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Australian Government

IP Australia

AUSTRALIAN OFFICIAL JOURNAL

OF

PATENTS

(ISSN 0819-1794)

Contents

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General Information

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GUIDE TO THE USE OF THIS JOURNAL

The Australian Official Journal of Patents (AOJP) reports all major events and actions which take place during the life cycle of an Australian patent and provides certain details of these actions as they relate to the patent or patent application involved. This guide sets out to teach the reader how to use the journal to access this information.

While there are many possible actions in the life of a patent, the majority of actions reported relate to the following events, which are the main stages in the progression of a patent application to a granted patent:

(i) FILING -

This is the act of making an application. When the application is first filed certain details are published.

(ii) OPEN-TO-PUBLIC-INSPECTION (OPI) -

Approximately 18 months after first filing of an Australian or a corresponding foreign application, certain application documents, including the complete specification, become available to the public (Open-to-Public-Inspection or "OPI"). Relevant application details are published.

(iii) ACCEPTANCE –

This is the Commissioner's acceptance of a patent application. Once the Commissioner has accepted a patent application, certain details of the application are published in the AOJP. Notice of opposition may be filed within three months of advertisement of acceptance.

(iv) OPPOSITION –

If an opposition action is commenced against the grant of the patent, the application number and the name of the opponent are published. If the opposition is to the Certification of an Innovation Patent, the patent number and the name of the opponent are published.

(v) GRANTING –

Most accepted applications are not opposed. These proceed to grant and become granted patents. Of the few that are opposed (less than 1%) most of these, after resolution of the opposition, proceed to grant and become granted patents. Granted patents are simply listed in order of their patent number.

(vi) CERTIFICATION

This is the Commissioner's Certification after passing examination of a previously granted unexamined Innovation Patent.

In addition to the actions related to these stages, other actions reported include: assignments, lapsing or withdrawal of applications and ceasing or expiry of patents, voluntary amendments, extensions of time for certain actions and registration of licences.

How To Identify Information Using "INID" Numbers

Patents are published in many different countries and in many different languages. As a result, finding the information that you want (eg the filing date) on a patent document or in a journal can be quite difficult. There is an international system operating, which codifies this information in an unambiguous way, by assigning a specific number to each piece of information about the history of a patent. These numbers are called the I**nternationally agreed Numbers for the Identification of Data** or INID numbers.

These numbers appear on all published patents and abstracts and are used throughout this journal to identify particular items of information. For example, the date on which a document is filed has the INID number (22), while the name of the applicant has the INID number of (71). These numbers are always expressed in parentheses and always immediately precede the information to which they relate. For example:

(22) 12.10.91

means that the filing date of the document which contains this reference is 12 October 1991. Learning the INID numbers for the information you want will help you find it quickly and easily. A complete list of the INID numbers and the items to which they relate is provided at the end of this Guide.

How Australian Patent Documents are Numbered

When searching information or ordering documents it is vital that you understand the numbering system.

Document Numbering in the **Australian Official Journal of Patents from 10th March 2018** All

patents, patent applications and provisional applications are assigned a "10" digit number.

- The first 4 digits identify the year of filing; and
- The fifth digit identifies the type of patent. Numerals; “0”, “2”, or “3” are allocated to standard complete applications and patents (including petty patents); “1” is allocated to innovation applications and patents; and “9” is allocated to provisional applications.

See Examples:
2011236254 and 2000023658 (Standard Complete)
2011158589 (Innovation Complete)
2011902365 (Provisional)

NOTE: Please refer to previous journal publications for numbering formats used prior to 10th March 2018.

Different prefixes will be associated to the application/patent at different stages of its life. This prefix indicates whether the application has been accepted.

A document corresponding to an unaccepted application has the prefix, AU-A; eg AU-A-2002200234. A document corresponding to an accepted application carries the prefix AU-B; eg AU-B-2002200234.

Users need to be aware that an accepted document may differ from the corresponding unaccepted document. This is because amendment may occur between first publication (OPI) and second publication (acceptance).

NOTE: When ordering any patent document from us, whether accepted or not, please quote the application/patent number preceded by the appropriate prefix.

Arrangement of Information in the Journal

For each of the categories

(i) Provisional Applications Filed, (ii)

Complete Applications Filed, iii)

Applications Open to Public Inspection

(iv) Applications Accepted, and (v)

Innovation Patent Certified.

The Journal lists the information published in that category in an alphabetical Name Index list based on the name of the applicant. These indices are useful if you wish to find information about applications made by a particular applicant.

In addition to the Name Index there is provided, for each of these categories, a Numerical Index This index lists the applications either in order of their Application Numbers, in the case of complete applications filed and applications OPI, or in order of their Document Number in the case of accepted applications. It provides, for each number, the name of the applicant. These indices are useful if you wish to track the progress of a particular patent application.

There are also IPC Indices provided for applications which are OPI and for applications which have been accepted. IPC stands for **I**nternational **P**atent **C**lassification. Each IPC "mark" is an alpha-numerical representation of a particular area of technology. These indices are in order of IPC mark, and within each mark provide either the application numbers of the application which are now OPI or the numbers of the cases now accepted. These indices are useful if you wish to check on patent activity in a particular technology.

Using the Indices To Find Patent Information if You Know the Name of the Applicant.

Use the Name Indices. They will give you the following information identified by their INID number:

ITEM	INID No.
A) Provisional applications filed - Name Index	
The name of the applicant	(71)
The Provisional application number	(21)
The date of filing	(22)
The title of the invention	(54)

ITEM	INID No.
B) Complete application filed - Name Index	
The name of the applicant	(71)
The number assigned to the application	(21)
The date of filing	(22)
Title of the invention	(54)
Number of priority document(s) if any	(31)
Date(s) of filing of priority documents	(32)
Country of which priority documents filed	(33)
PCT application number	(86)

ITEM	INID No.
C) Applications open to public inspection Name Index	
The name of the applicant	(71)
The number of the document	(11)
The number assigned to the application	(21)
The date of filing	(22)
The title	(54)
The classification marks	(51)
Priority document number(s)	(31)
Date of filing of priority document(s)	(32)
Country in which priority document filed	(33)
Publication date of unexamined document	(43)
Inventors names if known	(72)
Patent Attorneys	(74)

ITEM	INID No.
D) Applications accepted - Name Index	
The name of the applicant	(71)
The number of the document	(11)
The number of the accepted document	(10)
The number assigned to the application	(21)
The date of filing	(22)
The title	(54)
The classification marks	(51)
PCT publication number	(87)
Priority document number	(31)
Date of filing of priority document(s)	(32)
Country in which priority document filed	(33)
Publication date of unexamined document	(43)

ITEM	INID No.
E) Patents Certified – Name Index	
The name of the applicant	(71)
The number of the accepted document	(10)
The number assigned to the application	(21)
The date of filing	(22)
The title	(54)
The classification marks	(51)
Priority document number	(31)
Date of filing of priority document(s)	(32)
Country in which priority document filed	(33)
Publication date of granted patent	(45)
Inventors names	(72)
Patent Attorneys	(74)
Related by division	(62)

You will notice at each stage of following application through that all applications are in alphabetical order of **Applicant**, not inventor.

1. To Find Information About a Patent Application if You Know its Number.

Use the appropriate numerical index. This will give you the name of the applicant from the number. You will then need to use the appropriate Name Index as above to find out other information about the Patent Application you are interested in.

The following Numerical Indices are available:

A) **Provisional** Applications filed.

B) **Complete** Applications filed.

C) Innovation Applications filed.

D) Applications **Open to Public Inspection.**

E) Applications **Accepted**.

F) Innovation Patent Certified

3. To Find Information About Patent Documents in the Area of Technology in which You are Interested if You Know the International Patent Classification Mark for that Area.

All patent applications are classified according to their subject matter using the International Patent Classification (IPC). Although the system is very detailed and covers all technologies, knowledge of the IPC marks of the technologies you are interested in will allow you to find patent documents in these technologies quite easily. To identify the IPC marks of technologies you are interested in, you can inspect relevant documentation in any of AIPO's state offices.

The indices to use are

A) Applications **OPI** - IPC Index

B) Applications **accepted** - IPC Index.

These indices give you the numbers of the applications which are either OPI or Accepted and are listed in order of their IPC marks.

Once you have the numbers of the documents that interest you, consult the relevant Number Index (see 2. above) to find the applicant's name, and then the Name Index (see 1. above) to find out the details of that application.

'INID' NUMBERS in use on Australian Patent Documents

'INID' is an acronym for '**I**nternationally agreed **N**umbers for the **I**dentification of **D**ata'.

(10) Document identification
- **(11)** Number of the document
- **(12)** Plain language designation of the kind of document
- **(19)** WIPO country code, or other identification, of the country publishing the document.

(20) Document filing data
- **(21)** Number(s) assigned to the application(s).
- **(22)** Date(s) of filing application(s)
- **(23)** Other date(s) of filing, including exhibition filing date and date of filing complete specification following provisional specification.
- **(24)** Date from which industrial property rights may have effect.

(30) Priority data
- **(31)** Number(s) assigned to priority application(s)
- **(32)** Date(s) of filing priority application(s)
- **(33)** Country (countries) in which the priority application(s) was (were) filed.

(40) Date(s) of making available to the public
- (43) Date of publication by printing or similar process of an unexamined document, on which no grant has taken place on or before the said date.

(43) Date of publication by printing or similar process of an examined document, on which no grant has taken place on or before the said date.
(44) Date of publication by printing or similar process of a document, on which grant, or certification has taken place on or before the said date.

(50) Technical Information
(51) International Patent Classification
(52) Domestic or national classification
(54) Title of invention
(56) List of prior art documents, if separate from descriptive text
(57) Abstract or claim

(60) Reference(s) to other legally related domestic document(s)
(60) Related by cognate(s).
(61) Related by addition(s).
(62) Related by division(s).

(70) Identification of parties concerned with the document
(71) Name(s) of applicant(s)
(72) Name(s) of inventor(s) if know to be such
(74) Name(s) of attorney(s) or agent(s)
(75) Name(s) of inventor(s) who is (are) also applicant(s)

(80) Identification of data related to International Conventions other than the Paris Convention
(86) PCT Application Number
(87) PCT Publication Number

NOTE

(1) Australian patent documents published on or after 26 October 1978 should be referred to by the application number preceded by the prefix AU-A or AU-B.

AU-A = Pre-examination **AU-B** = Post-examination

(2) The classification used is the International Patent Classification and is identified by the INID code (51). Further editions of the classification are identified as $(51)_2$, $(51)_3$, $(51)_4$ and $(51)_5$.

(3) INID code 74 provides for the name of the patent attorney, or firm of attorneys, prosecuting an application.

(4) There is a gap in volume numbering of the Australian Official Journal of Patents. The volumes are:

- 1987-2022 Volume 1 - 36
- 2023 - Volume 57 -

IP AUSTRALIA

AUSTRALIAN PATENT OFFICE

Dyno Nobel Asia Pacific Limited and DetNet South Africa (Pty) Limited v Orica International Pte Ltd
[2025] APO 8

Patent Application:	2015280721
Title:	A wireless initiation device
Patent Applicant:	Orica International Pte Ltd
Opponent:	Dyno Nobel Asia Pacific Pty Limited (First Opponent) DetNet South Africa (Pty) Limited (Second Opponent)
Delegate:	Leslie F. McCaffery
Decision Date:	17 March 2025
Hearing Date:	17-18 December 2024, in Canberra
Catchwords:	**PATENTS** - opposition under section 59 to grant of patents – novelty – priority date of claims – inventive step – support – clear enough and complete enough disclosure – utility – best method – claims entitled to earliest priority claimed – opposition successful on the ground of inventive step – other grounds unsuccessful – applicant given 2 months to propose amendments to overcome issues – costs awarded.
Representation:	Counsel for the applicant: Neil Murray SC, Kate Beattie SC and Jessie McKenzie Solicitor for the applicant: Miriam Zanker of Davies Collison Cave Law Patent attorney for the applicant: Sam Mickan of Davies Collison Cave Counsel for the first opponent: Cynthia Cochrane SC and Joseph Elks Solicitor for the opponent: Duncan Longstaff and Taryn Francis of Spruson & Ferguson Lawyers Patent attorney for the opponent: Januar Yap of Spruson & Ferguson Counsel for the second opponent: Ian Horak KC Patent attorney for the opponent: Stephen O'Brien and Tom Melville of Madderns Patent & Trade Mark Attorneys

Proceedings under the Patents Act 1990

Provisional Applications Filed

Name Index

Applications listed below were processed through the Patent Office Canberra during the period ending 11 Mar 2025 .

(71) 3DI Solutions Limited
(21) 2025900787 **(22)** 13.03.2025
(54) Apparatus for automatically testing inhalers

(71) 4Gearz Pty Ltd
(21) 2025900808 **(22)** 14.03.2025
(54) Smart home apparatus

(71) Acacia Natural Sciences Pty Ltd
(21) 2025900746 **(22)** 11.03.2025
(54) ESSENTIAL OIL COMPOSITION FOR AQUACULTURE

(71) Adamson, G.
(21) 2025900693 **(22)** 05.03.2025
(54) Autonomous Networked Sea Mine System (ANSMS) for Maritime Defense

(71) AI Content Create Pty Ltd
(21) 2025900871 **(22)** 18.03.2025
(54) A METHOD AND SYSTEM FOR CONTENT GENERATION

(71) Ajzenszmidt, I.
(21) 2025900769 **(22)** 13.03.2025
(54) Method and System for Computing Fractional Quantum Knot Invariants Using Lie Groups and Fractional Calculus

(71) AKGK PTY LTD
(21) 2025900839 **(22)** 17.03.2025
(54) Centre Bounce Machine for Australian Rules Football

(71) Alterity Therapeutics Limited
(21) 2025900800 **(22)** 14.03.2025
(54) Novel Salt and Crystalline Form

(71) Alterity Therapeutics Limited
(21) 2025900806 **(22)** 14.03.2025
(54) Crystalline Form, and Process for its Production

(71) Angstmann, T.; Rowse, J.; Foster, L.; Knight, P.; Johnson, N.
(21) 2025900765 **(22)** 12.03.2025
(54) Preoperative Supplement for Surgery Visualisation and Metabolic Optimisation

(71) Angstmann, T.
(21) 2025900825 **(22)** 16.03.2025
(54) Continuous Heavy Metal Concentration System Using Cucurbituril-Zeolite Matrix and Cupriavidus metallidurans

(71) Angstmann, T.
(21) 2025900828 **(22)** 16.03.2025
(54) Black Light Laparoscopy and Cystoscopy System for Diagnostic and Photomedical Treatment Using Ultraviolet Light

(71) Angstmann, T.
(21) 2025900854 **(22)** 17.03.2025
(54) Combined Haemostatic and Healing Agent for Surgical Applications

(71) Angstmann, T.
(21) 2025900864 **(22)** 18.03.2025
(54) System and Method for Detecting Bacterial Contamination in Human Embryo Culture Media Using Para-Aminobenzoic Acid Monitoring

(71) ARC Ento Tech Ltd
(21) 2025900802 **(22)** 14.03.2025
(54) ORGANIC WASTE APPARATUS AND PROCESS

(71) Atmo Biosciences Limited
(21) 2025900850 **(22)** 17.03.2025
(54) Methods, Programs, Apparatus for Obtaining Health Information from Sensors in an Ingestible Capsule

(71) Australia Travel Safe Pty Ltd; stanley, I.
(21) 2025900801 **(22)** 14.03.2025
(54) FLIGHTSAFE AI Pressure-Regulating Electronic Earplug with Bluetooth Sensor and Wireless Charging

(71) Berley Buddy Pty Ltd
(21) 2025900870 **(22)** 18.03.2025
(54) BERLEY DISPENSING DEVICE

(71) Biotron Limited
(21) 2025900785 **(22)** 13.03.2025
(54) Anti-viral compounds

(71) Blairgowrie Developments Pty Ltd
(21) 2025900819 **(22)** 15.03.2025
(54) Mechanism for Gas Transfer for all markets for utilizing existing services

(71) Bowman, S.
(21) 2025900831 **(22)** 16.03.2025
(54) Detection, Alerting, Location and Incident Management for sudden adverse events with relation to vehicles commonly referred to as ATVs or Quad Bikes.

(71) Breville Pty Limited
(21) 2025900805 **(22)** 14.03.2025
(54) Kitchen appliance

(71) Bucceri, A.
(21) 2025900868 **(22)** 18.03.2025
(54) All Weather Fan Gun snow machine

Provisional Applications Filed - Name Index cont'd

(71) Bulmash, J.
(21) 2025900767 **(22)** 13.03.2025
(54) Quantum optimisation Index for Ai Assisted Computational Learning

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(71) Bulmash, J.
(21) 2025900774 **(22)** 13.03.2025
(54) System and Method for Dynamic Load Balancing in Artificial Intelligence Cloud Computing Environments

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(71) Bulmash, J.
(21) 2025900792 **(22)** 13.03.2025
(54) Quantum Simulation Framework with Entanglement Field Modeling

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(71) Bulmash, J.
(21) 2025900794 **(22)** 13.03.2025
(54) AI-Driven Quantum Optimization System with Entanglement Field Enhancement

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(71) Bulmash, J.
(21) 2025900796 **(22)** 14.03.2025
(54) Historic Provisional Patent Specification Algorithm for Multiscale Critical Pressure Calculation in Phase Transition Systems

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(71) Bulmash, J.
(21) 2025900813 **(22)** 14.03.2025
(54) Historic Provisional Patent Specification Title: Algorithm for Multiscale Critical Pressure Calculation in Phase Transition Systems

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(71) Bulmash, J.
(21) 2025900816 **(22)** 15.03.2025
(54) Method for Reducing Quantum Error Correction Overhead Using Advanced Mathematical Formulas

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(71) Bulmash, J.
(21) 2025900820 **(22)** 15.03.2025
(54) Quantum-Based Framework for Integrated Cancer Detection, Simulation, and Treatment Optimization

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(71) Bulmash, J.
(21) 2025900821 **(22)** 15.03.2025
(54) Quantum-Based Framework for Integrated Cancer Detection, Simulation, and Treatment Optimization

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(71) Bulmash, J.
(21) 2025900822 **(22)** 15.03.2025
(54) Entanglement-Enhanced Imaging Tool for Tumor Detection in Soft Tissue at 0.04 mm Resolution

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(71) Bulmash, J.
(21) 2025900823 **(22)** 15.03.2025
(54) Quantum Treatment Synergy Engine for Optimizing Combination Cancer Therapies

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(71) Bulmash, J.
(21) 2025900824 **(22)** 16.03.2025
(54) Quantum Cancer Omni-Resilient Framework for Integrated Diagnostics and Treatment Optimization

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(71) Bulmash, J.
(21) 2025900832 **(22)** 16.03.2025
(54) Hybrid Quantum Error Correction System with AI-Driven Predictive Correction and Biologically Inspired Adaptability

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(71) Bulmash, J.
(21) 2025900833 **(22)** 16.03.2025
(54) Hybrid Quantum Error Correction System with Dormant Priority Variants for Stable Diagnostics and High-Error Imaging

---

(71) Bulmash, J.
(21) 2025900845 **(22)** 17.03.2025
(54) Shiftable Artificial Intelligence System with Fully Functional Optimal Algorithm and Built-in Compensation Response

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(71) Bulmash, J.
(21) 2025900846 **(22)** 17.03.2025
(54) Dormant Hybrid Artificial Intelligence System with Sophisticated Efficiency Algorithm and Built-in Compensation Response

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(71) Bulmash, J.
(21) 2025900851 **(22)** 17.03.2025
(54) All-in-One Dormant Hybrid Artificial Intelligence System with Sophisticated Efficiency Algorithm, Integrated Enhancement Tools, and Built-in Compensation Response

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(71) Bulmash, J.
(21) 2025900852 **(22)** 17.03.2025
(54) All-in-One Shiftable Artificial Intelligence System with Sophisticated Efficiency Algorithm, Integrated Enhancement Tools, and Built-in Compensation Response

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(71) Bulmash, J.
(21) 2025900859 **(22)** 18.03.2025
(54) Software Update for Enhancing X-ray Imaging with 3D-Like Clarity Using Non-AI Algorithmic Techniques

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(71) Calcross Trading Pty Ltd
(21) 2025900776 **(22)** 13.03.2025
(54) Insect Repelling Device

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(71) CAMPBELL, T.
(21) 2025900760 **(22)** 12.03.2025
(54) IMPROVED PAINT BRUSH CLEANER MK1

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(71) CAMPBELL, T.
(21) 2025900773 **(22)** 13.03.2025
(54) SLIMLINE IMPROVED PAINT BRUSH CLEANER MK1

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(71) Commonwealth Scientific and Industrial Research Organisation
(21) 2025900843 **(22)** 17.03.2025
(54) Registering measurement systems

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(71) Data Critical Pty Ltd
(21) 2025900768 **(22)** 13.03.2025
(54) Server racks

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(71) Egerszegi, A.
(21) 2025900814 **(22)** 15.03.2025
(54) "Digital Energy Cell (DEC) & Smart Energy Platform: A Scalable, Multi-Application Dielectric Storage, Power Delivery, and Radiation Shielding System"

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(71) Electro Magnetic Measurements P/L
(21) 2025900793 **(22)** 13.03.2025
(54) HYBRID SODAR SYSTEM TO EXTEND RANGE

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(71) Enersil Pty Ltd
(21) 2025900770 **(22)** 13.03.2025
(54) Biomaterials for Battery Applications

Eyre Shellfish Pty Ltd see Nanosoils Bio Pty Ltd
(21) 2025900779

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(71) Fahy, A.
(21) 2025900862 **(22)** 18.03.2025
(54) Casimir Machine

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(71) Farah, U.
(21) 2025900861 **(22)** 18.03.2025
(54) Neurodivergent-Friendly Wearable AI Assistant with Adaptive Executive Function Support

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Foster, L. see Angstmann, T.
(21) 2025900765

Provisional Applications Filed - Name Index cont'd

(71) Fraider, J.; Nixon, Z.
(21) 2025900841 **(22)** 17.03.2025
(54) AI-IoT Integrated Self-Exclusion System for Gambling Harm Reduction

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Francis, S. see Miller, R.
(21) 2025900826

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(71) Fusiontuff Global Pty Ltd
(21) 2025900764 **(22)** 12.03.2025
(54) Spray Valve

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(71) Geagea, D.
(21) 2025900782 **(22)** 13.03.2025
(54) Collapsible Clothes Hanger

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(71) Gega Elements Pty Ltd
(21) 2025900834 **(22)** 16.03.2025
(54) A Mechanochemical Approach to Gallium Extraction from Low-Grade Resources

---

(71) Gilani Sari, R.
(21) 2025900873 **(22)** 18.03.2025
(54) Scalp Massager

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(71) Goddard, M.
(21) 2025900817 **(22)** 15.03.2025
(54) Scalable Dual-Tracker Split-Load Hybrid Solar Energy System with Dynamic Power Allocation

---

(71) Gunn, B.
(21) 2025900755 **(22)** 12.03.2025
(54) Automated Illuminated UltraSonic Monitoring Water Level Controller

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(71) Haas, D.
(21) 2025900781 **(22)** 13.03.2025
(54) A straight edge device used to observe undulations in floors (concrete floors, stairs & landings, resilient floor coverings etc). The device indicates to the user whether a floor is within a certain tolerance level. These tolerances can be adjusted dependent on national standards or manufacturers guidelines.

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(71) Hurst, T.
(21) 2025900830 **(22)** 16.03.2025
(54) Superconducting Electromagnetic Shield System for Radiation Protection in Space and Earth Applications

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(71) Hydra Light International Ltd
(21) 2025900849 **(22)** 17.03.2025
(54) POWER-SUPPLY DEVICE

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(71) ImmVirX Pty Ltd
(21) 2025900811 **(22)** 14.03.2025
(54) Oncolytic viruses as therapeutic agents for treating cancer

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(71) Imtrade Australia Pty Ltd
(21) 2025900758 **(22)** 12.03.2025
(54) Iron chelate

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(71) Imtrade Australia Pty Ltd
(21) 2025900759 **(22)** 12.03.2025
(54) High-protein bait

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(71) Inter Earth Pty Ltd
(21) 2025900789 **(22)** 13.03.2025
(54) An Improved Tree Planter

---

(71) Inter Earth Pty Ltd
(21) 2025900790 **(22)** 13.03.2025
(54) A Water Cart

---

(71) Jagano Pty Ltd
(21) 2025900791 **(22)** 13.03.2025
(54) Wheelbarrow lifter and carrier with assistance of your Vehicle Tow Hitch Receiver

---

(71) JEAN YVES CLAUSS
(21) 2025900804 **(22)** 14.03.2025
(54) PULSE TUBE COOLER

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(71) JEAN YVES CLAUSS
(21) 2025900809 **(22)** 14.03.2025
(54) PULSE TUBE COOLER

Johnson, N. see Angstmann, T.
(21) 2025900765

Knight, P. see Angstmann, T.
(21) 2025900765

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(71) Lubdub Technologies Pty Ltd
(21) 2025900803 **(22)** 14.03.2025
(54) A WEARABLE ULTRASOUND DEVICE FOR IMAGING AND HEALTH MONITORING

---

(71) LYONS, P.
(21) 2025900837 **(22)** 17.03.2025
(54) A portable, single use, mobile/ cell phone antennae booster. Compressed ballon connected to a length of wire packed into a small pack with helium cylinder which will inflate the balloon. Bluetooth connects to a mobile phone.

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(71) Magyar, L.
(21) 2025900766 **(22)** 13.03.2025
(54) Design of a portable electric toilet for situations when there is no plumbing or sewerage service available.

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(71) Magyar, L.
(21) 2025900778 **(22)** 13.03.2025
(54) Modular Electric Vehicles A design that allows for the creation of vehicles to meet the users' requirements.

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(71) Magyar, L.
(21) 2025900858 **(22)** 17.03.2025
(54) Design of an electric, portable, modular hydroponic system.

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(71) Martec Pty Ltd
(21) 2025900762 **(22)** 12.03.2025
(54) A ceiling fan hub

---

(71) Miller, R.; Francis, S.
(21) 2025900826 **(22)** 16.03.2025
(54) Bluetooth Low Energy Proximity Alert Device for Child Car Seat Reminder

---

(71) Mohammed, T.; Senanayake, G.
(21) 2025900777 **(22)** 13.03.2025
(54) Process for recovering rare earths from monazite ore

---

(71) MOROZOV, I.
(21) 2025900836 **(22)** 17.03.2025
(54) A STABILISING UNIT FOR A HAND-HELD ROTARY TOOL

---

(71) Moroz Technologies Pty Ltd
(21) 2025900757 **(22)** 12.03.2025
(54) SYSTEM AND METHOD FOR SELECTIVE PARTICLE EXTRACTION AND RELATED SYSTEM AND METHOD OF HAEMODIALYSIS

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(71) MULTIVENTURE INDUSTRIES PTY LTD
(21) 2025900799 **(22)** 14.03.2025
(54) Pharmaceutical Compositions Comprising Paracetamol L-Valinate (PLV)for Veterinary Use The present invention relates to pharmaceutical compositions and methods for veterinary pain management, specifically formulations containing Paracetamol L-Valinate (PLV) with improved metabolic stability and reduced hepatotoxicity

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(71) MUSGRAVE DESIGN & ENGINEERING PTY LIMITED
(21) 2023903396 **(22)** 25.10.2023
(54) PAPON (Printed, Automated, Programmable, Operational Nacelles)

Provisional Applications Filed - Name Index cont'd

(71) My Mini Pty Ltd
(21) 2025900863 **(22)** 18.03.2025
(54) Exercise Weight

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(71) Myriota Pty Ltd
(21) 2025900812 **(22)** 14.03.2025
(54) SYSTEM AND METHOD FOR ENHANCED COMMUNICATION

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(71) Nanosoils Bio Pty Ltd; Eyre Shellfish Pty Ltd
(21) 2025900779 **(22)** 13.03.2025
(54) Method for preparing nanoparticles

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(71) NewSouth Innovations Pty Limited
(21) 2025900771 **(22)** 13.03.2025
(54) Method for preparing nanoparticles

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(71) NewSouth Innovations Pty Limited
(21) 2025900772 **(22)** 13.03.2025
(54) Synthesis of Active Silica Nanoparticles

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(71) NewSouth Innovations Pty Limited
(21) 2025900847 **(22)** 17.03.2025
(54) Particle Composition

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(71) Niche Business Solutions Pty Ltd
(21) 2025900810 **(22)** 14.03.2025
(54) Lid lifting apparatus

Nixon, Z. see Fraider, J.
(21) 2025900841

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(71) ODL Sleep Services Pty Ltd
(21) 2025900756 **(22)** 12.03.2025
(54) A means to give therapy for OSA to individuals who are undergoing orthodontic treatment

---

(71) Ogg, B.
(21) 2025900775 **(22)** 13.03.2025
(54) FISHING LURE SAFETY DEVICE

---

(71) Oliver, L.
(21) 2025900807 **(22)** 14.03.2025
(54) A WALL-MOUNTED RACKING SYSTEM

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(71) Opitz, M.
(21) 2025900754 **(22)** 12.03.2025
(54) A SECURE HYPERLINK MANAGEMENT SYSTEM AND METHOD THEREOF

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(71) Orbilift Pty Ltd
(21) 2025900744 **(22)** 11.03.2025
(54) A MULTI-DIRECTIONAL WHEEL FOR A CONVEYANCE

---

(71) OtherPay Pty Ltd
(21) 2025900761 **(22)** 12.03.2025
(54) REVERSE MERCHANT & CONSUMER AGNOSTIC PUSH PAYMENT SOLUTION

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(71) OtherPay Pty Ltd
(21) 2025900763 **(22)** 12.03.2025
(54) CAPITAL FLIGHT AND PROFIT REPATRIATION AVOIDANCE

---

(71) Peters, M.
(21) 2025900815 **(22)** 15.03.2025
(54) Invention Title: “Context Weaver: AI-Powered Enterprise Knowledge Graph for Intelligent Information Retrieval & Contextual Insights” Category: # Electrical/ICT (Information & Communication Technology) (Specifically: AI, Machine Learning, Knowledge Graphs, Enterprise Software, Data Processing)

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(71) Podrug, K.
(21) 2025900835 **(22)** 17.03.2025
(54) Biometric Monitoring System for Equines

---

(71) POSITIVE BY DESIGN PTY LTD
(21) 2025900788 **(22)** 13.03.2025
(54) SECURED PERSONAL DEVICES

---

(71) Potty Plant Pty Ltd
(21) 2025900780 **(22)** 13.03.2025
(54) A TURF TRANSPORT AND PRESENTATION APPARATUS FOR PET TOILETRY

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(71) Pro-Test Pty Ltd
(21) 2025900844 **(22)** 17.03.2025
(54) Tubing and coupling

---

(71) Reid, D.
(21) 2025900753 **(22)** 12.03.2025
(54) RepTech - sporting repetition counter

---

(71) ResMed Pty Ltd
(21) 2025900797 **(22)** 14.03.2025
(54) PATIENT INTERFACE AND/OR COMPONENTS THEREOF

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(71) Rio Tinto Leaching Technologies Pty Limited
(21) 2025900876 **(22)** 18.03.2025
(54) A HEAP LEACH PROCESS

Rowse, J. see Angstmann, T.
(21) 2025900765

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(71) Royal Melbourne Institute of Technology
(21) 2025900872 **(22)** 18.03.2025
(54) Macro-heterostructure film for photocatalysis and associated device and system

---

(71) Scolaro, A.
(21) 2025900795 **(22)** 14.03.2025
(54) A Mechanical Drive

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(71) Scolaro, A.
(21) 2025900867 **(22)** 18.03.2025
(54) A Mechanical Drive

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(71) Seale, D.
(21) 2025900840 **(22)** 17.03.2025
(54) A toy vehicle

Senanayake, G. see Mohammed, T.
(21) 2025900777

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(71) SHINGLEBACK OFF ROAD PTY LTD
(21) 2025900853 **(22)** 17.03.2025
(54) MOTORCYCLE CARRIER

---

(71) Smart Loading Solutions Pty Ltd
(21) 2025900749 **(22)** 11.03.2025
(54) Shipping Container, and Shipping Container Loading and Unloading System

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(71) Spectrum Tuition Digital Pty Ltd
(21) 2025900848 **(22)** 17.03.2025
(54) The Success Path - Intelligence Unlocking System & Adaptive Intelligence Expansion Framework for Learning & Performance Optimisation

---

(71) Speed, T.
(21) 2025900827 **(22)** 16.03.2025
(54) A Storage Container for a Vehicle

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(71) SPENCER, L.
(21) 2025900784 **(22)** 13.03.2025
(54) TREE NET ARRANGEMENT

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stanley, I. see Australia Travel Safe Pty Ltd
(21) 2025900801

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(71) Stratco (Australia) Pty Limited; Studio 9 Architects Pty Ltd
(21) 2025900869 **(22)** 18.03.2025
(54) BUILDING CLADDING SYSTEM

Studio 9 Architects Pty Ltd see Stratco (Australia) Pty Limited
(21) 2025900869

Provisional Applications Filed - Name Index cont'd

(71) SupaVac Pty Ltd
(21) 2025900842 **(22)** 17.03.2025
(54) Dry media pumping system

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(71) Sustain 450 Pty Ltd
(21) 2025900865 **(22)** 18.03.2025
(54) Water treatment apparatus

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(71) Talebzadeh, S.
(21) 2025900866 **(22)** 18.03.2025
(54) An interactive oral hygiene feedback system

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(71) Tessara Therapeutics Pty Ltd
(21) 2025900783 **(22)** 13.03.2025
(54) Integrated Biosensor Compositions and Methods

---

(71) Timmermans, D.
(21) 2025900818 **(22)** 15.03.2025
(54) Concealed recreational vehicle shower and/or toilet

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(71) Tour 27 Pty Ltd
(21) 2025900829 **(22)** 16.03.2025
(54) Compact Hybrid HydroCapture Atmospheric Water Generator with Ionic Condensation, Thermoelectric Cooling, and Tilt-Responsive Shut-Off Circuit

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(71) Vater, L.
(21) 2025900786 **(22)** 13.03.2025
(54) A BUILDING ARRANGEMENT AND A METHOD OF CONSTRUCTION THEREOF

---

(71) Webb, J.
(21) 2025900838 **(22)** 17.03.2025
(54) Flux Modulation Generator (FMG) with Dynamic Flux Gating

---

(71) Xero Limited
(21) 2025900798 **(22)** 14.03.2025
(54) Systems, methods and computing programs for monitoring of accounting platform activity

Numerical Index

Complete Applications Filed

Name Index

Applications listed below were processed through the Patent Office Canberra during the period ending 11 Mar 2025 .

. (*) Title not in Roman characters
. (**) Title not given

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(71) 1nventing 2morrow 2day pty ltd
(21) 2025201883 **(22)** 16.03.2025
(54) Plant pot with separate internal chamber

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(71) Abbott Diabetes Care Inc.
(21) 2025201764 **(22)** 12.03.2025
(54) Analyte sensors featuring one or more detection-facilitating enhancements

---

(71) Abiomed Europe GmbH
(21) 2025201807 **(22)** 13.03.2025
(54) Intravascular blood pump with ceramic inner sleeve

---

(71) Abouloukme, H.M.
(21) 2025201801 **(22)** 12.03.2025
(54) Lungliv Inhaler - A specific unit for inhalation of dry powder.

Acuitas Therapeutics Inc. see CureVac SE
(21) 2025201944

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(71) Addtop Pty Ltd
(21) 2025201910 **(22)** 17.03.2025
(54) A picture frame

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(71) Adocia
(21) 2025201936 **(22)** 18.03.2025
(54) Compositions In The Form Of An Injectable Aqueous Solution Comprising Human Glucagon And A Copolyamino Acid

---

(71) Air Products and Chemicals, Inc.
(21) 2025201947 **(22)** 18.03.2025
(54) PROCESS AND APPARATUS FOR CRACKING AMMONIA

---

(71) Aksesori Setia SDN BHD
(21) 2025201773 **(22)** 12.03.2025
(54) Drawer side frame

---

(71) Alchin Long Group IP Pty Limited
(21) 2025201780 **(22)** 12.03.2025
(54) A window or door latching device

---

(71) Alector LLC
(21) 2025201767 **(22)** 12.03.2025
(54) Anti-SIRP-ALPHA antibodies and methods of use thereof

---

(71) Algalife Ltd.
(21) 2025201805 **(22)** 13.03.2025
(54) Fibers comprising cultivated microalgae, method for manufacturing the same, and yarns, fabrics and garments comprising such fiber

---

(71) Align Technology, Inc.
(21) 2025201772 **(22)** 12.03.2025
(54) NTRAORAL SCANNER WITH DENTAL DIAGNOSTICS CAPABILITIES

---

(71) Allergan Pharmaceuticals International Limited
(21) 2025201949 **(22)** 18.03.2025
(54) Scar prevention and/or treatment

---

(71) Aluminium Specialties Group Pty. Ltd.
(21) 2025201956 **(22)** 18.03.2025
(54) A HINGE

---

(71) Amgen Inc.
(21) 2025201784 **(22)** 12.03.2025
(54) Platform assembly process for drug delivery device

---

(71) Amylyx Pharmaceuticals Inc.
(21) 2025201758 **(22)** 11.03.2025
(54) COMPOSITIONS FOR IMPROVING CELL VIABILITY AND METHODS OF USE THEREOF

---

(71) Anderson, M.
(21) 2025201775 **(22)** 12.03.2025
(54) Dairy Cattle Breeding Status Indicator Technology

---

(71) ANDREEV, P.R.
(21) 2025201879 **(22)** 14.03.2025
(54) PAYLOAD (VARIANTS) AND AIR TRANSPORT SYSTEM (VARIANTS) COMPRISING SAME

---

(71) Angel Group Co., Ltd.
(21) 2025201799 **(22)** 12.03.2025
(54) System for counting number of game tokens

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(71) Angel Group Co., Ltd.
(21) 2025201891 **(22)** 17.03.2025
(54) Inspection system, and inspection device

---

(71) Apellis Pharmaceuticals, Inc.
(21) 2025201748 **(22)** 11.03.2025
(54) Cell-reactive, long-acting, or targeted compstatin analogs and related compositions and methods

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(71) Aristocrat Technologies Australia Pty Limited
(21) 2025201950 **(22)** 18.03.2025
(54) ELETRONIC GAMING MACHINE WITH NON-ORTHOGONALLY ARRANGED REEL POSITIONS

---

(71) ARRAY TECHNOLOGIES, INC.
(21) 2025201934 **(22)** 18.03.2025
(54) SPRING CLIP FOR PHOTOVOLTAIC MODULE MOUNTING

---

(71) ARRAY TECHNOLOGIES, INC.
(21) 2025201935 **(22)** 18.03.2025
(54) STOWING OF SOLAR POWER DEVICES

---

(71) AT Collective Enterprises PTY LTD
(21) 2025201802 **(22)** 13.03.2025
(54) Petsales.com.au AI Pet Matchmaker

---

(71) Atkins, W.
(21) 2025201859 **(22)** 14.03.2025
(54) APPARATUS AND METHOD FOR CULTIVATING MACROALGAE

---

(71) Ava Food Labs, Inc.
(21) 2025201926 **(22)** 18.03.2025
(54) ALCOHOLIC BEVERAGES PRODUCED FROM INDIVIDUAL COMPONENTS

---

(71) Avalon Polytom (HK) Limited
(21) 2025201903 **(22)** 17.03.2025
(54) Compositions and methods for amino acid depletion therapy

---

(71) b.box for kids developments Pty Ltd
(21) 2025201843 **(22)** 13.03.2025
(54) A PROTECTIVE COVER FOR BOTTLES AND CONTAINERS

Complete Applications Filed - Name Index cont'd

(71) Baxter Corporation Englewood
(21) 2025201867 **(22)** 14.03.2025
(54) AUTOMATED EXCHANGE OF HEALTHCARE INFORMATION FOR FULFILLMENT OF MEDICATION DOSES

(71) Bechtel Energy Technologies & Solutions, Inc.
(21) 2025201921 **(22)** 18.03.2025
(54) SYSTEMS AND METHODS FOR AMMONIA PURIFICATION

(71) Bio Blast Pharma Ltd.
(21) 2025201824 **(22)** 13.03.2025
(54) Treatment of protein aggregation myopathic and neurodegenerative diseases by parenteral administration of trehalose

(71) Bioscout Pty Ltd
(21) 2025201931 **(22)** 18.03.2025
(54) Particulate sampling device and analysis

(71) Bioverativ Therapeutics Inc.
(21) 2025201917 **(22)** 17.03.2025
(54) Nucleic acid molecules and uses thereof

(71) Black & Decker Inc.
(21) 2025201941 **(22)** 18.03.2025
(54) System for enhancing operation of power tools

(71) Black Belt Therapeutics Limited
(21) 2025201908 **(22)** 17.03.2025
(54) CD38 modulating antibody

(71) Bluescope Steel Limited
(21) 2025201911 **(22)** 17.03.2025
(54) Corrosion protection with AL/ZN-based coatings

(71) BNSF Railway Company
(21) 2025201897 **(22)** 17.03.2025
(54) SYSTEMS AND METHODS FOR IDENTIFYING RAILROAD TRACK RAILS AND DETERMINING RAILROAD TRACK CHARACTERISTICS USING LIDAR

(71) BNSF Railway Company
(21) 2025201901 **(22)** 17.03.2025
(54) SYSTEMS AND METHODS FOR AUTOMATICALLY DETERMINING BALLAST EXCESSES AND SHORTAGES

(71) BNSF Railway Company
(21) 2025201902 **(22)** 17.03.2025
(54) SYSTEMS AND METHODS FOR DETERMINING RAILROAD OBSTRUCTIONS USING LIDAR

(71) BNSF Railway Company
(21) 2025201904 **(22)** 17.03.2025
(54) SYSTEMS AND METHODS FOR DETERMINING ADJACENT RAILROAD TRACKS USING LIDAR

(71) Boston Scientific Neuromodulation Corporation
(21) 2025201869 **(22)** 14.03.2025
(54) Closed loop stimulation adjustments based on local and surround receptive field stimulation

(71) Boston Scientific Scimed, Inc.
(21) 2025201852 **(22)** 14.03.2025
(54) Systems and devices for articulation wire guidance

(71) BPG Sales and Technology Investments, LLC
(21) 2025201923 **(22)** 18.03.2025
(54) Vehicular alignment for sensor calibration

(71) Bristol Myers Squibb Co
(21) 2025201762 **(22)** 11.03.2025
(54) Antibodies against IL-7R alpha subunit and uses thereof

(71) BRISTOL-MYERS SQUIBB COMPANY
(21) 2025201886 **(22)** 17.03.2025
(54) MACROCYCLES WITH HETROCYCLIC P2' GROUPS AS FACTOR XIA INHIBITORS

(71) Britax Romer Kindersicherheit GmbH
(21) 2025201825 **(22)** 13.03.2025
(54) ANCHORING SYSTEM FOR SAFETY BELTS OF A CHILD SAFETY SEAT

(71) BRITAX RÖMER Kindersicherheit GmbH
(21) 2025201839 **(22)** 13.03.2025
(54) Child Safety Seat

(71) BÜHLER AG
(21) 2025201788 **(22)** 12.03.2025
(54) METHOD FOR PRODUCING A PROTEIN MEAL FROM INSECTS, IN PARTICULAR FROM INSECT LARVAE AND INSECT PUPAE, OR FROM WORMS, AND DRYING APPARATUS FOR USE IN SUCH A METHOD

(71) California Institute of Technology; The Rockefeller University
(21) 2025201781 **(22)** 12.03.2025
(54) BROADLY NEUTRALIZING ANTI-HIV-1 ANTIBODIES AND METHODS OF USE THEREOF

(71) Chevron Phillips Chemical Company LP
(21) 2025201942 **(22)** 18.03.2025
(54) WELLBORE DRILLING COMPOSITIONS

(71) Children's Medical Center Corporation
(21) 2025201810 **(22)** 13.03.2025
(54) ABCB5 LIGANDS AND SUBSTRATES

(71) Children's Research Institute, Children's National Medical Center; OncoC4, Inc.
(21) 2025201864 **(22)** 14.03.2025
(54) ANTI-CD24 COMPOSITIONS AND USES THEREOF

(71) Commonwealth Scientific and Industrial Research Organisation
(21) 2025201797 **(22)** 12.03.2025
(54) Gene annotation

(71) Coop, D.
(21) 2025201769 **(22)** 12.03.2025
(54) Railway Wheel Boring Machine for Machining the Bore of the Hub of a Railway Wheel

(71) Cummins Power Generation Inc.
(21) 2025201875 **(22)** 14.03.2025
(54) System, container, and method for containerized energy delivery

(71) CureVac SE; Acuitas Therapeutics Inc.
(21) 2025201944 **(22)** 18.03.2025
(54) Lipid nanoparticle mRNA vaccines

(71) Curis, Inc.
(21) 2025201766 **(22)** 12.03.2025
(54) COMBINATION THERAPY WITH A PHOSPHOINOSITIDE 3-KINASE INHIBITOR WITH A ZINC BINDING MOIETY

(71) DAIHEN Corporation
(21) 2025201806 **(22)** 13.03.2025
(54) POWER SYSTEM AND POWER CONTROL DEVICE

(71) Daiichi Sankyo Company, Limited
(21) 2025201862 **(22)** 14.03.2025
(54) Combination of antibody-drug conjugate and immune checkpoint inhibitor

Complete Applications Filed - Name Index cont'd

(71) Deere & Company
(21) 2025201951 **(22)** 18.03.2025
(54) Unsupervised on-road transport of an autonomous, off-road agricultural machine

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(71) DEFINITEK, INC.
(21) 2025201850 **(22)** 14.03.2025
(54) QUANTIFICATION OF PREVIOUSLY UNDETECTABLE QUANTITIES

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(71) Derrick Corporation
(21) 2025201813 **(22)** 13.03.2025
(54) COMPRESSION APPARATUSES, SYSTEMS AND METHODS FOR SCREENING MATERIALS

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(71) Dexcom, Inc.
(21) 2025201779 **(22)** 12.03.2025
(54) Systems and methods for power management in analyte sensor system

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(71) Dickinson Corporation
(21) 2025201873 **(22)** 14.03.2025
(54) Oxyanionic templates for surface replication

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(71) Dolby International AB
(21) 2025201819 **(22)** 13.03.2025
(54) Improved Subband Block Based Harmonic Transposition

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(71) Dräger Safety AG & Co. KGaA
(21) 2025201803 **(22)** 13.03.2025
(54) Thermal alarm handling

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(71) ECOFUEL TECHNOLOGIES LTD
(21) 2025201757 **(22)** 11.03.2025
(54) Method and Device for Treatment of Liquid Hydrocarbons

---

(71) Ecolab USA Inc.
(21) 2025201809 **(22)** 13.03.2025
(54) Pest control system and method of operating same

---

(71) ECSite, Inc.
(21) 2025201866 **(22)** 14.03.2025
(54) Two-port passive intermodulation analyzer to classify interference signals and identify likely sources

---

(71) EDGE VAPOUR BARRIER INVESTMENTS PTY LTD
(21) 2025201912 **(22)** 17.03.2025
(54) VAPOUR BARRIER FOR SLAB ON GROUND CONSTRUCTION

---

(71) Emerging Compounds Treatment Technologies, Inc.
(21) 2025201906 **(22)** 17.03.2025
(54) SYSTEM AND METHOD FOR SEPARATING COMPETING ANIONS FROM PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) IN WATER

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(71) Emomo Tech (Zhejiang) Co., Ltd
(21) 2025201768 **(22)** 12.03.2025
(54) ELECTRICAL CONNECTOR ASSEMBLY FOR FURNITURE PIECE

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(71) Emomo Tech (Zhejiang) Co., Ltd
(21) 2025201771 **(22)** 12.03.2025
(54) FURNITURE ACCESSORY WITH DETACHABLE CONTROLLER

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(71) Enoda Limited
(21) 2025201818 **(22)** 13.03.2025
(54) HOLDING MECHANISMS FOR ELECTROMAGNETIC CORES

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(71) Essilor International
(21) 2025201937 **(22)** 18.03.2025
(54) Lens with color enhancement

Exact Sciences Corporation see Mayo Foundation for Medical Education and Research
(21) 2025201794

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(71) EXEL INDUSTRIES
(21) 2025201836 **(22)** 13.03.2025
(54) Bumper system for an agricultural machine wheel

---

(71) F. HOFFMANN-LA ROCHE AG
(21) 2025201888 **(22)** 17.03.2025
(54) Methods of treating rheumatoid arthritis, chronic spontaneous urticaria, and systemic lupus erythematosis using an inhibitor of bruton's tyrosine kinase

---

(71) Fellowship of Orthopaedic Researchers, Inc.
(21) 2025201856 **(22)** 14.03.2025
(54) Total hip replacement system with rotatable femoral magnet

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(71) FISHER & PAYKEL HEALTHCARE LIMITED
(21) 2025201822 **(22)** 13.03.2025
(54) FLOW PATH FAULT DETECTION METHOD FOR A RESPIRATORY ASSISTANCE APPARATUS

---

(71) Flamel Ireland Ltd.
(21) 2025201830 **(22)** 13.03.2025
(54) MODIFIED RELEASE GAMMA-HYDROXYBUTYRATE FORMULATIONS HAVING IMPROVED PHARMACOKINETICS

---

(71) Fraunhofer-Gesellschaft zur Foerderung der angewandten Forschung e.V.
(21) 2025201914 **(22)** 17.03.2025
(54) Audio transmitter processor, audio receiver processor and related methods and computer programs

---

(71) FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.
(21) 2025201899 **(22)** 17.03.2025
(54) Method for efficient route planning of vehicles in a sorting system

---

(71) Goodrich, D.
(21) 2025201865 **(22)** 14.03.2025
(54) Method and apparatus for dispensing and expanding expandable slit sheet material

---

(71) GTS France
(21) 2025201804 **(22)** 13.03.2025
(54) Method for controlling dynamic activation/deactivation of at least one radio resource of a radio access network of a telecommunications system of a rail network in order to improve cybersecurity

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(71) GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP., LTD.
(21) 2025201938 **(22)** 18.03.2025
(54) Method and apparatus for encoding/decoding image, for performing deblocking filtering by determining boundary strength, and method for transmitting bitstream

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(71) Heliponix, LLC
(21) 2025201755 **(22)** 11.03.2025
(54) Automated plant growing system

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(71) Hong Kong Metropolitan University
(21) 2025201849 **(22)** 14.03.2025
(54) SYNAPTIC DEVICE AND SYNAPTIC DEVICE ARRAY

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(71) Hoteck Inc.
(21) 2025201870 **(22)** 14.03.2025
(54) Ceiling fan blade quick assembly structure

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(71) Hoteck Inc.
(21) 2025201909 **(22)** 17.03.2025
(54) Ceiling fan blade quick assembly structure

Complete Applications Filed - Name Index cont'd

(71) Huawei Technologies Co., Ltd.
(21) 2025201763 **(22)** 12.03.2025
(54) PICTURES WITH MIXED NAL UNIT TYPES

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(71) Huhtamaki Molded Fiber Technology B.V.
(21) 2025201841 **(22)** 13.03.2025
(54) Biodegradable and compostable food packaging unit from a moulded or fluff pulp material with a laminated multi-layer, and method for manufacturing such food packaging unit

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(71) HYDRO INTERNATIONAL LTD
(21) 2025201928 **(22)** 18.03.2025
(54) A SEPARATOR FOR SEPARATING SOLIDS FROM A FLUID

---

(71) I.C. Medical, Inc.
(21) 2025201785 **(22)** 12.03.2025
(54) Ultrapolar electrosurgery blade and ultrapolar electrosurgery blade assembly with conductive cutting edges and top and bottom conductive surfaces

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(71) ICM Airport Technics Pty Ltd
(21) 2025201907 **(22)** 17.03.2025
(54) DEVICE WITH BIOMETRIC SYSTEM

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(71) ICM Co., Ltd.
(21) 2025201905 **(22)** 17.03.2025
(54) Pharmaceutical composition for treating retinal diseases, comprising Nkx3.2 and fragment thereof as active ingredients

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(71) Ignite Orthopedics LLC
(21) 2025201747 **(22)** 11.03.2025
(54) Implants, systems and methods of using the same

---

(71) IHOME SECURITY SCREEN
(21) 2025201881 **(22)** 15.03.2025
(54) Holdding stainless steel mesh with aluminium extrusion and plastic wedge

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Illumina, Inc. see University of Washington through its Center for Commercialization
(21) 2025201791

Illumina, Inc. see University of Washington
(21) 2025201842

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(71) Impossible Foods Inc.
(21) 2025201786 **(22)** 12.03.2025
(54) Expression constructs and methods of genetically engineering methylotrophic yeast

---

(71) Increvet, Inc.
(21) 2025201847 **(22)** 14.03.2025
(54) A compound for the management of feline diabetes

---

(71) INDUSTRIAL GALVANIZERS CORPORATION PTY LTD
(21) 2025201953 **(22)** 18.03.2025
(54) IMPROVED GUARD RAIL ASSEMBLY

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(71) INSULET CORPORATION
(21) 2025201855 **(22)** 14.03.2025
(54) Medication delivery system with graphical user interface

---

(71) Intuit Inc.
(21) 2025201885 **(22)** 17.03.2025
(54) Artificial intelligence systems for automated social media content generation and trend integration

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(71) Intuit Inc.
(21) 2025201887 **(22)** 17.03.2025
(54) Artificial intelligence-based methods and systems for generating responses, ratings, and feedback of social media marketing campaigns

---

(71) Intuit Inc.
(21) 2025201913 **(22)** 17.03.2025
(54) Training a neural database for entity matching

---

(71) i-SENS, INC.
(21) 2025201860 **(22)** 14.03.2025
(54) METHOD OF PROVIDING NOTIFICATION OF SIGNAL LOSS IN GLUCOSE MONITORING SYSTEM

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(71) Itron, Inc.
(21) 2025201782 **(22)** 12.03.2025
(54) Battery power management for a cellular device

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(71) Johnson & Johnson Consumer Inc.
(21) 2025201853 **(22)** 14.03.2025
(54) Apparatus and method for assessing emotion of infants and young children

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(71) Kabushiki Kaisha Toshiba; Toshiba Energy Systems & Solutions Corporation
(21) 2025201837 **(22)** 13.03.2025
(54) Hydraulic equipment measurement device, hydraulic equipment measurement system, and hydraulic equipment measurement method

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(71) K Care Healthcare Solutions Pty Ltd
(21) 2025201777 **(22)** 12.03.2025
(54) Chair

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(71) KDB INTELLECTUAL PTY LTD
(21) 2025201877 **(22)** 14.03.2025
(54) MULTI-LOCK FOR DOORS

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(71) Kostecki, A.
(21) 2025201858 **(22)** 14.03.2025
(54) FUSED OVERLAY PLATE AND METHOD

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(71) Kymera Therapeutics, Inc.
(21) 2025201796 **(22)** 12.03.2025
(54) Protein degraders and uses thereof

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(71) L'Air Liquide, Société Anonyme pour l'Etude et l'Exploitation des Procédés Georges Claude
(21) 2025201924 **(22)** 18.03.2025
(54) PLANT AND METHOD FOR PRODUCING LIQUEFIED HYDROGEN

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(71) LG Chem, Ltd.
(21) 2025201828 **(22)** 13.03.2025
(54) ANTI-LILRB1 ANTIBODY AND USES THEREOF

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(71) LG Chem, Ltd.
(21) 2025201829 **(22)** 13.03.2025
(54) ANTI-LILRB1 ANTIBODY AND USES THEREOF

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(71) LG Electronics Inc.
(21) 2025201800 **(22)** 12.03.2025
(54) Ice maker and refrigerator

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(71) Lonza Cologne GmbH; Lonza Walkersville, Inc.; Octane Biotech Inc.
(21) 2025201808 **(22)** 13.03.2025
(54) End-to-end cell therapy automation

Lonza Walkersville, Inc. see Lonza Cologne GmbH
(21) 2025201808

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(71) Ludwig Institute for Cancer Research Ltd
(21) 2025201761 **(22)** 11.03.2025
(54) BISULFITE-FREE, BASE-RESOLUTION IDENTIFICATION OF CYTOSINE MODIFICATIONS

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(71) Mahindra & Mahindra Ltd
(21) 2025201754 **(22)** 11.03.2025
(54) A Side Door Hinge with Enhanced Opening Angle for Vehicles

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(71) Manitou Italia S.r.l.
(21) 2025201892 **(22)** 17.03.2025

Complete Applications Filed - Name Index cont'd

(54) Stabilising system for self-propelled operating machines

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(71) Manitou Italia S.r.l.
(21) 2025201895 **(22)** 17.03.2025
(54) System for stabilising self-propelled operating machines

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(71) Mason Corporation Pty Ltd
(21) 2025201745 **(22)** 11.03.2025
(54) An Adapter for a Ground Engaging Tool

Mayo Foundation for Medical Education and Research see Ohio State Innovation Foundation
(21) 2025201760

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(71) Mayo Foundation for Medical Education and Research; Exact Sciences Corporation
(21) 2025201794 **(22)** 12.03.2025
(54) Detecting breast cancer

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(71) McKechnie, R.
(21) 2025201863 **(22)** 14.03.2025
(54) Multi-functional Smart Device Platform

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(71) Meso Scale Technologies, LLC
(21) 2025201868 **(22)** 14.03.2025
(54) IMPROVED ASSAY METHODS

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(71) MineTech Solutions Pty Ltd
(21) 2025201929 **(22)** 18.03.2025
(54) WARNING SIGNAGE

NAGAO, K. see NAGAO, T.
(21) 2025201920

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(71) NAGAO, T.; NAGAO, K.
(21) 2025201920 **(22)** 18.03.2025
(54) Electronic transaction management system for providing a tip

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(71) Nanjing Chervon Industry Co., Ltd.
(21) 2025201840 **(22)** 13.03.2025
(54) PRESSURE WASHING APPARATUS

Newby, M. see Tyndall, J.
(21) 2025201882

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(71) NORITZ CORPORATION
(21) 2025201890 **(22)** 17.03.2025
(54) HOT WATER APPARATUS

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(71) NORITZ CORPORATION
(21) 2025201952 **(22)** 18.03.2025
(54) HOT WATER APPARATUS

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(71) Novartis AG
(21) 2025201900 **(22)** 17.03.2025
(54) CD19 binding molecules and uses thereof

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(71) Nutrition 21, LLC
(21) 2025201770 **(22)** 12.03.2025
(54) Chromium containing compositions for improving health and fitness

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Octane Biotech Inc. see Lonza Cologne GmbH
(21) 2025201808

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(71) Ohio State Innovation Foundation; Mayo Foundation for Medical Education and Research
(21) 2025201760 **(22)** 11.03.2025
(54) Human PD1 peptide vaccines and uses thereof

OncoC4, Inc. see Children's Research Institute, Children's National Medical Center
(21) 2025201864

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(71) Onvi, Inc.
(21) 2025201889 **(22)** 17.03.2025
(54) DOUBLE-ENDED ILLUMINATED DENTAL TOOL WITH REPLACEABLE ATTACHMENTS

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(71) Opus One Solutions (USA) Corporation; Opus One Solutions Energy Corp.
(21) 2025201815 **(22)** 13.03.2025
(54) Integrated distribution planning systems and methods for electric power systems

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Opus One Solutions Energy Corp. see Opus One Solutions (USA) Corporation
(21) 2025201815

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(71) Oryzon Genomics, S.A.
(21) 2025201787 **(22)** 12.03.2025
(54) Combinations of LSD1 inhibitors for the treatment of hematological malignancies

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(71) Perception Neuroscience, Inc.
(21) 2025201945 **(22)** 18.03.2025
(54) Methods of treating substance abuse

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(71) Presidio Medical, Inc.
(21) 2025201798 **(22)** 12.03.2025
(54) SYSTEMS AND METHODS FOR CARDIAC CONDUCTION BLOCK

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(71) Prysmian S.p.A.
(21) 2025201854 **(22)** 14.03.2025
(54) An optical cable junction box

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(71) Regeneron Pharmaceuticals, Inc.
(21) 2025201922 **(22)** 18.03.2025
(54) COMPOSITIONS AND METHODS FOR INTERNALIZING ENZYMES

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(71) Rongcheng Kangyi New Material Technology Co., Ltd.
(21) 2025201961 **(22)** 18.03.2025
(54) TRAILER JACK CONNECTING SEAT

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(71) Ruscoe, G.
(21) 2025201925 **(22)** 18.03.2025
(54) Ruscoe conveyor system

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(71) Sage Products, LLC
(21) 2025201876 **(22)** 14.03.2025
(54) Systems and methods for lifting and positioning a patient

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(71) Saronic Technologies
(21) 2025201759 **(22)** 11.03.2025
(54) Techniques for optimizing object detection for autonomous maritime surface vehicles

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(71) Saronic Technologies
(21) 2025201844 **(22)** 13.03.2025
(54) Autonomous maritime surface vehicles

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(71) Schneider Electric (Australia) Pty Limited
(21) 2025201751 **(22)** 11.03.2025
(54) IMPROVEMENTS IN WALL MOUNTED ELECTRICAL OUTLETS AND SWITCH PLATES

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(71) Schneider Electric (Australia) Pty Limited
(21) 2025201948 **(22)** 18.03.2025
(54) FACE PLATE AND METHOD OF MANUFACTURE

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(71) SCHNEIDER ELECTRIC SYSTEMS USA, INC.
(21) 2025201918 **(22)** 18.03.2025
(54) INDUSTRIAL PROCESS DEVICE FINGERPRINTING

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(71) SCHNEIDER ELECTRIC USA, INC.
(21) 2025201848 **(22)** 14.03.2025
(54) METHODS AND SYSTEMS FOR GENERATING PROGRAMMABLE LOGIC CONTROLLER CODE USING LARGE LANGUAGE MODELS

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(71) Seattle Children's Hospital (dba Seattle Children's Research Institute)
(21) 2025201845 **(22)** 13.03.2025

Complete Applications Filed - Name Index cont'd

(54) Phospholipid ether (PLE) CAR T cell tumor targeting (CTCT) agents

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(71) SENSE2 PTY LTD
(21) 2025201884 **(22)** 16.03.2025
(54) 3D-Stacked Neuromorphic-Photonic AI Accelerator with Picosecond Latency, Optical Synergy, Real-Time Adaptive Learning, and Embedded Security for Next-Generation Autonomous, Telecom, and Healthcare Systems.

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(71) SERMONIX PHARMACEUTICALS, INC.
(21) 2025201821 **(22)** 13.03.2025
(54) Lasofoxifene treatment of aromatase-resistant ER+ cancer

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(71) Seven Network (Operations) Limited
(21) 2025201872 **(22)** 14.03.2025
(54) SYSTEMS AND METHODS FOR VERIFYING A LOCATION OF A DISPLAY DEVICE AND RESTRICTING VIEWING BASED ON LOCATION

SHAABAN, A.F. see THANDRA, V.
(21) 2025201943

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(71) Shenzhen Lidacheng Technology Co., Ltd.
(21) 2025201915 **(22)** 17.03.2025
(54) GAMEPAD ADAPTABLE TO DIFFERENT SPECIFICATIONS OF GAME CONSOLE CONTROLLERS

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(71) Shoalter Automation Limited
(21) 2025201832 **(22)** 13.03.2025
(54) A modular automated retail store and system

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(71) Sicona Battery Technologies Pty Ltd
(21) 2025201765 **(22)** 12.03.2025
(54) Silicon carbon composite materials and methods for making same

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(71) SITA Information Networking Computing UK Limited
(21) 2025201940 **(22)** 18.03.2025
(54) SYSTEM, DEVICE AND METHOD FOR PROVIDING PASSENGER OR USER INFORMATION

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(71) Skechers U.S.A., Inc. II
(21) 2025201851 **(22)** 14.03.2025
(54) Footwear counter for easier entry and removal

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(71) Spectainer Pty Ltd
(21) 2025201823 **(22)** 13.03.2025
(54) Compactible pallet

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(71) Strong Force TX Portfolio 2018, LLC
(21) 2025201930 **(22)** 14.03.2025
(54) BLOCKCHAIN TRANSACTION SAFETY USING SMART CONTRACTS

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(71) Stryker Corporation
(21) 2025201893 **(22)** 17.03.2025
(54) Cassette for use with a medical waste collection system

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(71) Stryker Corporation
(21) 2025201896 **(22)** 17.03.2025
(54) Surgical manipulator and method for resuming semi-autonomous tool path position

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(71) STRYKER CORPORATION
(21) 2025201894 **(22)** 17.03.2025
(54) Surgical techniques utilizing exterior-facing display of head-mounted device

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(71) STRYKER EUROPEAN OPERATIONS HOLDINGS LLC
(21) 2025201778 **(22)** 12.03.2025
(54) Apparatus and method for securing an elongate member to a medical instrument

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(71) SUPERBREWED FOOD, INC.
(21) 2025201898 **(22)** 17.03.2025
(54) Food components having high protein content

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(71) Suzano Canada Inc.
(21) 2025201835 **(22)** 13.03.2025
(54) RHEOLOGICALLY DEFINED LIGNIN COMPOSITIONS

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(71) SWIMC, LLC
(21) 2025201793 **(22)** 12.03.2025
(54) Coating material container

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(71) Syngenta Crop Protection AG
(21) 2025201826 **(22)** 13.03.2025
(54) STABILIZED CHEMICAL COMPOSITION

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(71) Tata Consultancy Services Limited
(21) 2025201820 **(22)** 13.03.2025
(54) METHOD AND SYSTEM FOR MANAGING ITEM RETURNS

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(71) THANDRA, V.; SHAABAN, A.F.
(21) 2025201943 **(22)** 18.03.2025
(54) IMPROVED SYSTEM AND METHOD FOR TIMEKEEPING ENTRY AND WORK IN PROGRESS REPORTS

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(71) The George Institute for Global Health
(21) 2025201831 **(22)** 13.03.2025
(54) Compositions for the treatment of hypertension

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(71) The Institute for Ethnomedicine
(21) 2025201827 **(22)** 13.03.2025
(54) Method of enhancing glucose levels in the central nervous system

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(71) The J. David Gladstone Institutes, A Testamentary Trust Established Under The Will of J. David Gladstone
(21) 2025201916 **(22)** 17.03.2025
(54) Generation of induced pluripotent cells by CRISPR activation

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(71) The Regents of the University of California
(21) 2025201834 **(22)** 13.03.2025
(54) Methods for biomedical targeting and delivery and devices and systems for practicing the same

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(71) The Regents of The University of California; University College Dublin
(21) 2025201817 **(22)** 13.03.2025
(54) DITHIOLSACCHARIDE MUCOLYTIC AGENTS AND USES THEREOF

The Rockefeller University see California Institute of Technology
(21) 2025201781

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(71) The Trustees of the University of Pennsylvania
(21) 2025201833 **(22)** 13.03.2025
(54) Anti-C5 antibodies and uses thereof

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(71) The University of North Carolina at Chapel Hill
(21) 2025201776 **(22)** 12.03.2025
(54) Patch graft compositions for cell engraftment

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(71) THOMSON REUTERS ENTERPRISE CENTRE GMBH
(21) 2025201874 **(22)** 14.03.2025
(54) SYSTEM, METHOD, AND INTERFACES FOR WORK PRODUCT MANAGEMENT

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(71) Tidel Engineering, L.P.
(21) 2025201789 **(22)** 12.03.2025
(54) Systems and methods for transferring a locked container between vaults

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(71) T-Max (Hangzhou) Technology Co., Ltd.
(21) 2025201846 **(22)** 14.03.2025
(54) LADDER ASSEMBLY AND VEHICLE

Complete Applications Filed - Name Index cont'd

Toshiba Energy Systems & Solutions Corporation see Kabushiki Kaisha Toshiba
(21) 2025201837

(71) Trent Bridge (VIC) Engineering Pty Ltd
(21) 2025201927 **(22)** 18.03.2025
(54) HYBRID GENERATOR

(71) Trina Solar Co., Ltd.
(21) 2025201838 **(22)** 13.03.2025
(54) Solar cell, method for manufacturing the same, and photovoltaic module

(71) Twist Bioscience Corporation
(21) 2025201812 **(22)** 13.03.2025
(54) DNA-based digital information storage

(71) Tyndall, J.; Newby, M.
(21) 2025201882 **(22)** 16.03.2025
(54) INFLATABLE RGB PIXEL DISPLAY SYSTEM WITH REFLECTIVE-BACKED ELEMENTS

(71) UCB Biosciences, Inc.
(21) 2025201857 **(22)** 14.03.2025
(54) Prodrugs of deoxynucleosides for treatment of diseases caused by unbalanced nucleotide pools

(71) UCL Business Ltd
(21) 2025201861 **(22)** 14.03.2025
(54) Intranasal delivery of fluorescent marker

University College Dublin see The Regents of The University of California
(21) 2025201817

(71) University Health Network
(21) 2025201783 **(22)** 12.03.2025
(54) Devices, systems, and methods for tumor visualization and removal

(71) University of Iowa Research Foundation
(21) 2025201946 **(22)** 18.03.2025
(54) GPER proteolytic targeting chimeras

(71) University of Washington; Illumina, Inc.
(21) 2025201842 **(22)** 13.03.2025
(54) High-Throughput Single-Cell Transcriptome Libraries and Methods of Making and of Using

(71) University of Washington through its Center for Commercialization; Illumina, Inc.
(21) 2025201791 **(22)** 12.03.2025
(54) Selective modification of polymer subunits to improve nanopore-based analysis

(71) UVeye Ltd.
(21) 2025201774 **(22)** 12.03.2025
(54) Systems and methods for automated inspection of vehicles for body damage

(71) VALERIO, T.A.
(21) 2025201816 **(22)** 13.03.2025
(54) Method, Process, and System of Using a Mill to Separate Metals from Fibrous Feedstock

(71) Variation Biotechnologies Inc.
(21) 2025201932 **(22)** 18.03.2025
(54) IMMUNOTHERAPEUTIC COMPOSITIONS FOR TREATMENT OF GLIOBLASTOMA MULTIFORME

(71) vTv Therapeutics LLC
(21) 2025201814 **(22)** 13.03.2025
(54) Therapeutic uses of GLP1R agonists

(71) Westinghouse Air Brake Technologies Corporation
(21) 2025201795 **(22)** 12.03.2025
(54) MONITORING AND COMMUNICATION DEVICE OF A VEHICLE

(71) WONDERLAND SWITZERLAND AG
(21) 2025201792 **(22)** 12.03.2025
(54) Brake device for wheel set of baby carriage

(71) Xencor, Inc.
(21) 2025201933 **(22)** 18.03.2025
(54) Novel heterodimeric proteins

(71) Yokogawa Electric Corporation
(21) 2025201871 **(22)** 14.03.2025
(54) SUPPORT SYSTEM, SUPPORT METHOD, AND SUPPORT PROGRAM

(71) Yuhan Corporation
(21) 2025201790 **(22)** 12.03.2025
(54) Pharmaceutical composition for preventing or treating hepatitis, hepatic fibrosis, and hepatic cirrhosis comprising fusion proteins

(71) Zhejiang Huiguan Leisure Products Co., Ltd.
(21) 2025201878 **(22)** 14.03.2025
(54) Foldable tent

(71) Zhejiang Jinko Energy Storage Co., Ltd.
(21) 2025201955 **(22)** 18.03.2025
(54) METHOD AND DEVICE FOR DETECTING BATTERY STATE OF CHARGE, COMPUTER EQUIPMENT, STORAGE MEDIUM, AND COMPUTER PROGRAM PRODUCT

(71) Zitra Medicines Pty Ltd
(21) 2025201939 **(22)** 18.03.2025
(54) Targeted lipid nanoparticles

Numerical Index

Complete Applications Filed - Numerical Index cont'd

2025201876 Sage Products, LLC
2025201877 KDB INTELLECTUAL PTY LTD
2025201878 Zhejiang Huiguan Leisure Products Co., Ltd.
2025201879 ANDREEV, P.R.
2025201881 IHOME SECURITY SCREEN
2025201882 Tyndall, J.; Newby, M.
2025201883 1nventing 2morrow 2day pty ltd
2025201884 SENSE2 PTY LTD
2025201885 Intuit Inc.
2025201886 BRISTOL-MYERS SQUIBB COMPANY
2025201887 Intuit Inc.
2025201888 F. HOFFMANN-LA ROCHE AG
2025201889 Onvi, Inc.
2025201890 NORITZ CORPORATION
2025201891 Angel Group Co., Ltd.
2025201892 Manitou Italia S.r.l.
2025201893 Stryker Corporation
2025201894 STRYKER CORPORATION
2025201895 Manitou Italia S.r.l.
2025201896 Stryker Corporation
2025201897 BNSF Railway Company
2025201898 SUPERBREWED FOOD, INC.
2025201899 FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.
2025201900 Novartis AG
2025201901 BNSF Railway Company
2025201902 BNSF Railway Company
2025201903 Avalon Polytom (HK) Limited
2025201904 BNSF Railway Company
2025201905 ICM Co., Ltd.
2025201906 Emerging Compounds Treatment Technologies, Inc.
2025201907 ICM Airport Technics Pty Ltd
2025201908 Black Belt Therapeutics Limited
2025201909 Hoteck Inc.
2025201910 Addtop Pty Ltd
2025201911 Bluescope Steel Limited
2025201912 EDGE VAPOUR BARRIER INVESTMENTS PTY LTD
2025201913 Intuit Inc.
2025201914 Fraunhofer-Gesellschaft zur Foerderung der angewandten Forschung e.V.
2025201915 Shenzhen Lidacheng Technology Co., Ltd.
2025201916 The J. David Gladstone Institutes, A Testamentary Trust Established Under The Will of J. David Gladstone
2025201917 Bioverativ Therapeutics Inc.
2025201918 SCHNEIDER ELECTRIC SYSTEMS USA, INC.
2025201920 NAGAO, T.; NAGAO, K.
2025201921 Bechtel Energy Technologies & Solutions, Inc.
2025201922 Regeneron Pharmaceuticals, Inc.
2025201923 BPG Sales and Technology Investments, LLC
2025201924 L'Air Liquide, Société Anonyme pour l'Etude et l'Exploitation des Procédés Georges Claude
2025201925 Ruscoe, G.
2025201926 Ava Food Labs, Inc.
2025201927 Trent Bridge (VIC) Engineering Pty Ltd
2025201928 HYDRO INTERNATIONAL LTD
2025201929 MineTech Solutions Pty Ltd
2025201930 Strong Force TX Portfolio 2018, LLC
2025201931 Bioscout Pty Ltd
2025201932 Variation Biotechnologies Inc.
2025201933 Xencor, Inc.
2025201934 ARRAY TECHNOLOGIES, INC.
2025201935 ARRAY TECHNOLOGIES, INC.
2025201936 Adocia
2025201937 Essilor International
2025201938 GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP., LTD.
2025201939 Zitra Medicines Pty Ltd
2025201940 SITA Information Networking Computing UK Limited
2025201941 Black & Decker Inc.
2025201942 Chevron Phillips Chemical Company LP
2025201943 THANDRA, V.; SHAABAN, A.F.
2025201944 CureVac SE; Acuitas Therapeutics Inc.
2025201945 Perception Neuroscience, Inc.
2025201946 University of Iowa Research Foundation
2025201947 Air Products and Chemicals, Inc.
2025201948 Schneider Electric (Australia) Pty Limited
2025201949 Allergan Pharmaceuticals International Limited
2025201950 Aristocrat Technologies Australia Pty Limited
2025201951 Deere & Company
2025201952 NORITZ CORPORATION
2025201953 INDUSTRIAL GALVANIZERS CORPORATION PTY LTD
2025201955 Zhejiang Jinko Energy Storage Co., Ltd.
2025201956 Aluminium Specialties Group Pty. Ltd.
2025201961 Rongcheng Kangyi New Material Technology Co., Ltd.

Applications Lapsed, Refused Or Withdrawn, Patents Ceased or Expired

Reference to the application numbers must include the year of the application of the patent, which is shown preceding the numbers.

The codes next to each number have the following meanings:

Code	Meaning
1	Application Lapsed Section 142(2)(a)
3	Application Lapsed Section 142(2)(c)
4	Application Lapsed Section 142(2)(d)
5	Application Lapsed Section 142(2)(e)
6	Application Lapsed Section 142(2)(f)/Reg. 13.5A(2)\Reg. 8.3(3)
7	Application Lapsed Reg. 3.2A(3)/Reg. 3.2C
8	Application Lapsed Reg. 3.4(6)
9	Application Lapsed Section 142(3)
11	Application Lapsed Section 148(1)(c)
12	Application Withdrawn Section 141(1)
13	Application Withdrawn Section 141(2)/Reg 13.1C\Section 141(3)/See Reg 8.3(2)
14	Patent Ceased Section 143(a), or Expired
15	Patent Ceased Section 143(b)
16	Application Refused
17	Application Lapsed Reg. 22.2B(2)
18	Application Lapsed Reg. 3.2B(3),(5) or (6)
20	Patent Ceased Section 143A(b)/Reg. 22.2D(2) or (4)
21	Patent Ceased Section 101C(b)/Section 143A(c)/Reg. 9A.4
22	Patent Ceased Section 143A(d), or Expired
23	Patent Ceased Section 143A(e)
24	Application Lapsed Reg. 22.2E(2)
25	Application Lapsed Reg. 22.2I(2)
26	Application Lapsed Reg. 3.5AC(11)
27	Application Lapsed Reg. 3.5AF(2F)
28	Application Lapsed Reg. 22.15A(3)
A	Applications on which examination has not been requested or directed
B	Applications on which a direction to request examination has been given
C	Applications on which examination has been requested or on which an examination report has been issued
D	Applications which have been accepted or advertised accepted
E	Patents on which an examination has not been requested
F	Patents on which an examination has been requested or report issued
G	Patents Certified
N	Applications not Open to Public Inspection

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Assignments before Grant, Section 113

2019

2019371379 BayMedica, Inc. The application has been assigned to **INMED PHARMACEUTICALS INC.**

2020

2020276703 AptaTargets, S.L. The application has been assigned to **Merck Patent GmbH**

2020328154 Bayer Aktiengesellschaft; Bayer Pharma Aktiengesellschaft The application has been assigned to **Deutsches Krebsforschungszentrum Stiftung des öffentlichen Rechts**

2020363110 Ambi Labs Limited The application has been assigned to **LEE, Shang**

2021

2021213748 Teva Pharmaceuticals International GmbH The application has been assigned to **Assia Chemical Industries Ltd.**

2022

2022300384 ENERVENUE INC. The application has been assigned to **ENERVENUE HOLDINGS, LTD.**

2022350562 CHENGDU BAIYU PHARMACEUTICAL CO., LTD. The application has been assigned to **Kangbaida (Sichuan) Biotechnology Co., Ltd.**

2022387622 ENERVENUE, INC The application has been assigned to **ENERVENUE HOLDINGS, LTD.**

2023

2023201584 GROWPURA LIMITED The application has been assigned to **R & G Fresh Herbs**

2023297132 WILLIS GROUP LIMITED The application has been assigned to **Towers Watson Software Limited**

2023300603 WILLIS GROUP LIMITED The application has been assigned to **Towers Watson Software Limited**

2023301574 WILLIS GROUP LIMITED The application has been assigned to **Towers Watson Software Limited**

2023310356 HISEIS PTY LTD The application has been assigned to **Fleet Space Technologies Pty Ltd**

2023328481 YUNNAN DAORAN SCIENCE AND TECHNOLOGY LTD. The application has been assigned to **CooperSurgical, INC.**

2023336222 ATAI LIFE SCIENCES AG The application has been assigned to **EmpathBio, Inc.**

2024

2024900634 POPS PADDLES PTY LTD The application has been assigned to **Six Zero Pickleball Pty Ltd**

2024900681 Discaneer Pty Ltd The application has been assigned to **May, Christopher**

Assignments before Grant, Section 113

2024903311 Xcalibur Aviation (Australia) Pty Ltd The application has been assigned to **Xcalibur MPH Switzerland SA**

Extensions of Time, Section 223

Applications Received

Notice of opposition under Section 223(6) to the undermentioned application(s) for an extension of time may be lodged at the Patent Office within the prescribed time.

2014

2014331604 **Alnylam Pharmaceuticals, Inc.; Icahn School of Medicine at Mount Sinai** An application to extend the time from 28 May 2024 to 28 Sep 2024 in which to request an Extension of Term - Pharmaceutical has been filed . Address for service - Griffith Hack Level 15, 376-390 Collins Street Melbourne VIC 3000 AU

2017

2017291851 **Cellectis** An application to extend the time from 30 Jun 2024 to 30 Jan 2025 in which to pay a renewal fee has been filed . Address for service - Spruson & Ferguson GPO Box 3898 Sydney NSW 2001 AU

2018

2018203098 **Alnylam Pharmaceuticals, Inc.; Icahn School of Medicine at Mount Sinai** An application to extend the time from 28 May 2024 to 28 Sep 2024 in which to request an Extension of Term - Pharmaceutical has been filed . Address for service - Griffith Hack Level 15, 376-390 Collins Street Melbourne VIC 3000 AU

2020

2020286311 **Alnylam Pharmaceuticals, Inc.; ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI** An application to extend the time from 14 Jun 2024 to 14 Sep 2024 in which to request an Extension of Term - Pharmaceutical has been filed . Address for service - Griffith Hack Level 15, 376-390 Collins Street Melbourne VIC 3000 AU

Applications Allowed - Section 223(2)

2017

2017221309 **Smith, L.** The time in which to pay a renewal fee has been extended to 15 Sep 2024 . Address for service - Spruson & Ferguson GPO Box 3898 Sydney NSW 2001 AU

2020

2020435457 **Vapar Pty Ltd** The time in which to request examination has been extended to 17 Mar 2025 . Address for service - FORWARD INTELLECTUAL PROPERTY PTY LTD U 3 127 Crown Rd Queenscliff NSW 2096 AU

2020447274 **Acciona Generación Renovable, S. A.** The time in which to pay a continuation fee has been extended to 12 Dec 2024 . Address for service - Wallington-Dummer Suite 1005 Level 10 66 Hunter Street Sydney NSW 2000 AU

2021

2021233383 **HitIQ Limited** The time in which to request examination has been extended to 17 Mar 2025 . Address for service - FORWARD

Extensions of Time, Section 223

INTELLECTUAL PROPERTY PTY LTD U 3 127 Crown Rd Queenscliff NSW 2096 AU

2021234944 **HitIQ Limited** The time in which to request examination has been extended to 17 Mar 2025 . Address for service - FORWARD INTELLECTUAL PROPERTY PTY LTD U 3 127 Crown Rd Queenscliff NSW 2096 AU

2021239828 **FLASH THERAPEUTICS, LLC** The time in which to enter the National Phase has been extended to 16 Dec 2024 . Address for service - Pearce IP Pty Ltd L5, 20 Bond St SYDNEY NSW 2000 AU

2022

2022259704 **min, b.** The time in which to gain acceptance has been extended to 22 Mar 2025 . Address for service - byung woo min PO Box 494 Turramurra NSW 2074 AU

2024

2024278633 **AMG Mineração S.A.** The time in which to request examination has been extended to 07 Apr 2025 . Address for service - Maxwells Patent & Trade Mark Attorneys Pty Ltd PO Box R1466 SYDNEY NSW 1225 AU

Amendments

Applications for Amendment

A person interested in opposing the allowance of amendments under Section 104 may at any time within two months from the date of this journal give notice at the Patent Office using the approved form accompanied by the prescribed fee.

A person who wishes to be heard in relation to a proposed Rectification of the Register must file a request to be heard within two months from the date of this journal.

2017

2017436163 Methods for producing a cement composition **Boral IP Holdings (Australia) Pty Limited** The nature of the amendment is as shown in the statement(s) filed 05 Mar 2025 . Address for service - Davies Collison Cave Pty Ltd Level 15 1 Nicholson Street MELBOURNE VIC 3000 AU

2017436546 Methods for producing a low CO2 cement composition **Boral IP Holdings (Australia) Pty Limited** The nature of the amendment is as shown in the statement(s) filed 05 Mar 2025 . Address for service - Davies Collison Cave Pty Ltd Level 15 1 Nicholson Street MELBOURNE VIC 3000 AU

2018

2018392818 Treatment of autonomic disorders with botulinum toxin **Ipsen Biopharm Limited** The nature of the amendment is as shown in the statement(s) filed 21 Feb 2025 . Address for service - Griffith Hack Level 15 376-390 Collins St MELBOURNE VIC 3000 AU

2019

2019263254 Powered surgical drill having transducer assembly including at least two rotation sensor devices for use in determining bore depth of a drilled hole **Stryker Corporation** The nature of the amendment is as shown in the statement(s) filed 18 Feb 2025 . Address for service - Davies Collison Cave Pty Ltd Level 15 1 Nicholson Street MELBOURNE VIC 3000 AU

Amendments

2019340387 Dithiolsaccharide mucolytic agents and uses thereof **The Regents of The University of California ; University College Dublin** The nature of the amendment is as shown in the statement(s) filed 13 Mar 2025 . Address for service - RnB IP Pty Ltd PO Box 9530 Deakin ACT 2600 AU

2019368654 Heterocyclic kinase inhibitors and uses thereof **iOmx Therapeutics AG** The nature of the amendment is as shown in the statement(s) filed 07 Mar 2025 . Address for service - FPA Patent Attorneys Pty Ltd Level 19, South Tower 80 Collins Street Melbourne VIC 3000 AU

2020

2020103233 Panel Mounting System **CSR Building Products Limited** The nature of the amendment is as shown in the statement(s) filed 25 Feb 2025 . Address for service - Griffith Hack Level 15, 376-390 Collins Street Melbourne VIC 3000 AU

2020260443 Regulating Ornithine Metabolism To Manipulate The High Mannose Glycoform Content Of Recombinant Proteins **Amgen Inc.** The nature of the amendment is as shown in the statement(s) filed 11 Feb 2025 . Address for service - WRAYS PTY LTD L7 863 Hay St Perth WA 6000 AU

2022

2022268313 COMPOSITIONS, KITS AND METHODS FOR STYLING HAIR FIBERS **LANDA LABS (2012) LTD.** The nature of the amendment is as shown in the statement(s) filed 11 Mar 2025 . Address for service - Belyea IP PO Box 1011 ELSTERNWICK VIC 3185 AU

Amendments Made

2018

2018243281 **Valent BioSciences LLC** The nature of the amendment is: Amend the invention title to read 1-amino-1-cyclopropanecarboxylic acid formulations

2019

2019202079 **Ezyform International Pty Ltd** The nature of the amendment is: Application is to proceed under the number 2019101860

2019204172 **Schneider Electric (Australia) Pty Limited** The nature of the amendment is: Application is to proceed under the number 2019101861

2019205978 **AECI Mining Limited** The nature of the amendment is: Application is to proceed under the number 2019101862

2019262195 **Incyte Corporation** The nature of the amendment is: Amend the name of the inventor to read BURN, Timothy C. and LIU, Phillip C.

2020

2020204779 **Statens Serum Institut; Evaxion Biotech A/S** The nature of the amendment is: Amend the name of the inventor to read KRINGELUM, Jens; SØRENSEN, Anders Bundgård; RØNØ, Birgitte;

Amendments

PETERSEN, Nadia Viborg; SCHMIDT, Signe Tandrup; ANDREASEN, Lars Vibe and CHRISTENSEN, Dennis

2020332158 **Tosho,Inc.** The nature of the amendment is: Amend the invention title to read Tablet Dispensing Apparatus

2021

2021202073 **The Leisure Collective International Pty Ltd** The nature of the amendment is: Application is to proceed under the number 2021107702

2021239827 **MayMaan Research, Inc.** The nature of the amendment is: To amend the applicant name to MayMaan Research, Inc.

2022

2022215957 **PHILERGOS GROUP FOUNDATION** The nature of the amendment is: Amend the name of the inventor to read Giannelia, Vassili Paul

2022216539 **PHILERGOS GROUP FOUNDATION** The nature of the amendment is: Amend the name of the inventor to read Giannelia, Vassili Paul

2022217540 **PHILERGOS GROUP FOUNDATION** The nature of the amendment is: Amend the name of the inventor to read Giannelia, Vassili Paul

2022217904 **PHILERGOS GROUP FOUNDATION** The nature of the amendment is: Amend the name of the inventor to read Giannelia, Vassili Paul

2022280586 **CENTRICSBIO, INC.** The nature of the amendment is: Amend the name of the inventor to read JEON, Jae-Won and LEE, Suin

2022352845 **ABBVIE INC.** The nature of the amendment is: Amend the name of the inventor to read FACHERIS, Maurizio, F.; GOLD, Michael; ROBIESON, Weining, Z.; VOS, Melissa; SPIEGEL, Amy, M.; FISSEHA, Nahome, Tezera; BENESH, Janet, A.; LIOSSIS, George; BUDUR, Kumar and STODTMANN, Sven

2022474302 **PANDICA LTD** The nature of the amendment is: Amend the invention title to read Uses of a catheter for isolating an interior of a mammal hollow organ (variants)

2023

2023204300 **Daon Technology** The nature of the amendment is: Amend the invention title to read METHOD OF HOST-DIRECTED ILLUMINATION AND SYSTEM FOR CONDUCTING HOST-DIRECTED ILLUMINATION

2023237604 **PHILOGEN S.P.A** The nature of the amendment is: Amend the invention title to read IL2 IMMUNOCONJUGATE PREPARATION

2023306696 **PANASONIC INTELLECTUAL PROPERTY CORPORATION OF AMERICA** The nature of the amendment is as shown in the statement filed 04 Feb 2025

2023332688 **NANJING ROBOROCK INNOVATION TECHNOLOGY CO., LTD.** The nature of the amendment is: Amend the name of the inventor to read WANG, Wei; XUE, Lei; FANG, Junjun; WANG, Tao; HAN, Xianshan; QI, Hang; HU, Chengbing and LIU, Tong

2023335002 **NIPPON STEEL CORPORATION** The nature of the amendment is: Amend the invention title to read COATED CHECKERED STEEL SHEET

2023335870 **OSAKA SEALING PRINTING CO., LTD.** The nature of the amendment is: Amend the invention title to read HEAT-SENSITIVE RECORDING MEDIUM

2023335871 **OSAKA SEALING PRINTING CO., LTD.** The nature of the amendment is: Amend the invention title to read HEAT-SENSITIVE RECORDING MEDIUM

2023336593 **DEUTSCHES KREBSFORSCHUNGSZENTRUM STIFTUNG DES ÖFFENTLICHEN RECHTS** The nature of the amendment is: Amend the name of the inventor to read LI, Junwei; AUTENRIETH, Stella; RICHTER, Karsten; HOFMANN, Ilse; TESSMER, Claudia and PUSCHHOF, Jens

2023338571 **UNIVERSITY OF MIAMI** The nature of the amendment is: Amend the invention title to read Inflammasome antibody composition and method for treating neurologic disorder

2023339057 **POPPY HEALTH, INC.** The nature of the amendment is: Amend the name of the inventor to read KOTTAPALLI, Kalyan; MOLYNEUX, Sam; SWIC, Konrad; CALEY, Elizabeth; VOLMAN, Nathan; BOTHAM, Aaron; BEZDAN, Daniela and LADHANI, Laila

2023339166 **THE UNIVERSITY OF TOKYO** The nature of the amendment is: Amend the invention title to read SEISMIC EXPLORATION METHOD, SUBSURFACE MONITORING METHOD, SEISMIC EXPLORATION SYSTEM, AND SEISMIC SOURCE DEVICE

2023361932 **OSAKA UNIVERSITY; GC CORPORATION** The nature of the amendment is: Amend the invention title to read GLASS POWDER COMPOSITE AND METHOD OF PRODUCING GLASS POWDER COMPOSITE

2023441035 **JGC CORPORATION** The nature of the amendment is: Amend the invention title to read VERTICAL MULTISTAGE STIRRING SYSTEM AND CO2 SEQUESTRATION METHOD

2024

2024208227 **ORION POLYMER CORP.** The nature of the amendment is: Amend the invention title to read REINFORCED ANION EXCHANGE MEMBRANES AND METHODS OF MAKING SAME

2025

2025201663 **SHANDONG UNIVERSITY** The nature of the amendment is: Add priority details 2024102608265 07 Mar 2024 CN

2025201711 **THREE POINTS TECHNOLOGY PTY LTD** The nature of the amendment is: Amend the invention title to read Closed Loop System for Well Intervention

2025201772 **Align Technology, Inc.** The nature of the amendment is: Amend the invention title to read INTRAORAL SCANNER WITH DENTAL DIAGNOSTICS CAPABILITIES

Amendments

2025900671 **LA ZOUCH PTY LIMITED** The nature of the amendment is: To amend the applicant name to LA ZOUCH PTY LIMITED

2025900779 **Nanosoils Bio Pty Ltd; Eyre Shellfish Pty Ltd** The nature of the amendment is: Amend the invention title to read Improved Process for Algae Cultivation

Alteration of Name(s) of Applicant(s)/Patentee(s)

2008

2008253587 Aco Polycrete Pty Ltd The name of the patentee has been altered to **ACO Pty Ltd**

2010

2010249033 SiO2 Medical Products, Inc. The name of the patentee has been altered to **SiO2 Medical Products, LLC**

2013

2013219142 Ericsson-LG Enterprise Co.,Ltd. The name of the patentee has been altered to **IPECS Co., Ltd.**

2016

2016358111 Formycon AG; Klinge Biopharma GmbH; SiO2 Medical Products, Inc. The name of the patentee has been altered to **Formycon AG; Klinge Biopharma GmbH; SiO2 Medical Products, LLC**

2017

2017278950 Vitae Pharmaceuticals, LLC. The name of the patentee has been altered to **Vitae Pharmaceuticals, LLC**

2018

2018286919 Albumedix Ltd. The name of the patentee has been altered to **Sartorius Albumedix Limited**

2018449340 PerkinElmer Health Sciences, Inc. The name of the applicant has been altered to **Revvity Health Sciences, Inc.**

2019

2019215248 Weir Slurry Group, Inc. The name of the applicant has been altered to **Weir Minerals U.S. Inc.**

2020

2020387174 Ji Xing Pharmaceuticals Hong Kong Limited The name of the applicant has been altered to **Corxel Pharmaceuticals Hong Kong Limited**

2021

2021216630 Diurnal Limited The name of the applicant has been altered to **Neurocrine UK Limited**

2021258089 Vitae Pharmaceuticals, LLC. The name of the patentee has been altered to **Vitae Pharmaceuticals, LLC**

2022

2022262593 Ji Xing Pharmaceuticals Hong Kong Limited The name of the applicant has been altered to **Corxel Pharmaceuticals Hong Kong Limited**

Amendments

2022275263 Ji Xing Pharmaceuticals Hong Kong Limited The name of the applicant has been altered to **Corxel Pharmaceuticals Hong Kong Limited**

2023

2023255328 CRYOLEC LIMITED The name of the applicant has been altered to **CRYOLEC TECHNOLOGIES LTD**

2023336528 Trailer Dynamics GmbH; Dietrich NOWAK The name of the applicant has been altered to **Trailer Dynamics GmbH**

2024

2024201580 Weir Slurry Group, Inc. The name of the applicant has been altered to **Weir Minerals U.S. Inc.**

Notice of Intention to Amend under Section 105 pursuant to the Federal Court Rules

Australian Patent/Patent Application 2015255248 in the name(s) of Kutti Bay Investments Pty Ltd

Australian Patent/Patent Application 2021200376 in the name(s) of Kutti Bay Investments Pty Ltd

Australian Patent/Patent Application 2021215238 in the name(s) of Kutti Bay Investments Pty Ltd

Applications Open to Public Inspection

Name Index

. (*) Title not in Roman characters
. (**) Title not given

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(71) 360 Knee Systems Pty Ltd
(11) AU-A-2025201691
(21) 2025201691 **(22)** 07.03.2025
(54) Graphical representation of a dynamic knee score for a knee surgery
(51) Int. Cl.
G06F 30/20 (2020.01)
G06N 20/00 (2019.01)
G06T 17/00 (2006.01)
(43) 27.03.2025
(62) 2022202026
(72) O'CONNOR, Bede; MILES, Brad; THEODORE, Willy; TWIGGS, Joshua
(74) FB Rice Pty Ltd

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(71) 4TEEN4 Pharmaceuticals GmbH
(11) AU-A-2025201656
(21) 2025201656 **(22)** 06.03.2025
(54) DPP3 binder directed to and binding to specific DPP3-epitopes and its use in the prevention or treatment of diseases / acute conditions that are associated with oxidative stress
(51) Int. Cl.
C07K 16/40 (2006.01)
A61K 39/00 (2006.01)
A61P 9/04 (2006.01)
(43) 27.03.2025
(62) 2018356441
(72) BERGMANN, Andreas
(74) Davies Collison Cave Pty Ltd

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(71) Abiomed, Inc.
(11) AU-A-2025201547
(21) 2025201547 **(22)** 04.03.2025
(54) Catheter of a heart pump shaped for anatomic fit
(51) Int. Cl.
A61M 25/00 (2006.01)
(43) 27.03.2025
(62) 2022263596
(72) Corbett, Scott C.; Bergson, Margaret Tierney
(74) Davies Collison Cave Pty Ltd

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(71) Academia Sinica
(11) AU-A-2025201644
(21) 2025201644 **(22)** 06.03.2025
(54) CHIMERIC INFLUENZA VACCINES
(51) Int. Cl.
A61K 39/145 (2006.01)
A61P 31/16 (2006.01)
C12N 7/04 (2006.01)
(43) 27.03.2025
(62) 2024227222
(72) LIAO, Hsin-Yu; WANG, Shih-Chi; KO, Yi-An; LIN, Kuo-I; MA, Che; CHENG, Ting-Jen; WONG, Chi-Huey
(74) AJ PARK

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(71) Adobe Inc.
(11) AU-A-2024216453
(21) 2024216453 **(22)** 30.08.2024
(54) KNOWLEDGE EDIT IN A TEXT-TO-IMAGE MODEL
(51) Int. Cl.
G06F 40/10 (2020.01)
G06N 3/0475 (2023.01)
G06T 11/00 (2006.01)
(31) 63/581,974 **(32)** 11.09.23 **(33)** US
(43) 27.03.2025
(72) Manjunatha, Varun; Morariu, Vlad Ion; Basu, Samyadeep; Zhao, Nanxuan
(74) RnB IP Pty Ltd

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(71) Afterpay Pty Ltd
(11) AU-A-2025201729
(21) 2025201729 **(22)** 11.03.2025
(54) Payment system
(51) Int. Cl.
G06Q 40/02 (2023.01)
G06K 19/06 (2006.01)
G06Q 20/20 (2012.01)
G06Q 20/32 (2012.01)
(43) 27.03.2025
(62) 2023203755
(72) MOLNAR, Nicholas; WHITEMAN, David
(74) FB Rice Pty Ltd

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(71) Alcresta Therapeutics, Inc.
(11) AU-A-2025201699
(21) 2025201699 **(22)** 07.03.2025
(54) Methods, compositions, and devices for supplying dietary fatty acid needs
(51) Int. Cl.
A61K 9/50 (2006.01)
(43) 27.03.2025
(62) 2021203134
(72) MARGOLIN, Alexey L.; GALLOTTO, Robert; SHENOY, Bhami
(74) Spruson & Ferguson

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(71) Alecson Feld Australia Pty Ltd
(11) AU-A-2025201698
(21) 2025201698 **(22)** 07.03.2025
(54) Managing technical process data
(51) Int. Cl.
G06Q 40/00 (2023.01)
G06Q 10/00 (2023.01)
G06Q 40/04 (2012.01)
G06Q 40/08 (2012.01)
(43) 27.03.2025
(62) 2023229576
(72) KOVACEVIC, Aleksandar
(74) FOUNDRY INTELLECTUAL PROPERTY PTY LTD

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(71) Amgen Inc.
(11) AU-A-2025201675
(21) 2025201675 **(22)** 07.03.2025
(54) Stable Frozen Herpes Simplex Virus Formulation
(51) Int. Cl.
C12N 7/00 (2006.01)
A61K 35/763 (2015.01)
(43) 27.03.2025
(62) 2022201523
(72) LITOWSKI, Jennifer R.; SISKA, Christine Claudia; KERWIN, Bruce Arthur
(74) WRAYS PTY LTD

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(71) Amshield Partners Pte. Ltd.
(11) AU-A-2023237222
(21) 2023237222 **(22)** 03.10.2023
(54) LOAD BEARING MODULAR FORMWORK CONSTRUCTION SYSTEM FOR BUILDING HIGH RISE STRUCTURES
(51) Int. Cl.
E04B 1/348 (2006.01)
E04B 1/343 (2006.01)
E04H 1/00 (2006.01)
(31) PI2023005373 **(32)** 07.09.23 **(33)** MY
(43) 27.03.2025
(72) Dhillon, Amreek Singh
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) Andreev, A.A.
(11) AU-A-2023229519
(21) 2023229519 **(22)** 13.09.2023
(54) A GAS-HYDRAULIC SHOCK ABSORBER
(51) Int. Cl.
F16F 9/06 (2006.01)
F16F 9/34 (2006.01)
F16F 9/43 (2006.01)
B61G 9/08 (2006.01)
B61G 11/12 (2006.01)
(43) 27.03.2025
(72) Andreev, Aleksandr Aleksandrovich
(74) Remarkable IP

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(71) ANELLOTECH, INC.
(11) AU-A-2025201643
(21) 2025201643 **(22)** 06.03.2025
(54) High Efficiency Process for Separating Fillers from Catalyst and Gases in a Catalytic Fluidized Bed Pyrolysis Process of Plastics
(51) Int. Cl.
C10B 53/07 (2006.01)
B01D 45/12 (2006.01)
B01J 29/40 (2006.01)
C08J 11/12 (2006.01)
C10B 49/10 (2006.01)
C10B 49/22 (2006.01)
C10B 57/06 (2006.01)

Applications Open to Public Inspection - Name Index cont'd

C10G 1/08 (2006.01)
C10G 1/10 (2006.01)
C10G 11/18 (2006.01)
C10K 1/02 (2006.01)
(43) 27.03.2025
(62) 2023265062
(72) MISSALLA, Michael; MLECKZO, Leslaw; WIRTH, Karl-Ernst; BASHA, Omar
(74) MBIP

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(71) Angel Group Co., Ltd.
(11) AU-A-2025201661
(21) 2025201661 **(22)** 07.03.2025
(54) FRAUD DETECTION SYSTEM IN CASINO
(51) Int. Cl.
G07C 11/00 (2006.01)
A47B 25/00 (2006.01)
G06T 7/00 (2017.01)
(43) 27.03.2025
(62) 2023202469
(72) Shigeta, Yasushi
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Angel Group Co., Ltd.
(11) AU-A-2025201664
(21) 2025201664 **(22)** 07.03.2025
(54) Chip measurement system
(51) Int. Cl.
G07F 17/32 (2006.01)
A63F 3/00 (2006.01)
(43) 27.03.2025
(62) 2022291474
(72) SHIGETA, Yasushi
(74) FB Rice Pty Ltd

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(71) Angel Group Co., Ltd.
(11) AU-A-2025201668
(21) 2025201668 **(22)** 07.03.2025
(54) FRAUD DETECTION SYSTEM IN CASINO
(51) Int. Cl.
G07C 11/00 (2006.01)
A47B 25/00 (2006.01)
G06T 7/00 (2017.01)
(43) 27.03.2025
(62) 2023248182
(72) Shigeta, Yasushi
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Angel Group Co., Ltd.
(11) AU-A-2025201707
(21) 2025201707 **(22)** 08.03.2025
(54) GAMING TABLE SYSTEM AND SYSTEM
(51) Int. Cl.
G07F 17/32 (2006.01)
(43) 27.03.2025
(62) 2024202728
(72) Shigeta, Yasushi
(74) RnB IP Pty Ltd

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(71) ANSTEEL BEIJING RESEARCH INSTITUTE CO., LTD.
(11) AU-A-2023387758
(21) 2023387758 **(22)** 24.11.2023
(54) PRE-SEPARATION METHOD FOR COMPREHENSIVE UTILIZATION OF STRONG MAGNETIC TAILINGS
(51) Int. Cl.
B03C 1/30 (2006.01)
B03C 1/02 (2006.01)
B03D 1/02 (2006.01)
C22B 1/00 (2006.01)
(31) 202311155502.7 **(32)** 08.09.23 **(33)** CN
(43) 27.03.2025
(72) YANG, Xiaofeng; DU, Xin; CHU, Huichao; MAN, Xiaofei; LIU, Jianjun; ZHI, Hui; DONG, Zhenhai; FU, Yafeng
(74) Alder IP Pty Ltd

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(71) ANSTEEL BEIJING RESEARCH INSTITUTE CO., LTD.; ANSTEEL GROUP MINING CORPORATION LIMITED
(11) AU-A-2023387766
(21) 2023387766 **(22)** 08.12.2023
(54) MINERAL SEPARATION METHOD FOR CARBONATECONTAINING IRON ORE
(51) Int. Cl.
B03C 1/30 (2006.01)
B03C 1/00 (2006.01)
B03D 1/02 (2006.01)
C22B 1/00 (2006.01)
(31) 202311155803.X **(32)** 08.09.23 **(33)** CN
(43) 27.03.2025
(72) DONG, Zhenhai; ZHI, Hui; WANG, Huan; YAO, Qiang; YANG, Xiaofeng; XU, Liansheng
(74) Alder IP Pty Ltd

ANSTEEL GROUP MINING CORPORATION LIMITED see ANSTEEL BEIJING RESEARCH INSTITUTE CO., LTD.
(21) 2023387766

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(71) Applicants IND Window Fabrications Pty Ltd
(11) AU-A-2024205857
(21) 2024205857 **(22)** 16.08.2024
(54) Window assembly for secure facility
(51) Int. Cl.
E06B 1/34 (2006.01)
E06B 1/12 (2006.01)
E06B 3/30 (2006.01)
E06B 5/10 (2006.01)
E06B 9/00 (2006.01)
E04H 3/08 (2006.01)
E06B 3/24 (2006.01)
(31) 2023902887 **(32)** 08.09.23 **(33)** AU
(43) 27.03.2025
(72) Lockie, Hugh
(74) Cooper IP Pty Ltd

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(71) Applied Medical Resources Corporation
(11) AU-A-2025201744
(21) 2025201744 **(22)** 11.03.2025
(54) Systems and methods for tissue containment and retrieval
(51) Int. Cl.
A61B 17/00 (2006.01)
A61B 17/34 (2006.01)
(43) 27.03.2025
(62) 2022268391
(72) DO, Alexandra; BRESLIN, Tracy; YIN, Emily; WACHLI, Serene; HART, Charles C.; FILEK, Jacob J.
(74) Griffith Hack

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(71) Aravive Biologics, Inc.
(11) AU-A-2025201654
(21) 2025201654 **(22)** 06.03.2025
(54) Methods of treating metastatic cancers using AXL decoy receptors
(51) Int. Cl.
A61K 38/45 (2006.01)
(43) 27.03.2025
(62) 2018359863
(72) MCINTYRE, Gail; PROHASKA, David; TABIBIAZAR, Ray
(74) Spruson & Ferguson

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(71) Architex Corporation Pty Limited
(11) AU-A-2025201587
(21) 2025201587 **(22)** 04.03.2025
(54) A membrane roof system for buildings
(51) Int. Cl.
E04D 5/14 (2006.01)
E04B 7/16 (2006.01)
E04D 5/00 (2006.01)
E04D 15/04 (2006.01)
(43) 27.03.2025
(62) 2019202455
(72) Horsfall, Harvey David; Pascoe, Malcolm Richard
(74) ACROGON GROUP PTY LTD

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(71) Aristocrat Technologies, Inc.
(11) AU-A-2023258440
(21) 2023258440 **(22)** 03.11.2023
(54) DUAL-LATCH MECHANISM
(51) Int. Cl.
G07F 17/32 (2006.01)
A63F 13/90 (2014.01)
E05B 63/20 (2006.01)
E05C 9/02 (2006.01)
(31) 18/466,752 **(32)** 13.09.23 **(33)** US
(43) 27.03.2025
(72) Donald Rodd; Brian Goldstein
(74) James & Wells Intellectual Property

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(71) Aristocrat Technologies, Inc.
(11) AU-A-2024205731
(21) 2024205731 **(22)** 13.08.2024
(54) METHODS AND SYSTEMS FOR CONTROLLING A CONTINUOUS SYMBOL SEQUENCE MECHANIC USING PERSISTENT AWARD VALUES
(51) Int. Cl.
G07F 17/32 (2006.01)
A63F 9/24 (2006.01)
A63F 13/52 (2014.01)
(31) 18/465,009 **(32)** 11.09.23 **(33)** US
(43) 27.03.2025
(72) PENACHO, Gary; ENGLMAN, Allon
(74) James & Wells Intellectual Property

Applications Open to Public Inspection - Name Index cont'd

(71) Aristocrat Technologies, Inc.
(11) AU-A-2024205733
(21) 2024205733 **(22)** 13.08.2024
(54) GAMING OPERATION FOR DYNAMICALLY AND RANDOMLY MODIFYING SYMBOL AWARDS DISPLAYED ON A GAMING DEVICE
(51) Int. Cl.
G07F 17/32 (2006.01)
(31) 18/465,004 **(32)** 11.09.23 **(33)** US
(43) 27.03.2025
(72) DELEKTA, Scott; ENGLMAN, Allon
(74) James & Wells Intellectual Property

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(71) Aristocrat Technologies, Inc.
(11) AU-A-2024205735
(21) 2024205735 **(22)** 13.08.2024
(54) AUTOMATIC ON-BOARD CONTROLLERS FOR ELECTRONIC GAMING DEVICES
(51) Int. Cl.
G07F 17/32 (2006.01)
A63F 9/24 (2006.01)
(31) 18/625,558 **(32)** 03.04.24 **(33)** US
63/582,449 13.09.23 US
(43) 27.03.2025
(72) O'Hara, Jeremiah; Patton, Anthony; Raman, Samarth
(74) James & Wells Intellectual Property

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(71) Aristocrat Technologies, Inc.
(11) AU-A-2024213131
(21) 2024213131 **(22)** 21.08.2024
(54) HOLD AND SPIN WITH OVERLAPPING FEATURES AND EXPANDING REELS GAMING SYSTEMS AND METHODS
(51) Int. Cl.
G07F 17/32 (2006.01)
A63F 13/00 (2014.01)
G07F 17/34 (2006.01)
(31) 18/808,741 **(32)** 19.08.24 **(33)** US
63/581,760 11.09.23 US
(43) 27.03.2025
(72) Boese, Eric; Yi, Jae; Williams II, Ronald
(74) James & Wells Intellectual Property

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(71) Aristocrat Technologies, Inc.
(11) AU-A-2024219347
(21) 2024219347 **(22)** 03.09.2024
(54) DISPLAY ASSEMBLIES FOR A GAMING DEVICE HAVING A CURVED EDGE
(51) Int. Cl.
G07F 17/32 (2006.01)
A63F 13/00 (2014.01)
(31) 18/818,972 **(32)** 29.08.24 **(33)** US
63/582,466 13.09.23 US
(43) 27.03.2025
(72) BAUM, Michael; JADEJA, Rajendrasinh; MILLER, Sr., Charles
(74) James & Wells Intellectual Property

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(71) Aristocrat Technologies Australia Pty Limited
(11) AU-A-2025201681
(21) 2025201681 **(22)** 07.03.2025
(54) GAMING MACHINE WITH RETAINED BONUS GAME CONDITIONS
(51) Int. Cl.
G07F 17/32 (2006.01)
(43) 27.03.2025
(62) 2019204302
(72) Daniel, Mordecai
(74) Griffith Hack

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(71) Arla Foods AmbA
(11) AU-A-2025201712
(21) 2025201712 **(22)** 10.03.2025
(54) Acidic beta-lactoglobulin beverage preparation
(51) Int. Cl.
A23L 2/66 (2006.01)
A23L 2/39 (2006.01)
A23L 33/19 (2016.01)
A61K 38/17 (2006.01)
A61P 1/14 (2006.01)
(43) 27.03.2025
(62) 2019295120
(72) NIELSEN, Søren Bang; LAURIDSEN, Kasper Bøgelund; JÆGER, Tanja Christine; SØNDERGAARD, Kåre; DE MOURA MACIEL, Guilherme; BERTELSEN, Hans; PARJIKOLAEI, Behnaz Razi
(74) Griffith Hack

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(71) Ayala Pharmaceuticals Inc.
(11) AU-A-2025201674
(21) 2025201674 **(22)** 07.03.2025
(54) Combination compositions comprising bisfluoroalkyl-1,4- benzodiazepinone compounds and methods of use thereof
(51) Int. Cl.
A61K 31/5513 (2006.01)
A61K 31/661 (2006.01)
A61P 35/00 (2006.01)
A61P 35/02 (2006.01)
(43) 27.03.2025
(62) 2019266150
(72) DAVIS, Matti
(74) Griffith Hack

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(71) B. Braun Melsungen AG
(11) AU-A-2025201625
(21) 2025201625 **(22)** 05.03.2025
(54) CATHETER ASSEMBLIES AND RELATED METHODS
(51) Int. Cl.
A61M 25/06 (2006.01)
A61M 5/32 (2006.01)
A61M 39/06 (2006.01)
(43) 27.03.2025
(62) 2019409703
(72) WOEHR, Kevin; PHANG, Chee Mun
(74) Davies Collison Cave Pty Ltd

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(71) BASF Plant Science Company GmbH
(11) AU-A-2025200175
(21) 2025200175 **(22)** 10.01.2025
(54) Stabilising fatty acid compositions
(51) Int. Cl.
C12N 15/82 (2006.01)
(43) 27.03.2025
(62) 2022202025
(72) Senger, Toralf; Haertel, Heiko
(74) Griffith Hack

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(71) BASF Plant Science Company GmbH
(11) AU-A-2025200328
(21) 2025200328 **(22)** 16.01.2025
(54) Novel fatty acid desaturases and elongases and uses thereof
(51) Int. Cl.
C07K 14/435 (2006.01)
C12N 15/82 (2006.01)
(43) 27.03.2025
(62) 2021204777
(72) BAUER, Joerg; NAPIER, Johnathan A.; SAYANOVA, Olga
(74) Griffith Hack

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(71) BC Machining Technologies Inc.
(11) AU-A-2025201703
(21) 2025201703 **(22)** 07.03.2025
(54) Method and apparatus for producing filament array
(51) Int. Cl.
B21F 27/00 (2006.01)
B21F 1/00 (2006.01)
B21F 23/00 (2006.01)
(43) 27.03.2025
(62) 2019324741
(72) KOKBAS, Eugene
(74) FB Rice Pty Ltd

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(71) Berry Global, Inc
(11) AU-A-2024204544
(21) 2024204544 **(22)** 30.06.2024
(54) A Plant Shelter And Kit Including The Same
(51) Int. Cl.
A01G 13/23 (2025.01)
A01G 9/12 (2006.01)
A01G 13/27 (2025.01)
A01G 13/28 (2025.01)
A01G 17/04 (2006.01)
A01G 17/06 (2006.01)
(31) 2023904260 **(32)** 12.09.23 **(33)** AU
(43) 27.03.2025
(72) McCARTHY, Andrew Mark; de WOLFF, Michel; WORMALD, Paul Stuart
(74) WRAYS PTY LTD

BGC Partners, Inc. see CFPH, LLC
(21) 2025201621

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(71) BGC Partners, Inc.
(11) AU-A-2025201678
(21) 2025201678 **(22)** 07.03.2025
(54) INTERPROCESS COMMUNICATION FACILITATING SELLSIDE MARKET-MAKING
(51) Int. Cl.
G06Q 30/02 (2023.01)

Applications Open to Public Inspection - Name Index cont'd

(43) 27.03.2025
(62) 2023202470
(72) Lutnick, Howard W.; Sweeting, Michael; Lynn, Shaun; Norton, Philip; Winter, Rich
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

BioSpecifics Technologies Corporation see Duke University
(21) 2025201733

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(71) Blue River Technology Inc.
(11) AU-A-2025201613
(21) 2025201613 **(22)** 05.03.2025
(54) COMPENSATORY ACTIONS FOR AUTOMATED FARMING MACHINE FAILURE
(51) Int. Cl.
A01B 79/02 (2006.01)
A01B 69/00 (2006.01)
(43) 27.03.2025
(62) 2022275438
(72) Ostrowski, James Patrick; Ehn, Erik; Anderson, Kent Michael; Chostner, Benjamin Ray; Peake, John William
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) BostonGene Corporation
(11) AU-A-2025201658
(21) 2025201658 **(22)** 06.03.2025
(54) DETERMINING TISSUE CHARACTERISTICS USING MULTIPLEXED IMMUNOFLUORESCENCE IMAGING
(51) Int. Cl.
G06K 9/00 (2022.01)
G06K 9/62 (2022.01)
G06T 7/00 (2017.01)
(43) 27.03.2025
(62) 2021231904
(72) SVEKOLKIN, Viktor; GALKIN, Ilia; POSTOVALOVA, Ekaterina; ATAULLAKHANOV, Ravshan; BAGAEV, Alexander; VARLAMOVA, Arina; OVCHAROV, Pavel
(74) RnB IP Pty Ltd

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(71) Brady Worldwide, Inc.
(11) AU-A-2024219357
(21) 2024219357 **(22)** 03.09.2024
(54) Rotary circuit breaker lockout system and method
(51) Int. Cl.
H01H 9/20 (2006.01)
H01H 9/02 (2006.01)
H01H 71/02 (2006.01)
(31) 18/464,067 **(32)** 08.09.23 **(33)** US
(43) 27.03.2025
(72) ENGER, Andrew N.; GLADKOV, Gene
(74) GLMR

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(71) BRISTOL-MYERS SQUIBB COMPANY
(11) AU-A-2025201714
(21) 2025201714 **(22)** 10.03.2025
(54) ANTIBODIES COMPRISING MODIFIED HEAVY CONSTANT REGIONS
(51) Int. Cl.
C07K 16/28 (2006.01)
(43) 27.03.2025
(62) 2018272852
(72) YAMNIUK, Aaron P; KORMAN, Alan J; SELBY, Mark J; BARNHART, Bryan C; LONBERG, Nils; SRINIVASAN, Mohan; HENNING, Karla A; HAN, Michelle Minhua; LEI, Ming; SCHWEIZER, Liang; HATCHER, Sandra V; RAJPAL, Arvind
(74) AJ PARK

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(71) BYD COMPANY LIMITED
(11) AU-A-2024204406
(21) 2024204406 **(22)** 19.01.2024
(54) VEHICLE CONTROL SYSTEM, VEHICLE CONTROL METHOD, CONTROLLER, AND VEHICLE
(51) Int. Cl.
B60W 10/12 (2012.01)
B60W 30/02 (2012.01)
B60W 30/18 (2012.01)
B60W 40/12 (2012.01)
(31) 202311170393.6 **(32)** 11.09.23 **(33)** CN
(43) 27.03.2025
(72) YANG, Dongsheng; LU, Guoxiang; ZHUANG, Xuli; TANG, Lizhong; XU, Boliang; LEI, Zhaoyu
(74) Madderns Pty Ltd

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(71) BYD COMPANY LIMITED
(11) AU-A-2024204523
(21) 2024204523 **(22)** 19.01.2024
(54) VEHICLE CONTROL SYSTEM AND METHOD, AND VEHICLE
(51) Int. Cl.
B60W 50/02 (2012.01)
B60W 20/50 (2016.01)
B60W 50/029 (2012.01)
(31) 202311164098.X **(32)** 11.09.23 **(33)** CN
(43) 27.03.2025
(72) YANG, Dongsheng; LU, Guoxiang; ZHUANG, Xuli; TANG, Lizhong; XU, Boliang; LEI, Zhaoyu
(74) Madderns Pty Ltd

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(71) Caelli Pty Ltd
(11) AU-A-2023229509
(21) 2023229509 **(22)** 12.09.2023
(54) Box former
(51) Int. Cl.
B65B 43/26 (2006.01)
B65B 43/16 (2006.01)
(43) 27.03.2025
(72) GRIGGS, Matthew Joel; DRIESSEN, Johannes Petrus Maria
(74) GLMR

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(71) California Institute of Technology
(11) AU-A-2025201736
(21) 2025201736 **(22)** 11.03.2025
(54) Fractional initiator hybridization chain reaction
(51) Int. Cl.
C07H 21/00 (2006.01)
C07H 21/02 (2006.01)
C12Q 1/68 (2018.01)
(43) 27.03.2025
(62) 2021245196
(72) Pierce, Niles A.; Choi, Harry M.T.
(74) Davies Collison Cave Pty Ltd

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(71) Canon Kabushiki Kaisha
(11) AU-A-2023229477
(21) 2023229477 **(22)** 11.09.2023
(54) Method, apparatus and system for encoding and decoding a tensor
(51) Int. Cl.
H04N 19/46 (2014.01)
G06N 3/0455 (2023.01)
G06N 3/0464 (2023.01)
H04N 19/70 (2014.01)
G06T 9/00 (2006.01)
G06V 10/44 (2022.01)
(43) 27.03.2025
(72) ROSEWARNE, Christopher James; NGUYEN, Thi Hong Nhung
(74) Spruson & Ferguson

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(71) Caris MPI, Inc.
(11) AU-A-2025201608
(21) 2025201608 **(22)** 05.03.2025
(54) NEXT-GENERATION MOLECULAR PROFILING
(51) Int. Cl.
G06N 20/00 (2019.01)
A61B 5/00 (2006.01)
G06N 5/02 (2023.01)
G16H 10/40 (2018.01)
G16H 10/60 (2018.01)
G16H 20/70 (2018.01)
(43) 27.03.2025
(62) 2019389175
(72) ABRAHAM, Jim; SPETZLER, David; HELMSTETTER, Anthony; KORN, Wolfgang Michael; MAGEE, Daniel
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Caterpillar Inc.
(11) AU-A-2023222913
(21) 2023222913 **(22)** 31.08.2023
(54) Cooling arrangement for conditioning cabins of work machines
(51) Int. Cl.
B60H 1/00 (2006.01)
B60H 1/32 (2006.01)
(43) 27.03.2025
(72) Muthusamy, Karthik Raja; Ramasamy, Sivakumar; Ravi, Praveen Kumar; Saward, Sean Robert
(74) FPA Patent Attorneys Pty Ltd

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(71) CATERPILLAR INC.
(11) AU-A-2024205843
(21) 2024205843 **(22)** 16.08.2024
(54) METHOD AND SYSTEM OF DITCH EXTRACTION FOR A MOTOR GRADER
(51) Int. Cl.
E02F 3/84 (2006.01)
B60K 28/16 (2006.01)

Applications Open to Public Inspection - Name Index cont'd

E02F 9/20 (2006.01)
(31) 18/464572 **(32)** 11.09.23 **(33)** US
(43) 27.03.2025
(72) GENTLE, Michael C.; TEVIS, Ethan M.; HAYES, Joshua T.; COX, David L.
(74) FPA Patent Attorneys Pty Ltd

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(71) CFPH, LLC; BGC Partners, Inc.
(11) AU-A-2025201621
(21) 2025201621 **(22)** 05.03.2025
(54) SYSTEMS AND METHODS FOR PROVIDING ACCESS TO WIRELESS GAMING DEVICES
(51) Int. Cl.
H04B 7/26 (2006.01)
H04L 12/28 (2006.01)
H04W 88/06 (2009.01)
(43) 27.03.2025
(62) 2023204014
(72) Asher, Joseph M.; Alderucci, Dean P.; Burman, Kevin; Rushin, Ronald; Bahrampour, Robert; Coffey, James
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) CFPH, LLC
(11) AU-A-2025201713
(21) 2025201713 **(22)** 10.03.2025
(54) GAME WITH PLAYER ACTUATED CONTROL STRUCTURE
(51) Int. Cl.
A63F 9/24 (2006.01)
(43) 27.03.2025
(62) 2023201330
(72) Alderucci, Dean P.; Gelman, Geoffrey M.
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) CHEN, T.
(11) AU-A-2024204839
(21) 2024204839 **(22)** 13.07.2024
(54) TONGUE DEPRESSOR
(51) Int. Cl.
A61B 13/00 (2006.01)
(31) 112134081 **(32)** 07.09.23 **(33)** TW
(43) 27.03.2025
(72) CHEN, Tien-Sheng
(74) Allen & Associates

CHENGDU ADVANCED METAL MATERIALS INDUSTRY TECHNOLOGY RESEARCH INSTITUTE CO., LTD. see PANGANG GROUP PANZHIHUA IRON & STEEL RESEARCH INSTITUTE CO., LTD.
(21) 2024211005

Children's Medical Center Corporation see Ospedale San Raffaele S.r.l.
(21) 2025201558

Chromadex Inc. see The Queen's University Of Belfast
(21) 2025201710

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(71) ClioTech Ltd
(11) AU-A-2024219720
(21) 2024219720 **(22)** 13.09.2024
(54) Apparatus and method for generation of an integrated data file
(51) Int. Cl.
G06F 16/538 (2019.01)
G06F 16/55 (2019.01)
G06N 20/00 (2019.01)
(31) 18/367,738 **(32)** 13.09.23 **(33)** US
18/600,117 08.03.24 US
(43) 27.03.2025
(72) KIRKE, Georgia Helen
(74) Spruson & Ferguson

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(71) CNH Industrial America LLC
(11) AU-A-2024219647
(21) 2024219647 **(22)** 12.09.2024
(54) Deflector door for accessing a sieve of a combine harvester having a seed mill
(51) Int. Cl.
A01D 41/12 (2006.01)
A01F 12/00 (2006.01)
(31) 18/367,730 **(32)** 13.09.23 **(33)** US
(43) 27.03.2025
(72) ISAAC, Nathan E.; BOOK, Trevor
(74) Griffith Hack

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(71) CRRC MEISHAN CO., LTD
(11) AU-A-2023387757
(21) 2023387757 **(22)** 15.12.2023
(54) Wheel Set Radial Device for Railway Wagon and Bogie Thereof
(51) Int. Cl.
B61F 5/52 (2006.01)
(31) 202311158094.0 **(32)** 08.09.23 **(33)** CN
(43) 27.03.2025
(72) ZHANG, Guangcai; ZU, Ji; YUAN, Jie; JING, Xuanxuan; FENG, Chengli; ZHANG, Rui; LUO, Hanjiang; WANG, Yungui; LIAO, Jun
(74) WRAYS PTY LTD

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(71) CSL Sunmaster Enterprises Co., Ltd.
(11) AU-A-2023226729
(21) 2023226729 **(22)** 07.09.2023
(54) Buffering device capable of lower-limit position adjustment
(51) Int. Cl.
E06B 9/88 (2006.01)
(43) 27.03.2025
(72) TAO, Hsiu-Chih
(74) Spruson & Ferguson

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(71) CSR Building Products Limited
(11) AU-A-2024219487
(21) 2024219487 **(22)** 06.09.2024
(54) Prefabricated Construction Modules
(51) Int. Cl.
E04H 1/00 (2006.01)
E04B 1/04 (2006.01)
E04B 1/35 (2006.01)
E04B 2/20 (2006.01)
E04B 5/04 (2006.01)
E04B 5/10 (2006.01)
E04B 7/02 (2006.01)
E04B 9/04 (2006.01)
E04B 9/30 (2006.01)
E04H 1/02 (2006.01)
E02D 5/28 (2006.01)
E02D 5/56 (2006.01)
E02D 7/22 (2006.01)
E04B 1/06 (2006.01)
E04B 2/02 (2006.01)
E04B 2/18 (2006.01)
E04B 7/22 (2006.01)
E04B 9/00 (2006.01)
(31) 2023902881 **(32)** 07.09.23 **(33)** AU
(43) 27.03.2025
(72) Balding, Anthony John
(74) Griffith Hack

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(71) Cytec Industries Inc.
(11) AU-A-2025201704
(21) 2025201704 **(22)** 07.03.2025
(54) PROCESS FOR THE PRODUCTION OF HOMOGENEOUS SOLUTIONS OF POLYACRYLONITRILE-BASED POLYMER
(51) Int. Cl.
D01F 6/38 (2006.01)
C08J 3/02 (2006.01)
C08J 3/05 (2006.01)
C08J 3/09 (2006.01)
D01D 1/06 (2006.01)
D01F 9/22 (2006.01)
(43) 27.03.2025
(62) 2020256105
(72) Kumar, Varun; Mills, Peter; Moskowitz, Jeremy; Cook, John Desmond; Smith, James; Harmon, Billy
(74) PHILLIPS ORMONDE FITZPATRICK

Dana-Farber Cancer Institute, Inc. see Ospedale San Raffaele S.r.l.
(21) 2025201558

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(71) Deere & Company
(11) AU-A-2024205614
(21) 2024205614 **(22)** 08.08.2024
(54) Controlling an agricultural system based on time to empty and refill count
(51) Int. Cl.
A01C 7/10 (2006.01)
A01B 69/00 (2006.01)
A01C 21/00 (2006.01)
G05B 19/042 (2006.01)
(31) 18/465,574 **(32)** 12.09.23 **(33)** US
(43) 27.03.2025
(72) Kale, Mandar Mhalsakant; Dhavan, Nilesh; Singh, Alaka
(74) Davies Collison Cave Pty Ltd

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(71) DePuy Ireland Unlimited Company
(11) AU-A-2025201694
(21) 2025201694 **(22)** 07.03.2025
(54) Orthopaedic surgical instrument system and a method of trialing an orthopaedic prosthetic assembly
(51) Int. Cl.
A61F 2/38 (2006.01)

Applications Open to Public Inspection - Name Index cont'd

(43) 27.03.2025
(62) 2019201648
(72) SCHRADER, Adam D.; MUHAMMAD, William
(74) Spruson & Ferguson

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(71) DNA Genotek Inc.
(11) AU-A-2025201673
(21) 2025201673 **(22)** 07.03.2025
(54) Device for collecting, transporting and storing biomolecules from a biological sample
(51) Int. Cl.
G01N 1/38 (2006.01)
B01L 3/00 (2006.01)
C12M 1/24 (2006.01)
C12M 1/28 (2006.01)
C12N 15/10 (2006.01)
C12Q 1/00 (2006.01)
C12Q 1/68 (2018.01)
G01N 33/50 (2006.01)
(43) 27.03.2025
(62) 2022283752
(72) Acero, Mercedes Maria; Bimboim, Chaim H.; Iwasiow, Michal Rafal; Doukhanine, Vladimirovitch Evgueni; Liberty, Jonathan D.; Hernandez, Alberto Carlos Merino; Jackson, Adele
(74) Griffith Hack

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(71) Dragic, M.
(11) AU-A-2025201667
(21) 2025201667 **(22)** 07.03.2025
(54) Device for conversion of wave energy into electrical energy and the process for its deployment at the exploitation location
(51) Int. Cl.
F03B 13/18 (2006.01)
(43) 27.03.2025
(62) 2022256093
(72) DRAGIC, Mile
(74) Spruson & Ferguson

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(71) DSI Underground Australia Pty Limited
(11) AU-A-2025201603
(21) 2025201603 **(22)** 05.03.2025
(54) Friction bolt
(51) Int. Cl.
E21D 21/00 (2006.01)
(43) 27.03.2025
(62) 2018390988
(72) COLLIS, Adam; WITTER, Pat; EVANS, David William
(74) Spruson & Ferguson

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(71) Duke University; BioSpecifics Technologies Corporation
(11) AU-A-2025201733
(21) 2025201733 **(22)** 11.03.2025
(54) Treatment Method and Product for Uterine Fibroids using Purified Collagenase
(51) Int. Cl.
A61K 38/48 (2006.01)
A61P 35/00 (2006.01)
(43) 27.03.2025
(62) 2022201984
(72) Leppert, Phyllis Carolyn; Wegman, Thomas L.
(74) Davies Collison Cave Pty Ltd

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(71) Dyno Nobel Inc.
(11) AU-A-2025201702
(21) 2025201702 **(22)** 07.03.2025
(54) Mechanically-gassed emulsion explosives and methods related thereto
(51) Int. Cl.
F42D 1/10 (2006.01)
C06D 5/00 (2006.01)
F42D 1/24 (2006.01)
(43) 27.03.2025
(62) 2019212682
(72) HALANDER, John B.; NELSON, Casey L.; KOME, Cornelis L.
(74) Spruson & Ferguson

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(71) Eco Benchtops Pty Ltd
(11) AU-A-2025201672
(21) 2025201672 **(22)** 07.03.2025
(54) Composite slab comprising recycled glass
(51) Int. Cl.
E04F 13/14 (2006.01)
B29C 67/24 (2006.01)
C08K 3/40 (2006.01)
C08L 67/02 (2006.01)
E04F 13/18 (2006.01)
B29K 509/08 (2006.01)
B29L 31/10 (2006.01)
B29L 31/44 (2006.01)
(43) 27.03.2025
(62) 2020217435
(72) THOMPSON, Robert; THOMPSON, Roshni
(74) FB Rice Pty Ltd

Elsworth, C. see Macdonald, J.
(21) 2024219494

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(71) Endo Global Aesthetics Limited
(11) AU-A-2025201741
(21) 2025201741 **(22)** 11.03.2025
(54) Injection techniques for the treatment of cellulite
(51) Int. Cl.
A61K 8/66 (2006.01)
A61Q 19/06 (2006.01)
(43) 27.03.2025
(62) 2019309324
(72) VIJAYAN, Saji; DAVIS, Matthew W.; MCLANE, Michael; OMBURO, George; KIRBY, Todd
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Endotronix, Inc.
(11) AU-A-2025201619
(21) 2025201619 **(22)** 05.03.2025
(54) PRESSURE SENSING IMPLANT
(51) Int. Cl.
A61B 5/00 (2006.01)
A61B 5/0215 (2006.01)
G01L 9/00 (2006.01)
(43) 27.03.2025
(62) 2022271366
(72) Rowland, Harry; Nagy, Michael; Plag, Nathan; Panian, Tyler; Sundaram, Suresh
(74) Murray Trento & Associates Pty Ltd

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(71) Espervita Therapeutics, Inc.
(11) AU-A-2025201689
(21) 2025201689 **(22)** 07.03.2025
(54) FUNCTIONALIZED LONG-CHAIN HYDROCARBON MONO- AND DI-CARBOXYLIC ACIDS USEFUL FOR THE PREVENTION OR TREATMENT OF DISEASE
(51) Int. Cl.
A61K 31/047 (2006.01)
A61K 31/192 (2006.01)
A61K 31/194 (2006.01)
(43) 27.03.2025
(62) 2020321945
(72) ONICIU, Daniela Carmen
(74) RNB IP PTY LTD

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(71) Essenlix Corp.
(11) AU-A-2025201624
(21) 2025201624 **(22)** 05.03.2025
(54) DEVICE AND SYSTEM FOR ANALYZING A SAMPLE, PARTICULARLY BLOOD, AS WELL AS METHODS OF USING THE SAME
(51) Int. Cl.
G01N 33/543 (2006.01)
G01N 33/569 (2006.01)
G01N 33/80 (2006.01)
(43) 27.03.2025
(62) 2021266208
(72) Chou, Stephen Y.; Ding, Wei
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Ezyform International Pty Ltd
(11) AU-A-2025201652
(21) 2025201652 **(22)** 06.03.2025
(54) Extruded concrete formwork system and method
(51) Int. Cl.
E04G 17/00 (2006.01)
E04G 11/36 (2006.01)
E04G 11/48 (2006.01)
E04G 11/54 (2006.01)
E04G 17/14 (2006.01)
(43) 27.03.2025
(62) 2019202079
(72) Leith, Tim
(74) Davies Collison Cave Pty Ltd

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(71) Fasteners for Retail, Inc.
(11) AU-A-2024204918
(21) 2024204918 **(22)** 17.07.2024
(54) PULL-OUT TRAY FOR SHELVING
(51) Int. Cl.
A47F 1/12 (2006.01)
(31) 18/466,518 **(32)** 13.09.23 **(33)** US

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(43) 27.03.2025
(72) Nagel, Thomas; Pickett, Kelly Ann
(74) Baxter Patent Attorneys Pty Ltd

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(71) Fisher & Paykel Healthcare Limited
(11) AU-A-2025201607
(21) 2025201607 **(22)** 05.03.2025
(54) A PATIENT INTERFACE
(51) Int. Cl.
A61M 16/08 (2006.01)
A61M 16/06 (2006.01)
(43) 27.03.2025
(62) 2022241569
(72) MILNE, Robert Andrew David; JOHNSON, Chelsea Erin; SHEARER, Riki Zane; RONAYNE, Michael Paul; WILSON, Daniel Charles; STANLEY, Leon Tyler
(74) AJ PARK

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(71) Flaskworks, LLC
(11) AU-A-2025201614
(21) 2025201614 **(22)** 05.03.2025
(54) Dendritic cell generating apparatus and method
(51) Int. Cl.
C12M 1/12 (2006.01)
C12M 1/00 (2006.01)
C12N 5/0784 (2010.01)
(43) 27.03.2025
(62) 2019381629
(72) KOZBIAL, Andrew
(74) FPA Patent Attorneys Pty Ltd

Fondazione Telethon see Ospedale San Raffaele S.r.l.
(21) 2025201558

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(71) Ford Global Technologies, LLC; The University of Western Australia; The University of Melbourne
(11) AU-A-2024216356
(21) 2024216356 **(22)** 26.08.2024
(54) Liquid phase sintered aluminum alloy for binder jet printing
(51) Int. Cl.
B22F 3/10 (2006.01)
B22F 9/04 (2006.01)
(31) 18/462,923 **(32)** 07.09.23 **(33)** US
(43) 27.03.2025
(72) SCHAFFER, Graham; SERCOMBE, Tim; MOLLA, Tesfaye; HUO, Yang; LI, Mei; MEINHART, Mark; CORNELL, John; ATTHAPREYANGKUL, Ampaiphan; WANG, Jincheng; YOUSSEF, Andrew; OAKLEY, Sean; DOAK-SMITH, Joss
(74) WRAYS PTY LTD

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(71) Freeport-McMoran Inc.
(11) AU-A-2025201685
(21) 2025201685 **(22)** 07.03.2025
(54) Methods and systems for the batch delivery of material to a continuous material processor
(51) Int. Cl.
B65B 3/26 (2006.01)
B65G 61/00 (2006.01)
G05B 19/418 (2006.01)
G05D 1/02 (2020.01)
(43) 27.03.2025
(62) 2023201475
(72) WALKER, Mary Amelia; CATRON, Robert; VAUGHAN, Brian; LU, Hung Jung; HICKSON, Nicholas
(74) GLMR

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(71) GENENTECH, INC.
(11) AU-A-2025201610
(21) 2025201610 **(22)** 05.03.2025
(54) Methods and compositions comprising a KRasG12c inhibitor and a VEGF inhibitor for treating solid tumors
(51) Int. Cl.
A61K 31/517 (2006.01)
A61K 39/395 (2006.01)
A61P 35/00 (2006.01)
C07K 16/22 (2006.01)
(43) 27.03.2025
(62) 2021377810
(72) EVANGELISTA, Marie; MERCHANT, Mark Andrew; SCHUTZMAN, Jennifer Lee; LIN, Ting-Kun Mark; JOO, Stephanie Royer; MANDLEKAR, Sandhya Vinayak; LUTZKER, Stuart G.
(74) Griffith Hack

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(71) Genmab A/S
(11) AU-A-2025201717
(21) 2025201717 **(22)** 10.03.2025
(54) Antibodies binding AXL
(51) Int. Cl.
C07K 16/28 (2006.01)
A61P 35/00 (2006.01)
(43) 27.03.2025
(62) 2021205074
(72) Breij, Esther; Satijn, David; Van Den Brink, Edward Norbert; Verzijl, Dennis; De Jong, Rob N.; Parren, Paul; Van Dijkhuizen Radersma, Riemke
(74) Griffith Hack

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(71) Genzyme Corporation
(11) AU-A-2025201684
(21) 2025201684 **(22)** 07.03.2025
(54) Methods and compositions for treating a Serpinc1-associated disorder
(51) Int. Cl.
A61K 31/713 (2006.01)
A61P 7/04 (2006.01)
C12N 15/113 (2010.01)
(43) 27.03.2025
(62) 2023200828
(72) Akinc, Akin; Sorensen, Benny; Garg, Pushkal; Robbie, Gabriel
(74) Griffith Hack

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(71) Georg Fischer LLC
(11) AU-A-2024205825
(21) 2024205825 **(22)** 16.08.2024
(54) Valve containment
(51) Int. Cl.
F16L 9/19 (2006.01)
E21B 17/02 (2006.01)
F16L 7/00 (2006.01)
B29L 31/24 (2006.01)
B29L 31/26 (2006.01)
(31) 18/243,374 **(32)** 07.09.23 **(33)** US
(43) 27.03.2025
(72) BEUTLER, Michael Paul
(74) FB Rice Pty Ltd

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(71) GE Video Compression, LLC
(11) AU-A-2025201671
(21) 2025201671 **(22)** 07.03.2025
(54) Video encoder, video decoder, methods for encoding and decoding and video data stream for realizing advanced video coding concepts
(51) Int. Cl.
H04N 19/70 (2014.01)
H04N 19/503 (2014.01)
(43) 27.03.2025
(62) 2023200765
(72) SÁNCHEZ DE LA FUENTE, Yago; SÜHRING, Karsten; HELLGE, Cornelius; SCHIERL, Thomas; SKUPIN, Robert; WIEGAND, Thomas
(74) Griffith Hack

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(71) GE Video Compression, LLC
(11) AU-A-2025201676
(21) 2025201676 **(22)** 07.03.2025
(54) Video encoder, video decoder, methods for encoding and decoding and video data stream for realizing advanced video coding concepts
(51) Int. Cl.
H04N 19/70 (2014.01)
H04N 19/503 (2014.01)
(43) 27.03.2025
(62) 2023200765
(72) SÁNCHEZ DE LA FUENTE, Yago; SÜHRING, Karsten; HELLGE, Cornelius; SCHIERL, Thomas; SKUPIN, Robert; WIEGAND, Thomas
(74) Griffith Hack

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(71) GE Video Compression, LLC
(11) AU-A-2025201679
(21) 2025201679 **(22)** 07.03.2025
(54) Video encoder, video decoder, methods for encoding and decoding and video data stream for realizing advanced video coding concepts
(51) Int. Cl.
H04N 19/70 (2014.01)
H04N 19/503 (2014.01)
(43) 27.03.2025
(62) 2023200765
(72) SÁNCHEZ DE LA FUENTE, Yago; SÜHRING, Karsten; HELLGE, Cornelius; SCHIERL, Thomas; SKUPIN, Robert; WIEGAND, Thomas
(74) Griffith Hack

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(71) GE Video Compression, LLC
(11) AU-A-2025201680
(21) 2025201680 **(22)** 07.03.2025

Applications Open to Public Inspection - Name Index cont'd

(54) Video encoder, video decoder, methods for encoding and decoding and video data stream for realizing advanced video coding concepts
(51) Int. Cl.
H04N 19/70 (2014.01)
H04N 19/503 (2014.01)
(43) 27.03.2025
(62) 2023200765
(72) SÁNCHEZ DE LA FUENTE, Yago; SÜHRING, Karsten; HELLGE, Cornelius; SCHIERL, Thomas; SKUPIN, Robert; WIEGAND, Thomas
(74) Griffith Hack

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(71) GE Video Compression, LLC
(11) AU-A-2025201682
(21) 2025201682 **(22)** 07.03.2025
(54) Video encoder, video decoder, methods for encoding and decoding and video data stream for realizing advanced video coding concepts
(51) Int. Cl.
H04N 19/70 (2014.01)
H04N 19/503 (2014.01)
(43) 27.03.2025
(62) 2023200765
(72) SÁNCHEZ DE LA FUENTE, Yago; SÜHRING, Karsten; HELLGE, Cornelius; SCHIERL, Thomas; SKUPIN, Robert; WIEGAND, Thomas
(74) Griffith Hack

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(71) GE Video Compression, LLC
(11) AU-A-2025201683
(21) 2025201683 **(22)** 07.03.2025
(54) Video encoder, video decoder, methods for encoding and decoding and video data stream for realizing advanced video coding concepts
(51) Int. Cl.
H04N 19/70 (2014.01)
H04N 19/503 (2014.01)
(43) 27.03.2025
(62) 2023200765
(72) SÁNCHEZ DE LA FUENTE, Yago; SÜHRING, Karsten; HELLGE, Cornelius; SCHIERL, Thomas; SKUPIN, Robert; WIEGAND, Thomas
(74) Griffith Hack

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(71) Globeride, Inc.
(11) AU-A-2025201620
(21) 2025201620 **(22)** 05.03.2025
(54) FISHING SPINNING REEL
(51) Int. Cl.
A01K 89/01 (2006.01)
(43) 27.03.2025
(62) 2023200626
(72) HORIE, Hironori; TSUSHIMA, Daisuke
(74) Griffith Hack

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(71) Glory Light Technology (Harbin) Co., Ltd.; Harbin Institute of Technology
(11) AU-A-2024200745
(21) 2024200745 **(22)** 07.02.2024
(54) COMBINED MONOLITHIC UNIFORM LIGHTING DEVICE BASED ON LENSES AND SAWTOOTH GRATINGS
(51) Int. Cl.
G02B 3/08 (2006.01)
G02F 1/295 (2006.01)
(31) 2023111829949 **(32)** 13.09.23 **(33)** CN
(43) 27.03.2025
(72) LIU, Jian; DING, Xumin; WANG, Xinwei
(74) Remarkable IP

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(71) Goodhew, S.
(11) AU-A-2023226792
(21) 2023226792 **(22)** 09.09.2023
(54) Eco friendly fish landing net
(51) Int. Cl.
A01K 77/00 (2006.01)
(43) 27.03.2025
(72) Goodhew, Kevin; Goodhew, Craig
(74) Steven James Goodhew

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(71) Great Plains Manufacturing, Inc.
(11) AU-A-2024216382
(21) 2024216382 **(22)** 27.08.2024
(54) Vehicle steering assembly
(51) Int. Cl.
B60K 26/02 (2006.01)
B62D 1/12 (2006.01)
B62D 11/00 (2006.01)
E02F 3/42 (2006.01)
E02F 9/02 (2006.01)
E02F 9/20 (2006.01)
E02F 9/22 (2006.01)
G05G 1/08 (2006.01)
G05G 9/02 (2006.01)
(31) 18/463,839 **(32)** 08.09.23 **(33)** US
(43) 27.03.2025
(72) CARLSON, Jason
(74) Spruson & Ferguson

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(71) Hanshow Technology Co., Ltd.
(11) AU-A-2024203622
(21) 2024203622 **(22)** 30.05.2024
(54) Method, apparatus and robot for out-of-stock detection of shelf commodities
(51) Int. Cl.
G06Q 10/087 (2023.01)
G06T 7/187 (2017.01)
G06V 10/75 (2022.01)
(31) 202311174653.7 **(32)** 12.09.23 **(33)** CN
(43) 27.03.2025
(72) HUANG, Sheng; JING, Yanhao; ZHOU, Xudong; FAN, Jing
(74) Griffith Hack

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(21) 2024200745

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(71) Hendricks Corp. Pte. Ltd.
(11) AU-A-2024219566
(21) 2024219566 **(22)** 10.09.2024
(54) A multi-camera object tracking system and a method of operating a multi-camera object tracking system
(51) Int. Cl.
G06T 7/292 (2017.01)
(31) 10202302532S **(32)** 11.09.23 **(33)** SG
(43) 27.03.2025
(72) MEFTAH, Souhail; SANJAYA, Ricky
(74) FB Rice Pty Ltd

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(71) Hitachi, Ltd.
(11) AU-A-2024202349
(21) 2024202349 **(22)** 11.04.2024
(54) Failure probability evaluation apparatus
(51) Int. Cl.
G06N 7/01 (2023.01)
G05B 23/02 (2006.01)
G06F 17/18 (2006.01)
(31) 2023-148400 **(32)** 13.09.23 **(33)** JP
(43) 27.03.2025
(72) Shintani, Hiroshi
(74) Davies Collison Cave Pty Ltd

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(71) Hurst, M.
(11) AU-A-2024219728
(21) 2024219728 **(22)** 13.09.2024
(54) Formwork retainer
(51) Int. Cl.
E04G 17/06 (2006.01)
E01C 7/14 (2006.01)
E01C 9/00 (2006.01)
E01C 11/04 (2006.01)
E04G 11/36 (2006.01)
E04G 17/04 (2006.01)
E04G 17/12 (2006.01)
E01C 15/00 (2006.01)
E04B 1/48 (2006.01)
(31) 2023902948 **(32)** 13.09.23 **(33)** AU
(43) 27.03.2025
(72) HURST, Mario
(74) Spruson & Ferguson

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(71) Hy-Boost Technology Pty Ltd
(11) AU-A-2023229480
(21) 2023229480 **(22)** 11.09.2023
(54) APPARATUS AND METHOD FOR GENERATING A FUEL FOR COMBUSTION ENGINES
(51) Int. Cl.
C25B 15/08 (2006.01)
C25B 1/04 (2021.01)
F02B 43/10 (2006.01)
F02M 25/12 (2006.01)
C01B 13/02 (2006.01)
F02D 19/06 (2006.01)
F02M 21/02 (2006.01)
(43) 27.03.2025
(72) Shipp, Dean; Little, Craig
(74) Westmark IP

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(71) Illinois Tool Works Inc.
(11) AU-A-2024208797
(21) 2024208797 **(22)** 19.08.2024
(54) Tie bar assembly
(51) Int. Cl.
E04B 1/41 (2006.01)
E01C 11/14 (2006.01)
E04B 1/48 (2006.01)
E04C 5/16 (2006.01)
(31) 63/579,326 **(32)** 29.08.23 **(33)** US

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18/802,639 13.08.24 US
(43) 27.03.2025
(72) Wiatrowski, Darrell A.; Pappas, Steve A.
(74) Davies Collison Cave Pty Ltd

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(71) Illumina Cambridge Limited
(11) AU-A-2025201701
(21) 2025201701 **(22)** 07.03.2025
(54) Nucleosides and nucleotides with 3'-hydroxy blocking groups and their use in polynucleotide sequencing methods
(51) Int. Cl.
C07H 19/06 (2006.01)
C07H 19/10 (2006.01)
C07H 19/16 (2006.01)
C07H 19/20 (2006.01)
C07H 21/00 (2006.01)
C12Q 1/68 (2018.01)
(43) 27.03.2025
(62) 2019412494
(72) FRANCAIS, Antoine; CRESSINA, Elena; CULLEY, Adam; MARIANI, Angelica; WU, Xiaolin; LIU, Xiaohai
(74) Allens Patent & Trade Mark Attorneys

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(71) I-LUMEN SCIENTIFIC, INC.
(11) AU-A-2025201650
(21) 2025201650 **(22)** 06.03.2025
(54) SYSTEM AND METHOD FOR A MEDICAL DEVICE
(51) Int. Cl.
A61N 1/36 (2006.01)
A61N 1/04 (2006.01)
(43) 27.03.2025
(62) 2021358755
(72) MASKO, Marshall T.; VELURE, John C.; DUNCAN, Thu-Ha; LEMAIRE, Alexander B.; LEMAIRE, Charles A.
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) IMBA - Institut für Molekulare Biotechnologie GmbH
(11) AU-A-2025200408
(21) 2025200408 **(22)** 21.01.2025
(54) Blood Vessel Organoid, Methods Of Producing And Using Said Organoids
(51) Int. Cl.
C12N 5/071 (2010.01)
A61K 31/00 (2006.01)
A61K 35/12 (2015.01)
(43) 27.03.2025
(62) 2018285579
(72) Penninger, Josef; Wimmer, Reiner; Kerjaschki, Dontscho
(74) WRAYS PTY LTD

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(71) Inguran, LLC
(11) AU-A-2025201724
(21) 2025201724 **(22)** 11.03.2025
(54) SYSTEMS AND METHOD FOR CORRECTION OF POSITIONALLY DEPENDENT ELECTROMAGNETIC RADIATION DETECTED FROM OBJECTS WITHIN A FLUID COLUMN
(51) Int. Cl.
G01N 15/14 (2024.01)
C12Q 1/02 (2006.01)
G01N 21/63 (2006.01)
G01N 33/48 (2006.01)
(43) 27.03.2025
(62) 2024200927
(72) KIESEL, Peter; KARIN, Todd; EVANS, Kenneth Michael
(74) AJ PARK

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(71) INNO ENERGY GROUP PTY LTD
(11) AU-A-2024205511
(21) 2024205511 **(22)** 02.08.2024
(54) Passive Cooling Board for Heat Dissipation of High Power Electrical Devices
(51) Int. Cl.
H01L 23/36 (2006.01)
H05K 7/20 (2006.01)
H10F 77/60 (2025.01)
H10F 77/63 (2025.01)
(31) 2023902815 **(32)** 31.08.23 **(33)** AU
(43) 27.03.2025
(72) Hu, Dayong; Lv, Dongya; Li, Lei
(74) INNO ENERGY GROUP PTY LTD

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(71) Inova Diagnostics, Inc.
(11) AU-A-2024219489
(21) 2024219489 **(22)** 07.09.2024
(54) DETECTING ANTIBODIES USING ANTIGENS
(51) Int. Cl.
G01N 33/543 (2006.01)
B01L 3/00 (2006.01)
B82Y 15/00 (2011.01)
G01N 33/564 (2006.01)
(31) 18/825,426 **(32)** 05.09.24 **(33)** US
63/538,042 12.09.23 US
(43) 27.03.2025
(72) Mahler, Michael; Bentow, Chelsae
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Institute of Geology, Chinese Academy of Geological Sciences
(11) AU-A-2024205184
(21) 2024205184 **(22)** 29.07.2024
(54) Large-Scale Denudation Depth Thematic Mapping Method
(51) Int. Cl.
G01V 20/00 (2024.01)
G01V 99/00 (2009.01)
G06Q 90/00 (2006.01)
(31) 202311174354.3 **(32)** 13.09.23 **(33)** CN
(43) 27.03.2025
(72) Chen, Wen; Zhao, Shuangfeng; Sun, Jingbo; Tian, Pengfei; Zhang, Bin; Ding, Ruxin; Li, Zhi; Du, Qiuyi; Zhang, Wen; Shen, Ze
(74) Kings Patent & Trade Marks Attorneys Pty Ltd

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(71) INSULET CORPORATION
(11) AU-A-2025201640
(21) 2025201640 **(22)** 06.03.2025
(54) Scheduling of medicament bolus deliveries by a medicament delivery device at future dates and times with a computing device
(51) Int. Cl.
G16H 20/17 (2018.01)
G16H 20/10 (2018.01)
G16H 40/63 (2018.01)
(43) 27.03.2025
(62) 2021401809
(72) ALLES, Matthew; MURRAY, Daniel; LEE, Joon Bok; O'CONNOR, Jason
(74) Davies Collison Cave Pty Ltd

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(71) INSULET CORPORATION
(11) AU-A-2025201739
(21) 2025201739 **(22)** 11.03.2025
(54) Integration of a medicament delivery device with a smartwatch and a vehicle infotainment system
(51) Int. Cl.
G16H 20/17 (2018.01)
G16H 20/10 (2018.01)
(43) 27.03.2025
(62) 2021401078
(72) ALLES, Matthew; LEE, Joon Bok
(74) Davies Collison Cave Pty Ltd

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(71) Itron, Inc.
(11) AU-A-2025201647
(21) 2025201647 **(22)** 06.03.2025
(54) Server-assisted routing in network communications
(51) Int. Cl.
H04W 40/28 (2009.01)
H04W 28/02 (2009.01)
H04W 40/24 (2009.01)
(43) 27.03.2025
(62) 2019403054
(72) WOODLAND, Bernard M.
(74) FPA Patent Attorneys Pty Ltd

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(71) J & J Green Paper, Inc.; Origin Patent and Trade Mark Attorneys
(11) AU-A-2025201079
(21) 2025201079 **(22)** 15.02.2025
(54) RECYCLABLE COMPOSITION FOR WATERPROOFING PAPER UTILIZING PLANT DERIVED WAXES, AND PELLETS UTILIZING SAID COMPOSITION
(51) Int. Cl.
A47G 19/22 (2006.01)
A47G 21/18 (2006.01)
B65D 3/22 (2006.01)
B65D 65/42 (2006.01)
B65D 81/38 (2006.01)
B65D 85/804 (2006.01)
(43) 27.03.2025
(62) 2019255800
(72) SEGAL, Michael
(74) Origin Patent and Trade Mark Attorneys

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(71) Janssen Pharmaceutica NV
(11) AU-A-2025201677
(21) 2025201677 **(22)** 07.03.2025
(54) Immunoglobulins and uses thereof
(51) Int. Cl.
C07K 16/18 (2006.01)
A61K 39/00 (2006.01)

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A61K 39/395 (2006.01)
C07K 16/00 (2006.01)
C12P 21/08 (2006.01)
(43) 27.03.2025
(62) 2017348180
(72) MACIELAG, Mark; PATCH, Raymond J.; ZHANG, Rui; CASE, Martin A.; WALL, Mark; ZHANG, Yue-Mei; RANGWALA, Shamina M.; LEONARD, James N.; CAMACHO, Raul C.; HUNTER, Michael J.; D'AQUINO, Katharine E.; EDWARDS, Wilson; SWANSON, Ronald V.; JIAN, Wenying; CHI, Ellen
(74) Spruson & Ferguson

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(71) JCM AMERICAN CORPORATION
(11) AU-A-2025201633
(21) 2025201633 **(22)** 06.03.2025
(54) SYSTEM FOR PROVIDING VISUAL DEVICE STATUS VIA A PERIPHERAL DEVICE
(51) Int. Cl.
G07F 17/32 (2006.01)
(43) 27.03.2025
(62) 2022223807
(72) KUBAJAK, David; NGUYEN, Mike; BLEVENS, Chris
(74) AJ PARK

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(71) Jiangsu Sanjo Intelligent Technology Co., Ltd.; Photon Robot (Ningbo) Co., Ltd.
(11) AU-A-2024219543
(21) 2024219543 **(22)** 09.09.2024
(54) PLASTIC BAG PACKAGING AND SEPARATING DEVICE FOR INTELLIGENT PACKAGING TOILET
(51) Int. Cl.
A47K 17/00 (2006.01)
B65B 11/00 (2006.01)
B65B 69/00 (2006.01)
(31) 202311155471.5 **(32)** 08.09.23 **(33)** CN
(43) 27.03.2025
(72) XIAO, Heping; WANG, Lei; ZHANG, Jiang
(74) Winnie WONG

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(71) Jiangsu Sanjo Intelligent Technology Co., Ltd.; Photon Robot (Ningbo) Co., Ltd.
(11) AU-A-2024219634
(21) 2024219634 **(22)** 11.09.2024
(54) PLASTIC BAG PULL-DOWN DEVICE FOR INTELLIGENT PACKAGING TOILET, AND INTELLIGENT PACKAGING TOILET
(51) Int. Cl.
B65H 16/00 (2006.01)
A47K 11/02 (2006.01)
(31) 202311161934.9 **(32)** 11.09.23 **(33)** CN
(43) 27.03.2025
(72) XIAO, Heping; WANG, Lei; ZHANG, Jiang
(74) Winnie WONG

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(71) JKH Health Co., Ltd.
(11) AU-A-2024205161
(21) 2024205161 **(22)** 29.07.2024
(54) Portable system and device for cold therapy with optional heat and compression therapy
(51) Int. Cl.
A61F 7/00 (2006.01)
A61F 7/02 (2006.01)
A61H 9/00 (2006.01)
F25B 13/00 (2006.01)
(31) CN202322449198.9 **(32)** 08.09.23 **(33)** CN
CN202421612327.X 08.07.24 CN
(43) 27.03.2025
(72) DAI, Quanqin; JIANG, Pu
(74) Davies Collison Cave Pty Ltd

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(71) Joy Global Underground Mining LLC
(11) AU-A-2024219423
(21) 2024219423 **(22)** 05.09.2024
(54) Resilient link for conveyor chain
(51) Int. Cl.
B65G 17/38 (2006.01)
(31) 18/462,906 **(32)** 07.09.23 **(33)** US
(43) 27.03.2025
(72) Hannold, Nathan M.; Hoover, Joseph D.
(74) Griffith Hack

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(71) KANGLIN BIOTECHNOLOGY (HANGZHOU) CO., LTD.
(11) AU-A-2025201572
(21) 2025201572 **(22)** 04.03.2025
(54) Nucleic acid construct for increasing adeno-associated virus yield, and construction method therefor
(51) Int. Cl.
C12N 15/866 (2006.01)
C12N 7/00 (2006.01)
(43) 27.03.2025
(62) 2021327911
(72) TAO, Yu; WU, Haoquan; SU, Lingling; DANG, Ying
(74) FB Rice Pty Ltd

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(71) Kartos Therapeutics, Inc.
(11) AU-A-2025201686
(21) 2025201686 **(22)** 07.03.2025
(54) Methods of treating cancer
(51) Int. Cl.
A61K 31/451 (2006.01)
A61P 35/00 (2006.01)
C07D 211/76 (2006.01)
(43) 27.03.2025
(62) 2019263064
(72) ROTHBAUM, Wayne
(74) Allens Patent & Trade Mark Attorneys

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(71) Keros Therapeutics, Inc.
(11) AU-A-2025201554
(21) 2025201554 **(22)** 04.03.2025
(54) GDNF fusion polypeptides and methods of use thereof
(51) Int. Cl.
C07K 19/00 (2006.01)
A61P 25/00 (2006.01)
C12N 15/62 (2006.01)
(43) 27.03.2025
(62) 2017357931
(72) Seehra, Jasbir S.; Lachey, Jennifer
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Kilaris, N.
(11) AU-A-2023233087
(21) 2023233087 **(22)** 20.09.2023
(54) Click to Connect Conduit
(51) Int. Cl.
F16L 3/13 (2006.01)
F16L 3/26 (2006.01)
H02G 3/04 (2006.01)
F16L 3/10 (2006.01)
F16L 25/06 (2006.01)
H01R 13/639 (2006.01)
(31) 2023902940 **(32)** 12.09.23 **(33)** AU
(43) 27.03.2025
(72) Kilaris, Nathan
(74) Nathan James Kilaris

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(71) Klabin S.A.
(11) AU-A-2025201591
(21) 2025201591 **(22)** 05.03.2025
(54) PAPER AND PROCESS FOR MANUFACTURING PAPER USING MICROFIBRILLATED CELLULOSE IN THE CELLULOSE PULP
(51) Int. Cl.
D21H 11/14 (2006.01)
B82Y 30/00 (2011.01)
D21H 15/02 (2006.01)
(43) 27.03.2025
(62) 2019277277
(72) PEREIRA DAMÁSIO, Renato Augusto; COELHO DOS SANTOS MUGUET SOARES, Marcelo
(74) Pearce IP Pty Ltd

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(71) KNORR-BREMSE SYSTEME FÜR SCHIENENFAHRZEUGE GMBH
(11) AU-A-2025201696
(21) 2025201696 **(22)** 07.03.2025
(54) Digital freight car - automatic wagon list
(51) Int. Cl.
B61L 15/00 (2006.01)
B61L 25/02 (2006.01)
B61L 27/00 (2022.01)
(43) 27.03.2025
(62) 2022292843
(72) LIKTOR, Balazs; KOVACS, Laszlo
(74) FPA Patent Attorneys Pty Ltd

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(71) L3Harris Technologies, Inc.
(11) AU-A-2024219533
(21) 2024219533 **(22)** 09.09.2024
(54) WINDOW MOUNTABLE DIRECTION-FINDING ANTENNA ARRAYS
(51) Int. Cl.
B64C 1/36 (2006.01)
H01Q 1/22 (2006.01)
H01Q 1/28 (2006.01)
(31) 18/464,594 **(32)** 11.09.23 **(33)** US

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(43) 27.03.2025
(72) JOHNSON, Terry
(74) Maxwells Patent & Trade Mark Attorneys Pty Ltd

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(71) Learn and Grow Toys Pty Ltd
(11) AU-A-2024219680
(21) 2024219680 **(22)** 12.09.2024
(54) MAGNETIC BUILDING TILES FOR CREATING TWO DIMENSIONAL AND THREE DIMENSIONAL STRUCTURES AND FLAT MAGNETIC TILES FOR DECORATING THE BUILDING TILES
(51) Int. Cl.
A63H 33/04 (2006.01)
A63H 33/00 (2006.01)
A63H 33/26 (2006.01)
A63H 33/06 (2006.01)
(31) 2023902960 **(32)** 13.09.23 **(33)** AU
(43) 27.03.2025
(72) Hindmarsh, Joshua
(74) Learn and Grow Toys Pty Ltd

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(71) LG Electronics Inc.
(11) AU-A-2024219493
(21) 2024219493 **(22)** 08.09.2024
(54) Dish washer
(51) Int. Cl.
A47L 15/42 (2006.01)
A47L 15/50 (2006.01)
(31) 10-2023-0121616 **(32)** 13.09.23 **(33)** KR
(43) 27.03.2025
(72) KU, Jaecheol; KIM, Jin-Dong; JUNG, Kyuchang
(74) FB Rice Pty Ltd

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(71) LG Electronics INC.
(11) AU-A-2025201719
(21) 2025201719 **(22)** 10.03.2025
(54) Cleaning apparatus
(51) Int. Cl.
A47L 5/24 (2006.01)
A47L 9/12 (2006.01)
A47L 9/16 (2006.01)
A47L 9/22 (2006.01)
A47L 9/28 (2006.01)
A47L 9/32 (2006.01)
(43) 27.03.2025
(62) 2023201861
(72) NAM, Bohyun; HWANG, Jungbae; KIM, Jinju; KIM, Namhee; AN, Hyeonjeong; HWANG, Philjae; HWANG, Mantae; SUNG, Eunji; LEE, Taekgi
(74) Dentons Patent Attorneys Australasia Limited

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(71) Lone Gull Holdings, Ltd.
(11) AU-A-2025201360
(21) 2025201360 **(22)** 26.02.2025
(54) Self-powered, self-propelled compute grid with loop topology
(51) Int. Cl.
F03B 13/14 (2006.01)
B63B 3/04 (2006.01)
B63B 35/44 (2006.01)
F03B 13/16 (2006.01)
F03B 13/20 (2006.01)
F03B 15/14 (2006.01)
(43) 27.03.2025
(62) 2023219924
(72) SHELDON-COULSON, Garth Alexander; MOFFAT, Brian Lee; PLACE, Daniel William
(74) Pearce IP Pty Ltd

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(71) Longi Green Energy Technology Co., Ltd.
(11) AU-A-2024219330
(21) 2024219330 **(22)** 03.09.2024
(54) Back Contact Solar Cell And Photovoltaic Module
(51) Int. Cl.
H10F 77/20 (2025.01)
H10F 19/00 (2025.01)
H10F 19/80 (2025.01)
H10F 77/30 (2025.01)
(31) 202311179614.6 **(32)** 12.09.23 **(33)** CN
(43) 27.03.2025
(72) TONG, Hongbo; YU, Long; CHEN, Shi; LI, Hua
(74) WRAYS PTY LTD

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(71) LumanLab Inc.
(11) AU-A-2024213132
(21) 2024213132 **(22)** 21.08.2024
(54) APPARATUS AND METHOD FOR MONITORING CHILD BEHAVIOR
(51) Int. Cl.
G06V 40/20 (2022.01)
A61B 5/11 (2006.01)
G06N 3/0464 (2023.01)
G06V 20/40 (2022.01)
G06V 20/52 (2022.01)
G06V 40/16 (2022.01)
G08B 21/02 (2006.01)
(31) 10-2023-0121655 **(32)** 13.09.23 **(33)** KR
(43) 27.03.2025
(72) LIM, Jae Hyun
(74) LAMINAR IP PTY LTD

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(71) Macdonald, J.; Oeste, F.; Elsworth, C.; Reilly, D.
(11) AU-A-2024219494
(21) 2024219494 **(22)** 08.09.2024
(54) Reducing the impact of plastic waste combustion and ocean pollution by doping with metal catalysts.
(51) Int. Cl.
A62D 3/38 (2007.01)
B01J 31/16 (2006.01)
B01J 31/18 (2006.01)
B01J 35/39 (2024.01)
B01J 37/02 (2006.01)
B29C 71/00 (2006.01)
B09B 3/60 (2022.01)
B09B 101/75 (2022.01)
(31) 2023902885 **(32)** 08.09.23 **(33)** AU
(43) 27.03.2025
(72) Macdonald, John; Oeste, Franz; Elsworth, Clive; Reilly, Dermott
(74) John Andrew Macdonald

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(71) Majkic, B.
(11) AU-A-2024219488
(21) 2024219488 **(22)** 06.09.2024
(54) Universal Workers Bench
(51) Int. Cl.
B25H 1/04 (2006.01)
B25H 1/06 (2006.01)
B25H 1/10 (2006.01)
B25H 1/12 (2006.01)
B25H 1/16 (2006.01)
B26D 7/02 (2006.01)
B26D 7/04 (2006.01)
(31) 2023902873 **(32)** 07.09.23 **(33)** AU
(43) 27.03.2025
(72) Majkic, Bogdan
(74) Bogdan Majkic

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(71) MARTIN, T.
(11) AU-A-2025201737
(21) 2025201737 **(22)** 11.03.2025
(54) COMBINED TICKETLESS FLOW-THRU FACIAL RECOGNITION FOR MASS PARTICIPATION EVENT ENTRY AND ITEM FULFILLMENT
(51) Int. Cl.
H04N 7/18 (2006.01)
G06V 40/16 (2022.01)
G07C 9/00 (2020.01)
G06Q 10/02 (2012.01)
(43) 27.03.2025
(62) 2023241556
(72) MARTIN, Todd
(74) SOUTHERN CROSS INTELLECTUAL PROPERTY PTY LTD

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(71) Maynetic Investments Pty Ltd
(11) AU-A-2024219457
(21) 2024219457 **(22)** 06.09.2024
(54) A Playboard
(51) Int. Cl.
B32B 15/18 (2006.01)
B32B 15/085 (2006.01)
B32B 27/08 (2006.01)
B32B 27/32 (2006.01)
B43L 1/00 (2006.01)
B43L 5/00 (2006.01)
(31) 2023902908 **(32)** 08.09.23 **(33)** AU
(43) 27.03.2025
(72) McTegg, Leigh
(74) Stellar Law Pty Ltd

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(71) Maytronics Ltd.
(11) AU-A-2024219714
(21) 2024219714 **(22)** 13.09.2024
(54) MOVABLE SUBMERGED INTERFACE FOR POOL EXIT
(51) Int. Cl.
E04H 4/16 (2006.01)
B25J 3/00 (2006.01)
(31) 63/582,511 **(32)** 13.09.23 **(33)** US
63/621,804 17.01.24 US
(43) 27.03.2025
(72) Ben-dov, Boaz; Yosimov, Leonid
(74) Michael Buck IP

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(71) Mederis Diabetes, LLC
(11) AU-A-2025200349
(21) 2025200349 **(22)** 17.01.2025

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(54) IMPROVED PEPTIDE PHARMACEUTICALS FOR TREATMENT OF NASH AND OTHER DISORDERS
(51) Int. Cl.
A61P 1/16 (2006.01)
A61K 31/351 (2006.01)
A61K 38/02 (2006.01)
A61K 47/64 (2017.01)
A61P 13/12 (2006.01)
(43) 27.03.2025
(62) 2019205905
(72) NESTOR, John J.
(74) AJ PARK

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(71) MEDICAL MICROINSTRUMENTS, INC.
(11) AU-A-2025201692
(21) 2025201692 **(22)** 07.03.2025
(54) STERILE CONSOLE FOR ROBOTIC SURGERY
(51) Int. Cl.
A61B 34/37 (2016.01)
A61B 34/20 (2016.01)
A61B 90/60 (2016.01)
(43) 27.03.2025
(62) 2019270649
(72) SIMI, Massimiliano; PRISCO, Giuseppe Maria
(74) Murray Trento & Associates Pty Ltd

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(71) Medlogical Innovations Pty Ltd
(11) AU-A-2023229527
(21) 2023229527 **(22)** 13.09.2023
(54) System With Vibration Device and Cooling Fluid for Interstitial Laser Therapy
(51) Int. Cl.
A61B 18/22 (2006.01)
A61B 18/24 (2006.01)
A61N 5/06 (2006.01)
A61N 5/067 (2006.01)
A61B 18/00 (2006.01)
(43) 27.03.2025
(61) 2019458295
(72) Varol, Celalettin
(74) Davies Collison Cave Pty Ltd

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(71) MFTB Holdco, Inc.
(11) AU-A-2023259796
(21) 2023259796 **(22)** 06.11.2023
(54) Automated generation of building floor plans having associated absolute locations using coordination of multiple data sets
(51) Int. Cl.
G01S 19/01 (2010.01)
G01S 19/39 (2010.01)
H04W 4/02 (2018.01)
(31) 18/243,652 **(32)** 07.09.23 **(33)** US
(43) 27.03.2025
(72) Manjunath Narayana; Yongjoon Kim; Sean P. Cier; Sing Bing Kang
(74) Davies Collison Cave Pty Ltd

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(71) MFTB Holdco, Inc.
(11) AU-A-2024201196
(21) 2024201196 **(22)** 22.02.2024
(54) Automated generation of building floor plans having associated absolute locations using coordination of multiple data sets
(51) Int. Cl.
G01S 19/01 (2010.01)
G01S 19/39 (2010.01)
H04W 4/02 (2018.01)
(43) 27.03.2025
(62) 2023259796
(72) Narayana, Manjunath; Kim, Yongjoon; Cier, Sean P.; Kang, Sing Bing
(74) Davies Collison Cave Pty Ltd

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(71) Moxa Inc.
(11) AU-A-2024200113
(21) 2024200113 **(22)** 08.01.2024
(54) METHOD OF PERFORMING OVER-TEMPERATURE CONTROL IN A NETWORK SYSTEM
(51) Int. Cl.
G05B 13/02 (2006.01)
(31) 63/537,206 **(32)** 08.09.23 **(33)** US
112147889 08.12.23 TW
(43) 27.03.2025
(72) Kao, Chang-Yang; Liang, Yu-Ping; Chen, Fei-Hung
(74) LAMINAR IP PTY LTD

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(71) Mycelium Biotech Assets Pty Ltd
(11) AU-A-2024216540
(21) 2024216540 **(22)** 02.09.2024
(54) Methods of producing a biomaterial
(51) Int. Cl.
C12N 1/14 (2006.01)
C12M 1/00 (2006.01)
C12M 1/42 (2006.01)
C12R 1/645 (2006.01)
(31) 2023902878 **(32)** 07.09.23 **(33)** AU
(43) 27.03.2025
(72) Loussier, Thomas Sylvain Etienne
(74) Jones Tulloch

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(71) NanoDX, Inc.
(11) AU-A-2025201670
(21) 2025201670 **(22)** 07.03.2025
(54) SENSOR SYSTEM AND METHODS
(51) Int. Cl.
G01N 27/414 (2006.01)
G01N 27/327 (2006.01)
G01N 27/416 (2006.01)
G01N 33/49 (2006.01)
G01N 33/493 (2006.01)
(43) 27.03.2025
(62) 2020413218
(72) KHOSRAVI, Farhad; BASTABLE, David; DRYGA, Sergey A.
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) National University Corporation Nagoya University; Nichia Corporation; Osaka University
(11) AU-A-2025201648
(21) 2025201648 **(22)** 06.03.2025
(54) SEMICONDUCTOR NANOPARTICLES, METHOD OF PRODUCING THE SEMICONDUCTOR NANOPARTICLES, AND LIGHT-EMITTING DEVICE
(51) Int. Cl.
C09K 11/62 (2006.01)
B82Y 30/00 (2011.01)
B82Y 40/00 (2011.01)
C01G 15/00 (2006.01)
C09K 11/08 (2006.01)
H01L 33/50 (2010.01)
(43) 27.03.2025
(62) 2022291457
(72) TORIMOTO, Tsukasa; KAMEYAMA, Tatsuya; KISHI, Marino; MIYAMAE, Chie; KUWABATA, Susumu; UEMATSU, Taro; OYAMATSU, Daisuke; NIKI, Kenta
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Netzsch-Feinmahltechnik GmbH
(11) AU-A-2024205268
(21) 2024205268 **(22)** 31.07.2024
(54) Separator wheel with hybrid separator wheel vanes for wear protection purposes
(51) Int. Cl.
B04B 7/16 (2006.01)
B02C 19/11 (2006.01)
B04B 5/12 (2006.01)
(31) 10 2023 124 410.8 **(32)** 11.09.23 **(33)** DE
(43) 27.03.2025
(72) Sergi, Alegre
(74) Davies Collison Cave Pty Ltd

Nichia Corporation see National University Corporation Nagoya University
(21) 2025201648

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(71) NUC ELECTRONICS CO., LTD.
(11) AU-A-2024264619
(21) 2024264619 **(22)** 04.09.2024
(54) SCREW FOR JUICER AND JUICER COMPRISING THE SAME
(51) Int. Cl.
A47J 19/02 (2006.01)
A23N 1/00 (2006.01)
A47J 19/06 (2006.01)
A47J 31/44 (2006.01)
(31) 10-2023-0119863 **(32)** 08.09.23 **(33)** KR
10-2024-0011894 25.01.24 KR
10-2024-0092806 15.07.24 KR
(43) 27.03.2025
(72) KIM, Jong Boo
(74) FB Rice Pty Ltd

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(71) Nunhems B.V.
(11) AU-A-2023263462
(21) 2023263462 **(22)** 08.11.2023
(54) Carrot variety NUN 89202 CAC
(51) Int. Cl.
A01H 6/06 (2018.01)
A01H 1/04 (2006.01)
A01H 5/06 (2018.01)
(31) 18/463,925 **(32)** 08.09.23 **(33)** US

Applications Open to Public Inspection - Name Index cont'd

(43) 27.03.2025
(72) Roger E Freeman
(74) Davies Collison Cave Pty Ltd

Oeste, F. see Macdonald, J.
(21) 2024219494

Origin Patent and Trade Mark Attorneys see J & J Green Paper, Inc.
(21) 2025201079

Osaka University see National University Corporation Nagoya University
(21) 2025201648

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(71) Ospedale San Raffaele S.r.l.; Politecnico di Milano; Fondazione Telethon; Dana-Farber Cancer Institute, Inc.; Children's Medical Center Corporation
(11) AU-A-2025201558
(21) 2025201558 **(22)** 04.03.2025
(54) Compositions and methods for treating diseases and disorders of the central nervous system
(51) Int. Cl.
C12N 5/079 (2010.01)
C12N 5/0793 (2010.01)
C12N 5/0797 (2010.01)
(43) 27.03.2025
(62) 2024200841
(72) Biffi, Alessandra; Peviani, Marco; Moscatelli, Davide; Capotondo, Alessia; Milazzo, Rita; Capasso Palmiero, Umberto
(74) Griffith Hack

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(71) PANGANG GROUP PANZHIHUA IRON & STEEL RESEARCH INSTITUTE CO., LTD.; CHENGDU ADVANCED METAL MATERIALS INDUSTRY TECHNOLOGY RESEARCH INSTITUTE CO., LTD.
(11) AU-A-2024211005
(21) 2024211005 **(22)** 29.05.2024
(54) Method for increasing hardened layer thickness of a rail head of a flash welded joint of a steel rail and a steel rail
(51) Int. Cl.
C21D 9/50 (2006.01)
B23K 11/04 (2006.01)
B23K 11/36 (2006.01)
C21D 1/28 (2006.01)
C21D 9/04 (2006.01)
C22C 38/02 (2006.01)
C22C 38/04 (2006.01)
C22C 38/12 (2006.01)
C22C 38/18 (2006.01)
C22C 38/24 (2006.01)
E01B 5/02 (2006.01)
E01B 31/18 (2006.01)
B23K 101/26 (2006.01)
(31) 202311153004.9 **(32)** 07.09.23 **(33)** CN
(43) 27.03.2025
(72) LU, Xin; LI, Dadong; DENG, Jian; HUANG, Jie
(74) James & Wells Intellectual Property

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(71) Paragon 28, Inc.
(11) AU-A-2025201615
(21) 2025201615 **(22)** 05.03.2025
(54) TOTAL ANKLE REPLACEMENT INSTRUMENTS, ASSEMBLY, AND METHODS OF USE
(51) Int. Cl.
A61F 2/42 (2006.01)
A61B 17/56 (2006.01)
A61B 17/88 (2006.01)
A61F 2/46 (2006.01)
(43) 27.03.2025
(62) 2021310358
(72) Lee, Daniel J.; Dogué, Joseph; Marik, Greg; Raymond, Spanky
(74) PHILLIPS ORMONDE FITZPATRICK

Photon Robot (Ningbo) Co., Ltd. see Jiangsu Sanjo Intelligent Technology Co., Ltd.
(21) 2024219543

Photon Robot (Ningbo) Co., Ltd. see Jiangsu Sanjo Intelligent Technology Co., Ltd.
(21) 2024219634

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(71) Physio-Control, Inc.
(11) AU-A-2024219530
(21) 2024219530 **(22)** 09.09.2024
(54) LIGHTING FOR MECHANICAL CPR DEVICE
(51) Int. Cl.
A61H 31/00 (2006.01)
(31) 63/538,017 **(32)** 12.09.23 **(33)** US
(43) 27.03.2025
(72) Ehrstedt, Marcus; Lagerström, Jonas; Lindroth, Sara; Garcia, Maria Rojas; Widlund, William; Axelsson, Per; Nordström, Johan; von Schenck, Erik; Sohn, Dennis Changmin
(74) FOUNDRY INTELLECTUAL PROPERTY PTY LTD

Politecnico di Milano see Ospedale San Raffaele S.r.l.
(21) 2025201558

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(71) PUTTSHACK LTD
(11) AU-A-2024219522
(21) 2024219522 **(22)** 09.09.2024
(54) STANDALONE AND MULTIGAME MINIATURE GOLF STRUCTURE
(51) Int. Cl.
A63B 67/02 (2006.01)
A63B 69/36 (2006.01)
(31) 18/605267 **(32)** 14.03.24 **(33)** US
63/537702 11.09.23 US
63/590217 13.10.23 US
(43) 27.03.2025
(72) JONES, Samuel Nicolas; HOPKINSON, Thomas Stephen David; SLADE, Stephen Peter; CAMIES, Adam
(74) AJ PARK

Reilly, D. see Macdonald, J.
(21) 2024219494

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(71) Reko Automation Group Inc.
(11) AU-A-2024219609
(21) 2024219609 **(22)** 11.09.2024
(54) System and method for robotic drill rod handling
(51) Int. Cl.
E21B 19/20 (2006.01)
B25J 9/00 (2006.01)
B25J 11/00 (2006.01)
B25J 15/00 (2006.01)
E21B 19/14 (2006.01)
E21B 19/15 (2006.01)
(31) 63/582,277 **(32)** 13.09.23 **(33)** US
(43) 27.03.2025
(72) YZERMAN, Greg; CUTTING, Barrie; SERRAN, Christopher; WATSON, Benjamin; RAUCH, Paul; CHRISTIE, Alexander; KRASNOZON, Bill
(74) Spruson & Ferguson

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(71) Rust-Oleum Corporation
(11) AU-A-2024219596
(21) 2024219596 **(22)** 11.09.2024
(54) Fluid dispensing device
(51) Int. Cl.
B05B 7/04 (2006.01)
B05B 7/24 (2006.01)
B05B 11/10 (2023.01)
B65D 23/04 (2006.01)
(31) 63/537,602 **(32)** 11.09.23 **(33)** US
(43) 27.03.2025
(72) MORRISON, Adam Peter
(74) GLMR

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(71) Safier Ingenierie
(11) AU-A-2025201641
(21) 2025201641 **(22)** 06.03.2025
(54) FLOATING MODULE OF A FLOATING STRUCTURE AND METHOD FOR JOINING SUCH FLOATING MODULES
(51) Int. Cl.
B63B 35/38 (2006.01)
E02B 3/06 (2006.01)
(43) 27.03.2025
(62) 2019360540
(72) SAFIER, Elchanan
(74) AJ PARK

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(71) Samsara Vision Ltd.
(11) AU-A-2024219558
(21) 2024219558 **(22)** 10.09.2024
(54) Sulcus Fixation Frame
(51) Int. Cl.
A61F 2/16 (2006.01)
A61F 9/007 (2006.01)
(31) 18/465323 **(32)** 12.09.23 **(33)** US
(43) 27.03.2025
(72) AHARONI, Eli; BELOUSOV, Vladimir; YADID, Yogev
(74) Collison & Co

Applications Open to Public Inspection - Name Index cont'd

(71) SCHLAGE LOCK COMPANY LLC
(11) AU-A-2025201601
(21) 2025201601 **(22)** 05.03.2025
(54) MODULAR BIDIRECTIONAL SPRING CAGE
(51) Int. Cl.
E05B 15/04 (2006.01)
E05B 55/00 (2006.01)
E05B 63/04 (2006.01)
E05B 63/06 (2006.01)
(43) 27.03.2025
(62) 2022256059
(72) MOHAMMED, Saagar; McKIBBEN, Aaron; VARADARAJU, Nagesh
(74) Alder IP Pty Ltd

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(71) Schneider Electric (Australia) Pty Limited
(11) AU-A-2025201700
(21) 2025201700 **(22)** 07.03.2025
(54) FACE PLATE WITH FRAME AND METHOD OF MANUFACTURE
(51) Int. Cl.
H01R 13/46 (2006.01)
H01R 13/447 (2006.01)
H01R 13/502 (2006.01)
H01R 13/506 (2006.01)
(43) 27.03.2025
(62) 2019204172
(72) Juhasz, Elizabeth Tunde; Lifran, Xavier
(74) Madderns Pty Ltd

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(71) Schneider Electric USA, Inc.
(11) AU-A-2025201646
(21) 2025201646 **(22)** 06.03.2025
(54) Energy Management System And Method
(51) Int. Cl.
G06Q 50/06 (2024.01)
(43) 27.03.2025
(62) 2023200862
(72) Menzel, Johannes
(74) WRAYS PTY LTD

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(71) SHANGHAI HANSHI INFORMATION TECHNOLOGY CO., LTD.
(11) AU-A-2024203247
(21) 2024203247 **(22)** 16.05.2024
(54) Method and apparatus for image stitching
(51) Int. Cl.
G06T 11/60 (2006.01)
G06T 3/18 (2024.01)
G06T 5/60 (2024.01)
G06T 5/77 (2024.01)
G06T 7/30 (2017.01)
G06T 9/00 (2006.01)
(31) 202311167983.3 **(32)** 11.09.23 **(33)** CN
(43) 27.03.2025
(72) DING, Kun; YANG, Shuai; LI, Wangpei; HUANG, Sheng; ZHUANG, Yitang
(74) Griffith Hack

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(71) Shinext Group Pty Ltd
(11) AU-A-2023254935
(21) 2023254935 **(22)** 25.10.2023
(54) A RAPID INSTALLATION AND CONNECTION BRACKET FOR SOLAR
(51) Int. Cl.
H02S 20/23 (2014.01)
(31) 2023223978901 **(32)** 05.09.23 **(33)** CN
(43) 27.03.2025
(72) JIAO, Lichen; DING, Jianeng
(74) Baxter Patent Attorneys Pty Ltd

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(71) Sino International Group Ltd.
(11) AU-A-2024205086
(21) 2024205086 **(22)** 25.07.2024
(54) BEADSTEAD
(51) Int. Cl.
A47C 19/02 (2006.01)
(31) 102023124554.6 **(32)** 12.09.23 **(33)** DE
(43) 27.03.2025
(72) KNABE, Sven
(74) Collison & Co

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(71) SLD Technology, Inc.
(11) AU-A-2024227614
(21) 2024227614 **(22)** 24.10.2024
(54) MEDICAL EQUIPMENT MOUNTING SYSTEM
(51) Int. Cl.
A61B 90/57 (2016.01)
A61B 90/35 (2016.01)
A61G 13/10 (2006.01)
E04B 9/00 (2006.01)
E04B 9/02 (2006.01)
E04F 13/074 (2006.01)
F16M 13/02 (2006.01)
F24F 13/06 (2006.01)
(31) 63/504,080 **(32)** 24.05.23 **(33)** US
(43) 27.03.2025
(72) SCHREIBER, Kevin Joseph; WILKINSON, Jason; YUNG, Matthew; BARNETT, Mikah
(74) FB Rice Pty Ltd

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(71) Snap-on Incorporated
(11) AU-A-2025201606
(21) 2025201606 **(22)** 05.03.2025
(54) Dead blow hammer head
(51) Int. Cl.
B25D 1/12 (2006.01)
(43) 27.03.2025
(62) 2022263613
(72) BENDORF, Scott A.; ANDERSEN, Jonathan I.
(74) Griffith Hack

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(71) Sound Pharmaceuticals Incorporated
(11) AU-A-2025201645
(21) 2025201645 **(22)** 06.03.2025
(54) Methods and compositions for treating psychotic disorders
(51) Int. Cl.
A61P 25/18 (2006.01)
(43) 27.03.2025
(62) 2023200727
(72) KIL, Jonathan
(74) FB Rice Pty Ltd

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(71) Spellman High-Voltage Electronics Corporation
(11) AU-A-2024211014
(21) 2024211014 **(22)** 21.08.2024
(54) PRE-HEATING OF THE FILAMENT OF AN XRAY TUBE
(51) Int. Cl.
H01J 35/06 (2006.01)
H01J 35/00 (2006.01)
H05G 1/00 (2006.01)
H05G 1/30 (2006.01)
(31) 63/538,230 **(32)** 13.09.23 **(33)** US
(43) 27.03.2025
(72) BOWKER, Raymond; REYES, Nelson; BRASCH, William; SCHNEIDER, Barry
(74) Dark IP

SpyGlass Pharma, Inc. see The Regents of the University of Colorado, a body corporate
(21) 2025201616

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(71) SUNGROW POWER SUPPLY CO., LTD.
(11) AU-A-2024216485
(21) 2024216485 **(22)** 30.08.2024
(54) ENERGY STORAGE APPARATUS AND ENERGY STORAGE SYSTEM
(51) Int. Cl.
H01M 50/00 (2021.01)
A62C 3/16 (2006.01)
A62C 35/13 (2006.01)
A62C 37/44 (2006.01)
(31) 202322441726.6 **(32)** 07.09.23 **(33)** CN
(43) 27.03.2025
(72) CHENG, Yunfang
(74) Integrated IP

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(71) Sustainability Innovations Pty Ltd
(11) AU-A-2024219473
(21) 2024219473 **(22)** 06.09.2024
(54) Hemp based composite material and composite panel
(51) Int. Cl.
B32B 5/26 (2006.01)
B27N 3/06 (2006.01)
E02D 5/24 (2006.01)
E04C 2/18 (2006.01)
E04C 2/24 (2006.01)
E04C 2/26 (2006.01)
E04C 3/36 (2006.01)
E04F 13/16 (2006.01)
E04H 17/20 (2006.01)
B27N 3/04 (2006.01)
B27N 3/08 (2006.01)
B27N 3/12 (2006.01)
(31) 2023902890 **(32)** 08.09.23 **(33)** AU
(43) 27.03.2025
(72) BOAG, Brett
(74) FB Rice Pty Ltd

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(71) Techtronic Cordless GP
(11) AU-A-2024216473
(21) 2024216473 **(22)** 30.08.2024
(54) Lap bar rotational damper
(51) Int. Cl.
A01D 34/82 (2006.01)

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A01D 34/64 (2006.01)
(31) 63/581,108 **(32)** 07.09.23 **(33)** US
(43) 27.03.2025
(72) D'ANGELO, Adam; MITCHELL, Spencer
(74) Spruson & Ferguson

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(71) Techtronic Cordless GP
(11) AU-A-2024219346
(21) 2024219346 **(22)** 03.09.2024
(54) Handheld power spreader
(51) Int. Cl.
A01C 15/02 (2006.01)
A01C 7/02 (2006.01)
(31) 63/537,363 **(32)** 08.09.23 **(33)** US
(43) 27.03.2025
(72) DAVIS, Isaac Finn; FROST, Stephen
(74) Spruson & Ferguson

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(71) Techtronic Cordless GP
(11) AU-A-2024219348
(21) 2024219348 **(22)** 03.09.2024
(54) Towable elements for lawnmowers and lawnmowers with towable elements
(51) Int. Cl.
A01D 34/82 (2006.01)
A01D 43/00 (2006.01)
(31) 63/537,355 **(32)** 08.09.23 **(33)** US
(43) 27.03.2025
(72) BAKER, David J.
(74) Spruson & Ferguson

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(71) Techtronic Cordless GP
(11) AU-A-2024219415
(21) 2024219415 **(22)** 05.09.2024
(54) Lithium-ion battery cathode material
(51) Int. Cl.
H01M 4/36 (2006.01)
H01M 4/02 (2006.01)
H01M 4/13 (2010.01)
(31) 202311155564.8 **(32)** 07.09.23 **(33)** CN
(43) 27.03.2025
(72) LI, Jun
(74) Spruson & Ferguson

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(71) Tenovos Corporation
(11) AU-A-2025201602
(21) 2025201602 **(22)** 05.03.2025
(54) SYSTEMS AND INTERFACES FOR MANAGING CONTENT
(51) Int. Cl.
G06F 15/16 (2006.01)
(43) 27.03.2025
(62) 2019330002
(72) CORODIMAS, Matthew; GRANT, Neil
(74) RnB IP Pty Ltd

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(71) The Children's Hospital of Philadelphia
(11) AU-A-2025201665
(21) 2025201665 **(22)** 07.03.2025
(54) System and method configured to provide extracorporeal support for premature fetus
(51) Int. Cl.
A61G 11/00 (2006.01)
(43) 27.03.2025
(62) 2023201760
(72) FLAKE, Alan; DAVEY, Marcus
(74) Spruson & Ferguson

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(71) The National Institute for Biotechnology in the Negev Ltd.; The State of Israel, Ministry of Agriculture & Rural Development, Agricultural Research Organization (ARO) (Volcani Center)
(11) AU-A-2025200715
(21) 2025200715 **(22)** 03.02.2025
(54) Method of selecting ruminating animals for a desirable hereditable trait
(51) Int. Cl.
C12Q 1/04 (2006.01)
A01K 67/02 (2006.01)
C12Q 1/68 (2018.01)
(43) 27.03.2025
(62) 2018315764
(72) MIZRAHI, Itzhak
(74) Cooper IP Pty Ltd

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(71) The Penn State Research Foundation
(11) AU-A-2024219577
(21) 2024219577 **(22)** 10.09.2024
(54) Low-melting glass compositions, articles, and methods of making the same
(51) Int. Cl.
C03C 3/062 (2006.01)
(31) 63/582,033 **(32)** 12.09.23 **(33)** US
(43) 27.03.2025
(72) MAURO, John Christopher; MANCINI, Matthew Francis Lane; COOK, Glen Bennett; GALLAGHER, Colleen Elizabeth; CLARK, Nicholas; TRAUGH, Shaylee; ASTLE, Sierra; REED, Titus
(74) Spruson & Ferguson

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(71) The Queen's University Of Belfast; Chromadex Inc.
(11) AU-A-2025201710
(21) 2025201710 **(22)** 10.03.2025
(54) EFFICIENT AND SCALABLE SYNTHESES OF NICOTINOYL RIBOSIDES AND REDUCED NICOTINOYL RIBOSIDES, MODIFIED DERIVATIVES THEREOF, PHOSPHORYLATED ANALOGS THEREOF, ADENYLYL DINUCLEOTIDE CONJUGATES THEREOF, AND NOVEL CRYSTALLINE FORMS THEREOF
(51) Int. Cl.
C07H 19/048 (2006.01)
A61K 31/455 (2006.01)
A61K 31/706 (2006.01)
C07H 1/00 (2006.01)
(43) 27.03.2025
(62) 2024259832
(72) Migaud, Marie Eugenie; Redpath, Philip; Crossey, Kerri; Cunningham, Richard; Erickson, Aron; Nygaard, Richard; Storjohann, Amanda
(74) PIPERS

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(71) The Regents of the University of California
(11) AU-A-2025201611
(21) 2025201611 **(22)** 05.03.2025
(54) Implants using ultrasonic waves for stimulating tissue
(51) Int. Cl.
A61B 5/00 (2006.01)
A61N 1/05 (2006.01)
A61N 1/36 (2006.01)
A61N 1/372 (2006.01)
A61N 1/378 (2006.01)
(43) 27.03.2025
(62) 2022241497
(72) Maharbiz, Michel M.; Seo, Dongjin; Shen, Konlin; Carmena, Jose M.; Neely, Ryan; Alon, Elad; Rabaey, Jan
(74) Davies Collison Cave Pty Ltd

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(71) The Regents of the University of Colorado, a body corporate; SpyGlass Pharma, Inc.
(11) AU-A-2025201616
(21) 2025201616 **(22)** 05.03.2025
(54) OPHTHALMIC DEVICE FOR DRUG DELIVERY
(51) Int. Cl.
A61F 2/14 (2006.01)
A61F 2/16 (2006.01)
A61F 9/00 (2006.01)
A61F 9/007 (2006.01)
(43) 27.03.2025
(62) 2019310003
(72) KAHOOK, Malik Y.; SUSSMAN, Glenn; CABLE II, Craig Alan
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) The Schepens Eye Research Institute, Inc.
(11) AU-A-2025201563
(21) 2025201563 **(22)** 04.03.2025
(54) Compositions and methods for prevention and treatment of corneal haze and scarring
(51) Int. Cl.
A61K 38/16 (2006.01)
A61K 38/18 (2006.01)
C07K 14/00 (2006.01)
(43) 27.03.2025
(62) 2021286438
(72) CHAUHAN, Sunil; DANA, Reza
(74) FPA Patent Attorneys Pty Ltd

The State of Israel, Ministry of Agriculture & Rural Development, Agricultural Research Organization (ARO) (Volcani Center) see The National Institute for Biotechnology in the Negev Ltd.
(21) 2025200715

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(71) The University Court Of The University Of Edinburgh
(11) AU-A-2023229490
(21) 2023229490 **(22)** 12.09.2023
(54) ALPHA-SYNUCLEIN DETECTION ASSAY

Applications Open to Public Inspection - Name Index cont'd

(51) Int. Cl.
G01N 33/68 (2006.01)
G01N 21/64 (2006.01)
G01N 33/58 (2006.01)
(43) 27.03.2025
(61) 2017292377
(72) Green, Alison; Fairfoul, Graham
(74) Michael Buck IP

The University of Melbourne see Ford Global Technologies, LLC
(21) 2024216356

The University of Western Australia see Ford Global Technologies, LLC
(21) 2024216356

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(71) Toshiba Energy Systems & Solutions Corporation
(11) AU-A-2024204788
(21) 2024204788 **(22)** 11.07.2024
(54) Carbon dioxide conversion device and carbon dioxide conversion method
(51) Int. Cl.
C25B 1/00 (2021.01)
B01D 53/34 (2006.01)
B01D 53/62 (2006.01)
C25B 1/01 (2021.01)
C25B 15/00 (2006.01)
H01M 8/00 (2016.01)
(31) 2023-145936 **(32)** 08.09.23 **(33)** JP
2024-079915 16.05.24 JP
(43) 27.03.2025
(72) OGAWA, Takashi
(74) Davies Collison Cave Pty Ltd

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(71) Toyo Cushion Lanka (Pvt) Ltd
(11) AU-A-2024219528
(21) 2024219528 **(22)** 09.09.2024
(54) Waterproof biodegradable coir pot with natural special waterproof coating
(51) Int. Cl.
C09D 107/02 (2006.01)
A01G 9/02 (2018.01)
A01G 24/25 (2018.01)
C08J 3/26 (2006.01)
C08K 3/34 (2006.01)
(31) 22822 **(32)** 08.09.23 **(33)** LK
(43) 27.03.2025
(72) Harsha Abeywardene, Bambarande Gamage
(74) Davies Collison Cave Pty Ltd

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(71) Translate Bio, Inc.
(11) AU-A-2025201623
(21) 2025201623 **(22)** 05.03.2025
(54) COMPOSITION AND METHODS FOR TREATMENT OF PRIMARY CILIARY DYSKINESIA
(51) Int. Cl.
C07K 14/435 (2006.01)
A61K 31/7088 (2006.01)
(43) 27.03.2025
(62) 2020206109
(72) DIAS, Anusha; PAREKH, Darshan; DUBINS, Jeffrey S.; COBAUGH, Christian; KARVE, Shrirang; PATEL, Zarna; DUNAJ, Sara J.; DEROSA, Frank; HEARTLEIN, Michael
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Tricida, Inc.
(11) AU-A-2025201742
(21) 2025201742 **(22)** 11.03.2025
(54) COMPOSITIONS FOR AND METHOD OF TREATING ACID-BASE DISORDERS
(51) Int. Cl.
A61K 31/785 (2006.01)
C08F 8/02 (2006.01)
C08F 226/02 (2006.01)
(43) 27.03.2025
(62) 2018360867
(72) KLAERNER, Gerrit; BUYSSE, Jerry M.; SHAO, Jun; OTTO, Dawn Parsell
(74) Oxygene IP

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(71) Trina Solar Co., Ltd.
(11) AU-A-2025201838
(21) 2025201838 **(22)** 13.03.2025
(54) Solar cell, method for manufacturing the same, and photovoltaic module
(51) Int. Cl.
H10F 77/30 (2025.01)
H10F 77/20 (2025.01)
(31) 202411360281.1 **(32)** 27.09.24 **(33)** CN
(43) 27.03.2025
(72) LIU, Chengfa; LV, Dongyun; HUANG, Jian; CHEN, Daming
(74) FB Rice Pty Ltd

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(71) VECTOR CORROSION TECHNOLOGIES LTD.
(11) AU-A-2025201730
(21) 2025201730 **(22)** 11.03.2025
(54) CATHODIC PROTECTION OF CONCRETE USING AN ANODE ATTACHED TO AN OUTER SURFACE
(51) Int. Cl.
C02F 1/04 (2023.01)
C23F 13/06 (2006.01)
(43) 27.03.2025
(62) 2023296340
(72) BALL, John Chris; WHITMORE, David; BEAUDETTE, Martin; HIEBERT, Gerald Bruce; SERGI, George; SIMPSON, David
(74) IP GATEWAY PATENT & TRADE MARK ATTORNEYS PTY LTD

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(71) VISUAL DEFENCE INC.
(11) AU-A-2024204700
(21) 2024204700 **(22)** 08.07.2024
(54) IDENTIFYING, RECORDING AND ASSESSING GEOSPATIAL ASSETS WITH DATA COLLECTION, IMAGE PROCESSING, AND SELECTIVE PRUNING
(51) Int. Cl.
G06Q 10/06 (2023.01)
G06Q 10/063 (2023.01)
G06Q 10/20 (2023.01)
G06Q 50/40 (2024.01)
G06V 10/82 (2022.01)
G07C 5/00 (2006.01)
(31) 18/464655 **(32)** 11.09.23 **(33)** US
(43) 27.03.2025
(72) TAL, Royi; BAKONYI, Thomas; IBANA, Redenthor; ARTMAN, Omri
(74) AJ PARK

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(71) Watson, C.
(11) AU-A-2024219467
(21) 2024219467 **(22)** 06.09.2024
(54) Ankle Dorsiflexion Mobility Remediation Device
(51) Int. Cl.
A63B 23/08 (2006.01)
A63B 21/00 (2006.01)
A63B 23/00 (2006.01)
(31) 2023902918 **(32)** 11.09.23 **(33)** AU
(43) 27.03.2025
(72) Garnier, Anthony
(74) Patentec Patent Attorneys

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(71) Wilcox Industries Corp.
(11) AU-A-2024219394
(21) 2024219394 **(22)** 04.09.2024
(54) Identification Friend Or Foe Apparatus
(51) Int. Cl.
A42B 3/04 (2006.01)
(31) 63/537,144 **(32)** 07.09.23 **(33)** US
(43) 27.03.2025
(72) TEETZEL, James. W; TURNER, Elliott S
(74) WRAYS PTY LTD

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(71) Wilcox Industries Corp.
(11) AU-A-2024219635
(21) 2024219635 **(22)** 11.09.2024
(54) Power And Data Retrofit For Weapon Accessory Rail
(51) Int. Cl.
H01R 25/16 (2006.01)
H01R 12/70 (2011.01)
H01R 25/14 (2006.01)
H01R 31/00 (2006.01)
H05K 7/18 (2006.01)
(31) 63/538,265 **(32)** 13.09.23 **(33)** US
(43) 27.03.2025
(72) TEETZEL, James W.; TURNER, Elliott S.; RIEL, Robert
(74) WRAYS PTY LTD

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(71) WIREMAN PTY LIMITED
(11) AU-A-2024216370
(21) 2024216370 **(22)** 27.08.2024
(54) A Chain Restraint
(51) Int. Cl.
E04H 17/02 (2006.01)
B21F 9/00 (2006.01)
B25B 25/00 (2006.01)
E04H 17/26 (2006.01)
F16G 11/04 (2006.01)
F16G 11/12 (2006.01)
(31) 2023902942 **(32)** 13.09.23 **(33)** AU
(43) 27.03.2025
(72) LOWREY, IAN
(74) Fraser Old & Sohn

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(71) YONDR, INC.
(11) AU-A-2025201604
(21) 2025201604 **(22)** 05.03.2025
(54) Electronics Storage Device
(51) Int. Cl.
H05K 9/00 (2006.01)
A45C 11/00 (2006.01)
A45C 13/00 (2006.01)
A45C 15/00 (2006.01)
H04B 1/3888 (2015.01)
B65D 43/16 (2006.01)
(43) 27.03.2025
(62) 2022421672
(72) DUGONI, Graham
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Zhejiang Kindly Medical Devices Co., Ltd.
(11) AU-A-2023282325
(21) 2023282325 **(22)** 15.12.2023
(54) SHIELDING APPARATUS FOR LOWER END OF INJECTION NEEDLE, AND INJECTION DEVICE
(51) Int. Cl.
A61M 5/32 (2006.01)
A61M 25/06 (2006.01)
(31) 2023111604606 **(32)** 08.09.23 **(33)** CN
(43) 27.03.2025
(72) Chen, Hong; Chen, Xu; Zhang, Qian; Chi, Zhongshichao; Lou, Zhuoyuan
(74) Madderns Pty Ltd

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2025201619 Endotronix, Inc.
2025201620 Globeride, Inc.
2025201621 CFPH, LLC; BGC Partners, Inc.
2025201623 Translate Bio, Inc.
2025201624 Essenlix Corp.
2025201625 B. Braun Melsungen AG
2025201633 JCM AMERICAN CORPORATION
2025201640 INSULET CORPORATION
2025201641 Safier Ingenierie
2025201643 ANELLOTECH, INC.
2025201644 Academia Sinica
2025201645 Sound Pharmaceuticals Incorporated
2025201646 Schneider Electric USA, Inc.
2025201647 Itron, Inc.
2025201648 National University Corporation Nagoya University; Nichia Corporation; Osaka University
2025201650 I-LUMEN SCIENTIFIC, INC.
2025201652 Ezyform International Pty Ltd
2025201654 Aravive Biologics, Inc.
2025201656 4TEEN4 Pharmaceuticals GmbH
2025201658 BostonGene Corporation
2025201661 Angel Group Co., Ltd.
2025201664 Angel Group Co., Ltd.
2025201665 The Children's Hospital of Philadelphia
2025201667 Dragic, M.
2025201668 Angel Group Co., Ltd.
2025201670 NanoDX, Inc.
2025201671 GE Video Compression, LLC
2025201672 Eco Benchtops Pty Ltd
2025201673 DNA Genotek Inc.
2025201674 Ayala Pharmaceuticals Inc.
2025201675 Amgen Inc.
2025201676 GE Video Compression, LLC
2025201677 Janssen Pharmaceutica NV
2025201678 BGC Partners, Inc.
2025201679 GE Video Compression, LLC
2025201680 GE Video Compression, LLC
2025201681 Aristocrat Technologies Australia Pty Limited
2025201682 GE Video Compression, LLC
2025201683 GE Video Compression, LLC
2025201684 Genzyme Corporation
2025201685 Freeport-McMoran Inc.
2025201686 Kartos Therapeutics, Inc.
2025201689 Espervita Therapeutics, Inc.
2025201691 360 Knee Systems Pty Ltd
2025201692 MEDICAL MICROINSTRUMENTS, INC.
2025201694 DePuy Ireland Unlimited Company
2025201696 KNORR-BREMSE SYSTEME FÜR SCHIENEN-FAHRZEUGE GMBH
2025201698 Alecson Feld Australia Pty Ltd
2025201699 Alcresta Therapeutics, Inc.
2025201700 Schneider Electric (Australia) Pty Limited
2025201701 Illumina Cambridge Limited
2025201702 Dyno Nobel Inc.
2025201703 BC Machining Technologies Inc.
2025201704 Cytec Industries Inc.
2025201707 Angel Group Co., Ltd.
2025201710 The Queen's University Of Belfast; Chromadex Inc.
2025201712 Arla Foods AmbA
2025201713 CFPH, LLC
2025201714 BRISTOL-MYERS SQUIBB COMPANY
2025201717 Genmab A/S
2025201719 LG Electronics INC.
2025201724 Inguran, LLC
2025201729 Afterpay Pty Ltd
2025201730 VECTOR CORROSION TECHNOLOGIES LTD.
2025201733 Duke University; BioSpecifics Technologies Corporation
2025201736 California Institute of Technology
2025201737 MARTIN, T.
2025201739 INSULET CORPORATION
2025201741 Endo Global Aesthetics Limited
2025201742 Tricida, Inc.
2025201744 Applied Medical Resources Corporation
2025201838 Trina Solar Co., Ltd.

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No IPC Mark

Innovation Patents Open to Public Inspection

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(This list may contain multiple listings of a patent where there are multiple patentees for that patent.)

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(71) Dyno Nobel Inc.
(11) AU-A-2025100002
(21) 2025100002 **(22)** 05.02.2025
(54) Systems for automated blast design planning and methods related thereto
(51) Int. Cl.
G06Q 50/02 (2024.01)
B64C 39/02 (2023.01)
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(45) 27.03.2025
(62) 2020219764
(72) GILTNER, Scott; FLINCHUM, Rufus E.; AVERETT, Jeffrey; NAWROCKI JR., Joseph
(74) Spruson & Ferguson

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(71) Dyno Nobel Inc.
(11) AU-A-2025100003
(21) 2025100003 **(22)** 05.02.2025
(54) Systems for automated blast design planning and methods related thereto
(51) Int. Cl.
G06Q 50/02 (2024.01)
B64C 39/02 (2023.01)
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(72) GILTNER, Scott; FLINCHUM, Rufus E.; AVERETT, Jeffrey; NAWROCKI JR., Joseph
(74) Spruson & Ferguson

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(71) OzGreen Energy Pty Ltd
(11) AU-A-2025100005
(21) 2025100005 **(22)** 20.02.2025
(54) Method of Measuring Water Quality
(51) Int. Cl.
G01N 33/18 (2006.01)
C02F 1/00 (2023.01)
(45) 27.03.2025
(62) 2020101528
(72) McKelvey, Len
(74) Michael Buck IP

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(71) 10644137 CANADA INC.
(11) AU-A-2023337249
(21) 2023337249 **(22)** 07.09.2023
(54) SPIRO-BASED IONIC LIQUID ELECTROLYTE FOR LOW TEMPERATURE SUPERCAPACITORS AND METHODS OF FABRICATING SAME
(51) Int. Cl.
H01G 4/04 (2006.01)
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C07D 487/10 (2006.01)
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(87) WO2024/050635
(31) 63/404,409 **(32)** 07.09.22 **(33)** US
(43) 14.03.2024
(72) MOMODU, Damilola Yusuf; PAHLEVANINEZHAD, Hamid; PAHLEVANINEZHAD, Majid; SCHERWITZ, Sam
(74) FB Rice Pty Ltd

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(71) ABDERA THERAPEUTICS INC.
(11) AU-A-2023330109
(21) 2023330109 **(22)** 21.08.2023
(54) VHH ANTIBODY CONJUGATES
(51) Int. Cl.
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(87) WO2024/044549
(31) 63/373,183 **(32)** 22.08.22 **(33)** US
(43) 29.02.2024
(72) ABRAMS, Michael J.; JUDGE, Adam Daniel; MANDEL, Alexander Laurence; VISWAS, Raja Solomon; MACKAY, Douglas Bruce
(74) FB Rice Pty Ltd

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(71) AB INITIO TECHNOLOGY LLC
(11) AU-A-2023347913
(21) 2023347913 **(22)** 19.09.2023
(54) TECHNIQUES FOR DISCOVERING AND UPDATING SEMANTIC MEANING OF DATA FIELDS
(51) Int. Cl.
G06F 16/21 (2019.01)
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(87) WO2024/064705
(31) 63/408,400 **(32)** 20.09.22 **(33)** US
(43) 28.03.2024
(72) JOYCE, John; HUANG, David; CHANG, Andrew; MORRISON, Niel
(74) RnB IP Pty Ltd

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(71) ACCESS TO ADVANCED HEALTH INSTITUTE
(11) AU-A-2023336224
(21) 2023336224 **(22)** 09.09.2023
(54) IMMUNOGENIC VACCINE COMPOSITION INCORPORATING A SAPONIN
(51) Int. Cl.
A61K 9/00 (2006.01)
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(87) WO2024/052882
(31) 63/375,166 **(32)** 09.09.22 **(33)** US
(43) 14.03.2024
(72) FOX, Christopher Bradford; VOIGT, Emily
(74) AJ PARK

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(71) ACCUSHOOT, INC.
(11) AU-A-2023341616
(21) 2023341616 **(22)** 13.09.2023
(54) SYSTEMS AND METHODS FOR MARKSMANSHIP IMPROVEMENT THROUGH MACHINE LEARNING
(51) Int. Cl.
G09B 19/00 (2006.01)
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(87) WO2024/059156
(31) 63/406,208 **(32)** 13.09.22 **(33)** US
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(43) 21.03.2024
(72) HANGARTNER, Rick; MARTIN, Francisco; PETERSEN, Poul; BALDWIN, Ken; SHUR, Jim; DE SIMONE, Sergio; GARCIA, Beatriz; ROVIRA, Oscar; GONZALEZ, Pablo; CLEMENTE, Alvaro; ZURIAGA, Candido
(74) Spruson & Ferguson

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(71) ACLARITY, INC
(11) AU-A-2023321671
(21) 2023321671 **(22)** 10.08.2023
(54) ELECTROREDUCTIVE AND REGENERATIVE SYSTEM
(51) Int. Cl.
C02F 1/42 (2023.01)
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(87) WO2024/035902
(31) 63/396,919 **(32)** 10.08.22 **(33)** US
(43) 15.02.2024
(72) SCHNEIDER, Orren, David
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) ADAGENE PTE. LTD.
(11) AU-A-2023338559
(21) 2023338559 **(22)** 08.09.2023
(54) ACTIVATABLE ANTI-CTLA4 ANTIBODIES FOR TREATING CANCER
(51) Int. Cl.
A61P 35/00 (2006.01)
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C07K 16/28 (2006.01)
(87) WO2024/055005
(31) 63/405,293 **(32)** 09.09.22 **(33)** US
63/495,965 13.04.23 US
(43) 14.03.2024
(72) ZHENG, Songmao; ZHA, Jiping; LIU, Guizhong; SHE, Xiaohong; LUO, Peter Peizhi
(74) AJ PARK

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(71) ADAMA MAKHTESHIM LTD.
(11) AU-A-2023346650
(21) 2023346650 **(22)** 21.09.2023
(54) COMBINATIONS OF KETO-ENOL INSECTICIDES
(51) Int. Cl.
A01N 47/06 (2006.01)
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A01P 7/04 (2006.01)
(87) WO2024/062485
(31) 63/408,496 **(32)** 21.09.22 **(33)** US
(43) 28.03.2024
(72) DAHAN, Yogev; FRIEDMAN, Jacob; MEIRI, Erez; SHERMAN, Daniel
(74) Davies Collison Cave Pty Ltd

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(71) ADAMA MAKHTESHIM LTD.
(11) AU-A-2023352212
(21) 2023352212 **(22)** 27.09.2023
(54) CONCENTRATED AGROCHEMICAL COMPOSITIONS OF ANTHRANILIC DIAMIDES
(51) Int. Cl.
A01N 25/04 (2006.01)
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A01N 43/56 (2006.01)
(87) WO2024/069628
(31) 63/411,164 **(32)** 29.09.22 **(33)** US
(43) 04.04.2024
(72) DAYAGI, Yohai; KABALIK, Alexandra
(74) Davies Collison Cave Pty Ltd

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(71) ADIMAB, LLC
(11) AU-A-2023363979
(21) 2023363979 **(22)** 18.10.2023

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(54) PH-DEPENDENT ANTI-CD3 ANTIBODIES AND METHODS RELATING THERETO
(51) Int. Cl.
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A61K 47/68 (2017.01)
(87) WO2024/086617
(31) 63/417,118 **(32)** 18.10.22 **(33)** US
(43) 25.04.2024
(72) BATTLES, Michael, Benjamin; WIDBOOM, Paul
(74) FB Rice Pty Ltd

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(71) AGNIKUL COSMOS PRIVATE LIMITED
(11) AU-A-2022338306
(21) 2022338306 **(22)** 01.09.2022
(54) MODULAR CONFIGURATION OF LAUNCH VEHICLE SYSTEM
(51) Int. Cl.
B64G 1/00 (2006.01)
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(87) WO2023/031967
(31) 202141039671 **(32)** 02.09.21 **(33)** IN
(43) 09.03.2023
(72) -, 'Syed Peer Mohamed Shah Khadri; RAVICHANDRAN, Srinath
(74) Dentons Patent Attorneys Australasia Limited

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(71) AKERO THERAPEUTICS, INC.
(11) AU-A-2023343076
(21) 2023343076 **(22)** 11.09.2023
(54) FGF21 MUTANT POLYPEPTIDES
(51) Int. Cl.
C07K 14/50 (2006.01)
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A61P 3/00 (2006.01)
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(87) WO2024/059507
(31) 63/405,758 **(32)** 12.09.22 **(33)** US
(43) 21.03.2024
(72) ROLPH, Timothy, P.; TILLMAN, Erik, J.
(74) Catalyst Intellectual Property

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(71) ALCON INC.
(11) AU-A-2023367790
(21) 2023367790 **(22)** 26.10.2023
(54) TECHNIQUES FOR AUTOMATICALLY TRACKING SURGICAL PROCEDURES
(51) Int. Cl.
A61B 3/00 (2006.01)
A61B 3/13 (2006.01)
G16H 30/40 (2018.01)
(87) WO2024/089650
(31) 63/381,259 **(32)** 27.10.22 **(33)** US
(43) 02.05.2024
(72) TRIPATHI, Ashok Burton; YIN, Lu; SARANGAPANI, Ramesh
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) ALEXION PHARMACEUTICALS, INC.
(11) AU-A-2023338677
(21) 2023338677 **(22)** 01.09.2023
(54) SUPPLEMENTAL DOSAGE AND ADMINISTRATION OF ANTI-C5 ANTIBODIES FOR TREATING HEMATOPOIETIC STEM CELL TRANSPLANT-ASSOCIATED THROMBOTIC MICROANGIOPATHY (HSCT-TMA)
(51) Int. Cl.
A61K 39/395 (2006.01)
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(87) WO2024/054408
(31) 63/404,061 **(32)** 06.09.22 **(33)** US
63/440,984 25.01.23 US
(43) 14.03.2024
(72) ORTIZ, Stephan; MONTELEONE, Jonathan; REARS, Xiaofeng Wang
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) ALIBABA (CHINA) CO., LTD.
(11) AU-A-2023359177
(21) 2023359177 **(22)** 10.10.2023
(54) PRE-ANALYSIS BASED IMAGE COMPRESSION METHODS
(51) Int. Cl.
H04N 19/85 (2014.01)
(87) WO2024/078512
(31) 63/378,888 **(32)** 10.10.22 **(33)** US
18/478,680 29.09.23 US
(43) 18.04.2024
(72) WANG, Shurun; WANG, Zhao; YE, Yan; WANG, Shiqi
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) ALIBABA (CHINA) CO., LTD.
(11) AU-A-2023364015
(21) 2023364015 **(22)** 17.10.2023
(54) METHOD AND APPARATUS FOR TALKING FACE VIDEO COMPRESSION
(51) Int. Cl.
H04N 19/172 (2014.01)
G06T 17/00 (2006.01)
(87) WO2024/083100
(31) 63/379,779 **(32)** 17.10.22 **(33)** US
18/484,099 10.10.23 US
(43) 25.04.2024
(72) CHEN, Bolin; WANG, Zhao; YE, Yan; WANG, Shiqi
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) ALSTOM HOLDINGS
(11) AU-A-2023355701
(21) 2023355701 **(22)** 02.10.2023
(54) FLAMEPROOF CABLE BUSHING, CONTAINER AND RAIL VEHICLE HAVING A FLAMEPROOF CABLE BUSHING, AND USE OF A FOAM SEAL
(51) Int. Cl.
H02G 3/22 (2006.01)
A62C 3/16 (2006.01)
F16L 5/04 (2006.01)
A62C 2/06 (2006.01)
(87) WO2024/074463
(31) 22315231.5 **(32)** 05.10.22 **(33)** EP
(43) 11.04.2024
(72) HEIDRICH, Peter; RATHMANN, Detlev
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) ALTEROME THERAPEUTICS, INC.
(11) AU-A-2023351192
(21) 2023351192 **(22)** 25.09.2023
(54) AKT1 MODULATORS
(51) Int. Cl.
C07D 471/04 (2006.01)
A61K 31/444 (2006.01)
A61K 31/4545 (2006.01)
A61K 31/496 (2006.01)
A61K 31/497 (2006.01)
A61K 31/506 (2006.01)
A61K 31/53 (2006.01)
A61K 31/55 (2006.01)
A61K 31/551 (2006.01)
A61K 31/553 (2006.01)
A61P 35/00 (2006.01)
C07D 401/14 (2006.01)
C07D 473/00 (2006.01)
C07D 487/04 (2006.01)
C07D 519/00 (2006.01)
(87) WO2024/073371
(31) 63/377,183 **(32)** 26.09.22 **(33)** US
63/498,770 27.04.23 US
63/508,418 15.06.23 US
63/580,327 01.09.23 US
63/582,697 14.09.23 US
(43) 04.04.2024
(72) BARTBERGER, Michael David; DNEPROVSKAIA, Elena V.; FAN, Yi; MURPHY, Eric Anthony; ZHU, Xuefeng
(74) FB Rice Pty Ltd

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(71) AMPHISTA THERAPEUTICS LIMITED
(11) AU-A-2023343029
(21) 2023343029 **(22)** 13.09.2023
(54) COMPOUNDS FOR TARGETED PROTEIN DEGRADATION
(51) Int. Cl.
A61P 35/00 (2006.01)
A61K 31/4439 (2006.01)
A61K 31/4545 (2006.01)
A61K 31/4725 (2006.01)
A61K 31/496 (2006.01)
A61K 31/499 (2006.01)
A61K 31/4995 (2006.01)
A61K 31/551 (2006.01)
C07D 213/64 (2006.01)
C07D 401/10 (2006.01)
C07D 401/12 (2006.01)
C07D 401/14 (2006.01)
C07D 405/14 (2006.01)
C07D 413/14 (2006.01)
C07D 417/12 (2006.01)
C07D 417/14 (2006.01)
C07D 471/04 (2006.01)
C07D 471/10 (2006.01)
C07D 487/08 (2006.01)
C07D 487/10 (2006.01)
C07D 513/04 (2006.01)
C07D 519/00 (2006.01)
C40B 40/04 (2006.01)
(87) WO2024/057021
(31) 2213365.6 **(32)** 13.09.22 **(33)** GB
2219287.6 20.12.22 GB

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(43) 21.03.2024
(72) MCGARRY, David; MEIER, Gregor; OSBORNE, James; TESTA, Andrea; BROWN, Giles Albert; AMBLER, Martin; FALLAN, Charlene
(74) James & Wells Intellectual Property

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(71) ANSTEEL BEIJING RESEARCH INSTITUTE CO., LTD.
(11) AU-A-2023387758
(21) 2023387758 **(22)** 24.11.2023
(54) PRE-SEPARATION METHOD FOR COMPREHENSIVE UTILIZATION OF STRONG MAGNETIC TAILINGS
(51) Int. Cl.
B03C 1/30 (2006.01)
B03C 1/02 (2006.01)
B03D 1/02 (2006.01)
C22B 1/00 (2006.01)
(31) 202311155502.7 **(32)** 08.09.23 **(33)** CN
(43) 27.03.2025
(72) YANG, Xiaofeng; DU, Xin; CHU, Huichao; MAN, Xiaofei; LIU, Jianjun; ZHI, Hui; DONG, Zhenhai; FU, Yafeng
(74) Alder IP Pty Ltd

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(71) ANSTEEL BEIJING RESEARCH INSTITUTE CO., LTD.; ANSTEEL GROUP MINING CORPORATION LIMITED
(11) AU-A-2023387766
(21) 2023387766 **(22)** 08.12.2023
(54) MINERAL SEPARATION METHOD FOR CARBONATECONTAINING IRON ORE
(51) Int. Cl.
B03C 1/30 (2006.01)
B03C 1/00 (2006.01)
B03D 1/02 (2006.01)
C22B 1/00 (2006.01)
(31) 202311155803.X **(32)** 08.09.23 **(33)** CN
(43) 27.03.2025
(72) DONG, Zhenhai; ZHI, Hui; WANG, Huan; YAO, Qiang; YANG, Xiaofeng; XU, Liansheng
(74) Alder IP Pty Ltd

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(71) AQUAPAK IP LIMITED
(11) AU-A-2023327574
(21) 2023327574 **(22)** 11.08.2023
(54) POLYVINYL ALCOHOL FIBRES AND FIBROUS PRODUCTS
(51) Int. Cl.
D01F 1/02 (2006.01)
D01D 5/08 (2006.01)
D01F 6/14 (2006.01)
(87) WO2024/037984
(31) 22190331.3 **(32)** 13.08.22 **(33)** EP
(43) 22.02.2024
(72) WILLIAMS, John; GRIFFITHS, Sian; ASHWORTH, Robert; EATON, Jack
(74) Baxter Patent Attorneys Pty Ltd

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(71) AQUAPAK IP LIMITED
(11) AU-A-2023327580
(21) 2023327580 **(22)** 11.08.2023
(54) EXTRUDED POLYVINYL ALCOHOL FIBRES AND FIBROUS PRODUCTS
(51) Int. Cl.
D04H 1/56 (2006.01)
D01D 5/08 (2006.01)
D04H 3/007 (2012.01)
D04H 3/033 (2012.01)
D04H 3/105 (2012.01)
D04H 3/11 (2012.01)
D04H 3/12 (2006.01)
D04H 3/14 (2012.01)
D04H 3/16 (2006.01)
(87) WO2024/037987
(31) 22190330.5 **(32)** 13.08.22 **(33)** EP
(43) 22.02.2024
(72) WILLIAMS, John; GRIFFITHS, Sian; ASHWORTH, Robert; EATON, Jack
(74) Baxter Patent Attorneys Pty Ltd

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(71) AQUAPAK IP LIMITED
(11) AU-A-2023327581
(21) 2023327581 **(22)** 11.08.2023
(54) POLYVINYL ALCOHOL FIBRES AND SPUNBOND FIBROUS PRODUCTS
(51) Int. Cl.
D04H 3/007 (2012.01)
D01D 5/08 (2006.01)
D01D 5/098 (2006.01)
D01F 1/10 (2006.01)
D01F 6/14 (2006.01)
D04H 3/14 (2012.01)
(87) WO2024/037988
(31) 22190327.1 **(32)** 13.08.22 **(33)** EP
(43) 22.02.2024
(72) WILLIAMS, John; GRIFFITHS, Sian; ASHWORTH, Robert
(74) Baxter Patent Attorneys Pty Ltd

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(71) AQUAPAK IP LIMITED
(11) AU-A-2023327584
(21) 2023327584 **(22)** 11.08.2023
(54) POLYVINYL ALCOHOL FIBRES AND MELTBLOWN FIBROUS PRODUCTS
(51) Int. Cl.
D04H 1/56 (2006.01)
D01D 5/08 (2006.01)
D01D 5/098 (2006.01)
D01F 1/10 (2006.01)
D01F 6/14 (2006.01)
D04H 3/007 (2012.01)
D04H 3/16 (2006.01)
(87) WO2024/037991
(31) 22190328.9 **(32)** 13.08.22 **(33)** EP
(43) 22.02.2024
(72) WILLIAMS, John; GRIFFITHS, Sian; ASHWORTH, Robert; EATON, Jack
(74) Baxter Patent Attorneys Pty Ltd

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(71) ARCELORMITTAL
(11) AU-A-2022487305
(21) 2022487305 **(22)** 21.11.2022
(54) ELECTROLYSIS APPARATUS FOR THE PRODUCTION OF IRON WITH AN IMPROVED GAS PERMEABLE ANODE PLATE
(51) Int. Cl.
C25C 1/06 (2006.01)
C25C 7/02 (2006.01)
(87) WO2024/110771
(43) 30.05.2024
(72) LAVELAINE DE MAUBEUGE, Hervé
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) ARIANEGROUP GMBH
(11) AU-A-2023353412
(21) 2023353412 **(22)** 20.09.2023
(54) ROCKET ENGINE, METHOD AND SPACECRAFT
(51) Int. Cl.
F02K 9/42 (2006.01)
B64G 1/40 (2006.01)
F02K 9/48 (2006.01)
F02K 9/88 (2006.01)
F02K 9/94 (2006.01)
(87) WO2024/068395
(31) 22197690.5 **(32)** 26.09.22 **(33)** EP
(43) 04.04.2024
(72) HESSEL, Christian
(74) AJ PARK

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(71) ARRIS ENTERPRISES LLC
(11) AU-A-2023338874
(21) 2023338874 **(22)** 24.08.2023
(54) PASSIVE OPTICAL NETWORK
(51) Int. Cl.
H04Q 11/00 (2006.01)
H04L 41/40 (2022.01)
(87) WO2024/054364
(31) 63/403,995 **(32)** 06.09.22 **(33)** US
63/409,153 22.09.22 US
63/415,224 11.10.22 US
63/425,832 16.11.22 US
63/428,352 28.11.22 US
63/432,221 13.12.22 US
63/462,452 27.04.23 US
(43) 14.03.2024
(72) BOWLER, David; GRONVALL, Erik J.; COLELLA, Barry D.; AL-MUFTI, Khalid W.; CHAMBERLAIN, John Charles; PRATT, Bruce C.; WARNER, Shawn W.; RANGANATHAN, Parasuram; GRUBB, David; WANG, Peng; MAHAJAN, Tarkesh R.; MAGALDI, Robert S.
(74) Davies Collison Cave Pty Ltd

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(71) ARRIS ENTERPRISES LLC
(11) AU-A-2023338877
(21) 2023338877 **(22)** 25.08.2023
(54) SYSTEM INCLUDING A PASSIVE OPTICAL NETWORK
(51) Int. Cl.
H04Q 11/00 (2006.01)
(87) WO2024/054367
(31) 63/404,285 **(32)** 07.09.22 **(33)** US
63/409,514 23.09.22 US
63/430,315 05.12.22 US
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63/432,971 15.12.22 US
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63/435,524 27.12.22 US
(43) 14.03.2024
(72) BOWLER, David; EMMENDORFER, Michael J.; AL-MUFTI, Khalid W.;

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PRATT, Bruce C.; CHAMBERLAIN, John Charles; GRONVALL, Erik J.
(74) Davies Collison Cave Pty Ltd

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(71) ARSENAL BIOSCIENCES, INC.
(11) AU-A-2023342285
(21) 2023342285 **(22)** 15.09.2023
(54) IMMUNE CELLS WITH COMBINATION GENE PERTURBATIONS
(51) Int. Cl.
C12N 15/113 (2010.01)
(87) WO2024/059824
(31) 63/376,041 **(32)** 16.09.22 **(33)** US
(43) 21.03.2024
(72) LITTERMAN, Adam; SINGH, Brenal; GAGNON, John; DETOMASO, David; CASS, Ashley; GRAY-RUPP, Levi; WILLIAMS, Samuel
(74) FB Rice Pty Ltd

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(71) ARVINAS OPERATIONS, INC.; PFIZER INC.
(11) AU-A-2023336057
(21) 2023336057 **(22)** 30.08.2023
(54) DOSAGE REGIMENS OF ESTROGEN RECEPTOR DEGRADERS
(51) Int. Cl.
A61K 31/496 (2006.01)
A61K 31/506 (2006.01)
A61K 31/519 (2006.01)
A61P 35/00 (2006.01)
A61P 35/04 (2006.01)
(87) WO2024/049926
(31) 63/402,651 **(32)** 31.08.22 **(33)** US
63/443,892 07.02.23 US
63/454,422 24.03.23 US
63/454,485 24.03.23 US
63/508,503 15.06.23 US
(43) 07.03.2024
(72) PECK, Ronald; GOUGH, Sheryl Maxine; FLANAGAN, John J.; ANDERSON, Sibyl; TAYLOR, Ian Charles Anthony; SMITH, Julia Perkins; TAN, Weiwei
(74) FPA Patent Attorneys Pty Ltd

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(71) ASTELLAS ENGINEERED SMALL MOLECULES US, INCORPORATED
(11) AU-A-2023366846
(21) 2023366846 **(22)** 24.10.2023
(54) FUSED AZINES AS DYNAMIN-1-LIKE PROTEIN INHIBITORS AND USES THEREOF
(51) Int. Cl.
C07D 405/14 (2006.01)
A61K 31/4709 (2006.01)
A61P 9/00 (2006.01)
A61P 13/00 (2006.01)
A61P 35/00 (2006.01)
A61P 37/00 (2006.01)
C07D 417/04 (2006.01)
C07D 417/14 (2006.01)
(87) WO2024/091489
(31) 63/419,132 **(32)** 25.10.22 **(33)** US
(43) 02.05.2024
(72) MA, Bin; FURUYA, Takeru
(74) RnB IP Pty Ltd

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(71) ASTRAZENECA AB
(11) AU-A-2023321653
(21) 2023321653 **(22)** 11.08.2023
(54) COMBINATION THERAPIES FOR TREATMENT OF CIRRHOSIS WITH PORTAL HYPERTENSION
(51) Int. Cl.
A61K 31/497 (2006.01)
A61K 31/70 (2006.01)
A61P 1/16 (2006.01)
(87) WO2024/033519
(31) 63/371,228 **(32)** 12.08.22 **(33)** US
(43) 15.02.2024
(72) AMBERY, Philip; GREASLEY, Peter
(74) Maxwells Patent & Trade Mark Attorneys Pty Ltd

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(71) ATAI THERAPEUTICS, INC.
(11) AU-A-2023367107
(21) 2023367107 **(22)** 26.10.2023
(54) N-N-DIMETHYLTRYPTAMINE (DMT) AND DMT ANALOG COMPOSITIONS, METHODS OF MAKING, AND METHODS OF USE THEREOF
(51) Int. Cl.
A61K 31/395 (2006.01)
A61K 31/40 (2006.01)
A61K 31/404 (2006.01)
(87) WO2024/092106
(31) 17/974,443 **(32)** 26.10.22 **(33)** US
(43) 02.05.2024
(72) RAO, Srinivas G; SHORT, Glenn; FAWAZ, Majed; PATEL, Prerak; PATEL, Santnu
(74) Dennemeyer & Associates

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(71) AUSTRALIAN NATIONAL UNIVERSITY
(11) AU-A-2023337225
(21) 2023337225 **(22)** 08.09.2023
(54) REFLECTOR PANEL ASSEMBLY
(51) Int. Cl.
B32B 3/30 (2006.01)
B32B 15/18 (2006.01)
B32B 17/06 (2006.01)
F24S 20/00 (2018.01)
F24S 23/00 (2018.01)
F24S 23/70 (2018.01)
(87) WO2024/050607
(31) 2022902611 **(32)** 09.09.22 **(33)** AU
(43) 14.03.2024
(72) POTTAS, Johannes Joubert; COVENTRY, Joseph Sydney; POTTAS, Roelof Johannes Hendrik
(74) Griffith Hack

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(71) AUTOBAHN THERAPEUTICS, INC.
(11) AU-A-2023338550
(21) 2023338550 **(22)** 08.09.2023
(54) METHODS FOR THE TREATMENT OF DEPRESSION
(51) Int. Cl.
A61K 31/165 (2006.01)
A61K 31/015 (2006.01)
A61K 31/10 (2006.01)
A61K 31/135 (2006.01)
A61K 31/137 (2006.01)
A61K 31/192 (2006.01)
A61K 31/216 (2006.01)
A61K 31/275 (2006.01)
A61K 31/33 (2006.01)
A61K 31/343 (2006.01)
A61K 31/381 (2006.01)
A61K 31/395 (2006.01)
A61K 31/422 (2006.01)
A61K 31/4525 (2006.01)
A61P 25/00 (2006.01)
A61P 25/02 (2006.01)
A61P 25/22 (2006.01)
A61P 25/24 (2006.01)
(87) WO2024/054996
(31) 63/375,192 **(32)** 09.09.22 **(33)** US
(43) 14.03.2024
(72) FINNEY, Kevin; DAVAR, Gudarz; GANDHI, Rohan
(74) FB Rice Pty Ltd

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(71) AVENDA HEALTH, INC.
(11) AU-A-2023347382
(21) 2023347382 **(22)** 22.09.2023
(54) CANCER MAPPING USING MACHINE LEARNING
(51) Int. Cl.
G06T 7/00 (2017.01)
G06N 20/00 (2019.01)
G01R 33/54 (2006.01)
G06T 7/11 (2017.01)
(87) WO2024/064926
(31) 63/376,938 **(32)** 23.09.22 **(33)** US
63/385,757 01.12.22 US
(43) 28.03.2024
(72) NATARAJAN, Shyam; PRIESTER, Alan Martin; SHUBERT, Joshua Dylan; BONG, Jeremy Tet Kong; PUSEY, Brittany Nan
(74) James & Wells Intellectual Property

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(71) AVENT, INC.
(11) AU-A-2023342787
(21) 2023342787 **(22)** 12.09.2023
(54) SYSTEM, APPARATUS, AND METHOD FOR RELIEVING ABDOMINAL DISTENTION
(51) Int. Cl.
A61J 15/00 (2006.01)
A61M 5/31 (2006.01)
(87) WO2024/059023
(31) 63/405,555 **(32)** 12.09.22 **(33)** US
(43) 21.03.2024
(72) POSEY, Emily; WARTAN, Madeline; CARY, Mariann; MCMICHAEL, Donald J.; ROBERTS, Anthony D.; CROWE, Tyler; KENT, Lesley
(74) GLMR

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(71) BARINTHUS THERAPEUTICS NORTH AMERICA, INC.; THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES
(11) AU-A-2023367780
(21) 2023367780 **(22)** 25.10.2023
(54) SELF-ASSEMBLING NANOPARTICLES
(51) Int. Cl.
A61K 47/69 (2017.01)
(87) WO2024/092030
(31) 63/380,931 **(32)** 25.10.22 **(33)** US

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(43) 02.05.2024
(72) LYNN, Geoffrey Martin; GARLISS, Christopher Martin O'Brien; ISHIZUKA, Andrew Scott; WELLS, Hugh Clarke
(74) Madderns Pty Ltd

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(71) BAR PHARMACEUTICALS SOCIETA' A RESPONSABILITA' LIMITATA
(11) AU-A-2023343419
(21) 2023343419 **(22)** 12.09.2023
(54) PHARMACEUTICAL COMBINATION COMPRISING A CHOLANE DERIVATIVE AND A STATIN OR URSODESOXYCHOLIC ACID
(51) Int. Cl.
A61K 31/575 (2006.01)
A61K 31/40 (2006.01)
A61P 1/16 (2006.01)
(87) WO2024/057195
(31) 102022000018669 **(32)** 13.09.22 **(33)** IT
(43) 21.03.2024
(72) FIORUCCI, Stefano; ZAMPELLA, Angela
(74) Spruson & Ferguson

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(71) BASF SE
(11) AU-A-2023346584
(21) 2023346584 **(22)** 15.09.2023
(54) AZOLE PESTICIDAL COMPOUNDS
(51) Int. Cl.
C07D 231/40 (2006.01)
A01N 43/56 (2006.01)
A01N 43/78 (2006.01)
C07D 417/12 (2006.01)
C07D 417/14 (2006.01)
(87) WO2024/061768
(31) 22196425.7 **(32)** 19.09.22 **(33)** EP
(43) 28.03.2024
(72) CHAUDHURI, Rupsha; MAITY, Pulakesh; DEFIEBER, Christian; HANDORE, Kishor; ADISECHAN, Ashokkumar; WINTER, Christian Harald; KOERBER, Karsten; WAKEHAM, Matthew Charles Linford
(74) Griffith Hack

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(71) BASF SE
(11) AU-A-2023346730
(21) 2023346730 **(22)** 18.09.2023
(54) STORAGE STABLE GLUFOSINATE FORMULATION
(51) Int. Cl.
A01N 57/20 (2006.01)
A01N 25/02 (2006.01)
A01P 13/02 (2006.01)
(87) WO2024/061832
(31) 22196470.3 **(32)** 20.09.22 **(33)** EP
23167992.9 14.04.23 EP
(43) 28.03.2024
(72) KIENLE, Marcel Patrik; MEIER, Wolfgang; SCHREIECK, Jochen; KUHN, Steffen; MEINERS, Ingo; TAN, Siyuan; ZAGAR, Cyrill
(74) Griffith Hack

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(71) BAYLOR COLLEGE OF MEDICINE
(11) AU-A-2023334602
(21) 2023334602 **(22)** 31.08.2023
(54) MODULATION OF B-CELL TRANSLOCATION GENE 1 (BTG1) FOR USE IN ADOPTIVE CELL THERAPY
(51) Int. Cl.
A61K 35/17 (2015.01)
A61K 35/15 (2015.01)
A61P 31/00 (2006.01)
A61P 35/00 (2006.01)
A61P 37/00 (2006.01)
C12N 5/10 (2006.01)
C12N 15/11 (2006.01)
A61K 48/00 (2006.01)
C12N 9/22 (2006.01)
C12N 15/113 (2010.01)
C12N 15/63 (2006.01)
(87) WO2024/049971
(31) 63/374,447 **(32)** 02.09.22 **(33)** US
(43) 07.03.2024
(72) METELITSA, Leonid, S.; HECZEY, Andras; XU, Xin; COURTNEY, Amy, N.
(74) FB Rice Pty Ltd

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(71) BEAUMONT, W.
(11) AU-A-2023343783
(21) 2023343783 **(22)** 14.09.2023
(54) MODULAR ROOF STRUCTURE
(51) Int. Cl.
E04H 6/02 (2006.01)
E04B 7/02 (2006.01)
E04D 13/04 (2006.01)
E04D 13/064 (2006.01)
F24S 20/67 (2018.01)
F24S 25/12 (2018.01)
F24S 25/20 (2018.01)
F24S 40/44 (2018.01)
H02S 20/23 (2014.01)
H02S 30/10 (2014.01)
(87) WO2024/055072
(31) 2022902658 **(32)** 14.09.22 **(33)** AU
(43) 21.03.2024
(72) BEAUMONT, William
(74) FOUNDRY INTELLECTUAL PROPERTY PTY LTD

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(71) BEIJING GOLDWIND SCIENCE & CREATION WINDPOWER EQUIPMENT CO., LTD.
(11) AU-A-2023418254
(21) 2023418254 **(22)** 27.07.2023
(54) CLEARANCE ABNORMALITY DETECTION METHOD AND APPARATUS FOR WIND TURBINE GENERATOR SET
(51) Int. Cl.
F03D 17/00 (2016.01)
(87) WO2024/139207
(31) 202211734407.8 **(32)** 30.12.22 **(33)** CN
(43) 04.07.2024
(72) SU, Suping; ZHANG, Wenlei; LI, Jiaying; FANG, Haitao
(74) Madderns Pty Ltd

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(71) BEIJING SANKUAI ONLINE TECHNOLOGY CO., LTD
(11) AU-A-2023417921
(21) 2023417921 **(22)** 11.07.2023
(54) ROTOR AND ROTORCRAFT
(51) Int. Cl.
B64C 27/473 (2006.01)
B64C 27/467 (2006.01)
(87) WO2024/139168
(31) 202211679092.1 **(32)** 26.12.22 **(33)** CN
(43) 04.07.2024
(72) ZHAO, Longzhi; XU, Lijun; ZHANG, Yifei; ZHAO, Tianming
(74) Madderns Pty Ltd

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(71) BICARA THERAPEUTICS INC.
(11) AU-A-2023356326
(21) 2023356326 **(22)** 05.10.2023
(54) MULTISPECIFIC PROTEINS AND RELATED METHODS
(51) Int. Cl.
A61P 35/00 (2006.01)
C07K 16/28 (2006.01)
C07K 16/30 (2006.01)
(87) WO2024/077118
(31) 63/413,765 **(32)** 06.10.22 **(33)** US
(43) 11.04.2024
(72) GOSWAMI, Arvind Vittal; BHATNAGAR, Jaya; NAIR, Reshmi; SOMASUNDARAM, Veena; TAN, Seng-Lai; VARSHNEY, Avanish Kumar
(74) Griffith Hack

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(71) BIOCYTOGEN PHARMACEUTICALS (BEIJING) CO., LTD.
(11) AU-A-2023340345
(21) 2023340345 **(22)** 15.09.2023
(54) GENETICALLY MODIFIED NON-HUMAN ANIMALS AND METHODS FOR PRODUCING HEAVY-CHAIN ANTIBODIES
(51) Int. Cl.
C12N 15/85 (2006.01)
A01K 67/027 (2024.01)
(87) WO2024/056044
(31) PCT/CN2022/119188 **(32)** 16.09.22 **(33)** CN
PCT/CN2022/136246 02.12.22 CN
(43) 21.03.2024
(72) HU, Yiqing; ZHANG, Qi; ZHANG, Lijun; ZHANG, Yabo; ZHAO, Huizhen; YAO, Jiawei; SHEN, Yuelei
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) BIOFIRE DIAGNOSTICS, LLC
(11) AU-A-2023334144
(21) 2023334144 **(22)** 29.08.2023
(54) DYNAMIC MELT DETECTION
(51) Int. Cl.
C12Q 1/686 (2018.01)
G01N 21/64 (2006.01)
(87) WO2024/050362
(31) 63/374,350 **(32)** 01.09.22 **(33)** US
(43) 07.03.2024
(72) BAER, Jessica K.; DUBA, David; HEMMERT, Andrew C.; JONES, Jay D.; ROBBINS, Thomas Charles; FRANCIS, James Nicholas
(74) PHILLIPS ORMONDE FITZPATRICK

PCT applications which have entered the National Phase - Name Index cont'd

(71) BIOHAVEN THERAPEUTICS LTD.
(11) AU-A-2023334171
(21) 2023334171 **(22)** 30.08.2023
(54) COMBINATION THERAPIES INCLUDING METAL CHANNEL ACTIVATORS AND NMDA RECEPTOR ANTAGONISTS
(51) Int. Cl.
A61K 45/06 (2006.01)
A61K 31/135 (2006.01)
A61K 31/27 (2006.01)
A61P 25/00 (2006.01)
A61P 29/00 (2006.01)
C07D 235/30 (2006.01)
C07D 405/04 (2006.01)
C07D 471/04 (2006.01)
(87) WO2024/050389
(31) 63/402,416 **(32)** 30.08.22 **(33)** US
(43) 07.03.2024
(72) CORIC, Vladimir
(74) AJ PARK

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(71) BIOLOGICAL E LIMITED
(11) AU-A-2023346659
(21) 2023346659 **(22)** 19.09.2023
(54) METHOD FOR THE PURIFICATION OF CAPSULAR POLYSACCHARIDES
(51) Int. Cl.
C08B 37/00 (2006.01)
A61K 39/00 (2006.01)
C08L 5/00 (2006.01)
(87) WO2024/062494
(31) 202241053370 **(32)** 19.09.22 **(33)** IN
(43) 28.03.2024
(72) MACHA, Chandra shekar; KOWLAKUNTLA, Eswara Reddy; KUMAR, Sudeep; PARADKAR, Vikram Madhusudan; MANTENA, Narender Dev; DATLA, Mahima
(74) Griffith Hack

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(71) BIOMÉRIEUX
(11) AU-A-2023323860
(21) 2023323860 **(22)** 10.08.2023
(54) METHOD FOR DETERMINING THE VIRAL OR BACTERIAL NATURE OF AN INFECTION
(51) Int. Cl.
C12Q 1/6883 (2018.01)
(87) WO2024/033461
(31) FR2208298 **(32)** 12.08.22 **(33)** FR
22205313.4 03.11.22 EP
(43) 15.02.2024
(72) MOMMERT, Marine; BRENGEL PESCE, Karen; ORIOL, Guy; GUICHARD, Audrey
(74) FPA Patent Attorneys Pty Ltd

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(71) BIONTECH SE; TRON – TRANSLATIONALE ONKOLOGIE AN DER UNIVERSITÄTSMEDIZIN DER JOHANNES GUTENBERG-UNIVERSITÄT MAINZ GEMEINNÜTZIGE GMBH
(11) AU-A-2023342641
(21) 2023342641 **(22)** 15.09.2023
(54) SYSTEMS AND COMPOSITIONS COMPRISING TRANS-AMPLIFYING RNA VECTORS WITH MIRNA
(51) Int. Cl.
C12N 15/86 (2006.01)
C12N 15/87 (2006.01)
(87) WO2024/056856
(31) PCT/EP2022/075653 **(32)** 15.09.22 **(33)** EP
PCT/EP2023/073256 24.08.23 EP
(43) 21.03.2024
(72) BEISSERT, Tim; PERKOVIC, Mario; SAHIN, Ugur; YILDIZ, Aysegül
(74) FB Rice Pty Ltd

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(71) BITE NINJA, INC.
(11) AU-A-2023377610
(21) 2023377610 **(22)** 20.10.2023
(54) SHARED RESOURCE ALLOCATION FOR MULTIPLE QUEUE PROCESSING
(51) Int. Cl.
G06Q 10/06 (2023.01)
G06Q 10/0631 (2023.01)
G06Q 50/10 (2012.01)
G06F 3/048 (2013.01)
G06Q 10/02 (2012.01)
G06Q 10/04 (2023.01)
H04M 3/523 (2006.01)
(87) WO2024/102572
(31) 63/423,794 **(32)** 08.11.22 **(33)** US
18/490,694 19.10.23 US
(43) 16.05.2024
(72) CLEM, III, William Charles; MILLWARD, Anthony Scott
(74) IP GATEWAY PATENT & TRADE MARK ATTORNEYS PTY LTD

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(71) BLANCO GMBH + CO KG
(11) AU-A-2023362180
(21) 2023362180 **(22)** 04.09.2023
(54) CLOSURE ELEMENT FOR A DRAIN OPENING OF A SANITARY BASIN
(51) Int. Cl.
E03C 1/262 (2006.01)
E03C 1/23 (2006.01)
(87) WO2024/083286
(31) 10 2022 211 033.1 **(32)** 18.10.22 **(33)** DE
(43) 25.04.2024
(72) KOSKA, Reinhard; FRANK, Manuel; KAHL-MARBURGER, Georg
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) BLUENEWABLES SL
(11) AU-A-2023348377
(21) 2023348377 **(22)** 26.09.2023
(54) FOUNDATION DEVICE FOR AN OFFSHORE WIND TURBINE TOWER
(51) Int. Cl.
B63B 43/06 (2006.01)
B63B 77/00 (2020.01)
F03D 13/25 (2016.01)
(87) WO2024/069032
(31) P202230821 **(32)** 26.09.22 **(33)** ES
(43) 04.04.2024
(72) COUÑAGO LORENZO, Bernardino; SAINZ ÁVILA, Óscar; FERNÁNDEZ GIL, Ismael; HERNÁNDEZ BLANCO, Sergio; BARAHONA OVIEDO, Cecilio; ARÉVALO PÉREZ, Alfonso
(74) Dark IP

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(71) BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM; ASCENSION HEALTH ALLIANCE
(11) AU-A-2023347946
(21) 2023347946 **(22)** 20.09.2023
(54) MULTIFUNCTION NEWBORN GAVAGE TUBE
(51) Int. Cl.
A61J 15/00 (2006.01)
A61B 5/01 (2006.01)
A61B 5/02 (2006.01)
A61B 5/285 (2021.01)
A61B 5/318 (2021.01)
(87) WO2024/064738
(31) 63/376,356 **(32)** 20.09.22 **(33)** US
(43) 28.03.2024
(72) MORRIS, Alissa; ENGLERT, Angie; GROVES, Alan; RYLANDER, Christopher; SALAFIAN, Iman
(74) FB Rice Pty Ltd

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(71) BOEHRINGER INGELHEIM INTERNATIONAL GMBH
(11) AU-A-2023368953
(21) 2023368953 **(22)** 26.10.2023
(54) HETEROCYCLIC COMPOUNDS AS STING ANTAGONISTS
(51) Int. Cl.
C07D 471/04 (2006.01)
A61K 31/437 (2006.01)
A61P 37/00 (2006.01)
(87) WO2024/089155
(31) 63/381,349 **(32)** 28.10.22 **(33)** US
22210157.8 29.11.22 EP
(43) 02.05.2024
(72) HOFFMANN, Matthias; BRAMBILLA, Marta; DAHMANN, Georg; GROSS, Patrick; HANDSCHUH, Sandra Ruth; LI, Jun; MAYER, Camilla; NAR, Herbert; OOST, Thorsten
(74) Spruson & Ferguson

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(71) BONAFIDE HEALTH, LLC
(11) AU-A-2022479845
(21) 2022479845 **(22)** 30.09.2022
(54) PROBIOTIC AND FOLIC ACID COMPOSITIONS AND METHODS OF USING
(51) Int. Cl.
A61K 35/747 (2015.01)
A61K 9/00 (2006.01)
A61P 13/00 (2006.01)
A61P 15/02 (2006.01)
(87) WO2024/072421
(43) 04.04.2024
(72) KOMOROWSKI, James R.; SYLLA, Sarah; BERNSLEY, Devon
(74) Spruson & Ferguson

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(71) BOXIECAT LLC
(11) AU-A-2023342379
(21) 2023342379 **(22)** 15.09.2023
(54) CAT LITTER CONTAINING A FLUORESCENT CAT ATTRACTANT
(51) Int. Cl.
A01K 1/015 (2006.01)

PCT applications which have entered the National Phase - Name Index cont'd

A61L 15/56 (2006.01)
B01J 20/28 (2006.01)
B01J 20/32 (2006.01)
B29B 9/12 (2006.01)
C11D 3/42 (2006.01)
B01J 20/12 (2006.01)
C09D 101/26 (2006.01)
(87) WO2024/059856
(31) 63/406,785 **(32)** 15.09.22 **(33)** US
(43) 21.03.2024
(72) KERSHMAN, Alvin; SHEAR, Jeff; LINZE, Doreen; LEWIS, William
(74) Spruson & Ferguson

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(71) BRACCO SUISSE SA
(11) AU-A-2023413838
(21) 2023413838 **(22)** 21.12.2023
(54) IMAGING A BODY-PART BASED ON SIMULATED BLINKING OF CONTRAST PARTICLES PRESENT THEREIN
(51) Int. Cl.
A61B 8/00 (2006.01)
(87) WO2024/133663
(31) 22215895.8 **(32)** 22.12.22 **(33)** EP
(43) 27.06.2024
(72) TERNIFI, Redouane; GAUD, Emmanuel
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) BRICKWORKS BUILDING PRODUCTS PTY LTD
(11) AU-A-2023337222
(21) 2023337222 **(22)** 08.09.2023
(54) LIGHTWEIGHT CONCRETE COMPOSITIONS AND USES OF SAME
(51) Int. Cl.
C04B 28/04 (2006.01)
C04B 20/00 (2006.01)
C04B 20/02 (2006.01)
C04B 111/00 (2006.01)
C04B 111/40 (2006.01)
(87) WO2024/050604
(31) 2022902606 **(32)** 09.09.22 **(33)** AU
(43) 14.03.2024
(72) GAINEY, Lloyd, James; CABALLERO, Althea, Mai, Neo
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) BRIDGE MEDICINES
(11) AU-A-2023338045
(21) 2023338045 **(22)** 18.08.2023
(54) INHIBITORS OF ENL/AF9 YEATS AND FLT3
(51) Int. Cl.
A61K 31/395 (2006.01)
A61K 31/404 (2006.01)
A61K 31/407 (2006.01)
A61K 31/33 (2006.01)
(87) WO2024/054749
(31) 63/404,659 **(32)** 08.09.22 **(33)** US
(43) 14.03.2024
(72) LADDUWAHETTY, Tammy; DEGORCE, Sebastien, L.; VACCA, Joseph, P.
(74) Adams Pluck

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(71) BRIGADIER MOTORS, S.L.
(11) AU-A-2022477269
(21) 2022477269 **(22)** 09.09.2022
(54) ROLL CAGE KIT FOR MOTOR VEHICLES WITH A CHASSIS AND VEHICLE COMPRISING THE KIT
(51) Int. Cl.
B60R 21/13 (2006.01)
B62D 23/00 (2006.01)
B62D 31/02 (2006.01)
(87) WO2024/052581
(43) 14.03.2024
(72) PORRAS BRACERAS, Jairo
(74) Zone Patents Limited

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(71) BRIGHTSEED, INC.
(11) AU-A-2023347164
(21) 2023347164 **(22)** 18.09.2023
(54) COMPOSITIONS AND METHODS FOR IMPROVING GUT PERMEABILITY
(51) Int. Cl.
A61K 31/165 (2006.01)
A61P 1/00 (2006.01)
A61P 1/14 (2006.01)
(87) WO2024/064102
(31) 63/407,950 **(32)** 19.09.22 **(33)** US
(43) 28.03.2024
(72) CHAE, Lee Heil; AINA-BADEJO, Danielle
(74) Spruson & Ferguson

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(71) BTQ AG
(11) AU-A-2023327708
(21) 2023327708 **(22)** 14.08.2023
(54) IMPROVED BLOCKCHAIN SYSTEM AND METHOD
(51) Int. Cl.
H04L 9/30 (2006.01)
H04L 9/00 (2022.01)
H04L 9/32 (2006.01)
(87) WO2024/038028
(31) 22190335.4 **(32)** 14.08.22 **(33)** EP
(43) 22.02.2024
(72) KUO, Po-Chun; CHENG, Chen-Mou
(74) FB Rice Pty Ltd

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(71) BUNGE LODERS CROKLAAN B.V.
(11) AU-A-2023400697
(21) 2023400697 **(22)** 29.11.2023
(54) VEGAN ICE CREAM FORMULATION
(51) Int. Cl.
A23G 9/04 (2006.01)
A23G 9/32 (2006.01)
A23G 9/38 (2006.01)
A23G 9/42 (2006.01)
(87) WO2024/115543
(31) 22210642.9 **(32)** 30.11.22 **(33)** EP
(43) 06.06.2024
(72) VERKUIJL, Bastiaan Jeroen Victor
(74) MBIP

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(71) BUSHEL PLUS LTD.
(11) AU-A-2023326102
(21) 2023326102 **(22)** 15.08.2023
(54) GRAIN LOSS DETECTORS FOR A COMBINE HARVESTER
(51) Int. Cl.
A01D 41/127 (2006.01)
(87) WO2024/036401
(31) 63/398,108 **(32)** 15.08.22 **(33)** US
(43) 22.02.2024
(72) KRINGE, Marcel
(74) Summit IP

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(71) BYD COMPANY LIMITED
(11) AU-A-2024204406
(21) 2024204406 **(22)** 19.01.2024
(54) VEHICLE CONTROL SYSTEM, VEHICLE CONTROL METHOD, CONTROLLER, AND VEHICLE
(51) Int. Cl.
B60W 10/12 (2012.01)
B60W 30/02 (2012.01)
B60W 30/18 (2012.01)
B60W 40/12 (2012.01)
(31) 202311170393.6 **(32)** 11.09.23 **(33)** CN
(43) 27.03.2025
(72) YANG, Dongsheng; LU, Guoxiang; ZHUANG, Xuli; TANG, Lizhong; XU, Boliang; LEI, Zhaoyu
(74) Madderns Pty Ltd

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(71) BYD COMPANY LIMITED
(11) AU-A-2024204523
(21) 2024204523 **(22)** 19.01.2024
(54) VEHICLE CONTROL SYSTEM AND METHOD, AND VEHICLE
(51) Int. Cl.
B60W 50/02 (2012.01)
B60W 20/50 (2016.01)
B60W 50/029 (2012.01)
(31) 202311164098.X **(32)** 11.09.23 **(33)** CN
(43) 27.03.2025
(72) YANG, Dongsheng; LU, Guoxiang; ZHUANG, Xuli; TANG, Lizhong; XU, Boliang; LEI, Zhaoyu
(74) Madderns Pty Ltd

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(71) CALIENT.AI INC.
(11) AU-A-2023347803
(21) 2023347803 **(22)** 17.09.2023
(54) MEMS TENSIONING STRUCTURES AND METHODS OF MANUFACTURE
(51) Int. Cl.
B81B 7/04 (2006.01)
B81B 3/00 (2006.01)
(87) WO2024/064595
(31) 63/376,335 **(32)** 20.09.22 **(33)** US
18/468,687 16.09.23 US
(43) 28.03.2024
(72) HOCKING, Andrew
(74) WRAYS PTY LTD

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(71) CANADIAN NATURAL UPGRADING LIMITED
(11) AU-A-2023345376
(21) 2023345376 **(22)** 20.09.2023
(54) HYDRAULIC CENTRE PINTLE PULLER
(51) Int. Cl.
E02F 9/00 (2006.01)
E02F 3/46 (2006.01)
E02F 3/58 (2006.01)

PCT applications which have entered the National Phase - Name Index cont'd

E02F 9/14 (2006.01)
(87) WO2024/059939
(31) 63/376,468 **(32)** 21.09.22 **(33)** US
(43) 28.03.2024
(72) WELLER, Jason; SCHILLER, Jeff; PANDEY, Vaibhav; MACKOWSKI, Andrew; EZEKIEL, Michael
(74) Spruson & Ferguson

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(71) CARTESIAN THERAPEUTICS, INC.
(11) AU-A-2023321906
(21) 2023321906 **(22)** 11.08.2023
(54) COMPOSITIONS AND METHODS RELATED TO IMMUNOGLOBULIN PROTEASES AND FUSIONS THEREOF
(51) Int. Cl.
A61P 37/06 (2006.01)
A61K 38/16 (2006.01)
C12N 9/64 (2006.01)
(87) WO2024/036324
(31) 63/397,383 **(32)** 11.08.22 **(33)** US
63/406,829 15.09.22 US
63/413,005 04.10.22 US
63/437,523 06.01.23 US
63/443,130 03.02.23 US
63/463,942 04.05.23 US
(43) 15.02.2024
(72) LI, Ning; KISHIMOTO, Takashi, Kei
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) CASCADE CORPORATION
(11) AU-A-2023347557
(21) 2023347557 **(22)** 22.09.2023
(54) EXTENDED SWING FRAME ROLL CLAMP
(51) Int. Cl.
B66F 9/18 (2006.01)
B25J 15/00 (2006.01)
B66F 9/12 (2006.01)
(87) WO2024/064348
(31) 63/376,731 **(32)** 22.09.22 **(33)** US
(43) 28.03.2024
(72) SEAGRAVES, Angela Corrine; LOGSDON, Anthony Michael; PEARMAN, Cory Evan
(74) Davies Collison Cave Pty Ltd

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(71) CASE WESTERN RESERVE UNIVERSITY
(11) AU-A-2023347431
(21) 2023347431 **(22)** 20.09.2023
(54) NEAR-INFRARED IMAGING AGENT AND USES THEREOF
(51) Int. Cl.
A61B 5/00 (2006.01)
A61P 35/00 (2006.01)
G01N 21/64 (2006.01)
(87) WO2024/064233
(31) 63/376,377 **(32)** 20.09.22 **(33)** US
(43) 28.03.2024
(72) BRADY-KALNAY, Susann; JOHANSEN, Mette
(74) Oxygene IP

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(71) CATERPILLAR INC.
(11) AU-A-2023342003
(21) 2023342003 **(22)** 30.08.2023
(54) SYSTEMS AND METHODS FOR MACHINE USAGE VISUALIZATION
(51) Int. Cl.
G06Q 10/0633 (2023.01)
G06Q 50/08 (2012.01)
G07C 3/00 (2006.01)
(87) WO2024/059436
(31) 17/945,923 **(32)** 15.09.22 **(33)** US
(43) 21.03.2024
(72) MAESTRANZI, Theodore; MCBRIDE, Shane C.
(74) Patent Attorney Services

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(71) CELLTRION, INC.
(11) AU-A-2023334342
(21) 2023334342 **(22)** 29.08.2023
(54) DUAL-STRENGTH ODOR-SHIELDING PHARMACEUTICAL COMPOSITION
(51) Int. Cl.
A61K 9/28 (2006.01)
A61K 31/4245 (2006.01)
A61K 31/4422 (2006.01)
(87) WO2024/049155
(31) 10-2022-0109723 **(32)** 31.08.22 **(33)** KR
(43) 07.03.2024
(72) LEE, Tae Yoon; LEE, Byung Hoon; HAN, Eun Ji; JEONG, Da Wo; CHO, Woo Hyung; HAN, Sung Kyun; HONG, Eon Pyo
(74) Chrysiliou IP

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(71) CHENGDU AODA BIOTECHNOLOGY CO., LTD
(11) AU-A-2023320773
(21) 2023320773 **(22)** 09.08.2023
(54) LONG-ACTING INSULIN COMPOUND
(51) Int. Cl.
C07K 14/62 (2006.01)
A61K 38/28 (2006.01)
A61P 3/10 (2006.01)
(87) WO2024/032651
(31) 202210956232.9 **(32)** 10.08.22 **(33)** CN
(43) 15.02.2024
(72) ZHOU, Shuliang; WANG, Peng; DENG, Lan
(74) MBIP

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(71) CHENGDU AODA BIOTECHNOLOGY CO., LTD
(11) AU-A-2023321572
(21) 2023321572 **(22)** 07.08.2023
(54) LONG-ACTING DUAL-AGONIST COMPOUND
(51) Int. Cl.
C07K 14/605 (2006.01)
(87) WO2024/032523
(31) 202210957875.5 **(32)** 10.08.22 **(33)** CN
(43) 15.02.2024
(72) ZHOU, Shuliang; WANG, Peng; DENG, Lan
(74) MBIP

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(71) CHEVRON U.S.A. INC.
(11) AU-A-2023324673
(21) 2023324673 **(22)** 15.08.2023
(54) COMPOSITIONS AND METHODS OF USING A COMPLEXING AGENT
(51) Int. Cl.
C09K 8/594 (2006.01)
C09K 8/94 (2006.01)
E21B 21/14 (2006.01)
(87) WO2024/039676
(31) 63/398,182 **(32)** 15.08.22 **(33)** US
(43) 22.02.2024
(72) CHANDRASEKHAR, Sriram; AMINZADEH GOHARRIZI, Behdad; PINNAWALA, Gayani W.; LINNEMEYER, Harold Charles; JIN, Julia Liu; GRIFFITH, Christopher Adam
(74) FPA Patent Attorneys Pty Ltd

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(71) CHEVRON U.S.A. INC.
(11) AU-A-2023325303
(21) 2023325303 **(22)** 17.08.2023
(54) PROCESS TO CAPTURE AND STORE METHANE AND NATURAL GAS FROM PRODUCING FACILITIES USING SOLID SORBENTS
(51) Int. Cl.
F17D 1/02 (2006.01)
F17C 11/00 (2006.01)
B01J 20/02 (2006.01)
F17B 1/00 (2006.01)
(87) WO2024/040196
(31) 63/371,739 **(32)** 17.08.22 **(33)** US
(43) 22.02.2024
(72) DUTRA E MELLO, Marcus Vinicius; CHINN, Daniel; HERNANDEZ, Jennifer M.
(74) FPA Patent Attorneys Pty Ltd

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(71) CHEVRON U.S.A. INC.
(11) AU-A-2023356889
(21) 2023356889 **(22)** 03.10.2023
(54) INTEGRATED FLUID LEAK DETECTION USING MULTIPLE SENSORS
(51) Int. Cl.
G01M 3/16 (2006.01)
G06F 3/06 (2006.01)
G06N 5/04 (2023.01)
G06N 7/01 (2023.01)
G01M 3/24 (2006.01)
G01M 3/38 (2006.01)
G06F 3/048 (2013.01)
G06V 10/10 (2022.01)
G06V 20/40 (2022.01)
H04N 23/20 (2023.01)
(87) WO2024/076949
(31) 63/413,126 **(32)** 04.10.22 **(33)** US
(43) 11.04.2024
(72) SALMATANIS, Nikolaos Ioannis; JENKINS, Tyrone; BOWDEN, Larry A., Jr.
(74) Davies Collison Cave Pty Ltd

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(71) CHEVRON U.S.A. INC.
(11) AU-A-2023356892
(21) 2023356892 **(22)** 03.10.2023
(54) FLUID LEAK DETECTION, LOCALIZATION, AND QUANTIFICATION WITH CONFIDENCE
(51) Int. Cl.
G06T 1/00 (2006.01)
G06T 7/00 (2017.01)
(87) WO2024/076952

PCT applications which have entered the National Phase - Name Index cont'd

(31) 63/413,090 **(32)** 04.10.22 **(33)** US
(43) 11.04.2024
(72) SALMATANIS, Nikolaos Ioannis; JENKINS, Tyrone; BOWDEN, Larry A., Jr.
(74) Davies Collison Cave Pty Ltd

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(71) CHINA PETROLEUM & CHEMICAL CORPORATION; SINOPEC (BEIJING) RESEARCH INSTITUTE OF CHEMICAL INDUSTRY CO., LTD.
(11) AU-A-2023337297
(21) 2023337297 **(22)** 08.09.2023
(54) RECYCLABLE POLYMER AEROGEL, COLD-STORAGE PHASE-CHANGE COMPOSITE MATERIAL, PREPARATION METHODS, AND USES
(51) Int. Cl.
C08L 79/08 (2006.01)
C08G 73/10 (2006.01)
C08J 3/075 (2006.01)
C08J 9/28 (2006.01)
(87) WO2024/051811
(31) 202211100939.6 **(32)** 09.09.22 **(33)** CN
202211101085.3 09.09.22 CN
(43) 14.03.2024
(72) QIAO, Jinliang; YAO, Yuan; RU, Yue; QI, Guicun; GUO, Zhaoyan; HU, Chenxi; GAO, Yi; LAI, Jinmei; LIU, Zhenjie; ZHANG, Xiaohong; SONG, Zhihai
(74) Davies Collison Cave Pty Ltd

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(71) CHINA PETROLEUM & CHEMICAL CORPORATION; SINOPEC (BEIJING) RESEARCH INSTITUTE OF CHEMICAL INDUSTRY CO., LTD.
(11) AU-A-2023339312
(21) 2023339312 **(22)** 08.09.2023
(54) COMPOSITE AEROGEL, RECYCLABLE HEAT-STORAGE PHASE-CHANGE COMPOSITE MATERIAL WITH PHOTOTHERMAL CONVERSION FUNCTION, AND PREPARATION METHODS THEREFOR AND USE
(51) Int. Cl.
C08K 3/04 (2006.01)
C08G 73/10 (2006.01)
C08J 9/28 (2006.01)
C08L 33/02 (2006.01)
C08L 33/24 (2006.01)
C08L 79/08 (2006.01)
C09K 5/06 (2006.01)
(87) WO2024/051826
(31) 202211101221.9 **(32)** 09.09.22 **(33)** CN
(43) 14.03.2024
(72) GUO, Zhaoyan; LI, Binghai; LIU, Wenlu; RU, Yue; YAO, Yuan; QIAO, Jinliang; QI, Guicun; KONG, Dehui; HU, Chenxi; LIU, Zhenjie; GAO, Yi; LAI, Jinmei; WANG, Xiang; ZHANG, Xiaohong
(74) Davies Collison Cave Pty Ltd

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(71) CHINA PETROLEUM & CHEMICAL CORPORATION; SINOPEC (BEIJING) RESEARCH INSTITUTE OF CHEMICAL INDUSTRY CO., LTD.
(11) AU-A-2023350438
(21) 2023350438 **(22)** 27.09.2023
(54) LANTHANUM OXYCARBONATE CATALYST, PREPARATION METHOD THEREFOR AND USE THEREOF
(51) Int. Cl.
B01J 27/232 (2006.01)
C07C 2/84 (2006.01)
(87) WO2024/067658
(31) 202211186899.1 **(32)** 27.09.22 **(33)** CN
(43) 04.04.2024
(72) WU, Jiehua; XUE, Wei; MAN, Yi; FENG, Yingjie; LIU, Dongbing; ZHANG, Mingsen
(74) Churchill Attorneys

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(71) CLASADO LIMITED
(11) AU-A-2023361519
(21) 2023361519 **(22)** 12.10.2023
(54) OLIGOSACCHARIDE COMPOSITION FOR USE IN THE REDUCTION OF THE LEVEL OF AMMONIA
(51) Int. Cl.
A61K 31/702 (2006.01)
A23L 33/21 (2016.01)
A61P 1/16 (2006.01)
A61P 3/00 (2006.01)
A61P 13/12 (2006.01)
A61P 21/00 (2006.01)
A61P 25/00 (2006.01)
A61P 25/28 (2006.01)
A61P 39/00 (2006.01)
A61P 43/00 (2006.01)
(87) WO2024/079471
(31) 2215064.3 **(32)** 12.10.22 **(33)** GB
(43) 18.04.2024
(72) BALTULIONIS, Gediminas; LITHERLAND, Kelly; HARTHOORN, Leunis Forrinus; MARUSZAK, Aleksandra Elzbieta
(74) Spruson & Ferguson

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(71) CLASADO LIMITED
(11) AU-A-2023361520
(21) 2023361520 **(22)** 12.10.2023
(54) OLIGOSACCHARIDE COMPOSITION FOR USE IN THE REDUCTION OF THE LEVEL OF BRANCHED SHORT CHAIN FATTY ACIDS
(51) Int. Cl.
A61K 31/702 (2006.01)
A61L 33/00 (2006.01)
A61P 1/16 (2006.01)
A61P 3/00 (2006.01)
A61P 3/02 (2006.01)
A61P 43/00 (2006.01)
(87) WO2024/079472
(31) 2215065.0 **(32)** 12.10.22 **(33)** GB
(43) 18.04.2024
(72) BALTULIONIS, Gediminas; LITHERLAND, Kelly; HARTHOORN, Leunis Forrinus; MARUSZAK, Aleksandra Elzbieta
(74) Spruson & Ferguson

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(71) COLGATE-PALMOLIVE COMPANY
(11) AU-A-2023344017
(21) 2023344017 **(22)** 28.08.2023
(54) ORAL HEALTH MONITORING DEVICE
(51) Int. Cl.
A61B 1/00 (2006.01)
A61B 1/05 (2006.01)
A61B 1/24 (2006.01)
A61B 5/00 (2006.01)
A61C 19/04 (2006.01)
(87) WO2024/063922
(31) 63/408,646 **(32)** 21.09.22 **(33)** US
(43) 28.03.2024
(72) WU, Donghui; LEE, Bryan; GUIRGUIS, Mark; URBAN, JR., Benny E.; SUBHASH, Hrebesh Molly; BLOCH, Brian; LI, Hongbing; ANDRUS, Patrick Christopher; PRIESS, Benjamin Cooper; AHOOJA, Sharan; O'BRIEN, Michael Fredrick; SABUS, Luke Anthony
(74) Spruson & Ferguson

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(71) COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION
(11) AU-A-2023337218
(21) 2023337218 **(22)** 07.09.2023
(54) METHOD OF PRODUCING ZEOLITE FROM AN ACID-REFRACTORY MINERAL COMPOSITION
(51) Int. Cl.
C01B 39/18 (2006.01)
C01B 39/02 (2006.01)
C01B 39/22 (2006.01)
C01B 39/28 (2006.01)
(87) WO2024/050600
(31) 2022902587 **(32)** 08.09.22 **(33)** AU
(43) 14.03.2024
(72) MCDONALD, Robbie, Gordon; CHAPMAN, Nicole, Markia
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) COMMUNICATIONS TEST DESIGN, INC.
(11) AU-A-2023343081
(21) 2023343081 **(22)** 11.09.2023
(54) METHOD AND SYSTEM TO DETECT COMPONENTS OF FACIAL RECOGNITION SYSTEM
(51) Int. Cl.
G06T 1/00 (2006.01)
G06T 7/00 (2017.01)
(87) WO2024/059512
(31) 17/931,488 **(32)** 12.09.22 **(33)** US
(43) 21.03.2024
(72) MISHRA, Sanket; DAVIS, Nidhin
(74) Koch IP Pty Ltd

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(71) CONFLUX TECHNOLOGY PTY LTD
(11) AU-A-2023322230
(21) 2023322230 **(22)** 09.08.2023
(54) HEAT EXCHANGER
(51) Int. Cl.
F28B 3/02 (2006.01)
B33Y 80/00 (2015.01)
F28D 9/00 (2006.01)
F28F 3/04 (2006.01)
F28F 3/08 (2006.01)
F28F 13/00 (2006.01)
F28F 13/12 (2006.01)
(87) WO2024/031143
(31) 2022902285 **(32)** 12.08.22 **(33)** AU

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(43) 15.02.2024
(72) BALELANG, Gabrian; DOWLE, Ashley; FULLER, Michael
(74) Davies Collison Cave Pty Ltd

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(71) CONFLUX TECHNOLOGY PTY LTD
(11) AU-A-2023322237
(21) 2023322237 **(22)** 11.08.2023
(54) HEAT EXCHANGER
(51) Int. Cl.
F28F 3/02 (2006.01)
B33Y 80/00 (2015.01)
F28D 9/00 (2006.01)
F28F 3/00 (2006.01)
(87) WO2024/031150
(31) 2022902284 **(32)** 12.08.22 **(33)** AU
(43) 15.02.2024
(72) REES, Glenn; BALELANG, Gabrian; FULLER, Michael
(74) Davies Collison Cave Pty Ltd

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(71) CONFLUX TECHNOLOGY PTY LTD
(11) AU-A-2023322238
(21) 2023322238 **(22)** 11.08.2023
(54) HEAT EXCHANGER AND METHOD OF MANUFACTURE THEREFOR
(51) Int. Cl.
F28F 1/24 (2006.01)
B33Y 10/00 (2015.01)
B33Y 80/00 (2015.01)
F28F 1/12 (2006.01)
F28F 1/32 (2006.01)
F28F 1/42 (2006.01)
F28F 3/02 (2006.01)
(87) WO2024/031151
(31) 2022902293 **(32)** 12.08.22 **(33)** AU
(43) 15.02.2024
(72) HENDY, Paul; FULLER, Michael; REES, Glenn; VELARDO, Jason
(74) Davies Collison Cave Pty Ltd

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(71) CONOCOPHILLIPS COMPANY
(11) AU-A-2023355869
(21) 2023355869 **(22)** 05.10.2023
(54) REMOVAL OF CHELATED IRON FROM PRODUCED WATER
(51) Int. Cl.
C02F 1/64 (2023.01)
C02F 11/148 (2019.01)
E21B 43/16 (2006.01)
E21B 43/20 (2006.01)
(87) WO2024/077189
(31) 63/378,586 **(32)** 06.10.22 **(33)** US
(43) 11.04.2024
(72) KIESEWETTER, Jonathan; SHARMA, Ramesh; CARMAN, Paul
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) CONTERA PHARMA A/S
(11) AU-A-2023348346
(21) 2023348346 **(22)** 29.09.2023
(54) ANTISENSE OLIGONUCLEOTIDES FOR THE TREATMENT OF CANAVAN DISEASE
(51) Int. Cl.
C12N 15/113 (2010.01)
(87) WO2024/068997
(31) 22199007.0 **(32)** 30.09.22 **(33)** EP
(43) 04.04.2024
(72) FRYLAND, Tue; LERBECH JENSEN, Marianne; VESTERGAARD RASMUSSEN, Søren
(74) Spruson & Ferguson

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(71) CRRC MEISHAN CO., LTD
(11) AU-A-2023387757
(21) 2023387757 **(22)** 15.12.2023
(54) Wheel Set Radial Device for Railway Wagon and Bogie Thereof
(51) Int. Cl.
B61F 5/52 (2006.01)
(31) 202311158094.0 **(32)** 08.09.23 **(33)** CN
(43) 27.03.2025
(72) ZHANG, Guangcai; ZU, Ji; YUAN, Jie; JING, Xuanxuan; FENG, Chengli; ZHANG, Rui; LUO, Hanjiang; WANG, Yungui; LIAO, Jun
(74) WRAYS PTY LTD

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(71) CUMMINS POWER GENERATION LIMITED
(11) AU-A-2023331248
(21) 2023331248 **(22)** 24.08.2023
(54) SYSTEM AND METHOD FOR OPERATING A HYBRID ELECTRIC POWERTRAIN IN A VEHICLE
(51) Int. Cl.
B60L 50/75 (2019.01)
(87) WO2024/042482
(31) 63/400,633 **(32)** 24.08.22 **(33)** US
(43) 29.02.2024
(72) PATEL, Ankit Vinodchandra; HIREMATH, Apoorv Prakash
(74) FB Rice Pty Ltd

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(71) CYSBIO APS
(11) AU-A-2023355733
(21) 2023355733 **(22)** 03.10.2023
(54) METHOD TO INHIBIT PROLIFERATION OF A PHYTOPATHOGEN ON PLANTS AND COMPOSITIONS USED FOR THIS PURPOSE
(51) Int. Cl.
A01N 31/16 (2006.01)
A01N 37/02 (2006.01)
A01P 3/00 (2006.01)
(87) WO2024/074495
(31) PA202270484 **(32)** 04.10.22 **(33)** DK
(43) 11.04.2024
(72) NIELSEN, Alex Toftgaard; MEYER, Henrik; JENDRESEN, Christian, Bille; BRØNDUM, Sebastian, Sven
(74) FPA Patent Attorneys Pty Ltd

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(71) DALIAN RONGKE POWER GROUP CO., LTD
(11) AU-A-2023340314
(21) 2023340314 **(22)** 27.10.2023
(54) VANADIUM-CHROMIUM ELECTROLYTE, PREPARATION METHOD THEREFOR, AND FLOW BATTERY COMPRISING SAME
(51) Int. Cl.
H01M 8/18 (2006.01)
H01M 8/04186 (2016.01)
H01M 8/24 (2016.01)
(87) WO2024/056104
(31) 202211120529.8 **(32)** 15.09.22 **(33)** CN
(43) 21.03.2024
(72) SONG, Mingming; WANG, Delu; ZENG, Fanwu; GAO, Xinliang; CHEN, Yanbo; HAO, Yue
(74) LexGeneris Pty Ltd

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(71) DALLAS/FORT WORTH INTERNATIONAL AIRPORT BOARD
(11) AU-A-2023340924
(21) 2023340924 **(22)** 14.09.2023
(54) DIGITAL TWIN-BASED SYSTEM AND METHOD FOR OPERATIONAL CONTROL OF A PHYSICAL SYSTEM
(51) Int. Cl.
F24F 11/62 (2018.01)
F24F 11/47 (2018.01)
G06Q 50/06 (2024.01)
(87) WO2024/059214
(31) 63/375,828 **(32)** 15.09.22 **(33)** US
63/376,988 23.09.22 US
(43) 21.03.2024
(72) HORTON, Robert
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) DALLAS/FORT WORTH INTERNATIONAL AIRPORT BOARD
(11) AU-A-2023340935
(21) 2023340935 **(22)** 14.09.2023
(54) DIGITAL TWIN-BASED SYSTEM AND METHOD FOR REDUCING PEAK POWER AND ENERGY CONSUMPTION IN A PHYSICAL SYSTEM
(51) Int. Cl.
G01C 21/34 (2006.01)
G01C 21/36 (2006.01)
(87) WO2024/059225
(31) 63/375,828 **(32)** 15.09.22 **(33)** US
63/376,988 23.09.22 US
(43) 21.03.2024
(72) HORTON, Robert
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) DAMIAN PHARMA AG
(11) AU-A-2023361194
(21) 2023361194 **(22)** 13.10.2023
(54) ONCE DAILY ALDOSTERONE SYNTHASE INHIBITOR (R)-(+)-5-(P-CYANOPHENYL)-5,6,7,8-TETRAHYDROIMIDAZO[L A]PYRIDINE
(51) Int. Cl.
A61K 31/437 (2006.01)
A61P 5/00 (2006.01)
A61P 9/00 (2006.01)
A61P 9/04 (2006.01)
A61P 9/10 (2006.01)
A61P 9/12 (2006.01)
A61P 13/12 (2006.01)
A61P 43/00 (2006.01)
(87) WO2024/079324
(31) 22201751.9 **(32)** 14.10.22 **(33)** EP

PCT applications which have entered the National Phase - Name Index cont'd

(43) 18.04.2024
(72) SCHUMACHER, Christoph; STEELE, Ronald Edward; GERLOCK, Teresa
(74) Griffith Hack

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(71) DANA-FARBER CANCER INSTITUTE, INC.
(11) AU-A-2023347962
(21) 2023347962 **(22)** 20.09.2023
(54) RECEPTOR-MEDIATED ENDOCYTOSIS FOR TARGETED DEGRADATION AND DELIVERY OF THERAPEUTIC AGENTS
(51) Int. Cl.
A61K 39/395 (2006.01)
A61K 47/68 (2017.01)
A61P 35/00 (2006.01)
C07K 16/30 (2006.01)
C07K 19/00 (2006.01)
C12N 15/62 (2006.01)
(87) WO2024/064754
(31) 63/376,389 **(32)** 20.09.22 **(33)** US
63/462,828 28.04.23 US
(43) 28.03.2024
(72) ZHOU, Xin; ZHANG, DingPeng
(74) Spruson & Ferguson

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(71) DANA-FARBER CANCER INSTITUTE, INC.
(11) AU-A-2023347964
(21) 2023347964 **(22)** 20.09.2023
(54) RECEPTOR-MEDIATED ENDOCYTOSIS FOR TARGETED INTERNALIZATION AND DEGRADATION OF MEMBRANE PROTEINS AND CARGOS
(51) Int. Cl.
A61K 39/395 (2006.01)
A61P 35/00 (2006.01)
C07K 14/705 (2006.01)
C07K 16/30 (2006.01)
C07K 19/00 (2006.01)
C12N 15/62 (2006.01)
(87) WO2024/064756
(31) 63/376,389 **(32)** 20.09.22 **(33)** US
63/462,828 28.04.23 US
(43) 28.03.2024
(72) ZHOU, Xin; ZHANG, DingPeng
(74) Spruson & Ferguson

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(71) DENTAL MONITORING
(11) AU-A-2023331888
(21) 2023331888 **(22)** 29.08.2023
(54) METHOD FOR SCANNING A DENTAL ARCH OF A USER
(51) Int. Cl.
A61C 9/00 (2006.01)
G06V 20/20 (2022.01)
H04N 23/60 (2023.01)
(87) WO2024/047019
(31) FR2208709 **(32)** 31.08.22 **(33)** FR
(43) 07.03.2024
(72) PELLISSARD, Thomas; GHYSELINCK, Guillaume; DOREMUS, Xavier
(74) AJ PARK

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(71) DEVERRA THERAPEUTICS INC.
(11) AU-A-2023338109
(21) 2023338109 **(22)** 30.08.2023
(54) METHODS FOR THE GENERATION OF A MONOCYTE/MACROPHAGE CELL PRODUCT FROM EXPANDED CORD BLOOD CD34+ HEMATOPOIETIC STEM AND PROGENITOR CELLS
(51) Int. Cl.
A61K 35/17 (2015.01)
A61K 39/00 (2006.01)
A61P 35/00 (2006.01)
(87) WO2024/054769
(31) 63/404,486 **(32)** 07.09.22 **(33)** US
(43) 14.03.2024
(72) DELANEY, Colleen; von EUW, Erika; KREUSER, Shannon; STOLTZMAN, Carrie; BREMPELIS, Katherine
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) DEXCOM, INC.
(11) AU-A-2023330013
(21) 2023330013 **(22)** 31.07.2023
(54) AUTOMATIC SUSPENSION AND RESUMPTION OF MEDICAMENT DELIVERY
(51) Int. Cl.
G16H 20/17 (2018.01)
G16H 40/63 (2018.01)
(87) WO2024/044453
(31) 63/400,648 **(32)** 24.08.22 **(33)** US
18/361,827 29.07.23 US
(43) 29.02.2024
(72) PAUL, Nathanael R.
(74) FB Rice Pty Ltd

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(71) DHP TECHNOLOGY AG
(11) AU-A-2023322327
(21) 2023322327 **(22)** 11.08.2023
(54) SOLAR INSTALLATION
(51) Int. Cl.
H02S 20/10 (2014.01)
F24S 20/50 (2018.01)
F24S 25/50 (2018.01)
F24S 40/80 (2018.01)
H02S 20/21 (2014.01)
H02S 30/20 (2014.01)
H02S 40/12 (2014.01)
(87) WO2024/031202
(31) CH000952/2022 **(32)** 12.08.22 **(33)** CH
(43) 15.02.2024
(72) DIEM, Gian Andri; KASPER, Peter
(74) Spruson & Ferguson

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(71) DIATEX CO., LTD.
(11) AU-A-2023341490
(21) 2023341490 **(22)** 31.08.2023
(54) PROTECTOR
(51) Int. Cl.
A41D 13/06 (2006.01)
A41D 13/015 (2006.01)
A41D 13/08 (2006.01)
A41D 31/00 (2019.01)
A41D 31/28 (2019.01)
(87) WO2024/057946
(31) 2022-147176 **(32)** 15.09.22 **(33)** JP
(43) 21.03.2024
(72) MIYAGI Hiroomi; ITOH Ken
(74) James & Wells Intellectual Property

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(71) DISEÑO Y CONSTRUCCIÓN DE MAQUINARIA AUTOMATIZADA, S.L.
(11) AU-A-2022478569
(21) 2022478569 **(22)** 16.09.2022
(54) INDEXING SYSTEM FOR FROZEN FOOD PRODUCTS
(51) Int. Cl.
B07C 5/36 (2006.01)
B07C 5/02 (2006.01)
(87) WO2024/056918
(43) 21.03.2024
(72) TOBIAS GRANADO, José Antonio
(74) GLMR

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(71) DORMAKABA SCHWEIZ AG
(11) AU-A-2023346906
(21) 2023346906 **(22)** 20.09.2023
(54) KEY FOR AN ELECTROMECHANICAL LOCKING DEVICE
(51) Int. Cl.
E05B 19/04 (2006.01)
G07C 9/00 (2020.01)
(87) WO2024/061977
(31) 22196965.2 **(32)** 21.09.22 **(33)** EP
(43) 28.03.2024
(72) KÖLLIKER, Marcel; ZAHNER, Markus; LAIB, Dominik
(74) IP GATEWAY PATENT & TRADE MARK ATTORNEYS PTY LTD

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(71) ECONCRETE TECH LTD
(11) AU-A-2023335867
(21) 2023335867 **(22)** 28.08.2023
(54) SYSTEMS AND UNITS FOR MARINE INFRASTRUCTURE FOUNDATION SCOUR PROTECTION
(51) Int. Cl.
E02B 3/04 (2006.01)
E02B 17/00 (2006.01)
E02D 27/42 (2006.01)
E02D 27/52 (2006.01)
E02D 31/00 (2006.01)
E02D 31/06 (2006.01)
(87) WO2024/047636
(31) 63/401,667 **(32)** 28.08.22 **(33)** US
(43) 07.03.2024
(72) SELLA, Ido
(74) FPA Patent Attorneys Pty Ltd

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(71) ELECTROLUX APPLIANCES AKTIEBOLAG
(11) AU-A-2022482274
(21) 2022482274 **(22)** 12.10.2022
(54) ARTICLES TREATMENT MACHINE WITH TANK ASSEMBLY
(51) Int. Cl.
A47L 15/42 (2006.01)
(87) WO2024/078709
(43) 18.04.2024
(72) DEL POS, Maurizio; ROMANAZZI, Pietro
(74) Halfords IP

PCT applications which have entered the National Phase - Name Index cont'd

(71) ELECTROLUX APPLIANCES AKTIEBOLAG
(11) AU-A-2023369617
(21) 2023369617 **(22)** 09.10.2023
(54) AREA CALCULATION OF FOOD ITEMS USING IMAGE SEGMENTATION
(51) Int. Cl.
G06T 7/10 (2017.01)
A23L 5/10 (2016.01)
G06T 7/33 (2017.01)
G06T 7/62 (2017.01)
G06T 7/70 (2017.01)
G06V 10/82 (2022.01)
G09B 19/00 (2006.01)
(87) WO2024/088743
(31) 22203174.2 **(32)** 24.10.22 **(33)** EP
(43) 02.05.2024
(72) TOPPANO, Michele; SCHIFFLER, Thorben; SHUSTROV, Dmitrii; LUCKHARDT, Christoph
(74) Halfords IP

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(71) ELECTROLUX APPLIANCES AKTIEBOLAG
(11) AU-A-2023379055
(21) 2023379055 **(22)** 20.10.2023
(54) METHOD FOR OPERATING AN INDUCTION COOKTOP AND INDUCTION COOKTOP
(51) Int. Cl.
H05B 6/06 (2006.01)
(87) WO2024/099738
(31) 22206030.3 **(32)** 08.11.22 **(33)** EP
(43) 16.05.2024
(72) VIROLI, Alex; NOSTRO, Massimo; ANGELI, Fabio; MARTINI, Filippo
(74) Halfords IP

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(71) ELTORQUE AS
(11) AU-A-2023338595
(21) 2023338595 **(22)** 04.09.2023
(54) ACTUATOR FOR A VALVE
(51) Int. Cl.
H02K 7/116 (2006.01)
F16K 31/05 (2006.01)
H02K 7/14 (2006.01)
(87) WO2024/054118
(31) 20220963 **(32)** 07.09.22 **(33)** NO
(43) 14.03.2024
(72) BRENNVALL, Jon Eirik
(74) Spruson & Ferguson

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(71) EmpathBio, Inc.
(11) AU-A-2023336222
(21) 2023336222 **(22)** 08.09.2023
(54) USE OF MDMA FOR TREATMENT OF STRESS-RELATED DISORDERS
(51) Int. Cl.
A61K 31/36 (2006.01)
A61K 9/00 (2006.01)
A61K 45/06 (2006.01)
A61P 25/00 (2006.01)
A61P 25/18 (2006.01)
A61P 25/22 (2006.01)
A61P 25/24 (2006.01)
A61P 25/30 (2006.01)
A61P 43/00 (2006.01)
(87) WO2024/052880
(31) 63/405,158 **(32)** 09.09.22 **(33)** US
(43) 14.03.2024
(72) SHORT, Glenn; BOWEN, Carrie A.; RAO, Srinivas
(74) Dennemeyer & Associates

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(71) EQUINOR ENERGY AS
(11) AU-A-2023329696
(21) 2023329696 **(22)** 25.08.2023
(54) CARBON DIOXIDE INJECTION
(51) Int. Cl.
E21B 43/16 (2006.01)
B63B 35/44 (2006.01)
F17C 1/00 (2006.01)
(87) WO2024/043790
(31) 2212382.2 **(32)** 25.08.22 **(33)** GB
(43) 29.02.2024
(72) LOTHE, Per; SAMUELSBERG, Arild
(74) Spruson & Ferguson

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(71) EUPRAXIA PHARMACEUTICALS INC.
(11) AU-A-2023356957
(21) 2023356957 **(22)** 03.10.2023
(54) USE OF LONG-ACTING FLUTICASONE PROPIONATE INJECTABLE SUSPENSIONS FOR TREATING AND PREVENTING INFLAMMATIONS OF THE GASTROINTESTINAL TRACT
(51) Int. Cl.
A61K 9/00 (2006.01)
A61K 9/50 (2006.01)
A61K 31/56 (2006.01)
A61P 1/00 (2006.01)
A61P 37/00 (2006.01)
(87) WO2024/077017
(31) 63/413,167 **(32)** 04.10.22 **(33)** US
(43) 11.04.2024
(72) HELLIWELL, James; MALONE, Amanda; WEBB, Murray; PRICE, James; LOSS, Troy; PRICE, Nicola; BRENNAN, Paul
(74) Spruson & Ferguson

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(71) EVOLVERITAS BIOTECHNOLÓGIAI KORLÁTOLT FELELŐSSÉGŰ TÁRSASÁG
(11) AU-A-2023351442
(21) 2023351442 **(22)** 29.09.2023
(54) A MODIFIED PROTEIN SCAFFOLD AND USE THEREOF
(51) Int. Cl.
C07K 14/81 (2006.01)
A61K 38/00 (2006.01)
A61P 7/02 (2006.01)
A61P 43/00 (2006.01)
(87) WO2024/069200
(31) P2200390 **(32)** 29.09.22 **(33)** HU
(43) 04.04.2024
(72) GÁL, Péter; GÓGL, Gergő Zsolt; KISS, Bence; KÖLLER, Zsombor; NAGY, Zoltán Attila; NÉMETH, Zoltán Bálint; PÁL, Gábor; PÁRISNÉ DR KOCSIS, Andrea
(74) Collison & Co

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(71) EXACT THERAPEUTICS AS
(11) AU-A-2023372348
(21) 2023372348 **(22)** 03.11.2023
(54) METHOD AND SYSTEM FOR CALCULATING A POINT ESTIMATE OF AN ULTRASOUND DOSE
(51) Int. Cl.
A61B 8/00 (2006.01)
(87) WO2024/096748
(31) 20221187 **(32)** 04.11.22 **(33)** NO
(43) 10.05.2024
(72) HEALEY, Andrew John; KVÅLE, Svein; MYHRE, Ola
(74) Davies Collison Cave Pty Ltd

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(71) EXCLCIRC (SUZHOU) BIOMEDICAL CO., LTD.
(11) AU-A-2023339328
(21) 2023339328 **(22)** 09.09.2023
(54) CIRCULAR RNAS AND PREPARATION METHODS THEREOF
(51) Int. Cl.
C12N 15/64 (2006.01)
C12N 15/10 (2006.01)
(87) WO2024/051842
(31) 202211105849.6 **(32)** 10.09.22 **(33)** CN
202310557196.3 17.05.23 CN
(43) 14.03.2024
(72) DAI, Dongsheng; SHAN, Lynn; DAI, Zilin
(74) Madderns Pty Ltd

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(71) F. HOFFMANN-LA ROCHE AG
(11) AU-A-2023386575
(21) 2023386575 **(22)** 21.11.2023
(54) METHOD FOR INCREASING RECOMBINANT PROTEIN EXPRESSION
(51) Int. Cl.
C12N 15/85 (2006.01)
C07K 14/81 (2006.01)
C12N 15/62 (2006.01)
C12N 15/65 (2006.01)
C12P 21/02 (2006.01)
(87) WO2024/110426
(31) 22209191.0 **(32)** 23.11.22 **(33)** EP
(43) 30.05.2024
(72) BRUENKER, Peter; GEIGER, Martina; AUSLAENDER, Simon; GOEPFERT, Ulrich
(74) Griffith Hack

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(71) FATE THERAPEUTICS, INC.
(11) AU-A-2023343196
(21) 2023343196 **(22)** 12.09.2023
(54) METHODS AND COMPOSITIONS FOR INDUCING HEMATOPOIETIC CELL DIFFERENTIATION
(51) Int. Cl.
C12N 5/078 (2010.01)
(87) WO2024/059584
(31) 63/375,680 **(32)** 14.09.22 **(33)** US
(43) 21.03.2024
(72) WITTY, Alec; YZAGUIRRE, Amanda; GOODRIDGE, Jode; VALAMEHR, Bahram; LABARGE, Samuel, Adam; SHERMAN, Sean
(74) Spruson & Ferguson

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(71) FIBROGEN, INC.
(11) AU-A-2023325323
(21) 2023325323 **(22)** 18.08.2023
(54) ANTI-CCR8 ANTIBODIES AND USES THEREOF
(51) Int. Cl.
C07K 16/28 (2006.01)
A61K 39/00 (2006.01)
A61P 35/00 (2006.01)
C07K 14/715 (2006.01)
(87) WO2024/040216
(31) 63/399,483 **(32)** 19.08.22 **(33)** US
(43) 22.02.2024
(72) BROUSSEAU, David T.; WALKINSHAW, Gail; WITSCHI, Claudia
(74) FB Rice Pty Ltd

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(71) FISHER & PAYKEL HEALTHCARE LIMITED
(11) AU-A-2023326251
(21) 2023326251 **(22)** 18.08.2023
(54) GAS COLLECTOR
(51) Int. Cl.
A61B 5/097 (2006.01)
A61B 5/08 (2006.01)
A61B 5/083 (2006.01)
A61B 5/145 (2006.01)
A61M 16/00 (2006.01)
A61M 16/04 (2006.01)
A61M 16/06 (2006.01)
A61M 16/08 (2006.01)
A61M 16/10 (2006.01)
A61M 16/20 (2006.01)
(87) WO2024/038409
(31) 63/371,964 **(32)** 19.08.22 **(33)** US
(43) 22.02.2024
(72) MONTEIRO DE ANDRADE, Isabela; BRIDGMAN, Catherine, Rosamond; TOURANI RAD, Maxim, Darius; STURME, William, Herbert; BRUWER, David, Petrus; EDWARDS, Taylor, James; STRUTHERS, Samuel, Thomas; HAYMAN, Max, William, Anstiss
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) FISHER & PAYKEL HEALTHCARE LIMITED
(11) AU-A-2023326614
(21) 2023326614 **(22)** 18.08.2023
(54) CLOSED LOOP OXYGEN CONTROL
(51) Int. Cl.
A61M 16/00 (2006.01)
A61B 5/00 (2006.01)
A61B 5/08 (2006.01)
A61B 5/087 (2006.01)
A61B 5/091 (2006.01)
A61B 5/1455 (2006.01)
A61M 16/06 (2006.01)
A61M 16/10 (2006.01)
A61M 16/20 (2006.01)
(87) WO2024/039249
(31) 63/371,862 **(32)** 18.08.22 **(33)** US
(43) 22.02.2024
(72) GULLEY, Anton Kim; RUSSELL, David Martin
(74) AJ PARK

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(71) FISHER & PAYKEL HEALTHCARE LIMITED
(11) AU-A-2023343558
(21) 2023343558 **(22)** 14.09.2023
(54) A BREATHING ASSISTANCE APPARATUS FOR PROVIDING RESIPRATORY THERAPY
(51) Int. Cl.
A61M 16/00 (2006.01)
A61B 5/00 (2006.01)
A61B 5/08 (2006.01)
A61B 5/369 (2021.01)
A61B 5/389 (2021.01)
A61M 16/08 (2006.01)
A61M 16/12 (2006.01)
A61M 16/16 (2006.01)
A61M 16/20 (2006.01)
(87) WO2024/057241
(31) 63/375,677 **(32)** 14.09.22 **(33)** US
(43) 21.03.2024
(72) PEIRIS, Malik Tivanka Rajiv; WYSOSKI, Simei Gomes
(74) Flint Intellectual Property Limited

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(71) FIVES XCELLA
(11) AU-A-2023321641
(21) 2023321641 **(22)** 10.08.2023
(54) METHOD AND SYSTEM FOR TRANSPORTING ITEMS
(51) Int. Cl.
G05D 1/00 (2024.01)
(87) WO2024/033507
(31) FR2208289 **(32)** 12.08.22 **(33)** FR
(43) 15.02.2024
(72) CHERIF IDRISSI EL GANOUNI, Oussama
(74) Maxwells Patent & Trade Mark Attorneys Pty Ltd

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(71) FLEETMIND SEON SOLUTIONS INC.; BRODSKY, T.; MORALES, J.D.; MARTINEZ, F.; LAMUS, D.
(11) AU-A-2023334024
(21) 2023334024 **(22)** 28.08.2023
(54) COMPUTER-BASED TOOLS AND TECHNIQUES FOR VEHICLE DETECTION
(51) Int. Cl.
G08G 1/017 (2006.01)
G06V 20/52 (2022.01)
G06V 20/62 (2022.01)
G06V 30/19 (2022.01)
(87) WO2024/050320
(31) 63/401,695 **(32)** 28.08.22 **(33)** US
(43) 07.03.2024
(72) BRODSKY, Tomas; MORALES, Juan Daniel; MARTINEZ, Franklin; LAMUS, Diego
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) FORMO BIO GMBH
(11) AU-A-2023326825
(21) 2023326825 **(22)** 18.08.2023
(54) ANIMAL-FREE SUBSTITUTE FOOD PRODUCTS
(51) Int. Cl.
A23C 11/10 (2021.01)
A21D 10/02 (2006.01)
A21D 13/00 (2017.01)
A23C 20/02 (2021.01)
A23L 15/00 (2016.01)
(87) WO2024/038204
(31) 2022902352 **(32)** 18.08.22 **(33)** AU
2022902505 31.08.22 AU
2219695.0 23.12.22 GB
2219701.6 23.12.22 GB
(43) 22.02.2024
(72) LIVERMORE, Joshua Adam; REIFENRATH, Mara Elisa; COBOS, Irene Barba; MERTES, Lena; BRUCKNER-GUEHMANN, Monika; BIRKENHAUER, Christian Philipp; WESTPHAL, Alexander
(74) WRAYS PTY LTD

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(71) FORT ROBOTICS, INC.
(11) AU-A-2023341363
(21) 2023341363 **(22)** 13.09.2023
(54) METHOD FOR DECREASING PROBABILITY OF UNDETECTED ERRORS ON LARGE MESSAGES OVER A BLACK CHANNEL
(51) Int. Cl.
H04L 41/34 (2022.01)
H04L 43/0823 (2022.01)
(87) WO2024/059132
(31) 63/406,130 **(32)** 13.09.22 **(33)** US
(43) 21.03.2024
(72) BIVANS, Nathan
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) FUJITSU GENERAL LIMITED
(11) AU-A-2023341653
(21) 2023341653 **(22)** 11.09.2023
(54) TWO-STAGE CASCADE REFRIGERATION CYCLE DEVICE, AND TWO-STAGE CASCADE REFRIGERATION CYCLE DEVICE CONTROL METHOD
(51) Int. Cl.
F25B 7/00 (2006.01)
F24F 11/41 (2018.01)
F24F 11/875 (2018.01)
F25B 1/00 (2006.01)
F25B 13/00 (2006.01)
F25B 47/02 (2006.01)
F24F 140/00 (2018.01)
(87) WO2024/058136
(31) 2022-145107 **(32)** 13.09.22 **(33)** JP
(43) 21.03.2024
(72) ODA Akinobu; MAEMA Yoshinari; NAKATA Shohei; KANEI Kazuki
(74) IP SOLVED (ANZ) PTY. LTD.

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(71) FUJITSU GENERAL LIMITED
(11) AU-A-2023351761
(21) 2023351761 **(22)** 28.09.2023
(54) MOTOR CONTROL DEVICE
(51) Int. Cl.
H02P 21/24 (2016.01)
H02P 27/08 (2006.01)
(87) WO2024/071277
(31) 2022-157829 **(32)** 30.09.22 **(33)** JP

PCT applications which have entered the National Phase - Name Index cont'd

(43) 04.04.2024
(72) SAITO, Yuki; OSADA, Yudai; URAYAMA, Masaharu; SUZUKI, Kantaro
(74) Spruson & Ferguson

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(71) GC CORPORATION
(11) AU-A-2023345855
(21) 2023345855 **(22)** 28.08.2023
(54) METHOD FOR COLORING DENTAL CERAMIC, AND COLORING SOLUTION FOR DENTAL CERAMIC
(51) Int. Cl.
A61C 13/083 (2006.01)
A61C 5/77 (2017.01)
C04B 35/488 (2006.01)
C04B 41/85 (2006.01)
(87) WO2024/062846
(31) 2022-151021 **(32)** 22.09.22 **(33)** JP
(43) 28.03.2024
(72) NAGAOKA, Kento; ONODERA, Mizuho; YAMAMOTO, Koji; HOKII, Yusuke; AKIYAMA, Shigenori
(74) Spruson & Ferguson

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(71) GENFIT
(11) AU-A-2023355797
(21) 2023355797 **(22)** 04.10.2023
(54) COMBINATION OF SUBSTITUTED 2,4 DIAMINO-QUINOLINE COMPOUNDS AND MEK INHIBITORS FOR USE IN THE TREATMENT OF LIVER CANCERS
(51) Int. Cl.
A61K 31/4709 (2006.01)
A61K 31/4184 (2006.01)
A61K 31/4523 (2006.01)
A61K 31/519 (2006.01)
A61P 35/00 (2006.01)
(87) WO2024/074559
(31) 22306483.3 **(32)** 04.10.22 **(33)** EP
(43) 11.04.2024
(72) HALFON, Philippe; BESTION, Eloïne; MEZOUAR, Soraya; COURCAMBECK, Jérôme; MENUT, Agnès
(74) Davies Collison Cave Pty Ltd

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(71) GEOQUEST SYSTEMS B.V.
(11) AU-A-2023342942
(21) 2023342942 **(22)** 13.09.2023
(54) NATURAL LANGUAGE-BASED SEARCH ENGINE FOR INFORMATION RETRIEVAL IN ENERGY INDUSTRY
(51) Int. Cl.
G06F 16/2452 (2019.01)
G06F 16/21 (2019.01)
(87) WO2024/059094
(31) 202221052418 **(32)** 14.09.22 **(33)** IN
(43) 21.03.2024
(72) LOKHANDE, Avinash; PILLAI, Prashanth; KATOLE, Atul Laxman; MANGSULI, Purnaprajna Raghavendra
(74) Griffith Hack

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(71) GLAXOSMITHKLINE INTELLECTUAL PROPERTY DEVELOPMENT LIMITED
(11) AU-A-2023363750
(21) 2023363750 **(22)** 17.10.2023
(54) TRIAZOLE-SUBSTITUTED IMIDAZO[1,2-A]PYRIMIDINES AS CGAS INHIBITORS
(51) Int. Cl.
C07D 487/04 (2006.01)
A61K 31/519 (2006.01)
A61P 37/00 (2006.01)
C07D 471/04 (2006.01)
C07D 491/04 (2006.01)
C07F 9/142 (2006.01)
(87) WO2024/083773
(31) 63/379,950 **(32)** 18.10.22 **(33)** US
(43) 25.04.2024
(72) BOTYANSZKI, Janos; CHARNLEY, Adam; DONG, Xiaoyang; HUMPHREYS, Philip; KING, Bryan; MARCUS, Kimberly; NEWLANDER, Kenneth; PERO, Joseph; RAHMAN, Attiq; REIF, Alexander; WIGGALL, Kenneth; ZHANG, Daohua; RAMANJULU, Joshi
(74) Davies Collison Cave Pty Ltd

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(71) GOOGLE LLC
(11) AU-A-2023347492
(21) 2023347492 **(22)** 21.09.2023
(54) SCALABLE ARCHITECTURES FOR CONTROL OF QUANTUM DEVICES WITHIN COLD ENVIRONMENTS
(51) Int. Cl.
G06N 10/40 (2022.01)
B82Y 10/00 (2011.01)
H03K 19/195 (2006.01)
(87) WO2024/064283
(31) 17/950,807 **(32)** 22.09.22 **(33)** US
(43) 28.03.2024
(72) HILTON, Jeremy Patterson; STERLING, George Earl Grant; NAAMAN, Ofer
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) GRANVILLE BIOMEDICAL INC.
(11) AU-A-2022477359
(21) 2022477359 **(22)** 08.09.2022
(54) PELVIC EDUCATIONAL MODEL
(51) Int. Cl.
G09B 23/30 (2006.01)
(87) WO2024/050619
(43) 14.03.2024
(72) GOUDIE, Christine
(74) Madderns Pty Ltd

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(71) GRIMAT ENGINEERING INSTITUTE CO., LTD.
(11) AU-A-2023434833
(21) 2023434833 **(22)** 25.09.2023
(54) LIGHTWEIGHT, HIGH-STRENGTH, CORROSION-RESISTANT ALUMINUM ALLOY MATERIAL AND PREPARATION METHOD THEREOF
(51) Int. Cl.
C22C 21/06 (2006.01)
C22C 1/00 (2023.01)
C22F 1/00 (2006.01)
(87) WO2024/183265
(31) 202310201048.8 **(32)** 06.03.23 **(33)** CN
(43) 12.09.2024
(72) XIONG, Baiqing; LI, Xiwu; ZHANG, Yongan; LI, Zhihui; YAN, Hongwei; GAO, Guanjun; YAN, Lizhen; LI, Yanan; WEN, Kai; LIU, Hongwei; XIAO, Wei; SHI, Guohui; ZHU, Kai
(74) Davies Collison Cave Pty Ltd

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(71) GROSSMAN, S.O.
(11) AU-A-2022474269
(21) 2022474269 **(22)** 12.08.2022
(54) GAS PROCESSING DEVICE
(51) Int. Cl.
B01D 53/62 (2006.01)
B01D 53/78 (2006.01)
B01D 53/84 (2006.01)
(87) WO2024/033597
(43) 15.02.2024
(72) GROSSMAN, Scott Oliver
(74) WRAYS PTY LTD

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(71) GTI ENERGY
(11) AU-A-2023339066
(21) 2023339066 **(22)** 11.09.2023
(54) CLEAN WATER RECIRCULATION FOR STEAM PRODUCTION IN ROTATING PACKED BED DESORBER SYSTEM
(51) Int. Cl.
B01D 53/14 (2006.01)
(87) WO2024/054675
(31) 63/405,186 **(32)** 09.09.22 **(33)** US
(43) 14.03.2024
(72) PYRZYNSKI, Travis; CHAQUINGA NAVARRO, Guillermo; SAWAKED, Sanad; AKPOLAT, Osman
(74) Spruson & Ferguson

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(71) HAI ROBOTICS CO., LTD.; HAI INTELLIGENT CO., LTD.
(11) AU-A-2024281612
(21) 2024281612 **(22)** 22.05.2024
(54) TRANSPORT ROBOT, SHELF, WAREHOUSING SYSTEM AND DOCKING METHOD
(51) Int. Cl.
B65G 1/04 (2006.01)
B65G 1/137 (2006.01)
(87) WO2024/245082
(31) 202310630207.6 **(32)** 30.05.23 **(33)** CN
(43) 05.12.2024
(72) NING, Kejun; GAO, Peng; XU, Shengdong; WANG, Penghui; CHEN, Yuqi
(74) Davies Collison Cave Pty Ltd

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(71) HALDA THERAPEUTICS OPCO, INC.
(11) AU-A-2023337940
(21) 2023337940 **(22)** 08.09.2023
(54) HETEROBIFUNCTIONAL COMPOUNDS AND METHODS OF TREATING DISEASE
(51) Int. Cl.
C07D 495/14 (2006.01)
A61K 31/55 (2006.01)
A61K 31/551 (2006.01)

PCT applications which have entered the National Phase - Name Index cont'd

A61P 35/00 (2006.01)
C07D 498/04 (2006.01)
C07D 498/14 (2006.01)
C07D 519/00 (2006.01)
(87) WO2024/054603
(31) 63/404,567 **(32)** 08.09.22 **(33)** US
63/444,828 10.02.23 US
63/494,364 05.04.23 US
(43) 14.03.2024
(72) EASTMAN, Kyle J.; KAYSER-BRICKER, Katherine J.; MARTIN, Michael Barrington; MOUSSEAU, James John; PERRY, Matthew Alexander; PULEO, David E.; RAINA, Kanak Shail; ZAWARE, Nilesh K.; NEKLESA, Taavi; GERRITZ, Samuel W.; BOSANAC, Todd
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) HALDA THERAPEUTICS OPCO, INC.
(11) AU-A-2023337941
(21) 2023337941 **(22)** 08.09.2023
(54) HETEROBIFUNCTIONAL COMPOUNDS AND METHODS OF TREATING DISEASE
(51) Int. Cl.
C07D 495/14 (2006.01)
A61K 31/551 (2006.01)
A61P 35/00 (2006.01)
(87) WO2024/054604
(31) 63/404,569 **(32)** 08.09.22 **(33)** US
63/494,406 05.04.23 US
(43) 14.03.2024
(72) EASTMAN, Kyle J.; KAYSER-BRICKER, Katherine J.; MOUSSEAU, James John; PERRY, Matthew Alexander; PULEO, David E.; RAINA, Kanak Shail; ZAWARE, Nilesh K.; NEKLESA, Taavi; GERRITZ, Samuel W.; BOSANAC, Todd
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) HALEON CH SARL
(11) AU-A-2023346237
(21) 2023346237 **(22)** 14.09.2023
(54) HYDROALCOHOLIC TOPICAL DICLOFENAC FORMULATIONS
(51) Int. Cl.
A61K 9/00 (2006.01)
A61K 9/06 (2006.01)
A61K 31/196 (2006.01)
A61K 47/10 (2017.01)
A61P 29/00 (2006.01)
(87) WO2024/062349
(31) 22196980.1 **(32)** 21.09.22 **(33)** EP
(43) 28.03.2024
(72) BAKSHI, Pooja; BOZORG, Behnam Dasht; PATIL, Shantesh
(74) AJ PARK

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(71) HALLIBURTON ENERGY SERVICES, INC.
(11) AU-A-2022485043
(21) 2022485043 **(22)** 11.11.2022
(54) PRE-POSITIONING A MELTABLE SEAL FOR PLUG AND ABANDONMENT
(51) Int. Cl.
E21B 34/14 (2006.01)
E21B 23/04 (2006.01)
E21B 34/10 (2006.01)
(87) WO2024/096887
(31) 17/978,828 **(32)** 01.11.22 **(33)** US
(43) 10.05.2024
(72) MITCHELL, David Lyall; FRIPP, Michael Linley
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) HALLIBURTON ENERGY SERVICES, INC.
(11) AU-A-2022486015
(21) 2022486015 **(22)** 30.11.2022
(54) CALORIMETRIC CONTROL OF DOWNHOLE TOOLS
(51) Int. Cl.
E21B 34/14 (2006.01)
E21B 23/04 (2006.01)
E21B 34/06 (2006.01)
E21B 36/00 (2006.01)
E21B 47/07 (2012.01)
E21B 47/12 (2012.01)
(87) WO2024/102142
(31) 17/984,713 **(32)** 10.11.22 **(33)** US
(43) 16.05.2024
(72) CHANG, Gabriel Yun Chong; SIMMONDS, Timothy; MUNRO, Gavin; MAHER, Peter Reid
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) HALLIBURTON ENERGY SERVICES, INC.
(11) AU-A-2022488294
(21) 2022488294 **(22)** 12.12.2022
(54) METHOD FOR OPENING A COMPLETION ISOLATION VALVE WITH E-LINE POWERED SHIFTING TOOL
(51) Int. Cl.
E21B 34/14 (2006.01)
E21B 23/01 (2006.01)
E21B 34/06 (2006.01)
E21B 47/12 (2012.01)
(87) WO2024/123358
(31) 18/075,839 **(32)** 06.12.22 **(33)** US
(43) 13.06.2024
(72) WAI, Simon Whye Kwong; HOLLY, Mark S.
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) HALLIBURTON ENERGY SERVICES, INC.
(11) AU-A-2023356198
(21) 2023356198 **(22)** 06.10.2023
(54) A DOWNHOLE TOOL INCLUDING A PACKER ASSEMBLY, A COMPLETION ASSEMBLY, AND A FIXEDLY COUPLED WHIPSTOCK ASSEMBLY
(51) Int. Cl.
E21B 7/06 (2006.01)
E21B 23/01 (2006.01)
E21B 23/06 (2006.01)
E21B 41/00 (2006.01)
(87) WO2024/077219
(31) 63/414,308 **(32)** 07.10.22 **(33)** US
18/481,734 05.10.23 US
(43) 11.04.2024
(72) LARSEN, Lars, Petter; LAJESIC, Borisa; FALNES, Morten; DYRSETH, Vegard
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) HALLIBURTON ENERGY SERVICES, INC.
(11) AU-A-2023377449
(21) 2023377449 **(22)** 03.10.2023
(54) EVENT DETECTION USING HYDRAULIC SIMULATIONS
(51) Int. Cl.
E21B 44/02 (2006.01)
E21B 47/01 (2012.01)
(87) WO2024/102529
(31) 17/984,002 **(32)** 09.11.22 **(33)** US
(43) 16.05.2024
(72) JAMISON, Dale E.; DYNGOSZ, Mateusz Michal; PORTER, Aidan
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) HITACHI INDUSTRIAL PRODUCTS, LTD.
(11) AU-A-2023363447
(21) 2023363447 **(22)** 16.10.2023
(54) ROTARY ELECTRICAL MACHINE AND ROTARY ELECTRICAL MACHINE SYSTEM
(51) Int. Cl.
H02K 3/34 (2006.01)
H02K 3/487 (2006.01)
H02K 9/02 (2006.01)
(87) WO2024/085099
(31) 2022-167649 **(32)** 19.10.22 **(33)** JP
(43) 25.04.2024
(72) KORI Daisuke; FUJII Katsuhiko; TSUCHITANI Osamu; SATO Misato
(74) Davies Collison Cave Pty Ltd

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(71) HOLOGIC, INC.
(11) AU-A-2023333455
(21) 2023333455 **(22)** 29.08.2023
(54) SYSTEMS AND METHODS FOR LATERAL TREATMENTS OF THE BREAST
(51) Int. Cl.
A61B 6/00 (2024.01)
A61B 10/02 (2006.01)
A61B 17/34 (2006.01)
A61B 90/11 (2016.01)
A61B 90/17 (2016.01)
(87) WO2024/049822
(31) 63/401,842 **(32)** 29.08.22 **(33)** US
(43) 07.03.2024
(72) DEFREITAS, Kenneth F; GIRGENTI, John; DIPERSIO, Thomas Peter
(74) FB Rice Pty Ltd

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(71) HUAWEI TECHNOLOGIES CO., LTD.
(11) AU-A-2023339031
(21) 2023339031 **(22)** 30.06.2023
(54) COMMUNICATION METHOD AND APPARATUS
(51) Int. Cl.

PCT applications which have entered the National Phase - Name Index cont'd

H04W 28/20 (2009.01)
(87) WO2024/051318
(31) 202211080747.3 **(32)** 05.09.22 **(33)** CN
(43) 14.03.2024
(72) LIU, Peng; GUO, Ziyang; QIAN, Bin
(74) Spruson & Ferguson

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(71) HUECK SOLAR ENERGY GMBH
(11) AU-A-2023339788
(21) 2023339788 **(22)** 12.09.2023
(54) SOLAR-THERMAL MODULE
(51) Int. Cl.
F24S 20/20 (2018.01)
F24S 40/80 (2018.01)
F24S 70/16 (2018.01)
F24S 70/60 (2018.01)
F24S 80/30 (2018.01)
(87) WO2024/056658
(31) 10 2022 209 642.8 **(32)** 14.09.22 **(33)** DE
(43) 21.03.2024
(72) HUECK, Ulrich; HILLEKE, Robert
(74) Griffith Hack

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(71) HYBRIT DEVELOPMENT AB
(11) AU-A-2023329726
(21) 2023329726 **(22)** 26.09.2023
(54) A METHOD FOR PRODUCING COLD DIRECT REDUCED IRON
(51) Int. Cl.
C21B 13/02 (2006.01)
(87) WO2024/043827
(31) 22199172.2 **(32)** 30.09.22 **(33)** EP
(43) 29.02.2024
(72) PEI, Martin; KOJOLA, Niklas
(74) Davies Collison Cave Pty Ltd

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(71) HYDRODYN RECYCLING GMBH
(11) AU-A-2023345802
(21) 2023345802 **(22)** 16.08.2023
(54) METHOD FOR CLEANING PLASTIC WASTE
(51) Int. Cl.
B29B 17/04 (2006.01)
(87) WO2024/061542
(31) 10 2022 124 404.0 **(32)** 22.09.22 **(33)** DE
(43) 28.03.2024
(72) HOFMANN, Michael; GERCKE, Alexander; UCKURONIS, Kšištof
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) ICM, INC.
(11) AU-A-2024286395
(21) 2024286395 **(22)** 07.06.2024
(54) FOOD PROTEIN AND STARCH PURIFICATION AND WATER RECYCLING METHODS
(51) Int. Cl.
A23J 1/12 (2006.01)
C02F 1/00 (2023.01)
C07K 1/14 (2006.01)
C08B 30/04 (2006.01)
(87) WO2024/254504
(31) 63/472,251 **(32)** 09.06.23 **(33)** US
(43) 12.12.2024
(72) GALLOP, Charles C.
(74) FB Rice Pty Ltd

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(71) ICU MEDICAL, INC.
(11) AU-A-2023342161
(21) 2023342161 **(22)** 18.09.2023
(54) SYRINGES FOR INFUSION PUMPS
(51) Int. Cl.
A61M 5/142 (2006.01)
A61M 5/31 (2006.01)
A61M 5/315 (2006.01)
(87) WO2024/059875
(31) 63/407,512 **(32)** 16.09.22 **(33)** US
(43) 21.03.2024
(72) JACOBSON, James; BUTTERFIELD, Robert; HLINSKY, Robert; FRYMAN, Marshall; SPENCE, Ross
(74) Spruson & Ferguson

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(71) IFP ENERGIES NOUVELLES
(11) AU-A-2023369720
(21) 2023369720 **(22)** 13.10.2023
(54) METHOD FOR THE FIXED-BED TREATMENT OF A HEAVY FOSSIL-BASED FEEDSTOCK COMPRISING A FRACTION OF PLASTIC PYROLYSIS OIL
(51) Int. Cl.
C10B 53/07 (2006.01)
C10G 1/00 (2006.01)
C10G 1/10 (2006.01)
C10G 9/36 (2006.01)
C10G 31/08 (2006.01)
C10G 31/09 (2006.01)
C10G 31/10 (2006.01)
C10G 32/02 (2006.01)
C10G 45/00 (2006.01)
C10G 45/02 (2006.01)
C10G 45/08 (2006.01)
C10G 47/00 (2006.01)
C10G 65/04 (2006.01)
C10G 65/12 (2006.01)
C10G 67/04 (2006.01)
(87) WO2024/088793
(31) FR2211308 **(32)** 28.10.22 **(33)** FR
(43) 02.05.2024
(72) DE SOUSA DUARTE, Marisa; WEISS, Wilfried
(74) Griffith Hack

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(71) IMCHECK THERAPEUTICS; INSTITUT NATIONAL DE LA SANTÉ ET DE LA RECHERCHE MÉDICALE; CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE; UNIVERSITÉ D'AIX-MARSEILLE; INSTITUT JEAN PAOLI & IRENE CALMETTES
(11) AU-A-2023355736
(21) 2023355736 **(22)** 03.10.2023
(54) COMBINATION OF A BTN3A ACTIVATING ANTIBODY, A BCL2 INHIBITOR AND HYPOMETHYLATING AGENT FOR USE IN TREATING CANCER
(51) Int. Cl.
C07K 16/30 (2006.01)
A61K 31/635 (2006.01)
A61K 31/706 (2006.01)
A61K 39/395 (2006.01)
A61K 45/06 (2006.01)
A61P 35/02 (2006.01)
C07K 16/28 (2006.01)
(87) WO2024/074498
(31) 22306469.2 **(32)** 04.10.22 **(33)** EP
23186069.3 18.07.23 EP
(43) 11.04.2024
(72) LE FLOCH, Anne-Charlotte; OLIVE, Daniel; VEY, Norbert; FROHNA, Paul; WIEDUWILD, Elisabeth; MAKADAMU-TIL, Loui
(74) FB Rice Pty Ltd

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(71) IMI HYDRONIC ENGINEERING INTERNATIONAL SA
(11) AU-A-2023343245
(21) 2023343245 **(22)** 21.08.2023
(54) A VALVE ARRANGEMENT FOR CONTROLLING FLUID FLOW
(51) Int. Cl.
G05D 7/06 (2006.01)
(87) WO2024/056323
(31) 22195034.8 **(32)** 12.09.22 **(33)** EP
(43) 21.03.2024
(72) JILDEROS, Daniel; KROGH, Martin; ENGELBREKTSSON, Anders
(74) FPA Patent Attorneys Pty Ltd

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(71) IMMUNOGEN, INC.
(11) AU-A-2023341187
(21) 2023341187 **(22)** 15.09.2023
(54) IMPROVED METHODS FOR PREPARING N-METHYL ALANINE ESTERS OF MAYTANSINOL
(51) Int. Cl.
C07D 498/18 (2006.01)
(87) WO2024/059267
(31) 63/407,380 **(32)** 16.09.22 **(33)** US
(43) 21.03.2024
(72) LIANG, Feng; OH, Lynette
(74) Davies Collison Cave Pty Ltd

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(71) INBRAIN PHARMA; UNIVERSITE DE LILLE; CENTRE HOSPITALIER UNIVERSITAIRE DE LILLE; INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE
(11) AU-A-2023342441
(21) 2023342441 **(22)** 13.09.2023
(54) PHARMACEUTICAL INJECTABLE SOLUTION COMPRISING DOPAMINE
(51) Int. Cl.
A61K 9/00 (2006.01)
A61K 9/08 (2006.01)
A61K 31/137 (2006.01)
(87) WO2024/056749
(31) 22306352.0 **(32)** 14.09.22 **(33)** EP
(43) 21.03.2024
(72) ODOU, Pascal; DEVOS, David; DEMAILLY, Alexandre; FISICHELLA, Matthieu
(74) FB Rice Pty Ltd

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(71) INNOVATIVE MINING PRODUCTS (PTY) LTD
(11) AU-A-2023347473
(21) 2023347473 **(22)** 11.09.2023
(54) A DISPLACEMENT MEASURING DEVICE FOR INSTALLATION IN A ROCK HOLE

PCT applications which have entered the National Phase - Name Index cont'd

(51) Int. Cl.
E21D 21/00 (2006.01)
E21D 21/02 (2006.01)
E21F 17/18 (2006.01)
G01B 5/30 (2006.01)
G01B 7/16 (2006.01)
G01B 11/16 (2006.01)
(87) WO2024/064974
(31) 2022/09801 **(32)** 20.09.22 **(33)** ZA
(43) 28.03.2024
(72) ABREU, Rual; PASTORINO, Paolo; KNOX, Greig
(74) A.P.T. Patent and Trade Mark Attorneys

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(71) INSULET CORPORATION
(11) AU-A-2023343209
(21) 2023343209 **(22)** 13.09.2023
(54) INCORPORATION OF ADDITIONAL SENSORS INTO ADAPTATION OF AID SYSTEMS
(51) Int. Cl.
G16H 20/17 (2018.01)
A61B 5/00 (2006.01)
A61B 5/145 (2006.01)
A61M 5/172 (2006.01)
G16H 40/63 (2018.01)
G16H 40/67 (2018.01)
G16H 50/20 (2018.01)
(87) WO2024/059597
(31) 63/375,561 **(32)** 14.09.22 **(33)** US
(43) 21.03.2024
(72) LEE, Joon Bok; ZHENG, Yibin; O'CONNOR, Jason; ZADE, Ashutosh
(74) Davies Collison Cave Pty Ltd

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(71) INTERNATIONAL N&H DENMARK APS; DANISCO US INC.
(11) AU-A-2023365666
(21) 2023365666 **(22)** 17.10.2023
(54) METHOD FOR IMPROVING FLAVOR IN PLANT-BASED FOOD STUFF
(51) Int. Cl.
A23L 11/30 (2016.01)
A23L 11/65 (2021.01)
A23L 27/00 (2016.01)
A23L 29/00 (2016.01)
C12N 9/10 (2006.01)
C12P 19/18 (2006.01)
C12P 19/44 (2006.01)
(87) WO2024/086560
(31) 63/379,883 **(32)** 17.10.22 **(33)** US
(43) 25.04.2024
(72) KJAER, Karina Hansen; EWERT, Jacob Franz; KRALJ, Slavko; THORSEN, Michael; HORNSHØJ, Bettina Høj; HILDEBRANDT, Katja Søholm
(74) Oxygene IP

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(71) IONIS PHARMACEUTICALS, INC.
(11) AU-A-2023347222
(21) 2023347222 **(22)** 22.09.2023
(54) COMPOUNDS AND METHODS FOR REDUCING MECP2 EXPRESSION
(51) Int. Cl.
A61K 31/712 (2006.01)
A61K 31/7115 (2006.01)
A61K 31/7125 (2006.01)
C07H 21/00 (2006.01)
C07H 21/02 (2006.01)
C07H 21/04 (2006.01)
C12N 15/113 (2010.01)
A61P 25/00 (2006.01)
(87) WO2024/064858
(31) 63/376,936 **(32)** 23.09.22 **(33)** US
(43) 28.03.2024
(72) FREIER, Susan, M.
(74) RnB IP Pty Ltd

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(71) IPSEN BIOPHARM LIMITED
(11) AU-A-2023351418
(21) 2023351418 **(22)** 28.09.2023
(54) CLOSTRIDIAL NEUROTOXINS COMPRISING AN ACTIVATING ENDOSOMAL PROTEASE CLEAVAGE SITE
(51) Int. Cl.
C07K 14/33 (2006.01)
A61K 8/64 (2006.01)
A61K 38/48 (2006.01)
(87) WO2024/069175
(31) 2214229.3 **(32)** 28.09.22 **(33)** GB
(43) 04.04.2024
(72) LIU, Sai Man; BUNTING, Karen
(74) Griffith Hack

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(71) IRBM S.P.A.; C.N.C.C.S. S.C.A.R.L. COLLEZIONE NAZIONALE DEI COMPOSTI CHIMICI E CENTRO SCREENING
(11) AU-A-2023348325
(21) 2023348325 **(22)** 29.09.2023
(54) AZOLE DERIVATIVES AS SHP2 INHIBITORS
(51) Int. Cl.
C07D 471/20 (2006.01)
A61K 31/438 (2006.01)
A61P 9/00 (2006.01)
A61P 11/00 (2006.01)
A61P 27/00 (2006.01)
A61P 35/00 (2006.01)
A61P 35/02 (2006.01)
A61P 35/04 (2006.01)
A61P 37/00 (2006.01)
A61P 37/02 (2006.01)
A61P 37/06 (2006.01)
(87) WO2024/068976
(31) 22198899.1 **(32)** 29.09.22 **(33)** EP
(43) 04.04.2024
(72) PETROCCHI, Alessia; MONTALBETTI, Christian; DI FABIO, Romano; CIAMMAICHELLA, Alina; ROSSETTI, Ilaria
(74) FB Rice Pty Ltd

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(71) ITRON, INC.
(11) AU-A-2023347640
(21) 2023347640 **(22)** 19.07.2023
(54) INTELLIGENT DATA CONTEXTUALIZATION
(51) Int. Cl.
G06Q 10/00 (2023.01)
G06Q 10/06 (2023.01)
G06Q 10/063 (2023.01)
G06Q 10/0631 (2023.01)
G06Q 50/06 (2024.01)
(87) WO2024/064432
(31) 17/948,617 **(32)** 20.09.22 **(33)** US
(43) 28.03.2024
(72) CHRISTMAN, Curtis
(74) FPA Patent Attorneys Pty Ltd

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(71) IZOTROPIC CORPORATION; ACHKIRE, Y.
(11) AU-A-2022478559
(21) 2022478559 **(22)** 13.09.2022
(54) LINEAR MOTOR ASSEMBLY FOR X-RAY COMPUTED TOMOGRAPHY SYSTEM
(51) Int. Cl.
A61B 6/04 (2006.01)
A61B 6/02 (2006.01)
A61B 6/08 (2006.01)
(87) WO2024/058806
(31) 17/942,895 **(32)** 12.09.22 **(33)** US
(43) 21.03.2024
(72) ACHKIRE, Younes
(74) Adams Pluck

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(71) JACOBSMEYER, D.
(11) AU-A-2023338962
(21) 2023338962 **(22)** 08.09.2023
(54) SECURE WALL HANGER AND METHODS OF USE
(51) Int. Cl.
A47G 1/16 (2006.01)
A47G 29/087 (2006.01)
(87) WO2024/054629
(31) 17/940,843 **(32)** 08.09.22 **(33)** US
(43) 14.03.2024
(72) JACOBSMEYER, Don
(74) AJ PARK

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(71) JAPAN CASH MACHINE CO., LTD.
(11) AU-A-2023372411
(21) 2023372411 **(22)** 31.08.2023
(54) COIN PROCESSING DEVICE
(51) Int. Cl.
G07D 11/18 (2019.01)
G07D 3/06 (2006.01)
G07D 11/235 (2019.01)
(87) WO2024/095588
(31) 2022-177387 **(32)** 04.11.22 **(33)** JP
(43) 10.05.2024
(72) NISHIMURA Kazuya
(74) Spruson & Ferguson

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(71) JAPAN CASH MACHINE CO., LTD.
(11) AU-A-2023372413
(21) 2023372413 **(22)** 31.08.2023
(54) COIN-PROCESSING DEVICE
(51) Int. Cl.
G07D 3/06 (2006.01)
(87) WO2024/095590
(31) 2022-177389 **(32)** 04.11.22 **(33)** JP
(43) 10.05.2024
(72) NISHIMURA Kazuya
(74) Spruson & Ferguson

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(71) JAPAN TOBACCO INC.
(11) AU-A-2023334673
(21) 2023334673 **(22)** 28.08.2023

PCT applications which have entered the National Phase - Name Index cont'd

(54) PYRAZOLOPYRIMIDINE COMPOUND AND PHARMACEUTICAL USE THEREOF
(51) Int. Cl.
C07D 487/04 (2006.01)
A61K 31/519 (2006.01)
A61P 1/04 (2006.01)
A61P 1/16 (2006.01)
A61P 3/06 (2006.01)
A61P 9/10 (2006.01)
A61P 19/02 (2006.01)
A61P 19/06 (2006.01)
A61P 21/02 (2006.01)
A61P 25/00 (2006.01)
A61P 25/16 (2006.01)
A61P 25/28 (2006.01)
A61P 29/00 (2006.01)
A61P 37/02 (2006.01)
A61P 43/00 (2006.01)
C07D 519/00 (2006.01)
(87) WO2024/048519
(31) 2022-135949 **(32)** 29.08.22 **(33)** JP
2023-027426 24.02.23 JP
(43) 07.03.2024
(72) OHBA, Yusuke; ADACHI, Kaoru; SAKURAI, Kentaro; SATO, Shimpei; ITO, Shunya
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) JGC CORPORATION
(11) AU-A-2023441035
(21) 2023441035 **(22)** 27.03.2023
(54) VERTICAL MULTISTAGE STIRRING SYSTEM AND CO2 FIXING METHOD
(51) Int. Cl.
B01D 11/02 (2006.01)
B01D 53/14 (2006.01)
B02C 17/16 (2006.01)
C22B 3/02 (2006.01)
(87) WO2024/201669
(43) 03.10.2024
(72) SAUDA, Kenzo; NOZOE, Yasunori; FUJIMOTO, Sho
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) JURA ELEKTROAPPARATE AG
(11) AU-A-2023376433
(21) 2023376433 **(22)** 07.11.2023
(54) METHOD FOR ESTABLISHING A CONTROL CONNECTION, MOBILE TERMINAL, SET COMPRISING A MOBILE TERMINAL AND A HOUSEHOLD APPLIANCE AND METHOD FOR RETROFITTING A HOUSEHOLD APPLIANCE
(51) Int. Cl.
H04W 4/80 (2018.01)
H04L 12/28 (2006.01)
H04L 67/12 (2022.01)
(87) WO2024/100027
(31) 22206470.1 **(32)** 09.11.22 **(33)** EP
(43) 16.05.2024
(72) KARIMIAN, Amir
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) JW PHARMACEUTICAL CORPORATION
(11) AU-A-2023348200
(21) 2023348200 **(22)** 28.09.2023
(54) A PROCESS FOR THE MANUFACTURE OF SALTS AND CRYSTALLINE FORMS OF 1-(8-BROMOPYRIDO[2,3-E][1,2,4]TRIAZOLO[4,3-A]PYRAZIN-4-YL)-N-METHYLAZETIDIN-3-AMINE AND NOVEL CRYSTALLINE FORMS
(51) Int. Cl.
C07D 471/14 (2006.01)
A61K 31/4375 (2006.01)
A61P 17/04 (2006.01)
(87) WO2024/068851
(31) 22198611.0 **(32)** 29.09.22 **(33)** EP
(43) 04.04.2024
(72) TROENSEGAARD NIELSEN, Kim; HOFMANN LARSEN, Flemming; KLARSKOV PETERSEN, Anders
(74) Spruson & Ferguson

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(71) JW PHARMACEUTICAL CORPORATION
(11) AU-A-2023352113
(21) 2023352113 **(22)** 29.09.2023
(54) NOVEL CRYSTALLINE FORM OF 1-(8-BROMOPYRIDO[2,3-E][1,2,4]TRIAZOLO[4,3-A]PYRAZIN-4-YL)-N-METHYLAZETIDIN-3-AMINE MONO SUCCINATE
(51) Int. Cl.
C07D 471/14 (2006.01)
A61K 31/4985 (2006.01)
A61P 17/00 (2006.01)
A61P 17/04 (2006.01)
(87) WO2024/069576
(31) 22199259.7 **(32)** 30.09.22 **(33)** EP
(43) 04.04.2024
(72) PARK, Suha; CHIN, Seiho; LEE, Sumin
(74) Spruson & Ferguson

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(71) KABUSHIKI KAISHA KOBE SEIKO SHO (KOBE STEEL, LTD.)
(11) AU-A-2022480928
(21) 2022480928 **(22)** 19.10.2022
(54) METHOD FOR PRODUCING IRON ORE PELLETS, AND IRON ORE PELLETS
(51) Int. Cl.
C22B 1/16 (2006.01)
C21B 5/00 (2006.01)
C22B 1/14 (2006.01)
(87) WO2024/069991
(31) 2022-152829 **(32)** 26.09.22 **(33)** JP
(43) 04.04.2024
(72) MORIOKA Koichi; TAKIGUCHI Yuta; KATO Tsugunori; KAJIYAMA Yuki
(74) FB Rice Pty Ltd

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(71) KANADEVIA CORPORATION
(11) AU-A-2023357147
(21) 2023357147 **(22)** 15.08.2023
(54) GENERATION DEVICE AND GENERATION METHOD
(51) Int. Cl.
B01J 8/02 (2006.01)
C07C 1/12 (2006.01)
C07C 9/04 (2006.01)
(87) WO2024/075400
(31) 2022-162809 **(32)** 07.10.22 **(33)** JP
(43) 11.04.2024
(72) YAMAKI, Masahiro; OHNO, Takuya; MORIYAMA, Tadahiro; ECHIGO, Takumi; SHIMAZAKI, Shingo
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) KATMA ENGINEERING GMBH
(11) AU-A-2023336212
(21) 2023336212 **(22)** 06.09.2023
(54) CLEANING STATION FOR CLEANING THE LOADING SPACE OF A MEANS OF TRANSPORT
(51) Int. Cl.
B60S 3/00 (2006.01)
B08B 9/093 (2006.01)
(87) WO2024/052394
(31) 10 2022 122 694.8 **(32)** 07.09.22 **(33)** DE
(43) 14.03.2024
(72) KATHÖFER, Felix; KATHÖFER, Patrick
(74) MBIP

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(71) KATMA ENGINEERING GMBH
(11) AU-A-2023338800
(21) 2023338800 **(22)** 06.09.2023
(54) METHOD FOR CLEANING A LOADING SPACE OF A MEANS OF TRANSPORT
(51) Int. Cl.
B60S 3/00 (2006.01)
B08B 9/093 (2006.01)
B65D 88/12 (2006.01)
G06Q 10/10 (2023.01)
(87) WO2024/052383
(31) 10 2022 122 692.1 **(32)** 07.09.22 **(33)** DE
(43) 14.03.2024
(72) KATHÖFER, Felix; KATHÖFER, Patrick
(74) MBIP

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(71) KHR BIOTEC GMBH
(11) AU-A-2023340139
(21) 2023340139 **(22)** 11.09.2023
(54) 1H-CYCLOPENTA[B]BENZOFURAN DERIVATIVES FOR THE PREVENTION AND TREATMENT OF VIRUS DISEASES
(51) Int. Cl.
A61K 31/343 (2006.01)
A61K 31/4025 (2006.01)
A61K 31/4525 (2006.01)
A61K 31/496 (2006.01)
A61K 31/5377 (2006.01)
A61K 31/541 (2006.01)
A61P 31/12 (2006.01)
(87) WO2024/056619
(31) 22020441.6 **(32)** 13.09.22 **(33)** EP
(43) 21.03.2024
(72) RAJALINGAM, Krishnaraj
(74) Griffith Hack

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(71) KIMBERLY-CLARK WORLDWIDE, INC.
(11) AU-A-2023330609
(21) 2023330609 **(22)** 13.07.2023
(54) MOISTURE ABSORBENT FILMS AND FACE MASKS INCORPORATING THE FILMS

PCT applications which have entered the National Phase - Name Index cont'd

(51) Int. Cl.
A61F 13/53 (2006.01)
A41D 13/11 (2006.01)
C08L 71/02 (2006.01)
C08L 75/04 (2006.01)
(87) WO2024/043990
(31) 63/400,649 **(32)** 24.08.22 **(33)** US
(43) 29.02.2024
(72) ZHOU, Peiguang; YANG, Kaiyuan; NG, Wing-Chak; SONG, Xuedong; COHEN, Richmond R.; LAM, Uyen T.
(74) Spruson & Ferguson

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(71) KIMBERLY-CLARK WORLDWIDE, INC.
(11) AU-A-2023330610
(21) 2023330610 **(22)** 13.07.2023
(54) WATER-RESPONSIVE FILM AND METHODS OF PRODUCING THE SAME
(51) Int. Cl.
A61F 13/15 (2006.01)
A61F 13/53 (2006.01)
C08L 71/02 (2006.01)
C08L 75/06 (2006.01)
(87) WO2024/043991
(31) 63/400,642 **(32)** 24.08.22 **(33)** US
(43) 29.02.2024
(72) COHEN, Richmond R.; HOEGER VIVAS, Ingrid C.; LAM, Uyen T.; NG, Wing-Chak; ZHOU, Peiguang
(74) Spruson & Ferguson

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(71) KIMBERLY-CLARK WORLDWIDE, INC.
(11) AU-A-2023330611
(21) 2023330611 **(22)** 13.07.2023
(54) ABSORBENT ARTICLES INCLUDING A WATER-RESPONSIVE FILM AND METHODS OF PRODUCING THE SAME
(51) Int. Cl.
A61F 13/475 (2006.01)
A61F 13/494 (2006.01)
A61F 13/53 (2006.01)
C08L 71/02 (2006.01)
C08L 75/04 (2006.01)
(87) WO2024/043992
(31) 63/400,645 **(32)** 24.08.22 **(33)** US
(43) 29.02.2024
(72) COHEN, Richmond R.; HOEGER VIVAS, Ingrid C.; LAM, Uyen T.; NG, Wing-Chak; ZHOU, Peiguang
(74) Spruson & Ferguson

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(71) KIMBERLY-CLARK WORLDWIDE, INC.
(11) AU-A-2023330616
(21) 2023330616 **(22)** 18.07.2023
(54) HEADBOX FOR MANUFACTURING A SUBSTRATE
(51) Int. Cl.
D21F 1/02 (2006.01)
A47K 10/16 (2006.01)
D21F 7/02 (2006.01)
D21F 7/04 (2006.01)
(87) WO2024/043997
(31) 63/401,266 **(32)** 26.08.22 **(33)** US
(43) 29.02.2024
(72) MARRANO, Stephen A.; KRAUTKRAMER, Kyle; RAMAZANI REND, Reza
(74) Spruson & Ferguson

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(71) KING'S COLLEGE LONDON
(11) AU-A-2023342734
(21) 2023342734 **(22)** 15.09.2023
(54) COMPOSITIONS AND METHODS FOR TREATING NEUROLOGICAL DISEASES
(51) Int. Cl.
C12N 15/113 (2010.01)
A61P 25/28 (2006.01)
(87) WO2024/056902
(31) 63/407,321 **(32)** 16.09.22 **(33)** US
(43) 21.03.2024
(72) SHAW, Christopher; LEE, Youn Bok; JOUBERT, Romain; LEE, Do Young
(74) SR Intellectual Property

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(71) KODIAK ROBOTICS, INC.
(11) AU-A-2023343095
(21) 2023343095 **(22)** 12.09.2023
(54) SYSTEMS AND METHODS FOR PROVIDING REDUNDANT PULSE-WIDTH MODULATION (PWM) THROTTLE CONTROL
(51) Int. Cl.
B60K 26/02 (2006.01)
F02D 11/10 (2006.01)
F02D 29/00 (2006.01)
F02N 11/08 (2006.01)
(87) WO2024/059526
(31) 17/931,177 **(32)** 12.09.22 **(33)** US
(43) 21.03.2024
(72) CHIU, Gary; BERG, Nathan
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) KOREA RESEARCH INSTITUTE OF CHEMICAL TECHNOLOGY; KOREA RESEARCH INSTITUTE OF BIOSCIENCE AND BIOTECHNOLOGY
(11) AU-A-2023326499
(21) 2023326499 **(22)** 17.08.2023
(54) COMPOUNDS FOR INHIBITING OR DECOMPOSING CDK2 AND/OR CDK9, AND MEDICINAL USES THEREOF
(51) Int. Cl.
C07D 473/34 (2006.01)
A61K 31/52 (2006.01)
A61P 31/18 (2006.01)
A61P 35/00 (2006.01)
(87) WO2024/039210
(31) 10-2022-0102979 **(32)** 17.08.22 **(33)** KR
(43) 22.02.2024
(72) HWANG, Jong Yeon; HA, Jae Du; CHO, Sung Yun; KIM, Pilho; PARK, Chi Hoon; KIM, Hyun Jin; KIM, Jeong Hoon; CHO, Jin Hwa; PARK, Byoung Chul; PARK, Sung Goo; KIM, Jung-Ae; CHOI, Ji Hoon; LEE, Hye Yeon; LEE, Yujin
(74) WRAYS PTY LTD

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(71) KUSMO, INC.
(11) AU-A-2023347463
(21) 2023347463 **(22)** 21.09.2023
(54) CATHETER STABILIZER AND GRIP
(51) Int. Cl.
A61M 25/01 (2006.01)
A61B 1/005 (2006.01)
A61B 5/00 (2006.01)
A61B 18/14 (2006.01)
A61M 25/02 (2006.01)
A61M 16/04 (2006.01)
(87) WO2024/064265
(31) 63/408,692 **(32)** 21.09.22 **(33)** US
(43) 28.03.2024
(72) KUSUMOTO, Walter
(74) WRAYS PTY LTD

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(71) KYOTO UNIVERSITY
(11) AU-A-2023335113
(21) 2023335113 **(22)** 31.08.2023
(54) METHOD FOR PRODUCING NAÏVE PLURIPOTENT STEM CELLS
(51) Int. Cl.
C12N 5/0735 (2010.01)
C12N 5/10 (2006.01)
(87) WO2024/048731
(31) 2022-138649 **(32)** 31.08.22 **(33)** JP
(43) 07.03.2024
(72) SAITO, Hirohide; FUJITA, Yoshihiko; HIROSAWA, Moe; HAYASHI, Karin; TAKASHIMA, Yasuhiro
(74) Griffith Hack

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(71) KYOTO UNIVERSITY; NATIONAL UNIVERSITY CORPORATION HOKKAIDO UNIVERSITY
(11) AU-A-2023367530
(21) 2023367530 **(22)** 26.10.2023
(54) PHARMACEUTICAL COMPOSITION FOR TREATING AND/OR PREVENTING RENAL CYSTIC CILIOPATHY
(51) Int. Cl.
A61K 45/00 (2006.01)
A61K 31/192 (2006.01)
A61K 31/203 (2006.01)
A61P 13/12 (2006.01)
A61P 43/00 (2006.01)
C12N 15/09 (2006.01)
(87) WO2024/090521
(31) 2022-171387 **(32)** 26.10.22 **(33)** JP
(43) 02.05.2024
(72) OSAFUNE, Kenji; MAE, Shinichi; NISHIO, Saori; HATTANDA, Fumihiko
(74) FB Rice Pty Ltd

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(71) KYRA MEDICAL, INC.
(11) AU-A-2023329811
(21) 2023329811 **(22)** 23.08.2023
(54) FLUID SOURCE MANAGEMENT SYSTEM
(51) Int. Cl.
A61M 3/02 (2006.01)
A61M 5/14 (2006.01)
A61M 39/22 (2006.01)
A61M 39/28 (2006.01)
(87) WO2024/044263
(31) 17/894,842 **(32)** 24.08.22 **(33)** US

PCT applications which have entered the National Phase - Name Index cont'd

(43) 29.02.2024
(72) DRAKE, Jesse; NORDLING, Mike; MCCARTHY, Justin; CUNNIFF, Ryan; MACPHERSON, Jeremy
(74) Davies Collison Cave Pty Ltd

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(71) LANDIS+GYR TECHNOLOGY, INC.
(11) AU-A-2023356323
(21) 2023356323 **(22)** 05.10.2023
(54) ELECTRICITY METER WITH GRID-SIDE VOLTAGE SENSING
(51) Int. Cl.
G01R 19/00 (2006.01)
G01R 31/327 (2006.01)
(87) WO2024/077115
(31) 2214709.4 **(32)** 06.10.22 **(33)** GB
2305776.3 19.04.23 GB
(43) 11.04.2024
(72) BUSEKRUS, Doug; KRAUS, Matthew Eric
(74) Davies Collison Cave Pty Ltd

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(71) LIFE EDIT THERAPEUTICS, INC.
(11) AU-A-2023331255
(21) 2023331255 **(22)** 25.08.2023
(54) CHEMICAL MODIFICATION OF GUIDE RNAS WITH LOCKED NUCLEIC ACID FOR RNA GUIDED NUCLEASE-MEDIATED GENE EDITING
(51) Int. Cl.
C12N 15/11 (2006.01)
C12N 9/22 (2006.01)
C12N 15/113 (2010.01)
C12N 5/0783 (2010.01)
(87) WO2024/042489
(31) 63/373,498 **(32)** 25.08.22 **(33)** US
63/385,887 02.12.22 US
63/517,703 04.08.23 US
(43) 29.02.2024
(72) COYLE, Michael; CRAWLEY, Alexandra Briner; ELICH, Tedd D.; KELSO, Drew; YU-KEMP, Hui-Chia; WILEY, David
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) LINDSAY CORPORATION
(11) AU-A-2023356015
(21) 2023356015 **(22)** 21.08.2023
(54) SYSTEM AND METHOD FOR COMMUNICATING TO MULTIPLE CONTROLLERS ON A MECHANIZED IRRIGATION MACHINE
(51) Int. Cl.
A01G 25/16 (2006.01)
A01G 25/02 (2006.01)
H04L 12/40 (2006.01)
(87) WO2024/076420
(31) 17/937,486 **(32)** 03.10.22 **(33)** US
(43) 11.04.2024
(72) MILLER, Mark William; BARKER, Luke Joseph
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) LIPOSPHERE LTD.
(11) AU-A-2023331605
(21) 2023331605 **(22)** 30.08.2023
(54) LIPID ANALOGS, LIPOSOMES COMPRISING SAME AND USES THEREOF
(51) Int. Cl.
A61L 27/50 (2006.01)
A61K 9/00 (2006.01)
A61K 9/127 (2006.01)
A61K 31/66 (2006.01)
A61K 31/685 (2006.01)
A61K 47/24 (2006.01)
A61K 47/54 (2017.01)
A61K 47/58 (2017.01)
A61K 47/69 (2017.01)
A61L 27/18 (2006.01)
C07F 9/10 (2006.01)
C07F 9/11 (2006.01)
C08F 10/00 (2006.01)
C08F 130/02 (2006.01)
(87) WO2024/047647
(31) 63/402,097 **(32)** 30.08.22 **(33)** US
63/427,943 25.11.22 US
(43) 07.03.2024
(72) HARNOY, Assaf J.; GOLDBERG, Ronit; JAHN, Sabrina; GRUPI, Asaf
(74) FPA Patent Attorneys Pty Ltd

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(71) LONGI GREEN ENERGY TECHNOLOGY CO., LTD.
(11) AU-A-2023399252
(21) 2023399252 **(22)** 01.09.2023
(54) BACK CONTACT BATTERY AND MANUFACTURING METHOD THEREFOR, AND PHOTOVOLTAIC MODULE
(51) Int. Cl.
H01L 23/00 (2006.01)
(87) WO2024/114009
(31) 202211538525.1 **(32)** 01.12.22 **(33)** CN
(43) 06.06.2024
(72) ZHOU, Shenghou; TANG, Xiyan; SUN, Zhaoqing; DENG, Xiaoyu; FANG, Liang; YE, Feng; XU, Xixiang
(74) Madderns Pty Ltd

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(71) LONGI GREEN ENERGY TECHNOLOGY CO., LTD.
(11) AU-A-2024324424
(21) 2024324424 **(22)** 28.06.2024
(54) BACK-CONTACT BATTERY STRING GROUP AND PHOTOVOLTAIC MODULE
(51) Int. Cl.
H01L 23/00 (2006.01)
(87) WO2025/035974
(31) 202311043041.4 **(32)** 17.08.23 **(33)** CN
(43) 20.02.2025
(72) CHEN, Xiaoniu; ZHAO, Long; LI, Jie; LYU, Jun; FENG, Chunnuan; YU, Yonglin; ZHANG, Liang
(74) Madderns Pty Ltd

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(71) LUBRIZOL ADVANCED MATERIALS, INC.
(11) AU-A-2023341626
(21) 2023341626 **(22)** 14.09.2023
(54) THERMOPLASTIC POLYURETHANE COMPOSITIONS WITH SHAPE MEMORY PROPERTIES
(51) Int. Cl.
C08G 18/32 (2006.01)
C08G 18/42 (2006.01)
C08G 18/66 (2006.01)
C08G 18/73 (2006.01)
C08G 18/76 (2006.01)
(87) WO2024/059166
(31) 22382851.8 **(32)** 15.09.22 **(33)** EP
(43) 21.03.2024
(72) BAYON RUEDA, Joan Carles; KOCIC, Nikola; RIBA GARCÍA, María Josep; GARCIA-MARTOS, Daniel
(74) Oxygene IP

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(71) M2SP LLC
(11) AU-A-2023347838
(21) 2023347838 **(22)** 18.09.2023
(54) TREATMENT FOR HEART FAILURE WITH PRESERVED EJECTION FRACTION WITH GUANETHIDINE AND GUANADREL
(51) Int. Cl.
A61K 31/554 (2006.01)
A61K 31/155 (2006.01)
A61K 31/549 (2006.01)
A61P 9/04 (2006.01)
(87) WO2024/064630
(31) 63/376,121 **(32)** 19.09.22 **(33)** US
63/486,280 22.02.23 US
(43) 28.03.2024
(72) MAURER, Mathew; GRODMAN, Marc
(74) FB Rice Pty Ltd

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(71) MAPLEBEAR INC.
(11) AU-A-2022473700
(21) 2022473700 **(22)** 10.08.2022
(54) CART-BASED AVAILABILITY DETERMINATION FOR AN ONLINE CONCIERGE SYSTEM
(51) Int. Cl.
G06Q 10/08 (2024.01)
G06Q 30/00 (2023.01)
(87) WO2024/031478
(43) 15.02.2024
(72) GAO, Lin; HUANG, Yilin; YANG, Shiyuan; WU, Hao; WU, Ganglu; ZHOU, Xiao
(74) FB Rice Pty Ltd

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(71) MAT RESEARCH B.V.
(11) AU-A-2023338793
(21) 2023338793 **(22)** 06.09.2023
(54) IMPROVED MONOCYTE ACTIVATION TEST
(51) Int. Cl.
G01N 33/50 (2006.01)
G01N 33/567 (2006.01)
G01N 33/569 (2006.01)
G01N 33/58 (2006.01)
G01N 33/68 (2006.01)
(87) WO2024/052376
(31) 22194176.8 **(32)** 06.09.22 **(33)** EP
(43) 14.03.2024
(72) MARIJT, Koen Abraham; FREIRE SANCHEZ, Guillermo
(74) FPA Patent Attorneys Pty Ltd

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(71) MAVRYCK INC.
(11) AU-A-2023322317
(21) 2023322317 **(22)** 10.08.2023

PCT applications which have entered the National Phase - Name Index cont'd

(54) SYSTEMS AND METHODS FOR PROJECT AND PROGRAM MANAGEMENT USING ARTIFICIAL INTELLIGENCE
(51) Int. Cl.
G06Q 10/0631 (2023.01)
G06N 3/02 (2006.01)
G06Q 10/0635 (2023.01)
G06Q 10/0637 (2023.01)
(87) WO2024/031191
(31) 3170083 **(32)** 10.08.22 **(33)** CA
(43) 15.02.2024
(72) MUNIR, Muhammad Shoaib
(74) FB Rice Pty Ltd

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(71) MERCK SHARP & DOHME LLC; DRAGONFLY THERAPEUTICS, INC.
(11) AU-A-2023323773
(21) 2023323773 **(22)** 08.08.2023
(54) PROTEINS BINDING NKG2D, CD16, AND CEACAM5
(51) Int. Cl.
C07K 16/30 (2006.01)
A61K 39/00 (2006.01)
C07K 16/28 (2006.01)
(87) WO2024/035662
(31) 63/396,910 **(32)** 10.08.22 **(33)** US
(43) 15.02.2024
(72) BEEBE, Amy M.; FAYADAT-DILMAN, Laurence; JAUN, Veronica M.; CHANG, Gregory P.; CHATTOPADHYAY, Souvik; CHEUNG, Ann F.; GRINBERG, Asya; HEIN, Pyae P.; WAGTMANN, Nicolai
(74) Spruson & Ferguson

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(71) MICROPYRETICS HEATERS INTERNATIONAL, INC.; VISSA, R.; SAJJA, S.; BURADA, V.; SEKHAR, J.
(11) AU-A-2023323514
(21) 2023323514 **(22)** 12.06.2023
(54) CONDUCTIVE/NON-CONDUCTIVE COMPOSITE HEATER FOR STEAM PRODUCTION
(51) Int. Cl.
H05B 3/14 (2006.01)
F22B 1/28 (2006.01)
H05B 1/02 (2006.01)
(87) WO2024/035486
(31) 63/397,620 **(32)** 12.08.22 **(33)** US
(43) 15.02.2024
(72) VISSA, Ramgopal; SAJJA, Sriramu; BURADA, Venkata; SEKHAR, Jainagesh
(74) Ashutosh Choudhary

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(71) MINDBODY, INC.
(11) AU-A-2023334172
(21) 2023334172 **(22)** 30.08.2023
(54) GOAL ORIENTED INTELLIGENT SCHEDULING SYSTEM
(51) Int. Cl.
G06Q 10/1093 (2023.01)
G06N 20/00 (2019.01)
G06Q 10/0631 (2023.01)
(87) WO2024/050390
(31) 17/900,423 **(32)** 31.08.22 **(33)** US
(43) 07.03.2024
(72) GHARAYBEH, Zaid; HENDRIX, Yulia O.; KNOX, Scott; BRYDEN, Steven J.; SARIPALLI, Kanaka Prasad; ERBY, LaDell A.
(74) FPA Patent Attorneys Pty Ltd

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(71) MINDRANK THERAPEUTICS (SUZHOU) NEW DRUG RESEARCH AND DEVELOPMENT CO., LTD; MINDRANK AI LTD.
(11) AU-A-2023337154
(21) 2023337154 **(22)** 06.09.2023
(54) POLYMORPH OF GLP-1R AGONIST COMPOUND, PREPARATION METHOD THEREFOR, AND USE THEREOF
(51) Int. Cl.
C07D 405/14 (2006.01)
A61K 31/4184 (2006.01)
A61K 31/444 (2006.01)
A61P 3/00 (2006.01)
A61P 5/50 (2006.01)
A61P 9/10 (2006.01)
A61P 19/02 (2006.01)
A61P 43/00 (2006.01)
C07D 401/14 (2006.01)
C07D 403/14 (2006.01)
C07D 487/00 (2006.01)
(87) WO2024/051749
(31) 202211096444.0 **(32)** 06.09.22 **(33)** CN
(43) 14.03.2024
(72) ZHANG, Long; NIU, Zhangming; HU, Yang
(74) WRAYS PTY LTD

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(71) MONTEFIORE MEDICAL CENTER; ALBERT EINSTEIN COLLEGE OF MEDICINE
(11) AU-A-2023329340
(21) 2023329340 **(22)** 23.08.2023
(54) FLT3 LIGAND BI-FUNCTIONAL MOLECULES FOR THROMBOPENIA AND ACUTE RADIATION SYNDROME
(51) Int. Cl.
C07K 14/52 (2006.01)
A61K 38/00 (2006.01)
A61K 38/19 (2006.01)
A61P 35/00 (2006.01)
A61P 37/04 (2006.01)
(87) WO2024/044647
(31) 63/373,436 **(32)** 24.08.22 **(33)** US
(43) 29.02.2024
(72) GUHA, Chandan; ALMO, Steven; DUDDEMPUDI, Phaneendra
(74) FB Rice Pty Ltd

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(71) MULTITUDE THERAPEUTICS INC.
(11) AU-A-2023362057
(21) 2023362057 **(22)** 18.10.2023
(54) ANTIBODIES, ANTIBODY-DRUG CONJUGATES, PREPARATIONS AND USES THEREOF
(51) Int. Cl.
C07K 16/28 (2006.01)
A61K 39/395 (2006.01)
A61K 47/68 (2017.01)
A61P 35/00 (2006.01)
C12N 15/13 (2006.01)
(87) WO2024/083162
(31) PCT/ **(32)** 19.10.22 **(33)** CN CN2022/126276
(43) 25.04.2024
(72) MENG, Xun; LIU, Shu-Hui; ZHANG, Yue
(74) FB Rice Pty Ltd

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(71) MUSIANI ANGELO
(11) AU-A-2023331855
(21) 2023331855 **(22)** 21.08.2023
(54) ARTIFICIAL LURE FOR SPORT FISHING OF AN IMPROVED TYPE
(51) Int. Cl.
A01K 85/00 (2006.01)
(87) WO2024/046802
(31) 102022000017709 **(32)** 29.08.22 **(33)** IT
(43) 07.03.2024
(72) MUSIANI, Angelo
(74) GLMR

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(71) NANJING BOSTEC BIOLOGICAL ENGINEERING CO., LTD
(11) AU-A-2022477403
(21) 2022477403 **(22)** 06.09.2022
(54) NATURAL PORPHIN SALT AND USE THEREOF AS PLANT GROWTH REGULATOR AND IMMUNE RESISTANCE INDUCER
(51) Int. Cl.
C07D 487/22 (2006.01)
A01N 43/90 (2006.01)
A01P 21/00 (2006.01)
C07D 491/22 (2006.01)
(87) WO2024/050694
(43) 14.03.2024
(72) REN, Yong; WEI, Lihui; WANG, Letian; ZHOU, Dongmei; MENG, Dongfeng
(74) LAMINAR IP PTY LTD

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(71) NANJING ROBOROCK INNOVATION TECHNOLOGY CO., LTD.
(11) AU-A-2023332688
(21) 2023332688 **(22)** 26.05.2023
(54) CLOTHING TREATMENT EQUIPMENT, WATER SUPPLY CONTROL METHOD, AND COMPUTER-READABLE STORAGE MEDIUM
(51) Int. Cl.
D06F 58/20 (2006.01)
D06F 39/08 (2006.01)
D06F 39/10 (2006.01)
(87) WO2024/045712
(31) 202222310919.3 **(32)** 31.08.22 **(33)** CN
PCT/ 31.08.22 CN CN2022/116142
PCT/ 31.08.22 CN CN2022/116387
PCT/ 17.01.23 CN CN2023/072664
(43) 07.03.2024
(72) WANG, Lei; XUE, Lei; FANG, Junjun; WANG, Tao; HAN, Xianshan; QI, Hang; HU, Chengbing; LIU, Tong
(74) Halfords IP

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(71) NEIGHBOURS, G.J.
(11) AU-A-2023337100
(21) 2023337100 **(22)** 08.09.2023

PCT applications which have entered the National Phase - Name Index cont'd

(54) HANDLING SYSTEM FOR HANDLING SECTIONS OF A STRUCTURE
(51) Int. Cl.
B66F 3/08 (2006.01)
B66F 3/44 (2006.01)
B66F 3/46 (2006.01)
B66F 9/065 (2006.01)
B66F 9/12 (2006.01)
E04B 1/35 (2006.01)
E04G 21/16 (2006.01)
F03D 13/10 (2016.01)
F03D 13/20 (2016.01)
F03D 13/25 (2016.01)
(87) WO2024/052865
(31) 2022902589 **(32)** 08.09.22 **(33)** AU
(43) 14.03.2024
(72) NEIGHBOURS, Gregory John
(74) AJ PARK

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(71) NETFLIX, INC.
(11) AU-A-2023353732
(21) 2023353732 **(22)** 27.09.2023
(54) TECHNIQUES FOR PREDICTING VIDEO QUALITY ACROSS DIFFERENT VIEWING PARAMETERS
(51) Int. Cl.
H04N 19/154 (2014.01)
H04N 19/147 (2014.01)
H04N 19/172 (2014.01)
(87) WO2024/073515
(31) 17/937,033 **(32)** 30.09.22 **(33)** US
(43) 04.04.2024
(72) BAMPIS, Christos G.; LI, Zhi
(74) FPA Patent Attorneys Pty Ltd

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(71) NEUROTECH INTERNATIONAL LTD
(11) AU-A-2023356549
(21) 2023356549 **(22)** 05.10.2023
(54) METHODS FOR TREATING PAEDIATRIC NEUROLOGICAL DISORDERS
(51) Int. Cl.
A61K 31/00 (2006.01)
A61K 31/196 (2006.01)
A61K 31/573 (2006.01)
A61K 31/635 (2006.01)
A61K 31/675 (2006.01)
A61K 47/44 (2017.01)
A61P 25/00 (2006.01)
(87) WO2024/073812
(31) 2022902914 **(32)** 06.10.22 **(33)** AU
(43) 11.04.2024
(72) CRIPPS, Allan William; ISIKGEL, Esra; ANDREWS, Alexandra Elizabeth Marion; DUTHY, Thomas George
(74) WRAYS PTY LTD

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(71) NEXTVIVO, INC.
(11) AU-A-2023337626
(21) 2023337626 **(22)** 06.09.2023
(54) SYSTEMS AND METHODS OF ENHANCING TUMOR-REACTIVE IMMUNE POPULATIONS WITH ORGANOIDS
(51) Int. Cl.
C12N 5/0783 (2010.01)
A61K 35/17 (2015.01)
A61P 35/00 (2006.01)
(87) WO2024/054518
(31) 63/374,891 **(32)** 07.09.22 **(33)** US
63/499,685 02.05.23 US
(43) 14.03.2024
(72) LEUSHACKE, Marc; JU, Jihang; HYSENAJ, Lisiena; MARGOLIN, Adam; CHARTIER-COURTAUD, Cecile
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) NOKIA TECHNOLOGIES OY
(11) AU-A-2022479729
(21) 2022479729 **(22)** 29.09.2022
(54) ACCESS CONTROL FOR ENERGY SAVING MODE
(51) Int. Cl.
H04W 76/27 (2018.01)
(87) WO2024/065478
(43) 04.04.2024
(72) LASELVA, Daniela; WU, Chunli; TAO, Tao; KOSKELA, Jarkko Tuomo
(74) Spruson & Ferguson

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(71) NOKIA TECHNOLOGIES OY
(11) AU-A-2023349826
(21) 2023349826 **(22)** 11.09.2023
(54) MANAGING OF SATELLITE ASSISTANCE INFORMATION DURING HANDOVER PROCEDURE
(51) Int. Cl.
H04W 36/00 (2009.01)
G01S 19/25 (2010.01)
H04W 84/06 (2009.01)
(87) WO2024/068251
(31) 20225862 **(32)** 29.09.22 **(33)** FI
(43) 04.04.2024
(72) MEDEIROS DE AMORIM, Rafhael; LAURIDSEN, Mads; PORTELA LOPES DE ALMEIDA, Erika
(74) Spruson & Ferguson

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(71) NOKIA TECHNOLOGIES OY
(11) AU-A-2023377997
(21) 2023377997 **(22)** 27.10.2023
(54) METHOD AND APPARATUS FOR INDICATING POSITIONING AVAILABILITY BASED ON NETWORK CONGESTION
(51) Int. Cl.
G01S 5/02 (2010.01)
H04W 4/02 (2018.01)
(87) WO2024/099804
(31) 2216596.3 **(32)** 08.11.22 **(33)** GB
(43) 16.05.2024
(72) SAHIN, Taylan; SEHIER, Philippe; MICHALOPOULOS, Diomidis; SÄILY, Mikko; BARACCA, Paolo
(74) Spruson & Ferguson

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(71) NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY(NTNU)
(11) AU-A-2023332165
(21) 2023332165 **(22)** 31.08.2023
(54) FAULT DETECTION IN SYNCHRONOUS MACHINES USING PATTERN RECOGNITION
(51) Int. Cl.
G01R 31/34 (2020.01)
(87) WO2024/047190
(31) 2212828.4 **(32)** 02.09.22 **(33)** GB
(43) 07.03.2024
(72) EHYA, Hossein
(74) FB Rice Pty Ltd

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(71) NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY (NTNU); ST. OLAVS HOSPITAL, TRONDHEIM UNIVERSITY HOSPITAL
(11) AU-A-2023329166
(21) 2023329166 **(22)** 25.08.2023
(54) AN APPARATUS FOR TREATMENT OF A CONDITION OF A NERVE AND A METHOD FOR TARGETING A NERVE FOR SUBSEQUENT TREATMENT
(51) Int. Cl.
A61B 34/20 (2016.01)
(87) WO2024/042216
(31) 2212456.4 **(32)** 26.08.22 **(33)** GB
(43) 29.02.2024
(72) BRATBAK, Daniel Fossum
(74) FB Rice Pty Ltd

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(71) NOVA-TECH ENGINEERING, LLC
(11) AU-A-2023337796
(21) 2023337796 **(22)** 07.09.2023
(54) SHRIMP SORTING SYSTEMS AND METHODS
(51) Int. Cl.
A22C 29/00 (2006.01)
A22C 29/02 (2006.01)
B65G 11/12 (2006.01)
(87) WO2024/054530
(31) 63/404,618 **(32)** 08.09.22 **(33)** US
(43) 14.03.2024
(72) EID, Elliot D.; GRAMSTAD, Derek; O'LEARY, Brian; LAMBERT, Michael; REMMEL, Shaun
(74) James & Wells Intellectual Property

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(71) NOVOZYMES A/S; MICROBIOGEN PTY. LTD.
(11) AU-A-2023347311
(21) 2023347311 **(22)** 22.09.2023
(54) IMPROVED FERMENTING ORGANISM FOR ETHANOL PRODUCTION
(51) Int. Cl.
C12P 7/06 (2006.01)
C12N 1/18 (2006.01)
C12N 15/01 (2006.01)
C12P 7/10 (2006.01)
C12R 1/865 (2006.01)
(87) WO2024/064901
(31) 63/409,501 **(32)** 23.09.22 **(33)** US
(43) 28.03.2024
(72) THOMPSON, Brianna; BELL, Philip John Livingstone; HEHMAN, Lauren; STRAHLER, Christie; COWARD-KELLY, Guillermo; OSBORNE, Robert; YAZDI, Hamid; PURKOVIC, Dragana; BOYD, Kelly
(74) Spruson & Ferguson

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(71) NUC ELECTRONICS CO., LTD.
(11) AU-A-2024264619
(21) 2024264619 **(22)** 04.09.2024

PCT applications which have entered the National Phase - Name Index cont'd

(54) SCREW FOR JUICER AND JUICER COMPRISING THE SAME
(51) Int. Cl.
A47J 19/02 (2006.01)
A23N 1/00 (2006.01)
A47J 19/06 (2006.01)
A47J 31/44 (2006.01)
(31) 10-2023-0119863 **(32)** 08.09.23 **(33)** KR
10-2024-0011894 25.01.24 KR
10-2024-0092806 15.07.24 KR
(43) 27.03.2025
(72) KIM, Jong Boo
(74) FB Rice Pty Ltd

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(71) OCADO INNOVATION LIMITED
(11) AU-A-2023328984
(21) 2023328984 **(22)** 22.08.2023
(54) DETERMINING PROPERTIES OF POWDER BED FUSION ADDITIVE MANUFACTURING PRODUCED COMPONENTS
(51) Int. Cl.
B29C 64/153 (2017.01)
B22F 10/00 (2021.01)
B29C 64/182 (2017.01)
B29C 64/386 (2017.01)
B29C 64/393 (2017.01)
B33Y 10/00 (2015.01)
B33Y 40/00 (2020.01)
B33Y 50/00 (2015.01)
B33Y 50/02 (2015.01)
B33Y 80/00 (2015.01)
(87) WO2024/042079
(31) 2212266.7 **(32)** 23.08.22 **(33)** GB
(43) 29.02.2024
(72) RUNFALK, Andreas Carl Erik; BREARLEY, Thomas James; PRZEPIÓRA, Dominik Krystian
(74) James & Wells Intellectual Property

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(71) OHIO STATE INNOVATION FOUNDATION
(11) AU-A-2023360513
(21) 2023360513 **(22)** 28.09.2023
(54) RNA COMPLEXES AND NANOSTRUCTURES FOR TREATMENT OF CANCER METASTASIS
(51) Int. Cl.
C12N 15/113 (2010.01)
A61K 9/51 (2006.01)
B82Y 5/00 (2011.01)
C12P 19/34 (2006.01)
(87) WO2024/081511
(31) 63/377,390 **(32)** 28.09.22 **(33)** US
63/511,969 05.07.23 US
(43) 18.04.2024
(72) GUO, Peixuan; LI, Xin; BINZEL, Daniel; JIN, Kai
(74) Adams Pluck

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(71) OMNIACTIVE HEALTH TECHNOLOGIES LIMITED
(11) AU-A-2024327458
(21) 2024327458 **(22)** 21.08.2024
(54) WITHANIA SOMNIFERA COMPOSITION FOR COGNITIVE HEALTH
(51) Int. Cl.
A61K 36/81 (2006.01)
A61K 9/14 (2006.01)
A61K 31/58 (2006.01)
A61K 31/702 (2006.01)
A61K 47/36 (2006.01)
A61P 43/00 (2006.01)
(87) WO2025/041168
(31) 202321029399 **(32)** 24.08.23 **(33)** IN
(43) 27.02.2025
(72) PADIGARU, Muralidhara; MORDE, Abhijeet; PATIL, Sumit; NAYAKWADI, Ravindra; PURANIK, Ninad; NAGAVEKAR, Nupur; CHAUDHARI, Bhushan
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) ONCOHOST LTD.
(11) AU-A-2023323576
(21) 2023323576 **(22)** 10.08.2023
(54) PREDICTING PATIENT RESPONSE
(51) Int. Cl.
C12Q 1/6886 (2018.01)
G01N 33/68 (2006.01)
G06F 18/24 (2023.01)
G16B 40/00 (2019.01)
G16H 10/40 (2018.01)
(87) WO2024/033930
(31) PCT/IL2022/050881 **(32)** 11.08.22 **(33)** IL
63/423,551 08.11.22 US
63/442,174 31.01.23 US
63/465,026 09.05.23 US
(43) 15.02.2024
(72) LAHAV, Coren; SELA, Itamar; ELON, Yehonatan; HAREL, Michal; JACOB, Eyal; YELLIN, Ben
(74) Collison & Co

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(71) ONO PHARMACEUTICAL CO., LTD.
(11) AU-A-2023329533
(21) 2023329533 **(22)** 22.08.2023
(54) BISPECIFIC ANTIBODY
(51) Int. Cl.
C07K 16/28 (2006.01)
A61K 39/395 (2006.01)
A61P 35/00 (2006.01)
C07K 16/46 (2006.01)
C12N 15/13 (2006.01)
(87) WO2024/043227
(31) 2022-132264 **(32)** 23.08.22 **(33)** JP
(43) 29.02.2024
(72) SHIBAYAMA, Shiro; ARIMA, Hiroshi; SAITO, Akina; NAKAMURA, Masatoshi; GUNDE, Tea; HESS, Christian; SIMONIN, Alexandre; WARMUTH, Stefan; JOHANSSON, Maria; BROCK, Matthias; WEINERT, Christopher; SPIGA, Fabio Mario
(74) Spruson & Ferguson

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(71) ONVI, INC.
(11) AU-A-2023338374
(21) 2023338374 **(22)** 07.09.2023
(54) AUGMENTED REALITY DISPLAY FOR A DENTAL TOOL
(51) Int. Cl.
A61B 1/247 (2006.01)
A61B 1/00 (2006.01)
A61B 5/00 (2006.01)
A61C 17/22 (2006.01)
G09B 19/00 (2006.01)
(87) WO2024/054905
(31) 63/404,451 **(32)** 07.09.22 **(33)** US
(43) 14.03.2024
(72) KOHLER, Craig
(74) Adams Pluck

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(71) ORCHARD HOLDING
(11) AU-A-2023347162
(21) 2023347162 **(22)** 18.09.2023
(54) A SYSTEM AND METHOD TO MEASURE, IDENTIFY, PROCESS AND REDUCE FOOD DEFECTS DURING MANUAL OR AUTOMATED PROCESSING
(51) Int. Cl.
G01N 33/12 (2006.01)
G06T 7/00 (2017.01)
G06V 20/68 (2022.01)
G06T 19/00 (2011.01)
(87) WO2024/064100
(31) 63/408,355 **(32)** 20.09.22 **(33)** US
18/369,643 18.09.23 US
(43) 28.03.2024
(72) MC DONNELL, Rian; WEIMHOLT, Elise; BROWN, Aaron; LAMB, Nicholas; NASH, Peyton; WHITEHURST, Terrance
(74) LAMINAR IP PTY LTD

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(71) ORIC PHARMACEUTICALS, INC.
(11) AU-A-2023343309
(21) 2023343309 **(22)** 13.09.2023
(54) PHARMACEUTICAL FORMS OF A CD73 INHIBITOR
(51) Int. Cl.
C07C 55/10 (2006.01)
A61K 31/675 (2006.01)
A61P 35/00 (2006.01)
C07C 65/05 (2006.01)
C07H 19/23 (2006.01)
(87) WO2024/059609
(31) 63/375,580 **(32)** 14.09.22 **(33)** US
63/497,323 20.04.23 US
(43) 21.03.2024
(72) AL-SAYAH, Mohammad; KOPPENOL, Sandy; KUMAR, Archana; NARANG, Ajit Singh; MILBURN, Robert Ronald
(74) FB Rice Pty Ltd

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(71) ORION POLYMER CORP.
(11) AU-A-2024208227
(21) 2024208227 **(22)** 12.01.2024
(54) REINFORCED ANION EXCHNAGE MEMBRANES AND METHODS OF MAKING SAME
(51) Int. Cl.
C08G 10/00 (2006.01)
C08G 2/16 (2006.01)
(87) WO2024/151961
(31) 63/438,983 **(32)** 13.01.23 **(33)** US
18/164,980 06.02.23 US
63/307,532 07.02.23 US
PCT/US2023/012399 06.02.23 US
(43) 18.07.2024
(72) BAE, Chulsung; JEON, Jong Yeob
(74) IP GATEWAY PATENT & TRADE MARK ATTORNEYS PTY LTD

PCT applications which have entered the National Phase - Name Index cont'd

(71) OSAKA UNIVERSITY; GC CORPORATION
(11) AU-A-2023361932
(21) 2023361932 **(22)** 05.10.2023
(54) GLASS POWDER COMPOSITE, AND GLASS POWDER COMPOSITE PRODUCTION METHOD
(51) Int. Cl.
C03C 8/02 (2006.01)
C03C 8/04 (2006.01)
C03C 8/08 (2006.01)
(87) WO2024/080222
(31) 2022-164278 **(32)** 12.10.22 **(33)** JP
(43) 18.04.2024
(72) IMAZATO, Satoshi; KITAGAWA, Haruaki; AKIYAMA, Ayaka; KONO, Tomoki; KATO, Katsuhito
(74) Spruson & Ferguson

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(71) OXFORD IONICS LIMITED
(11) AU-A-2023336808
(21) 2023336808 **(22)** 08.09.2023
(54) CHARGED PARTICLE TRAP
(51) Int. Cl.
G06N 10/40 (2022.01)
(87) WO2024/052689
(31) 2213239.3 **(32)** 09.09.22 **(33)** GB
(43) 14.03.2024
(72) MALINOWSKI, Maciej; ALLCOCK, David; HARTY, Thomas; BALLANCE, Chris
(74) FB Rice Pty Ltd

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(71) OXFORD NANOPORE TECHNOLOGIES PLC; VIB VZW; VRIJE UNIVERSITEIT BRUSSEL
(11) AU-A-2023366350
(21) 2023366350 **(22)** 27.10.2023
(54) PORE MONOMERS AND PORES
(51) Int. Cl.
C07K 14/35 (2006.01)
C12Q 1/6869 (2018.01)
G01N 33/487 (2006.01)
(87) WO2024/089270
(31) 2216026.1 **(32)** 28.10.22 **(33)** GB
2312689.9 18.08.23 GB
(43) 02.05.2024
(72) WALLACE, Elizabeth Jayne; ALBERTO, Riera; JAYASINGHE, Lakmal Nishantha; SCOTT, Alistair James; REMAUT, Han
(74) Spruson & Ferguson

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(71) OYSTER POINT PHARMA, INC.
(11) AU-A-2023342082
(21) 2023342082 **(22)** 14.09.2023
(54) AAV VECTORS ENCODING OXIDOREDUCTASE ENZYME AND USES THEREOF
(51) Int. Cl.
C12N 15/864 (2006.01)
A61K 38/44 (2006.01)
A61K 48/00 (2006.01)
A61P 27/02 (2006.01)
C12N 9/00 (2006.01)
(87) WO2024/059735
(31) 63/375,613 **(32)** 14.09.22 **(33)** US
63/383,055 09.11.22 US
(43) 21.03.2024
(72) CARLSON, Eric C.; NAU, Jeffrey Alan
(74) FB Rice Pty Ltd

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(71) PANASONIC INTELLECTUAL PROPERTY CORPORATION OF AMERICA
(11) AU-A-2023322164
(21) 2023322164 **(22)** 28.07.2023
(54) USER EQUIPMENT AND BASE STATION
(51) Int. Cl.
H04W 76/15 (2018.01)
H04W 52/02 (2009.01)
H04W 72/11 (2023.01)
H04W 76/28 (2018.01)
H04W 88/06 (2009.01)
H04W 72/23 (2023.01)
(87) WO2024/033115
(31) 22190171.3 **(32)** 12.08.22 **(33)** EP
(43) 15.02.2024
(72) LI, Hongchao; SUZUKI, Hidetoshi
(74) FPA Patent Attorneys Pty Ltd

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(71) PANDICA LTD
(11) AU-A-2022474302
(21) 2022474302 **(22)** 31.12.2022
(54) USE OF A CATHETER FOR ISOLATING A REGION IN A HOLLOW ORGAN OF A MAMMAL (VARIANTS)
(51) Int. Cl.
A61B 10/00 (2006.01)
A61M 25/10 (2013.01)
(87) WO2024/033700
(31) 2022122019 **(32)** 12.08.22 **(33)** RU
2022126129 06.10.22 RU
2022132961 15.12.22 RU
(43) 15.02.2024
(72) KASHINTSEV, Aleksei Arievich; PROUTSKI, Vitali Yurievich; ANISIMOV, Sergey Vladimirovich; GRANSTREM, Oleg Konstantinovich
(74) FB Rice Pty Ltd

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(71) PANGANG GROUP PANZHIHUA IRON & STEEL RESEARCH INSTITUTE CO., LTD.; CHENGDU ADVANCED METAL MATERIALS INDUSTRY TECHNOLOGY RESEARCH INSTITUTE CO., LTD.
(11) AU-A-2024211005
(21) 2024211005 **(22)** 29.05.2024
(54) Method for increasing hardened layer thickness of a rail head of a flash welded joint of a steel rail and a steel rail
(51) Int. Cl.
C21D 9/50 (2006.01)
B23K 11/04 (2006.01)
B23K 11/36 (2006.01)
C21D 1/28 (2006.01)
C21D 9/04 (2006.01)
C22C 38/02 (2006.01)
C22C 38/04 (2006.01)
C22C 38/12 (2006.01)
C22C 38/18 (2006.01)
C22C 38/24 (2006.01)
E01B 5/02 (2006.01)
E01B 31/18 (2006.01)
B23K 101/26 (2006.01)
(31) 202311153004.9 **(32)** 07.09.23 **(33)** CN
(43) 27.03.2025
(72) LU, Xin; LI, Dadong; DENG, Jian; HUANG, Jie
(74) James & Wells Intellectual Property

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(71) PAYPAL, INC.
(11) AU-A-2022478629
(21) 2022478629 **(22)** 13.09.2022
(54) DUAL WRITE AND DUAL READ ACCESS TO GRAPH DATABASES
(51) Int. Cl.
G06F 16/2453 (2019.01)
(87) WO2024/055153
(43) 21.03.2024
(72) ZHANG, Xia; ZHANG, Pengshan; WANG, Kun; FANG, Jiaxin; LI, Jun; WANG, Xin; LIU, Yangxing; ZHANG, Yu; LIAN, Changle; YUE, Ying; LUAN, Xiaojun
(74) FPA Patent Attorneys Pty Ltd

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(71) PEPSICO INTERNATIONAL LIMITED
(11) AU-A-2023369569
(21) 2023369569 **(22)** 25.10.2023
(54) VEGETABLE- AND/OR FRUIT-CONTAINING SNACK FOOD PRODUCTS AND MANUFACTURE THEREOF
(51) Int. Cl.
A21D 2/36 (2006.01)
A23B 2/80 (2025.01)
A23B 7/04 (2006.01)
A23L 19/00 (2016.01)
A23L 19/18 (2016.01)
(87) WO2024/089617
(31) 2215829.9 **(32)** 26.10.22 **(33)** GB
(43) 02.05.2024
(72) BOWS, John Richard; LANGSTON, Faye Margaret Alison
(74) James & Wells Intellectual Property

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(71) PILKINGTON GROUP LIMITED; TECHNOFORM GLASS INSULATION HOLDING GMBH
(11) AU-A-2023342331
(21) 2023342331 **(22)** 12.09.2023
(54) ASSEMBLY FOR INSULATED GLAZING AND INSULATED GLAZING
(51) Int. Cl.
E06B 3/663 (2006.01)
E06B 3/667 (2006.01)
(87) WO2024/056684
(31) 22195339.1 **(32)** 13.09.22 **(33)** EP
(43) 21.03.2024
(72) RIBBERINK, Marcel; HAYN, Christoph; KNOLL, Arthur; FRANK, Marek
(74) Madderns Pty Ltd

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(71) PPC BROADBAND, INC.
(11) AU-A-2023338725
(21) 2023338725 **(22)** 06.09.2023
(54) ADAPTER BULKHEAD STRUCTURALLY CONFIGURED TO ENHANCE ACCESS TO ADAPTERS ON AN ADAPTER HOLDER
(51) Int. Cl.
G02B 6/38 (2006.01)

PCT applications which have entered the National Phase - Name Index cont'd

(87) WO2024/054474
(31) 63/374,659 **(32)** 06.09.22 **(33)** US
63/462,686 28.04.23 US
(43) 14.03.2024
(72) LARSSON, Nicholas
(74) Origin Patent and Trade Mark Attorneys

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(71) PRIMIENT COVATION LLC
(11) AU-A-2023341158
(21) 2023341158 **(22)** 15.09.2023
(54) COMPOSITIONS COMPRISING AND METHODS OF USING 1,3-PROPANEDIOL TO IMPROVE SWEETNESS AND/OR REDUCE BITTERNESS OF SWEETENERS
(51) Int. Cl.
A23L 27/30 (2016.01)
A23L 27/00 (2016.01)
A23L 29/30 (2016.01)
(87) WO2024/059238
(31) 63/407,250 **(32)** 16.09.22 **(33)** US
(43) 21.03.2024
(72) GAHAN, Sean L.; WOO, Alexander H.
(74) HENRY HUGHES IP LTD

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(71) PROKARIUM LIMITED
(11) AU-A-2023346467
(21) 2023346467 **(22)** 14.09.2023
(54) SALMONELLA STRAIN WITH CHROMOSOMALLY INTEGRATED LANDING PAD
(51) Int. Cl.
C12N 15/74 (2006.01)
A61K 35/00 (2006.01)
(87) WO2024/061748
(31) 22196895.1 **(32)** 21.09.22 **(33)** EP
(43) 28.03.2024
(72) CARRERA, Marc Biarnes; SALERNO, Paola
(74) FPA Patent Attorneys Pty Ltd

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(71) PROKARIUM LIMITED
(11) AU-A-2023361317
(21) 2023361317 **(22)** 13.10.2023
(54) BACTOFECTION
(51) Int. Cl.
C07K 14/255 (2006.01)
A61K 48/00 (2006.01)
C12N 9/12 (2006.01)
C12N 15/74 (2006.01)
C12R 1/42 (2006.01)
(87) WO2024/079358
(31) 2215134.4 **(32)** 13.10.22 **(33)** GB
(43) 18.04.2024
(72) CARRERA, Marc Biarnes; PETSIOU, Georgia
(74) FPA Patent Attorneys Pty Ltd

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(71) PSIQUANTUM, CORP.
(11) AU-A-2023338711
(21) 2023338711 **(22)** 05.09.2023
(54) CRYOGENIC CHIP-ON-CHIP ASSEMBLIES WITH THROUGH SUBSTRATE VIAS AND METHODS OF FORMING THEREOF
(51) Int. Cl.
H01L 25/16 (2023.01)
H01L 23/34 (2006.01)
H01L 25/18 (2023.01)
G02B 6/12 (2006.01)
G02B 6/42 (2006.01)
G02B 6/43 (2006.01)
(87) WO2024/054460
(31) 63/374,617 **(32)** 06.09.22 **(33)** US
(43) 14.03.2024
(72) VERT, Alexey; KAMINENI, Vimal
(74) RnB IP Pty Ltd

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(71) PULMATRIX OPERATING COMPANY, INC.
(11) AU-A-2023334713
(21) 2023334713 **(22)** 31.08.2023
(54) METHODS OF USING ITRACONAZOLE DRY POWDERS
(51) Int. Cl.
A61K 31/496 (2006.01)
A61K 9/00 (2006.01)
A61K 31/5517 (2006.01)
A61K 45/06 (2006.01)
A61P 11/00 (2006.01)
A61P 11/06 (2006.01)
A61P 11/14 (2006.01)
A61P 31/10 (2006.01)
(87) WO2024/049982
(31) 63/402,577 **(32)** 31.08.22 **(33)** US
(43) 07.03.2024
(72) CURRAN, Aidan
(74) Davies Collison Cave Pty Ltd

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(71) PULSE BIOSCIENCES, INC.
(11) AU-A-2023358773
(21) 2023358773 **(22)** 13.10.2023
(54) MULTI-STRUT ABLATION AND SENSING CATHETER DEVICES AND METHODS
(51) Int. Cl.
A61B 18/14 (2006.01)
A61B 18/00 (2006.01)
A61B 18/12 (2006.01)
(87) WO2024/081897
(31) 18/046,784 **(32)** 14.10.22 **(33)** US
18/353,867 17.07.23 US
(43) 18.04.2024
(72) TUROVSKIY, Roman; KIRKLAND, David R.
(74) Integrated IP

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(71) R.I.P., LLC
(11) AU-A-2023333379
(21) 2023333379 **(22)** 05.09.2023
(54) ADJUSTABLE SLEEP APNEA ORAL APPLIANCE FOR USE WITH ORTHODONTIC BRACES
(51) Int. Cl.
A61C 7/08 (2006.01)
A61C 7/36 (2006.01)
A61F 5/56 (2006.01)
A61C 7/00 (2006.01)
A61C 19/00 (2006.01)
(87) WO2024/050568
(31) 63/403,400 **(32)** 02.09.22 **(33)** US
(43) 07.03.2024
(72) VEIS, Rob
(74) Madderns Pty Ltd

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(71) READYLINKS INC.
(11) AU-A-2023330158
(21) 2023330158 **(22)** 22.08.2023
(54) SYSTEMS AND METHODS FOR CLOUD-BASED NETWORK CONTROL
(51) Int. Cl.
H04L 9/40 (2022.01)
(87) WO2024/044598
(31) 63/401,373 **(32)** 26.08.22 **(33)** US
(43) 29.02.2024
(72) SYNSTELIEN, Alec R.; SYNSTELIEN, Justin L.; SYNSTELIEN, Brady M.; SYNSTELIEN, Garrett D.; SYNSTELIEN, Larry D.
(74) FB Rice Pty Ltd

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(71) RECKITT & COLMAN (OVERSEAS) HYGIENE HOME LIMITED
(11) AU-A-2023332417
(21) 2023332417 **(22)** 01.09.2023
(54) A METHOD OF MANUFACTURING A SCENTED CANDLE
(51) Int. Cl.
C11C 5/00 (2006.01)
(87) WO2024/047365
(31) PCT/ **(32)** 02.09.22 **(33)** CN
CN2022/116754
(43) 07.03.2024
(72) BOSSARD, Isabelle; MIXTRO SERRASQUEIRO, Marina; PEACOCK, Lewis; QUMMER, Saad; TARASEK, Damian; TONIOLO, Umberto; ZHANG, Wenhao
(74) RnB IP

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(71) REDDROP DX, INC.
(11) AU-A-2023331054
(21) 2023331054 **(22)** 22.08.2023
(54) ACCELERATED ERGONOMIC COLLECTION OF CAPILLARY BLOOD
(51) Int. Cl.
A61B 5/15 (2006.01)
A61J 1/05 (2006.01)
G01N 1/02 (2006.01)
(87) WO2024/044200
(31) 63/400,277 **(32)** 23.08.22 **(33)** US
18/081,475 14.12.22 US
18/110,566 16.02.23 US
(43) 29.02.2024
(72) BUCHANAN, Kristopher Scott; BUCHANAN, William Kristopher; VAN DEN BOOM, Dirk; JOHANNSEN, Thomas Michael; HAGER, Wesley Joseph; HUNTINGDON, Matthew Bryan; FRANKSON, Christopher Andrew; BRUGGEMAN, Landon; CASTILLO, Dominic
(74) FB Rice Pty Ltd

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(71) RELIANCE WORLDWIDE CORPORATION
(11) AU-A-2023356672
(21) 2023356672 **(22)** 06.10.2023
(54) PRESS FITTING
(51) Int. Cl.
F16L 37/02 (2006.01)
F16L 25/12 (2006.01)
F16L 33/22 (2006.01)

PCT applications which have entered the National Phase - Name Index cont'd

(87) WO2024/076732
(31) 63/378,637 **(32)** 06.10.22 **(33)** US
63/519,609 15.08.23 US
(43) 11.04.2024
(72) CATALANO, Joseph Derres; RAVISANKAR, Sai Kishore
(74) Allens Patent & Trade Mark Attorneys

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(71) RENEWABLE ENERGY GROUP, INC.
(11) AU-A-2023383196
(21) 2023383196 **(22)** 29.09.2023
(54) HYDRODEOXYGENATION OF PHENOLIC LIPIDS AND RENEWABLE HYDROCARBON FUELS PRODUCED THEREFROM
(51) Int. Cl.
C07C 65/19 (2006.01)
C10L 1/02 (2006.01)
C25B 1/04 (2021.01)
C25B 15/08 (2006.01)
(87) WO2024/107490
(31) 63/377,573 **(32)** 29.09.22 **(33)** US
(43) 23.05.2024
(72) BROWN, Jared; ABHARI, Ramin; HAVERLY, Martin; SLADE, David A.; GHONASGI, Dhananjay
(74) FPA Patent Attorneys Pty Ltd

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(71) RESEARCH INSTITUTE AT NATIONWIDE CHILDREN'S HOSPITAL
(11) AU-A-2023390911
(21) 2023390911 **(22)** 11.12.2023
(54) CHIMERIC ANTIGEN RECEPTOR (CAR) T CELLS AND USES THEREOF
(51) Int. Cl.
C12N 15/90 (2006.01)
A61K 35/17 (2015.01)
A61K 48/00 (2006.01)
A61P 35/00 (2006.01)
C12N 15/86 (2006.01)
(87) WO2024/124243
(31) 63/431,354 **(32)** 09.12.22 **(33)** US
(43) 13.06.2024
(72) LEE, Dean; NAEIMI KARAROUDI, Meisam
(74) FB Rice Pty Ltd

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(71) REVLON CONSUMER PRODUCTS LLC
(11) AU-A-2023368565
(21) 2023368565 **(22)** 06.09.2023
(54) LONG WEAR NON-CRACKING COLOR COSMETIC COMPOSITIONS
(51) Int. Cl.
A61K 8/30 (2006.01)
A61K 8/891 (2006.01)
A61K 8/898 (2006.01)
A61Q 1/04 (2006.01)
(87) WO2024/091736
(31) 63/381,008 **(32)** 26.10.22 **(33)** US
(43) 02.05.2024
(72) SHAH, Sweety; DACRUZ, Deanna
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) RICOH COMPANY, LTD.
(11) AU-A-2023354806
(21) 2023354806 **(22)** 05.09.2023
(54) INFORMATION PROCESSING DEVICE, INFORMATION PROCESSING METHOD, PROGRAM, AND INFORMATION PROCESSING SYSTEM
(51) Int. Cl.
G06T 3/00 (2024.01)
E01C 23/01 (2006.01)
(87) WO2024/070532
(31) 2022-152354 **(32)** 26.09.22 **(33)** JP
2023-124018 31.07.23 JP
(43) 04.04.2024
(72) YAMAMOTO Ryouji; TATSUNO Hibiki
(74) WRAYS PTY LTD

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(71) RINRI THERAPEUTICS LIMITED
(11) AU-A-2023348283
(21) 2023348283 **(22)** 29.09.2023
(54) LAMININ CELL CULTURE SUBSTRATE AND PROTOCOL
(51) Int. Cl.
C12N 5/0793 (2010.01)
C07K 14/78 (2006.01)
C12N 5/0797 (2010.01)
(87) WO2024/068934
(31) 2214291.3 **(32)** 29.09.22 **(33)** GB
(43) 04.04.2024
(72) RIVOLTA, Carlos Marcelo Nicolas; ABBAS, Leila
(74) FB Rice Pty Ltd

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(71) ROBOTIC TECHNOLOGIES LIMITED
(11) AU-A-2023341007
(21) 2023341007 **(22)** 11.09.2023
(54) CARCASS PROCESSING MACHINE AND ASSEMBLIES
(51) Int. Cl.
A22B 5/00 (2006.01)
A22C 17/00 (2006.01)
(87) WO2024/058674
(31) 792240 **(32)** 12.09.22 **(33)** NZ
(43) 21.03.2024
(72) MAUNSELL, Stephen Robert; FERN, Steven John; LORMANS, Ian Joseph; HOPKINS, Liam James
(74) ET Intellectual Property

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(71) RONDEROS, J.F.; DANEK, C.; GUITIERREZ HERNANDEZ, A.E.
(11) AU-A-2023325098
(21) 2023325098 **(22)** 16.08.2023
(54) TULIP SIDECAR DEVICES, SYSTEMS, AND METHODS
(51) Int. Cl.
A61B 17/70 (2006.01)
A61B 17/86 (2006.01)
(87) WO2024/040102
(31) 63/398,398 **(32)** 16.08.22 **(33)** US
63/488,592 06.03.23 US
(43) 22.02.2024
(72) RONDEROS, Juan Felix; DANEK, Chris; GUITIERREZ HERNANDEZ, Andres Eduardo
(74) FB Rice Pty Ltd

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(71) SABAN VENTURES PTY LIMITED
(11) AU-A-2022480035
(21) 2022480035 **(22)** 08.12.2022
(54) CLEANING AGENT CARTRIDGE
(51) Int. Cl.
B08B 9/032 (2006.01)
A61B 90/70 (2016.01)
B08B 3/00 (2006.01)
B65D 43/02 (2006.01)
B65D 47/00 (2006.01)
B65D 47/06 (2006.01)
B65D 51/24 (2006.01)
B65D 55/02 (2006.01)
B65D 81/24 (2006.01)
B65D 85/804 (2006.01)
(87) WO2024/064992
(31) 2022902786 **(32)** 26.09.22 **(33)** AU
(43) 04.04.2024
(72) KAYVANPOUR, Amir Hossein; PIDCOCK, David Anthony; ASPA, Rigor Del Mundo; TSUBONO, Makomo; TRAN, Phuong Hy Ton; MERAM, Joanne Aguirre
(74) Spruson & Ferguson

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(71) SAINT-GOBAIN ISOVER
(11) AU-A-2023342455
(21) 2023342455 **(22)** 13.09.2023
(54) METHOD FOR MANUFACTURING GLASS, AND HYDBRID GLASS FURNACE FOR IMPLEMENTING THE MANUFACTURING METHOD
(51) Int. Cl.
C03B 5/03 (2006.01)
C03B 5/00 (2006.01)
C03B 5/04 (2006.01)
C03B 5/20 (2006.01)
C03B 5/235 (2006.01)
C03C 1/00 (2006.01)
(87) WO2024/056763
(31) FR2209219 **(32)** 14.09.22 **(33)** FR
(43) 21.03.2024
(72) GUILLET, Thibault; CLATOT, Richard; GIMENEZ, Guillaume
(74) Griffith Hack

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(71) SALTS HEALTHCARE LIMITED
(11) AU-A-2023336722
(21) 2023336722 **(22)** 01.09.2023
(54) A DRAINAGE ASSEMBLY
(51) Int. Cl.
A61F 5/445 (2006.01)
(87) WO2024/052649
(31) 2212884.7 **(32)** 05.09.22 **(33)** GB
(43) 14.03.2024
(72) SMITH, Lee
(74) AJ PARK

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(71) SAMYANG CORPORATION
(11) AU-A-2023325533
(21) 2023325533 **(22)** 16.08.2023
(54) COATING COMPOSITION COMPRISING KESTOSE
(51) Int. Cl.
A23P 20/10 (2016.01)
A23L 7/104 (2016.01)
A23L 7/126 (2016.01)
A23L 19/00 (2016.01)
A23L 25/00 (2016.01)
A23L 29/30 (2016.01)
A23P 10/28 (2016.01)

PCT applications which have entered the National Phase - Name Index cont'd

(87) WO2024/039171
(31) 10-2022-0102270 **(32)** 16.08.22 **(33)** KR
(43) 22.02.2024
(72) KIM, Yong-In; SEO, Il; LEE, Seung Mi; LEE, Hyeon-Hwa; LIM, Hye Jin; CHOI, Hyun Shik
(74) FB Rice Pty Ltd

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(71) SANDVIK MINING AND CONSTRUCTION OY
(11) AU-A-2023346910
(21) 2023346910 **(22)** 20.09.2023
(54) AN APPARATUS AND A METHOD FOR MONITORING A ROCK DRILLING RIG
(51) Int. Cl.
E21B 7/02 (2006.01)
(87) WO2024/061981
(31) 22196739.1 **(32)** 20.09.22 **(33)** EP
(43) 28.03.2024
(72) PUURA, Jussi; LIIKANEN, Henri
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) SANDVIK MINING AND CONSTRUCTION OY
(11) AU-A-2023346911
(21) 2023346911 **(22)** 20.09.2023
(54) A SENSOR SYSTEM AND A METHOD FOR A MINING VEHICLE
(51) Int. Cl.
G01S 7/00 (2006.01)
G01S 7/481 (2006.01)
G01S 13/89 (2006.01)
G01S 13/93 (2020.01)
G01S 17/89 (2020.01)
G01S 17/93 (2020.01)
(87) WO2024/061982
(31) 22196726.8 **(32)** 20.09.22 **(33)** EP
(43) 28.03.2024
(72) PUURA, Jussi
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) SANDVIK MINING AND CONSTRUCTION OY
(11) AU-A-2023346912
(21) 2023346912 **(22)** 20.09.2023
(54) DETERMINATION OF A ROUTE IN AN UNDERGOUND WORKSITE FOR A MINING VEHICLE
(51) Int. Cl.
E21B 7/02 (2006.01)
E21B 44/00 (2006.01)
G05D 1/20 (2024.01)
(87) WO2024/061983
(31) 22196731.8 **(32)** 20.09.22 **(33)** EP
(43) 28.03.2024
(72) PUURA, Jussi; SIIVONEN, Lauri; LIIKANEN, Henri
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) SANDVIK MINING AND CONSTRUCTION OY
(11) AU-A-2023347016
(21) 2023347016 **(22)** 20.09.2023
(54) DETERMINATION OF AN UPDATED DRILLING PLAN
(51) Int. Cl.
E21B 7/02 (2006.01)
B25J 9/16 (2006.01)
(87) WO2024/061995
(31) 22196730.0 **(32)** 20.09.22 **(33)** EP
(43) 28.03.2024
(72) PUURA, Jussi; VON ESSEN, Tomi; NURMINEN, Petri; KIVELÄ, Tuomo; PESOLA, Mikko
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) SANDVIK MINING AND CONSTRUCTION OY
(11) AU-A-2023347017
(21) 2023347017 **(22)** 20.09.2023
(54) ENVIRONMENT RELATED DATA MANAGEMENT FOR A MOBILE MINING VEHICLE
(51) Int. Cl.
G05D 1/00 (2024.01)
(87) WO2024/061996
(31) 22196732.6 **(32)** 20.09.22 **(33)** EP
(43) 28.03.2024
(72) PUURA, Jussi; VON ESSEN, Tomi
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) SANI MEMBRANES A/S
(11) AU-A-2023361028
(21) 2023361028 **(22)** 12.10.2023
(54) VIBRATING FILTRATION DEVICE
(51) Int. Cl.
B01D 61/14 (2006.01)
B01D 61/18 (2006.01)
B01D 61/20 (2006.01)
B01D 63/08 (2006.01)
B01D 63/16 (2006.01)
B01D 65/08 (2006.01)
(87) WO2024/079290
(31) 22201641.2 **(32)** 14.10.22 **(33)** EP
(43) 18.04.2024
(72) HJELMSMARK, Henrik
(74) FPA Patent Attorneys Pty Ltd

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(71) SATTVAPONICS SOLUTIONS PVT LTD
(11) AU-A-2023331344
(21) 2023331344 **(22)** 25.08.2023
(54) A PROCESS FOR EXTRACTING MUNG BEAN PROTEIN
(51) Int. Cl.
A23J 1/14 (2006.01)
A23J 3/14 (2006.01)
A23L 11/00 (2021.01)
(87) WO2024/042553
(31) 202221048784 **(32)** 26.08.22 **(33)** IN
(43) 29.02.2024
(72) PAREKH, Kevin; KORDE, Ashish; KASHIKAR, Nilambari C.; CHITNIS, Anuradha; SALI, Mrunal
(74) LexGeneris Pty Ltd

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(71) SCHLUMBERGER TECHNOLOGY B.V.
(11) AU-A-2023342784
(21) 2023342784 **(22)** 12.09.2023
(54) A METHOD OF CALIBRATION FOR CONTINUOUS MONITORING OF METHANE GAS FUGITIVE EMISSIONS
(51) Int. Cl.
G01N 27/02 (2006.01)
G01N 33/00 (2006.01)
G06N 3/04 (2023.01)
G06N 20/00 (2019.01)
(87) WO2024/059020
(31) 63/375,575 **(32)** 14.09.22 **(33)** US
(43) 21.03.2024
(72) ANDREWS, Albert, Ballard; SPECK, Andrew, J.; DAUPHIN, Mathieu; CHAKRABARTI, Aditi
(74) Griffith Hack

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(71) SHANGHAI LANGBO COMMUNICATION TECHNOLOGY COMPANY LIMITED
(11) AU-A-2023321569
(21) 2023321569 **(22)** 07.08.2023
(54) METHOD AND APPARATUS FOR WIRELESS COMMUNICATION
(51) Int. Cl.
H04W 72/04 (2023.01)
(87) WO2024/032520
(31) 202210971235.X **(32)** 12.08.22 **(33)** CN
(43) 15.02.2024
(72) JIANG, Qi; ZHANG, Xiaobo
(74) FB Rice Pty Ltd

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(71) SHAPE THERAPEUTICS INC.
(11) AU-A-2023329830
(21) 2023329830 **(22)** 23.08.2023
(54) ENGINEERED CONSTRUCTS FOR INCREASED TRANSCRIPTION OF RNA PAYLOADS
(51) Int. Cl.
C12N 15/113 (2010.01)
C12N 15/63 (2006.01)
(87) WO2024/044282
(31) 63/400,583 **(32)** 24.08.22 **(33)** US
63/419,889 27.10.22 US
63/453,584 21.03.23 US
63/466,625 15.05.23 US
(43) 29.02.2024
(72) BURLEIGH, Stephen; LEE, Duankun; BRIGGS, Adrian Wrangham
(74) FB Rice Pty Ltd

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(71) SHENZHEN GREPOW BATTERY CO., LTD
(11) AU-A-2023340414
(21) 2023340414 **(22)** 10.02.2023
(54) DETACHABLE MOVING SNAP-FIT FASTENER
(51) Int. Cl.
A44B 11/25 (2006.01)
(87) WO2024/055503
(31) 202222452270.9 **(32)** 15.09.22 **(33)** CN
(43) 21.03.2024
(72) LIU, Bing; LIU, Shiyu; LIU, Su; LI, Gang; LIN, Li; ZHAO, Shixing; GUO, Bing
(74) SHENZHEN GREPOW BATTERY CO., LTD

PCT applications which have entered the National Phase - Name Index cont'd

(71) SHENZHEN GREPOW BATTERY CO., LTD.
(11) AU-A-2023344595
(21) 2023344595 **(22)** 17.01.2023
(54) CHIP MOUNTING FIXTURE AND CHIP MOUNTING PROCESS
(51) Int. Cl.
H01L 21/60 (2006.01)
H01L 21/673 (2006.01)
(87) WO2024/060476
(31) 202211166676.9 **(32)** 23.09.22 **(33)** CN
(43) 28.03.2024
(72) LIU, Shiyu; GUO, Bing; LI, Gang; LI, Long; YANG, Miao
(74) SHENZHEN GREPOW BATTERY CO., LTD

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(71) SKIN ANALYTICS LTD.
(11) AU-A-2023345765
(21) 2023345765 **(22)** 12.07.2023
(54) CALIBRATING OUTPUT FROM AN IMAGE CLASSIFIER
(51) Int. Cl.
G06V 10/776 (2022.01)
G06V 10/778 (2022.01)
(87) WO2024/061505
(31) 17/934,182 **(32)** 21.09.22 **(33)** US
(43) 28.03.2024
(72) GREENHALGH, Jack; KEMOS, Polychronis; BAZAGA GARCIA, David; DALY, Neil
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) SMARTSEAL AS
(11) AU-A-2023339402
(21) 2023339402 **(22)** 17.04.2023
(54) SEALING UNIT FOR A LIQUID CONTAINER
(51) Int. Cl.
B65D 47/24 (2006.01)
B65D 47/32 (2006.01)
(87) WO2024/051968
(31) 2032997 **(32)** 09.09.22 **(33)** NL
(43) 14.03.2024
(72) GEBBINK, Jeroen Gerrit Anton; KNUTSEN, Rune Kristian
(74) Spruson & Ferguson

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(71) SOCIÉTÉ DES PRODUITS NESTLÉ S.A.
(11) AU-A-2023359918
(21) 2023359918 **(22)** 10.10.2023
(54) SUSTAINED RELEASE MELATONIN COMPOSITIONS
(51) Int. Cl.
A61K 9/00 (2006.01)
A61K 9/14 (2006.01)
A61K 47/34 (2017.01)
A61K 47/36 (2006.01)
(87) WO2024/079125
(31) 63/416,074 **(32)** 14.10.22 **(33)** US
63/455,331 29.03.23 US
(43) 18.04.2024
(72) REZA, Md Ehtesham; MILADINOV, Vesselin Danailov; WARRINGTON, Richard Mark
(74) Spruson & Ferguson

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(71) SOCIÉTÉ DES PRODUITS NESTLÉ S.A.
(11) AU-A-2023362000
(21) 2023362000 **(22)** 18.10.2023
(54) FOAMING INGREDIENT
(51) Int. Cl.
A23F 5/40 (2006.01)
A23C 9/152 (2006.01)
A23C 13/12 (2006.01)
A23L 2/54 (2006.01)
A23L 29/25 (2016.01)
A23L 29/30 (2016.01)
A23P 30/40 (2016.01)
(87) WO2024/083890
(31) 22202224.6 **(32)** 18.10.22 **(33)** EP
(43) 25.04.2024
(72) RUIZ BARBERO, Sheila; DUPAS-LANGLET, Marina; LAMOTHE, Lisa; MEUNIER, Vincent Daniel Maurice; SCHMITT, Christophe Joseph Etienne; MICHEL, Sarah
(74) Spruson & Ferguson

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(71) SOCIÉTÉ DES PRODUITS NESTLÉ S.A.
(11) AU-A-2023374669
(21) 2023374669 **(22)** 02.11.2023
(54) BEVERAGE OR FOODSTUFF PREPARATION SYSTEM
(51) Int. Cl.
B65D 85/804 (2006.01)
(87) WO2024/094786
(31) 22205441.3 **(32)** 04.11.22 **(33)** EP
2216443.8 04.11.22 GB
(43) 10.05.2024
(72) NOTH, André
(74) Spruson & Ferguson

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(71) SOCIÉTÉ DES PRODUITS NESTLÉ S.A.
(11) AU-A-2023378254
(21) 2023378254 **(22)** 03.11.2023
(54) COMPOSITIONS AND METHODS USING A COMBINATION OF OLEUROPEIN AND TAURINE
(51) Int. Cl.
A61K 31/351 (2006.01)
A23L 33/00 (2016.01)
A61K 31/185 (2006.01)
A61K 31/7048 (2006.01)
A61P 3/14 (2006.01)
A61P 21/00 (2006.01)
A61P 25/00 (2006.01)
A61P 39/06 (2006.01)
(87) WO2024/099884
(31) 63/423,965 **(32)** 09.11.22 **(33)** US
(43) 16.05.2024
(72) DE MARCHI, Umberto; HORSTMAN, Astrid; FEIGE, Jerome
(74) Spruson & Ferguson

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(71) SOCIÉTÉ DES PRODUITS NESTLÉ S.A.
(11) AU-A-2023378255
(21) 2023378255 **(22)** 03.11.2023
(54) COMPOSITIONS AND METHODS USING A COMBINATION OF OLEUROPEIN AND TAURINE FOR USE IN PREVENTION OR TREATMENT OF JOINT DISORDERS
(51) Int. Cl.
A61K 31/7048 (2006.01)
A23L 33/10 (2016.01)
A61K 31/185 (2006.01)
A61P 19/02 (2006.01)
(87) WO2024/099885
(31) 22206277.0 **(32)** 09.11.22 **(33)** EP
(43) 16.05.2024
(72) DE MARCHI, Umberto; HORCAJADA, Marie Noëlle; FEIGE, Jerome
(74) Spruson & Ferguson

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(71) SOCIÉTÉ DES PRODUITS NESTLÉ S.A.
(11) AU-A-2023378946
(21) 2023378946 **(22)** 11.10.2023
(54) BEVERAGE PREPARATION MACHINE
(51) Int. Cl.
A47J 31/44 (2006.01)
(87) WO2024/099674
(31) 22205828.1 **(32)** 07.11.22 **(33)** EP
(43) 16.05.2024
(72) KOLLEP, Alexandre; VUAGNIAUX, Didier
(74) Spruson & Ferguson

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(71) SONOMA BIOTHERAPEUTICS, INC.
(11) AU-A-2023347848
(21) 2023347848 **(22)** 18.09.2023
(54) CITRULLINATED ANTIGEN-SPECIFIC CHIMERIC ANTIGEN RECEPTORS FOR TARGETING REGULATORY T CELLS TO TREAT HIDRADENITIS SUPPURATIVA
(51) Int. Cl.
A61K 39/00 (2006.01)
A61K 35/17 (2015.01)
A61K 38/17 (2006.01)
A61K 39/395 (2006.01)
C07K 14/705 (2006.01)
C12N 5/0783 (2010.01)
A61P 17/00 (2006.01)
(87) WO2024/064640
(31) 63/408,046 **(32)** 19.09.22 **(33)** US
63/519,184 11.08.23 US
(43) 28.03.2024
(72) DRAGONE, Leonard; BEILKE, Joshua
(74) Spruson & Ferguson

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(71) SPAN TECH LLC
(11) AU-A-2023360724
(21) 2023360724 **(22)** 10.10.2023
(54) CUSTOMIZABLE COVER FOR USE WITH CONVEYOR AND RELATED METHODS
(51) Int. Cl.
B65G 21/10 (2006.01)
B65G 21/08 (2006.01)
B65G 21/20 (2006.01)
(87) WO2024/081607
(31) 63/414,609 **(32)** 10.10.22 **(33)** US
(43) 18.04.2024
(72) LASLEY, Nathan
(74) PHILLIPS ORMONDE FITZPATRICK

PCT applications which have entered the National Phase - Name Index cont'd

(71) SPAX INTERNATIONAL GMBH & CO. KG
(11) AU-A-2023369862
(21) 2023369862 **(22)** 18.10.2023
(54) SCREW
(51) Int. Cl.
F16B 25/00 (2006.01)
(87) WO2024/088846
(31) 22204159.2 **(32)** 27.10.22 **(33)** EP
22214057.6 16.12.22 EP
(43) 02.05.2024
(72) LANGEWIESCHE, Frank; ROMANKO, Jacek
(74) Collison & Co

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(71) STAMICARBON B.V.
(11) AU-A-2023340993
(21) 2023340993 **(22)** 12.09.2023
(54) METHOD AND PLANT FOR THE PRODUCTION OF AMMONIA WITH RENEWABLE ENERGY
(51) Int. Cl.
C01C 1/04 (2006.01)
C25B 1/04 (2021.01)
F01D 15/10 (2006.01)
F25J 1/00 (2006.01)
F25J 3/04 (2006.01)
(87) WO2024/058660
(31) 22195074.4 **(32)** 12.09.22 **(33)** EP
(43) 21.03.2024
(72) DOBREE, Joey; PATEL, Mahal; MAZZARA, Paolo
(74) Spruson & Ferguson

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(71) STANDARD BARIATRICS, INC.
(11) AU-A-2023337879
(21) 2023337879 **(22)** 07.09.2023
(54) TISSUE MONITORING ELECTROSURGICAL INSTRUMENTS AND METHODS OF USING THE SAME
(51) Int. Cl.
A61B 17/32 (2006.01)
A61B 17/068 (2006.01)
A61B 17/115 (2006.01)
A61B 18/14 (2006.01)
A61B 90/00 (2016.01)
(87) WO2024/054568
(31) 63/404,578 **(32)** 08.09.22 **(33)** US
(43) 14.03.2024
(72) DUNKI-JACOBS, Adam, R.; THOMPSON, Jonathan, R.; MEANS III, Robert, T.; BARTON, Trevor J.
(74) RnB IP Pty Ltd

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(71) STRYKER CORPORATION
(11) AU-A-2023361449
(21) 2023361449 **(22)** 11.10.2023
(54) SYSTEMS FOR MICROWAVE ABLATION OF TISSUE
(51) Int. Cl.
A61B 18/18 (2006.01)
(87) WO2024/081287
(31) 63/414,962 **(32)** 11.10.22 **(33)** US
(43) 18.04.2024
(72) PETERS, Nicolas, A.; BROCKMAN, Christopher, S.; ANDREWS, Justin, M.
(74) Davies Collison Cave Pty Ltd

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(71) STRYKER CORPORATION
(11) AU-A-2023366937
(21) 2023366937 **(22)** 25.10.2023
(54) MEDICAL WASTE COLLECTION AND DISPOSAL SYSTEMS
(51) Int. Cl.
A61M 1/00 (2006.01)
G16H 40/00 (2018.01)
(87) WO2024/091580
(31) 63/419,012 **(32)** 25.10.22 **(33)** US
(43) 02.05.2024
(72) MACLACHLAN, Brian; MASON, Brooke; ROCQUE, Glen, D.; RETWAL, Gaurav; DURNELL, Troy, E.; NAVE, Ross
(74) Davies Collison Cave Pty Ltd

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(71) STRYKER CORPORATION
(11) AU-A-2023376928
(21) 2023376928 **(22)** 08.11.2023
(54) ELECTRODE PROBE FOR RADIOFREQUENCY ABLATION
(51) Int. Cl.
A61B 18/14 (2006.01)
A61B 18/00 (2006.01)
(87) WO2024/102386
(31) 63/424,539 **(32)** 11.11.22 **(33)** US
(43) 16.05.2024
(72) MARKLEY, Zachary; MERCIER, Camille; JIRAL, Charles; MCNALL, Ty, N.
(74) Davies Collison Cave Pty Ltd

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(71) SUNGROW POWER SUPPLY CO., LTD.
(11) AU-A-2022487615
(21) 2022487615 **(22)** 22.12.2022
(54) WIRING MODULE, COMBINER BOX AND CONVERTER
(51) Int. Cl.
H02H 3/087 (2006.01)
(87) WO2024/108709
(31) 202223111155.1 **(32)** 22.11.22 **(33)** CN
(43) 30.05.2024
(72) CHEN, Peng; SUN, Shuai; LIN, Leiming; SHEN, Zhanliang
(74) Davies Collison Cave Pty Ltd

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(71) SUZHOU LANGRUI BIOPHARMACEUTICAL CO., LTD.
(11) AU-A-2023339247
(21) 2023339247 **(22)** 04.09.2023
(54) MACROCYCLIC IMIDAZO[1,2-B]PYRIDAZINE DERIVATIVE, PREPARATION METHOD THEREFOR, AND USE THEREOF
(51) Int. Cl.
C07D 498/22 (2006.01)
A61K 31/5025 (2006.01)
A61P 25/00 (2006.01)
A61P 29/00 (2006.01)
A61P 35/00 (2006.01)
C07D 471/22 (2006.01)
C07D 487/22 (2006.01)
C07D 515/22 (2006.01)
(87) WO2024/051631
(31) 202211090622.9 **(32)** 07.09.22 **(33)** CN
(43) 14.03.2024
(72) XING, Li; ZHU, Wei; LIU, Haitao; WU, Fan
(74) FB Rice Pty Ltd

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(71) SYNGENTA CROP PROTECTION AG
(11) AU-A-2023347818
(21) 2023347818 **(22)** 18.09.2023
(54) OBTAINING HAPLOIDS VIA ANDROGENESIS
(51) Int. Cl.
C12N 15/82 (2006.01)
A01H 1/08 (2006.01)
C12N 9/12 (2006.01)
(87) WO2024/064610
(31) 63/376,465 **(32)** 21.09.22 **(33)** US
(43) 28.03.2024
(72) LIU, Weiguo; ZHANG, Xia; NALAPALLI, Samson Prabhakar; GREEN, Julie Leonard; GU, Weining; CHEN, Zhongying; FAN, Chunyang
(74) Davies Collison Cave Pty Ltd

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(71) SYNGENTA CROP PROTECTION AG
(11) AU-A-2023348186
(21) 2023348186 **(22)** 28.09.2023
(54) AGRICULTURAL METHODS
(51) Int. Cl.
A01N 37/36 (2006.01)
A01N 43/653 (2006.01)
A01P 3/00 (2006.01)
(87) WO2024/068837
(31) 2214202.0 **(32)** 28.09.22 **(33)** GB
(43) 04.04.2024
(72) BEATTIE, David
(74) Davies Collison Cave Pty Ltd

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(71) SYNGENTA CROP PROTECTION AG
(11) AU-A-2023348296
(21) 2023348296 **(22)** 29.09.2023
(54) MICROBIOCIDAL PYRAZOLE DERIVATIVES
(51) Int. Cl.
C07D 401/14 (2006.01)
A01N 43/647 (2006.01)
(87) WO2024/068947
(31) 202211056322 **(32)** 30.09.22 **(33)** IN
22208396.6 18.11.22 EP
(43) 04.04.2024
(72) EDMUNDS, Andrew; SCARBOROUGH, Christopher Charles; MAHAJAN, Atul
(74) Davies Collison Cave Pty Ltd

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(71) SYNTARA LIMITED
(11) AU-A-2023331414
(21) 2023331414 **(22)** 29.08.2023
(54) NOVEL SELECTIVE INHIBITORS OF LYSYL OXIDASES
(51) Int. Cl.
C07C 317/28 (2006.01)
A61K 9/00 (2006.01)
A61K 9/06 (2006.01)
A61K 31/131 (2006.01)
A61K 31/166 (2006.01)
A61K 31/277 (2006.01)
A61K 31/55 (2006.01)

PCT applications which have entered the National Phase - Name Index cont'd

A61P 17/02 (2006.01)
C07C 317/44 (2006.01)
C07D 215/36 (2006.01)
C07D 223/10 (2006.01)
C07D 249/06 (2006.01)
C07D 319/18 (2006.01)
(87) WO2024/044813
(31) 2022902483 **(32)** 29.08.22 **(33)** AU
(43) 07.03.2024
(72) JAROLIMEK, Wolfgang; HAMPRECHT, Dieter Wolfgang; FINDLAY, Alison Dorothy; DEODHAR, Mandar
(74) Spruson & Ferguson

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(71) TEKO GESELLSCHAFT FÜR KÄLTETECHNIK MBH
(11) AU-A-2023357509
(21) 2023357509 **(22)** 09.10.2023
(54) METHOD FOR CONTROLLING THE FILL LEVEL OF AN OIL SEPARATOR FOR A COOLING CIRCUIT AND ASSOCIATED SYSTEM
(51) Int. Cl.
F25B 31/00 (2006.01)
F25B 41/20 (2021.01)
F25B 49/02 (2006.01)
(87) WO2024/074729
(31) 10 2022 125 945.5 **(32)** 07.10.22 **(33)** DE
(43) 11.04.2024
(72) SCHMITT, Andreas
(74) SOUTHERN CROSS INTELLECTUAL PROPERTY PTY LTD

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(71) TERABASE ENERGY, INC.
(11) AU-A-2023338741
(21) 2023338741 **(22)** 25.04.2023
(54) SOLAR MODULE CRATE TRANSPORT AND MONITORING STRUCTURE
(51) Int. Cl.
B65D 81/02 (2006.01)
B65D 85/30 (2006.01)
B60P 3/00 (2006.01)
B65D 85/48 (2006.01)
(87) WO2024/054259
(31) 17/903,844 **(32)** 06.09.22 **(33)** US
(43) 14.03.2024
(72) HANSEL, Adam; DALY, Allan; MAY-OSTENDORP, Peter; MALINOSKI, Steven; JENSEN, Soren
(74) BOSH IP Pty Ltd

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(71) TEXAS CROP SCIENCE, INC.
(11) AU-A-2023333052
(21) 2023333052 **(22)** 31.08.2023
(54) APYRASE INHIBITORS
(51) Int. Cl.
A01N 43/60 (2006.01)
A01N 43/48 (2006.01)
A01N 43/54 (2006.01)
A01G 13/00 (2006.01)
(87) WO2024/050040
(31) 63/402,917 **(32)** 31.08.22 **(33)** US
(43) 07.03.2024
(72) DUNCTON, Matthew; FOWLER, Jeffrey, D.; CLOUGH, John; SABHARWAL, Tanya; HIEBERT, Simon
(74) FB Rice Pty Ltd

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(71) THAI POLYETHYLENE CO., LTD.; SCG CHEMICALS PUBLIC COMPANY LIMITED
(11) AU-A-2023363693
(21) 2023363693 **(22)** 25.09.2023
(54) MULTIMODAL POLYETHYLENE COMPOSITION AND EXTRUSION ARTICLE COMPRISING THE SAME
(51) Int. Cl.
C08F 2/00 (2006.01)
C08F 10/02 (2006.01)
C08F 110/02 (2006.01)
C08F 210/16 (2006.01)
C08L 23/06 (2006.01)
C08L 23/08 (2006.01)
(87) WO2024/083450
(31) 22201839.2 **(32)** 17.10.22 **(33)** EP
(43) 25.04.2024
(72) EKABUTR, Pongpol; SUCHAO-IN, Natthaporn
(74) Davies Collison Cave Pty Ltd

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(71) THAKUR, S.S.; BEGDE, D.
(11) AU-A-2023337077
(21) 2023337077 **(22)** 07.09.2023
(54) A NON-INVASIVE DEVICE AND METHOD FOR DETECTING RNA ASSOCIATED DISEASE
(51) Int. Cl.
C12Q 1/68 (2018.01)
C12Q 1/683 (2018.01)
C12Q 1/6883 (2018.01)
G01N 33/50 (2006.01)
(87) WO2024/052842
(31) 202221012042 **(32)** 07.09.22 **(33)** IN
(43) 14.03.2024
(72) THAKUR, Shubhendra Singh; BEGDE, Deovrat
(74) LexGeneris Pty Ltd

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(71) THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY
(11) AU-A-2023342046
(21) 2023342046 **(22)** 12.09.2023
(54) COMPOSITION AND METHOD OF UNIVERSAL PSEUDOTYPED RETROVIRUSES
(51) Int. Cl.
C12N 15/86 (2006.01)
C12N 15/867 (2006.01)
A61K 48/00 (2006.01)
C07K 14/08 (2006.01)
(87) WO2024/059569
(31) 63/405,720 **(32)** 12.09.22 **(33)** US
(43) 21.03.2024
(72) QI, Lei S.; CHAVEZ, Michael; FINN, Paul B.
(74) FPA Patent Attorneys Pty Ltd

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(71) THE COCA-COLA COMPANY
(11) AU-A-2023353089
(21) 2023353089 **(22)** 20.09.2023
(54) BEVERAGE DISPENSER FOR MIXED DRINKING DISPENSING
(51) Int. Cl.
B67D 1/08 (2006.01)
B67D 1/00 (2006.01)
B67D 1/06 (2006.01)
(87) WO2024/072669
(31) 63/377,070 **(32)** 26.09.22 **(33)** US
(43) 04.04.2024
(72) JOHNSON, Brian, B.; CHAUDHURI, Akash; WELCH, Dick, P.; DAVIS, Renika, Payne
(74) FB Rice Pty Ltd

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(71) THE GEORGE WASHINGTON UNIVERSITY
(11) AU-A-2023347888
(21) 2023347888 **(22)** 19.09.2023
(54) CHEMICAL FREE EXTRACTION OF LITHIUM FROM BRINE
(51) Int. Cl.
C01D 15/02 (2006.01)
C01D 1/28 (2006.01)
C02F 1/46 (2023.01)
C22B 3/20 (2006.01)
C22B 26/12 (2006.01)
C25B 1/16 (2006.01)
(87) WO2024/064680
(31) 63/407,952 **(32)** 19.09.22 **(33)** US
(43) 28.03.2024
(72) LIU, Xitong; KONG, Lingchen
(74) FPA Patent Attorneys Pty Ltd

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(71) THE PROTEIN BREWERY B.V.
(11) AU-A-2023336552
(21) 2023336552 **(22)** 07.09.2023
(54) GRANULATE COMPRISIG PARTICLES OF FUNGAL BIOMASS
(51) Int. Cl.
A23J 3/20 (2006.01)
A23J 1/00 (2006.01)
A23J 3/22 (2006.01)
(87) WO2024/052504
(31) 22194941.5 **(32)** 09.09.22 **(33)** EP
(43) 14.03.2024
(72) KLEINE HAAR, Maloe; DE LAAT, Wilhelmus Theodorus Antonius Maria; AKINTOYE, Olumuyiwa Adetokunbo
(74) Griffith Hack

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(71) THE TORO COMPANY
(11) AU-A-2023341365
(21) 2023341365 **(22)** 13.09.2023
(54) BOUNDARY DEFINITION FOR AUTONOMOUS MACHINE WORK REGION
(51) Int. Cl.
G05D 1/00 (2024.01)
(87) WO2024/059134
(31) 63/406,524 **(32)** 14.09.22 **(33)** US
63/425,746 16.11.22 US
(43) 21.03.2024
(72) FRICK, Alexander Steven; KRAFT, Jason Thomas; JENNINGS, Brian William
(74) MBIP

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(71) THE TORO COMPANY
(11) AU-A-2023353119
(21) 2023353119 **(22)** 22.09.2023

PCT applications which have entered the National Phase - Name Index cont'd

(54) LAWN MOWER WITH GRASS DIRECTING SYSTEM
(51) Int. Cl.
A01D 34/00 (2006.01)
A01D 57/01 (2006.01)
(87) WO2024/072699
(31) 63/411,294 **(32)** 29.09.22 **(33)** US
(43) 04.04.2024
(72) FRICK, Alexander Steven; VOLOVSEK, Ryan J.; JANEY, Gregory S.
(74) MBIP

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(71) THINX INC.
(11) AU-A-2023329912
(21) 2023329912 **(22)** 25.08.2023
(54) GUSSET PERFORMANCE STRUCTURE AND GARMENT INCLUDING SAME
(51) Int. Cl.
A61F 13/49 (2006.01)
A41B 9/12 (2006.01)
A41B 9/04 (2006.01)
A61F 13/15 (2006.01)
(87) WO2024/044364
(31) 63/401,249 **(32)** 26.08.22 **(33)** US
(43) 29.02.2024
(72) NEWMAN, Courtney; RAZDOLSKI, Oxana; BARAN, Joyce
(74) Spruson & Ferguson

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(71) THOMSON REUTERS ENTERPRISE CENTRE GMBH
(11) AU-A-2023343203
(21) 2023343203 **(22)** 12.09.2023
(54) DETECTING CITED WITH CONNECTIONS IN LEGAL DOCUMENTS AND GENERATING RECORDS OF SAME
(51) Int. Cl.
G06F 16/30 (2019.01)
G06F 40/20 (2020.01)
G06F 40/30 (2020.01)
G06Q 50/18 (2012.01)
G06N 20/00 (2019.01)
(87) WO2024/059591
(31) 63/405,674 **(32)** 12.09.22 **(33)** US
(43) 21.03.2024
(72) ALBAUM, Shelly; ENGELHART, John Michael; SIDWELL, Steven R.; STANLEY, Sharon Ruth
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) THOMSON REUTERS ENTERPRISE CENTRE GMBH
(11) AU-A-2023343205
(21) 2023343205 **(22)** 12.09.2023
(54) INTERACTIVE TOOL FOR DETERMINING A HEADNOTE REPORT
(51) Int. Cl.
G06F 17/00 (2019.01)
G06F 16/00 (2019.01)
G06F 16/33 (2019.01)
G06Q 10/00 (2023.01)
(87) WO2024/059593
(31) 63/405,684 **(32)** 12.09.22 **(33)** US
(43) 21.03.2024
(72) PETERSBURG, Benjamin; BAKER, Mark Daniel; MCNAMARA, Stephen; STANLEY, Sharon Ruth; CARLSON, Jesse McCrillis
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) THOMSON REUTERS ENTERPRISE CENTRE GMBH
(11) AU-A-2023343207
(21) 2023343207 **(22)** 13.09.2023
(54) SYSTEMS AND METHODS FOR DYNAMIC CROSS-CONTEXTUAL SEARCH AND INTERPRETATION
(51) Int. Cl.
G06F 16/901 (2019.01)
G06F 16/248 (2019.01)
G06F 16/908 (2019.01)
G06Q 50/18 (2012.01)
(87) WO2024/059595
(31) 63/405,922 **(32)** 13.09.22 **(33)** US
(43) 21.03.2024
(72) CARLSON, Jesse McCrillis
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) THOMSON REUTERS ENTERPRISE CENTRE GMBH
(11) AU-A-2023343340
(21) 2023343340 **(22)** 13.09.2023
(54) SYSTEMS AND METHODS FOR IDENTIFYING A RISK OF PARTLY OVERRULED CONTENT BASED ON CITATIONALLY RELATED CONTENT
(51) Int. Cl.
G06F 16/93 (2019.01)
G06F 16/908 (2019.01)
G06Q 50/18 (2012.01)
(87) WO2024/059640
(31) 63/405,915 **(32)** 13.09.22 **(33)** US
(43) 21.03.2024
(72) MCELVAIN, Gayle May; CHINNAPPA, Dhivya Infant; DENNESON, Travis Jon; ERICKSON, Diane Lynn
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) THOMSON REUTERS ENTERPRISE CENTRE GMBH
(11) AU-A-2023343467
(21) 2023343467 **(22)** 13.09.2023
(54) SYSTEMS AND METHODS FOR GENERATING GRAPHICAL VIEWS
(51) Int. Cl.
G06F 16/14 (2019.01)
G06F 16/16 (2019.01)
G06F 16/248 (2019.01)
G06F 16/338 (2019.01)
(87) WO2024/059672
(31) 63/405,913 **(32)** 13.09.22 **(33)** US
(43) 21.03.2024
(72) ALBAUM, Shelly; KELLY, Ryan Douglas; DENNESON, Travis Jon
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) TOHO TITANIUM CO.,LTD.
(11) AU-A-2023367890
(21) 2023367890 **(22)** 25.08.2023
(54) TITANIUM POROUS BODY
(51) Int. Cl.
B22F 3/11 (2006.01)
B22F 1/00 (2022.01)
C22C 1/08 (2006.01)
C22C 14/00 (2006.01)
H01B 5/02 (2006.01)
(87) WO2024/090003
(31) 2022-173590 **(32)** 28.10.22 **(33)** JP
(43) 02.05.2024
(72) INOUE,Yosuke
(74) FB Rice Pty Ltd

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(71) TOPPAN HOLDINGS INC.
(11) AU-A-2023372141
(21) 2023372141 **(22)** 31.10.2023
(54) COEXTRUDED MULTILAYER FILM, LAMINATE, AND PACKAGING BAG
(51) Int. Cl.
B32B 27/32 (2006.01)
B29C 48/08 (2019.01)
B29C 48/21 (2019.01)
B65D 65/40 (2006.01)
(87) WO2024/096024
(31) 2022-176669 **(32)** 02.11.22 **(33)** JP
2022-176673 02.11.22 JP
(43) 10.05.2024
(72) EJIMA Yuki; TAKEI Ryo
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) TOTALENERGIES ONETECH
(11) AU-A-2022478578
(21) 2022478578 **(22)** 16.09.2022
(54) PROCESS OF DETERMINING AN INJECTION PERFORMANCE OF A WELL WHEN INJECTING A FLUID INTO A GEOLOGICAL FORMATION
(51) Int. Cl.
E21B 41/00 (2006.01)
E21B 43/16 (2006.01)
(87) WO2024/057050
(43) 21.03.2024
(72) RODRIGUEZ MARTINEZ, Alejandro
(74) Davies Collison Cave Pty Ltd

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(71) TRACK MACHINES CONNECTED GESELLSCHAFT M.B.H.
(11) AU-A-2023376154
(21) 2023376154 **(22)** 06.11.2023
(54) METHOD FOR ASSESSING AN OPERATING STATE OF A MACHINE FOR MAINTAINING A RAILWAY LINE
(51) Int. Cl.
B61L 15/00 (2006.01)
B61L 27/57 (2022.01)
E01B 35/00 (2006.01)
(87) WO2024/099965
(31) A 50845/2022 **(32)** 07.11.22 **(33)** AT
(43) 16.05.2024
(72) STUNTNER, Benjamin; NOWOTNY, Jochen
(74) Dennemeyer & Associates

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(71) TRAILER DYNAMICS GMBH
(11) AU-A-2023343626
(21) 2023343626 **(22)** 04.09.2023

PCT applications which have entered the National Phase - Name Index cont'd

(54) SCREW, SCREW CONNECTION, AND VEHICLE COUPLING COMPRISING SUCH A SCREW CONNECTION
(51) Int. Cl.
F16B 31/02 (2006.01)
(87) WO2024/056432
(31) 10 2022 123 644.7 **(32)** 15.09.22 **(33)** DE
(43) 21.03.2024
(72) JABER, Abdullah; MUSTAFA, Jakob
(74) MBIP

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(71) TREVITEK LTD
(11) AU-A-2023361441
(21) 2023361441 **(22)** 06.10.2023
(54) SYSTEM FOR OPERATING A VALVE
(51) Int. Cl.
E03C 1/04 (2006.01)
(87) WO2024/079441
(31) 2214912.4 **(32)** 10.10.22 **(33)** GB
(43) 18.04.2024
(72) NADA-ALI, Belal
(74) Alex Rowley

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(71) TRU TENSION LTD
(11) AU-A-2023342357
(21) 2023342357 **(22)** 13.09.2023
(54) HANDTOOL FOR CHANGING BICYLE TYRES
(51) Int. Cl.
B60C 25/02 (2006.01)
(87) WO2024/056710
(31) 2213396.1 **(32)** 13.09.22 **(33)** GB
(43) 21.03.2024
(72) FRAPPELL, Chris
(74) IP GATEWAY PATENT & TRADE MARK ATTORNEYS PTY LTD

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(71) TSUBOTA LABORATORY, INC.
(11) AU-A-2023339169
(21) 2023339169 **(22)** 11.09.2023
(54) LIGHT RADIATION SYSTEM, LIGHT RADIATION METHOD, LIGHT MEASUREMENT METHOD, AND LIGHT MEASUREMENT DEVICE
(51) Int. Cl.
A61N 5/06 (2006.01)
(87) WO2024/053746
(31) 2022-143754 **(32)** 09.09.22 **(33)** JP
(43) 14.03.2024
(72) TSUBOTA, Kazuo; KONDO, Shinichiro
(74) Spruson & Ferguson

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(71) UACJ CORPORATION
(11) AU-A-2024258073
(21) 2024258073 **(22)** 16.04.2024
(54) ALUMINUM ALLOY SHEET FOR TAB
(51) Int. Cl.
C22C 21/06 (2006.01)
C22F 1/00 (2006.01)
C22F 1/047 (2006.01)
(87) WO2024/219395
(31) 2023-067405 **(32)** 17.04.23 **(33)** JP
(43) 24.10.2024
(72) YOSHIDA, Tomonori; IKEDA, Yukimasa; KUDO, Tomoyuki
(74) Oxygene IP

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(71) UNICHARM CORPORATION
(11) AU-A-2023346258
(21) 2023346258 **(22)** 13.09.2023
(54) PET SHEET AND PACKAGE
(51) Int. Cl.
A01K 1/015 (2006.01)
(87) WO2024/062990
(31) 2022-150099 **(32)** 21.09.22 **(33)** JP
(43) 28.03.2024
(72) NASHIKI Mami; IWATA Mai
(74) Allens Patent & Trade Mark Attorneys

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(71) UNICHARM CORPORATION
(11) AU-A-2023360644
(21) 2023360644 **(22)** 12.09.2023
(54) WEARABLE ARTICLE HOUSING BODY, WEARABLE ARTICLE, AND ABSORBENT PAD
(51) Int. Cl.
A61F 13/72 (2006.01)
A61F 13/56 (2006.01)
A61F 13/62 (2006.01)
A61F 13/76 (2006.01)
(87) WO2024/080054
(31) 2022-164183 **(32)** 12.10.22 **(33)** JP
(43) 18.04.2024
(72) SHIMBO, Yosuke; NASHIKI, Kento; TAKINO, Shunsuke; SAKURAI, Sayaka
(74) Allens Patent & Trade Mark Attorneys

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(71) UNICHARM CORPORATION
(11) AU-A-2023360645
(21) 2023360645 **(22)** 12.09.2023
(54) WEARING ARTICLE HOUSING BODY AND WEARING ARTICLE
(51) Int. Cl.
A61F 13/72 (2006.01)
A41B 9/12 (2006.01)
A61F 13/74 (2006.01)
(87) WO2024/080055
(31) 2022-164184 **(32)** 12.10.22 **(33)** JP
(43) 18.04.2024
(72) SHIMBO, Yosuke; NASHIKI, Kento; TAKINO, Shunsuke; SAKURAI, Sayaka
(74) Allens Patent & Trade Mark Attorneys

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(71) UNILUX IP B.V.
(11) AU-A-2023341000
(21) 2023341000 **(22)** 14.09.2023
(54) IMPROVED RETRACTABLE AND EXTENDABLE COVERING DEVICE
(51) Int. Cl.
E06B 9/262 (2006.01)
E06B 9/52 (2006.01)
(87) WO2024/058667
(31) 2033027 **(32)** 14.09.22 **(33)** NL
(43) 21.03.2024
(72) HOEKMAN, Thomas Pieter Christiaan
(74) FPA Patent Attorneys Pty Ltd

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(71) UNIVERSITÉ DE MONTPELLIER; CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE; INSTITUT NATIONAL DE LA SANTÉ ET DE LA RECHERCHE MÉDICALE; CENTRE HOSPITALIER UNIVERSITAIRE DE MONTPELLIER
(11) AU-A-2023345444
(21) 2023345444 **(22)** 21.09.2023
(54) METHOD AND DEVICE FOR ASSISTING THE DETERMINATION OF AN ANTIOXIDANT DOSAGE FOR A PERSON SUFFERING FROM OXIDATIVE STRESS
(51) Int. Cl.
G16H 20/10 (2018.01)
(87) WO2024/062051
(31) FR2209589 **(32)** 22.09.22 **(33)** FR
(43) 28.03.2024
(72) LAOUDJ-CHENIVESSE, Dalila
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) UNIVERSITY OF KANSAS
(11) AU-A-2023324867
(21) 2023324867 **(22)** 18.08.2023
(54) ENHANCED OBSERVABILITY UNINHABITED AERIAL VEHICLES AND METHODS OF USE
(51) Int. Cl.
G05D 1/00 (2024.01)
(87) WO2024/039871
(31) 17/891,644 **(32)** 19.08.22 **(33)** US
(43) 22.02.2024
(72) BARRETT, Ronald Martin
(74) Griffith Hack

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(71) UNIVERSITY OF LOUISIANA MONROE
(11) AU-A-2023325345
(21) 2023325345 **(22)** 18.08.2023
(54) METHOD OF DIAGNOSING AND TREATING PROSTATE CANCER USING ZINC FINGER PROTEIN-LIKE 1 ANTIBODIES
(51) Int. Cl.
G01N 33/574 (2006.01)
A61K 9/00 (2006.01)
A61K 39/395 (2006.01)
A61K 45/06 (2006.01)
A61P 13/08 (2006.01)
A61P 35/00 (2006.01)
C12Q 1/6809 (2018.01)
A61K 39/00 (2006.01)
C07K 16/18 (2006.01)
C07K 16/30 (2006.01)
(87) WO2024/040238
(31) 63/371,902 **(32)** 19.08.22 **(33)** US
63/387,115 13.12.22 US
(43) 22.02.2024
(72) SHAH, Girish, V.
(74) Collison & Co

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(71) UNIVERSITY OF MIAMI
(11) AU-A-2023338571
(21) 2023338571 **(22)** 08.09.2023
(54) INFLAMMASOME ANTIBODY COMPOSITON AND METHOD FOR TREATING NEUROLOGIC DISORDER
(51) Int. Cl.
A61P 25/28 (2006.01)
C07K 16/24 (2006.01)
A61K 39/395 (2006.01)
(87) WO2024/055015

PCT applications which have entered the National Phase - Name Index cont'd

(31) 63/405,009 **(32)** 09.09.22 **(33)** US
(43) 14.03.2024
(72) VICCARI, Juan, Pablo De Rivero; KEANE, Robert, W.; DEITRICH, W., Dalton; BRAMLETT, Helen, M.
(74) Spruson & Ferguson

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(71) UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA
(11) AU-A-2023319424
(21) 2023319424 **(22)** 31.07.2023
(54) PEROVSKITE SOLAR CELL WITH LOCAL SEMI-OPEN PASSIVATION CONTACT STRUCTURE AND PREPARATION METHOD THEREFOR
(51) Int. Cl.
H10K 30/40 (2023.01)
H10K 30/50 (2023.01)
H10K 30/88 (2023.01)
H10K 71/12 (2023.01)
(87) WO2024/027640
(31) 202210919606.X **(32)** 02.08.22 **(33)** CN
(43) 08.02.2024
(72) XU, Jixian; PENG, Wei
(74) Peng Zhang

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(71) UNIVERSITY OF TARTU
(11) AU-A-2023331232
(21) 2023331232 **(22)** 23.08.2023
(54) BRAIN PENETRATING PEPTIDES AND METHODS OF USE THEREOF
(51) Int. Cl.
A61K 38/10 (2006.01)
A61K 38/08 (2019.01)
A61K 38/17 (2006.01)
A61K 47/64 (2017.01)
A61P 3/00 (2006.01)
A61P 9/00 (2006.01)
A61P 25/04 (2006.01)
A61P 25/28 (2006.01)
A61P 29/02 (2006.01)
A61P 31/00 (2006.01)
A61P 35/00 (2006.01)
A61P 37/00 (2006.01)
C07K 7/06 (2006.01)
C07K 7/08 (2006.01)
C07K 14/435 (2006.01)
(87) WO2024/042466
(31) 63/373,160 **(32)** 22.08.22 **(33)** US
(43) 29.02.2024
(72) PÕŠNOGRAJEVA, Kristina; TOOME, Kadri; HAUGAS, Maarja; TEESALU, Tambet
(74) Blue Penguin IP Ltd

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(71) UNIVERSITY OF WASHINGTON
(11) AU-A-2023325021
(21) 2023325021 **(22)** 14.08.2023
(54) TH2 VACCINE-BASED PREVENTION AND TREATMENT OF INFLAMMATION IN OBESITY
(51) Int. Cl.
A61K 38/17 (2006.01)
A61K 38/03 (2006.01)
(87) WO2024/040025
(31) 63/371,999 **(32)** 19.08.22 **(33)** US
(43) 22.02.2024
(72) DISIS, Mary L.; CECIL, Denise; CORULLI, Lauren
(74) Pearce IP Pty Ltd

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(71) UNIVERSITY OF WYOMING
(11) AU-A-2023452511
(21) 2023452511 **(22)** 23.06.2023
(54) COAL-DERIVED CARBON-BASED STRUCTURAL UNITS AND METHODS OF MAKING THE SAME
(51) Int. Cl.
C01B 32/33 (2017.01)
C01B 32/05 (2017.01)
C04B 32/00 (2006.01)
C08L 95/00 (2006.01)
(87) WO2025/048764
(31) 63/355,426 **(32)** 24.06.22 **(33)** US
(43) 06.03.2025
(72) NG, Kam Weng; HOSSAIN, Md Tarik; LAU, Chooi Kim; YU, Hua; HORNER, Richard
(74) GLMR

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(71) UOP LLC
(11) AU-A-2023343073
(21) 2023343073 **(22)** 11.09.2023
(54) INLINE SENSORS FOR ELECTROLYTE PRECIPITATION DETECTION IN REDOX FLOW BATTERY SYSTEM
(51) Int. Cl.
H01M 8/18 (2006.01)
G01N 15/06 (2024.01)
H01M 8/04082 (2016.01)
H01M 8/04186 (2016.01)
H01M 8/0444 (2016.01)
(87) WO2024/059504
(31) 17/932,458 **(32)** 15.09.22 **(33)** US
(43) 21.03.2024
(72) ZHAO, Di; MCCALL, Michael J.; MILLER, Stuart R.
(74) Patent Attorney Services

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(71) VANDERBILT UNIVERSITY
(11) AU-A-2023342126
(21) 2023342126 **(22)** 15.09.2023
(54) NEGATIVE ALLOSTERIC MODULATORS OF METABOTROPIC GLUTAMATE RECEPTOR 2
(51) Int. Cl.
C07D 209/04 (2006.01)
A61K 31/4035 (2006.01)
A61P 25/18 (2006.01)
A61P 25/22 (2006.01)
A61P 25/24 (2006.01)
A61P 25/28 (2006.01)
C07D 401/04 (2006.01)
C07D 401/14 (2006.01)
C07D 403/04 (2006.01)
C07D 403/06 (2006.01)
C07D 403/10 (2006.01)
C07D 403/12 (2006.01)
C07D 405/04 (2006.01)
C07D 405/14 (2006.01)
C07D 413/04 (2006.01)
C07D 413/12 (2006.01)
C07D 413/14 (2006.01)
C07D 417/04 (2006.01)
C07D 417/06 (2006.01)
C07D 417/10 (2006.01)
C07D 471/04 (2006.01)
(87) WO2024/059781
(31) 63/407,484 **(32)** 16.09.22 **(33)** US
(43) 21.03.2024
(72) LINDSLEY, Craig W.; ENGERS, Darren W.; COLEMAN, Jeremy S.; RATHNAYAKE, Upendra; CAPSTICK, Rory A.
(74) Griffith Hack

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(71) VERDESIAN LIFE SCIENCES U.S., LLC
(11) AU-A-2023356087
(21) 2023356087 **(22)** 28.09.2023
(54) COMPOSITIONS FOR ENHANCING NITROGEN FERTILIZERS BY INCORPORATING ANTI-OXIDANT MOIETIES AND METHODS FOR USE THEREOF
(51) Int. Cl.
C05G 3/90 (2020.01)
C05D 9/00 (2006.01)
(87) WO2024/076491
(31) 63/412,723 **(32)** 03.10.22 **(33)** US
(43) 11.04.2024
(72) PANDYA, Ashish, Arun; QIN, Kuide; ORR, Gary; PAA, Sandra
(74) Adams Pluck

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(71) VERSANIS BIO, INC.
(11) AU-A-2023329487
(21) 2023329487 **(22)** 28.08.2023
(54) ACTRII ANTIBODY FIXED UNIT DOSE TREATMENTS
(51) Int. Cl.
A61P 3/04 (2006.01)
A61K 39/00 (2006.01)
C07K 16/28 (2006.01)
(87) WO2024/044782
(31) 63/373,684 **(32)** 26.08.22 **(33)** US
63/378,128 03.10.22 US
(43) 29.02.2024
(72) KLICKSTEIN, Lloyd B.
(74) Spruson & Ferguson

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(71) VERSUNI HOLDING B.V.
(11) AU-A-2023327587
(21) 2023327587 **(22)** 11.08.2023
(54) JUICER ACCESSORY, JUICER AND METHOD OF USING THE SAME
(51) Int. Cl.
A47J 43/044 (2006.01)
A47J 19/02 (2006.01)
A47J 43/07 (2006.01)
(87) WO2024/037994
(31) 22190703.3 **(32)** 17.08.22 **(33)** EP
(43) 22.02.2024
(72) HIETBRINK, Ingrid
(74) FB Rice Pty Ltd

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(71) VGARDEN LTD.
(11) AU-A-2023340749
(21) 2023340749 **(22)** 14.09.2023
(54) VEGAN FISH SUBSTITUTE AND METHODS OF MAKING SAME
(51) Int. Cl.
A23L 17/00 (2016.01)

PCT applications which have entered the National Phase - Name Index cont'd

A23L 11/00 (2021.01)
(87) WO2024/057321
(31) 296553 **(32)** 15.09.22 **(33)** IL
(43) 21.03.2024
(72) ADUT, Eyal; ELIAV, Omer
(74) Collison & Co

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(71) VIASAT, INC.
(11) AU-A-2023333352
(21) 2023333352 **(22)** 28.08.2023
(54) METHODS AND APPARATUS FOR SCHEDULING TERMINALS IN A SATELLITE COMMUNICATIONS SYSTEM
(51) Int. Cl.
H04B 7/204 (2006.01)
(87) WO2024/049775
(31) 63/402,383 **(32)** 30.08.22 **(33)** US
(43) 07.03.2024
(72) BERNDSEN, Nicholas G.; CHAUGHULE, Arya; HILL, Laura K.; HOFFMAN, Anton; PETRANOVICH, James E.
(74) Adams Pluck

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(71) VIDERA HEALTH, INC.
(11) AU-A-2023341375
(21) 2023341375 **(22)** 13.09.2023
(54) MACHINE LEARNING CLASSIFICATION OF VIDEO FOR DETERMINATION OF MOVEMENT DISORDER SYMPTOMS
(51) Int. Cl.
G16H 30/40 (2018.01)
G06N 20/00 (2019.01)
G16H 10/60 (2018.01)
G16H 50/20 (2018.01)
(87) WO2024/059144
(31) 63/406,421 **(32)** 14.09.22 **(33)** US
18/367,389 12.09.23 US
(43) 21.03.2024
(72) GRIMM, Bradley C.; LARSEN, Loren D.; STERNS, Anthony Alexander
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) VIROX TECHNOLOGIES INC.
(11) AU-A-2023357907
(21) 2023357907 **(22)** 29.09.2023
(54) CONCENTRATED ANTIMICROBIAL SOLUTIONS CONTAINING SPARINGLY SOLUBLE ANTIMICROBIAL AGENTS
(51) Int. Cl.
A01N 25/02 (2006.01)
A01N 25/30 (2006.01)
A01N 61/00 (2006.01)
A01P 1/00 (2006.01)
A61L 2/18 (2006.01)
(87) WO2024/074965
(31) 63/412,975 **(32)** 04.10.22 **(33)** US
(43) 11.04.2024
(72) ALDERSON, Faraz Ahmadpour
(74) James & Wells Intellectual Property

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(71) VISTERRA, INC.
(11) AU-A-2023347940
(21) 2023347940 **(22)** 20.09.2023
(54) TREATMENT OF COMPLEMENT MEDIATED DISEASES AND DISORDERS WITH C3B-ANTIBODIES
(51) Int. Cl.
C07K 16/18 (2006.01)
A61P 37/06 (2006.01)
(87) WO2024/064732
(31) 63/376,305 **(32)** 20.09.22 **(33)** US
(43) 28.03.2024
(72) VISWANATHAN, Karthik; RAMAKRISHNAN, Ramki; ADARI, Hedy; GAO, Feng; WOLLACOTT, Andrew
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) VOXELCARE, SL
(11) AU-A-2023342806
(21) 2023342806 **(22)** 13.09.2023
(54) GRANULE-BASED THREE-DIMENSIONAL PRINTING EQUIPMENT
(51) Int. Cl.
B29C 64/20 (2017.01)
B22F 12/00 (2021.01)
B29C 64/209 (2017.01)
B29C 64/255 (2017.01)
B29C 64/336 (2017.01)
B33Y 30/00 (2015.01)
B33Y 40/00 (2020.01)
(87) WO2024/056928
(31) P202230800 **(32)** 14.09.22 **(33)** ES
(43) 21.03.2024
(72) LAMPERT, Michael
(74) Patentec Patent Attorneys

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(71) WÄRTSILÄ FINLAND OY
(11) AU-A-2022479527
(21) 2022479527 **(22)** 30.09.2022
(54) MODULAR AND SCALABLE CONTROL SYSTEM FOR LOCAL AND/OR REMOTE MANAGEMENT OF AN ELECTRICAL POWER PLANT
(51) Int. Cl.
H02J 13/00 (2006.01)
(87) WO2024/069037
(43) 04.04.2024
(72) BLOMQVIST, Göran; KULLAS, Joakim; BJÖRKLUND, Martin; LAMPARELLI, Davide
(74) Spruson & Ferguson

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(71) WEIR MINERALS AUSTRALIA LIMITED
(11) AU-A-2023385879
(21) 2023385879 **(22)** 09.11.2023
(54) EXCITER
(51) Int. Cl.
B07B 1/28 (2006.01)
B06B 1/16 (2006.01)
F16C 19/26 (2006.01)
F16C 33/66 (2006.01)
F16C 35/04 (2006.01)
(87) WO2024/110810
(31) 2217654.9 **(32)** 25.11.22 **(33)** GB
(43) 30.05.2024
(72) WALKER, Carl
(74) WEIR MINERALS AUSTRALIA LTD

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(71) WELLTEC A/S
(11) AU-A-2023329695
(21) 2023329695 **(22)** 25.08.2023
(54) WELLBORE FISHING TOOL
(51) Int. Cl.
E21B 31/18 (2006.01)
(87) WO2024/043789
(31) 20220918 **(32)** 26.08.22 **(33)** NO
(43) 29.02.2024
(72) MALAFEY, Vladimir; KRISTIANSEN, Roy; JOHNSEN, Geir Magne Mo; HAUGEN, Stian Gausel; IBRAGIMOV, Alexander
(74) GLMR

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(71) WGA WATER GLOBAL ACCESS, SL; NOMEN CALVET, J.E.; HANGANU, D.A.
(11) AU-A-2023336630
(21) 2023336630 **(22)** 08.09.2023
(54) GRAVITATIONAL VAPOUR COMPRESSOR DEVICE
(51) Int. Cl.
B01D 1/16 (2006.01)
B01D 1/20 (2006.01)
B01D 1/28 (2006.01)
B01D 3/00 (2006.01)
C02F 1/12 (2023.01)
(87) WO2024/052584
(31) U202231457 **(32)** 08.09.22 **(33)** ES
U202330618 13.04.23 ES
PCT/ES2023/070545 08.09.23 ES
(43) 14.03.2024
(72) NOMEN CALVET, Juan Eusebio; HANGANU, Dan Alexandru
(74) MBIP

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(71) WGA WATER GLOBAL ACCESS S.L.; NOMEN CALVET, J.E.; HANGANU, D.A.
(11) AU-A-2023336629
(21) 2023336629 **(22)** 08.09.2023
(54) MULTIPLE-EFFECT MULTI-TRAIN DESALINATION (MEMTD) DEVICE
(51) Int. Cl.
B01D 1/26 (2006.01)
B01D 3/14 (2006.01)
C02F 1/04 (2023.01)
C02F 1/10 (2023.01)
F28D 3/02 (2006.01)
F28D 5/02 (2006.01)
(87) WO2024/052583
(31) U202231457 **(32)** 08.09.22 **(33)** ES
(43) 14.03.2024
(72) NOMEN CALVET, Juan Eusebio; HANGANU, Dan Alexandru
(74) MBIP

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(71) WINLOC AG
(11) AU-A-2023328527
(21) 2023328527 **(22)** 28.07.2023
(54) A KEY BLANK, A KEY, AND A CYLINDER LOCK AND KEY COMBINATION
(51) Int. Cl.
E05B 27/00 (2006.01)
E05B 19/00 (2006.01)
B23C 3/35 (2006.01)
(87) WO2024/041844

PCT applications which have entered the National Phase - Name Index cont'd

(31) 17/892,938 **(32)** 22.08.22 **(33)** US
(43) 29.02.2024
(72) WIDÉN, Bo
(74) Spruson & Ferguson

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(71) WINLOC AG
(11) AU-A-2023328528
(21) 2023328528 **(22)** 28.07.2023
(54) A KEY BLANK, A CODED KEY AND A CYLINDER LOCK AND KEY SYSTEM WITH IMPROVED STOP ARRANGEMENT
(51) Int. Cl.
E05B 19/00 (2006.01)
E05B 27/00 (2006.01)
(87) WO2024/041845
(31) 17/892,931 **(32)** 22.08.22 **(33)** US
(43) 29.02.2024
(72) WIDÉN, Bo
(74) Spruson & Ferguson

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(71) WONDERLAND SWITZERLAND AG
(11) AU-A-2023329156
(21) 2023329156 **(22)** 25.08.2023
(54) ROTARY LOCKING INDICATING MECHANISM AND CHILD SAFETY SEAT
(51) Int. Cl.
B60N 2/28 (2006.01)
(87) WO2024/042206
(31) 202211029717.X **(32)** 25.08.22 **(33)** CN
202211209988.3 30.09.22 CN
(43) 29.02.2024
(72) MO, Xiaolong
(74) Allens Patent & Trade Mark Attorneys

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(71) WORKOVER SOLUTIONS, INC.
(11) AU-A-2023342427
(21) 2023342427 **(22)** 16.06.2023
(54) DRILLING SYSTEM WITH ANNULAR FLUSH SEPARATION DEVICE AND METHOD
(51) Int. Cl.
E21B 21/06 (2006.01)
B01D 33/03 (2006.01)
E21B 34/10 (2006.01)
E21B 43/12 (2006.01)
B07B 1/00 (2006.01)
F15D 1/00 (2006.01)
(87) WO2024/058843
(31) 17/942,316 **(32)** 12.09.22 **(33)** US
(43) 21.03.2024
(72) VON GYNZ-REKOWSKI, Gunther, HH; REEVES, Mark, Allen; KOENIG, Russell, Wayne
(74) Spruson & Ferguson

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(71) WUXI LONGI HYDROGEN TECHNOLOGY CO., LTD.
(11) AU-A-2023365839
(21) 2023365839 **(22)** 28.09.2023
(54) HYDROGEN PRODUCTION CONTROL SYSTEM AND METHOD, AND STORAGE MEDIUM
(51) Int. Cl.
C25B 1/04 (2021.01)
C25B 15/02 (2021.01)
C25B 15/023 (2021.01)
G05D 16/20 (2006.01)
(87) WO2024/082956
(31) 202211269276.0 **(32)** 17.10.22 **(33)** CN
(43) 25.04.2024
(72) JIANG, Chao; SHEN, Hong; ZHENG, Lianhuan; ZANG, Lili
(74) Madderns Pty Ltd

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(71) XADCERA BIOPHARMACEUTICAL (SUZHOU) CO., LTD.
(11) AU-A-2023337167
(21) 2023337167 **(22)** 07.09.2023
(54) ANTI-TROP2/EGFR ANTIBODIES AND USES THEREOF
(51) Int. Cl.
A61K 47/68 (2017.01)
A61K 47/65 (2017.01)
A61P 35/00 (2006.01)
C07K 16/30 (2006.01)
(87) WO2024/051762
(31) PCT/ **(32)** 07.09.22 **(33)** CN
CN2022/117496
PCT/ 23.03.23 CN
CN2023/083228
(43) 14.03.2024
(72) LI, Zhuolin; GUAN, Xuewa; SHANG, Chengzhang; SHEN, Yuelei
(74) Minter Ellison

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(71) XEFCO PTY LTD
(11) AU-A-2023326062
(21) 2023326062 **(22)** 18.08.2023
(54) COMPOSITE CONSTRUCTION
(51) Int. Cl.
B32B 27/12 (2006.01)
A47G 9/08 (2006.01)
B32B 5/02 (2006.01)
B32B 27/08 (2006.01)
B32B 27/32 (2006.01)
(87) WO2024/036382
(31) 2022902378 **(32)** 19.08.22 **(33)** AU
(43) 22.02.2024
(72) HUSSEY, Thomas; KONGAHAGE, Dharshika; LIN, Chih Lung
(74) XEFCO PTY LTD

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(71) ZEALAND PHARMA A/S
(11) AU-A-2023348282
(21) 2023348282 **(22)** 29.09.2023
(54) GLUCAGON-LIKE-PEPTIDE-2 (GLP-2) ANALOGUES AND THEIR MEDICAL USES FOR THE TREATMENT OF SHORT BOWEL SYNDROME (SBS)
(51) Int. Cl.
A61K 38/26 (2006.01)
A61P 1/00 (2006.01)
(87) WO2024/068933
(31) 63/377,868 **(32)** 30.09.22 **(33)** US
(43) 04.04.2024
(72) AGERSNAP, Mikkel Askjaer; NIELSEN, Thor Schütt Svane
(74) FB Rice Pty Ltd

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(71) ZHEJIANG YAT ELECTRICAL APPLIANCE CO., LTD.
(11) AU-A-2023348883
(21) 2023348883 **(22)** 27.09.2023
(54) MOWER AND MOWER START AND STOP CONTROL METHOD
(51) Int. Cl.
A01D 43/063 (2006.01)
(87) WO2024/067681
(31) 202211185901.3 **(32)** 27.09.22 **(33)** CN
202321627977.7 25.06.23 CN
(43) 04.04.2024
(72) CHEN, Gang
(74) Davies Collison Cave Pty Ltd

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(71) ZHENGZHOU NON-FERROUS METALS RESEARCH INSTITUTE CO.LTD OF CHALCO
(11) AU-A-2024246125
(21) 2024246125 **(22)** 20.03.2024
(54) METHOD FOR CONNECTING NICKEL FERRITE-BASED CERAMIC INERT ANODE AND METAL CONDUCTIVE BLOCK
(51) Int. Cl.
C04B 37/02 (2006.01)
C25C 3/12 (2006.01)
(87) WO2024/199041
(31) 202310298466.3 **(32)** 24.03.23 **(33)** CN
(43) 03.10.2024
(72) LI, Dongsheng; HOU, Guanghui; BAO, Shengzhong; MA, Junyi; LIU, Dan; WANG, Huiyao
(74) SOLIS IP PTY LTD

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(71) ZHOU, Z.
(11) AU-A-2023428967
(21) 2023428967 **(22)** 01.01.2024
(54) VTOL AIRCRAFT-CONDUCTED SOFT CAPTURE, PRESERVING AND LANDING OF SPACECRAFTS
(51) Int. Cl.
B64G 1/62 (2006.01)
(87) WO2024/167594
(31) 63/440,428 **(32)** 22.01.23 **(33)** US
18/207,649 08.06.23 US
(43) 15.08.2024
(72) ZHOU, Zhishang
(74) Arceo IP

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(71) ZHUHAI NINESTAR MANAGEMENT CO., LTD.
(11) AU-A-2023325792
(21) 2023325792 **(22)** 15.08.2023
(54) INK SUPPLY DEVICE AND INK FILLING METHOD THEREFOR
(51) Int. Cl.
B41J 2/175 (2006.01)
(87) WO2024/037518
(31) 202210978869.8 **(32)** 15.08.22 **(33)** CN
202310076618.5 13.01.23 CN
202320121869.6 13.01.23 CN
(43) 22.02.2024
(72) QIU, Yongqun
(74) Wynnes Patent and Trade Mark Attorneys Pty Ltd

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(71) ZTE CORPORATION
(11) AU-A-2022473793
(21) 2022473793 **(22)** 11.08.2022

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(54) METHOD, DEVICE AND COMPUTER PROGRAM PRODUCT FOR WIRELESS COMMUNICATION
(51) Int. Cl.
H04L 5/00 (2006.01)
H04W 24/10 (2009.01)
(87) WO2024/031571
(43) 15.02.2024
(72) MA, Xiaoying; CHEN, Mengzhu; XU, Jun; DAI, Bo; TANG, Hong; GUO, Qiujin; WEI, Ping
(74) Davies Collison Cave Pty Ltd

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(71) ZYMEWORKS BC INC.
(11) AU-A-2023350792
(21) 2023350792 **(22)** 28.09.2023
(54) ANTIBODY DRUG CONJUGATES TARGETING C-MET AND METHODS OF USE
(51) Int. Cl.
C07K 16/28 (2006.01)
A61K 47/68 (2017.01)
C07K 5/02 (2006.01)
C07K 5/023 (2006.01)
C12N 15/13 (2006.01)
(87) WO2024/065056
(31) 63/411,039 **(32)** 28.09.22 **(33)** US
(43) 04.04.2024
(72) DAVIES, Rupert H.; RICH, James R.; GARNETT, Graham Albert Edwin; SANCHES, Mario; DAS, Samir; FARBER, Patrick; BARNSCHER, Stuart Daniel
(74) FB Rice Pty Ltd

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2023337297 CHINA PETROLEUM & CHEMICAL CORPORATION; SINOPEC (BEIJING) RESEARCH INSTITUTE OF CHEMICAL INDUSTRY CO., LTD.
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2023347803 CALIENT.AI INC.
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2023356323 LANDIS+GYR TECHNOLOGY, INC.
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2023358773 PULSE BIOSCIENCES, INC.
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2023367780 BARINTHUS THERAPEUTICS NORTH AMERICA, INC.; THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES
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B06B 1 /-

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2023328984

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2023322327

H03K 19 /-

2023347492

H04B 7 /-

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H04L 12 /-

2023356015
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H04L 41 /-

2023338874
2023341363

H04L 43 /-

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H04L 5 /-

2022473793

H04L 67 /-

2023376433

H04L 9 /-

2023327708
2023330158

H04M 3 /-

2023377610

H04N 19 /-

2023353732
2023359177
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H04N 23 /-

2023331888
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H04Q 11 /-

2023338874
2023338877

H04W 24 /-

2022473793

H04W 28 /-

2023339031

H04W 36 /-

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H04W 4 /-

2023376433
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H04W 52 /-

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H04W 72 /-

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H04W 76 /-

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H04W 84 /-

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H04W 88 /-

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H05B 1 /-

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H05B 3 /-

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(51) Int. Cl.
H05B 6/76 (2006.01)
E01C 19/08 (2006.01)
E01C 19/10 (2006.01)
H05B 6/78 (2006.01)
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(21) 2019241300 **(22)** 28.03.2019
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C12N 15/867 (2006.01)
C12N 7/02 (2006.01)
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(74) Phillips Ormonde Fitzpatrick

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(11) AU-B-2023203674
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A61B 5/352 (2021.01)
A61M 60/178 (2021.01)
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A61P 25/16 (2006.01)
A61P 3/10 (2006.01)
A61P 25/28 (2006.01)
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(31) 63/001,177 **(32)** 27.03.20 **(33)** US
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A61F 2/16 (2006.01)
A61M 5/315 (2006.01)
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A61K 38/46 (2006.01)
A61P 19/08 (2006.01)
C12Q 1/42 (2006.01)
G01N 33/50 (2006.01)
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(54) Water-based hydrogel blend coating and method of application to elastomeric articles
(51) Int. Cl.
A61L 31/04 (2006.01)
A61B 42/10 (2016.01)
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C09D 7/47 (2018.01)
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A61K 31/7076 (2006.01)
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C07K 16/28 (2006.01)
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A61P 35/00 (2006.01)
A61K 47/68 (2017.01)
C07K 16/30 (2006.01)
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E04H 12/34 (2006.01)
B66F 3/46 (2006.01)
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E04H 12/00 (2006.01)
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(74) Allens Patent & Trade Mark Attorneys

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C07D 239/91 (2006.01)
A61K 31/517 (2006.01)
A61P 25/02 (2006.01)
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(54) SYSTEMS AND METHODS FOR PREDICTABLE COMMISSURAL ALIGNMENT OF A REPLACEMENT HEART VALVE
(51) Int. Cl.
A61F 2/24 (2006.01)
A61F 2/958 (2013.01)
A61M 25/00 (2006.01)
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(21) 2023248135 **(22)** 12.10.2023
(54) Systems and methods for proactively identifying and surfacing relevant content on a touch-sensitive device
(51) Int. Cl.
G06F 3/0486 (2013.01)
G06F 3/0488 (2022.01)
G06F 9/44 (2018.01)
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(54) Flange bolting method and apparatus
(51) Int. Cl.
F16B 31/02 (2006.01)
G01L 5/24 (2006.01)
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(54) Methods of reducing serum levels of Fc-containing agents using FcRn antagonists
(51) Int. Cl.
C07K 16/00 (2006.01)
A61K 38/17 (2006.01)
A61K 39/00 (2006.01)
A61K 45/06 (2006.01)
C07K 14/47 (2006.01)
C07K 16/28 (2006.01)
C07K 16/40 (2006.01)
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A61B 34/00 (2016.01)
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A61K 38/20 (2006.01)
A61K 47/60 (2017.01)
C07K 1/107 (2006.01)
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C07K 16/28 (2006.01)
A61K 47/68 (2017.01)
C07K 14/725 (2006.01)
G01N 33/574 (2006.01)
(87) WO2018/224844
(31) 1709203.2 **(32)** 09.06.17 **(33)** GB
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(74) Pairman IP

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(54) Nucleic acid construct
(51) Int. Cl.
C12N 15/67 (2006.01)
C12N 15/79 (2006.01)
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(43) 06.02.2020

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(54) A pneumatic flow controlling device for a pneumatic vacuum elevator and a method thereof
(51) Int. Cl.
B66B 9/04 (2006.01)
F16K 7/00 (2006.01)
(87) WO2021/245454
(31) 202041023082 **(32)** 02.06.20 **(33)** IN
(43) 09.12.2021
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(72) BABU, Killakathu Ramanathan
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(54) WATER-REPELLENT TARPAULIN FABRIC AND WATER-REPELLENT TARPAULIN USING IT
(51) Int. Cl.
D06M 13/10 (2006.01)
D06B 3/04 (2006.01)
D06M 13/165 (2006.01)
D06M 13/224 (2006.01)
D06M 13/325 (2006.01)
D06M 13/402 (2006.01)
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(43) 19.12.2024
(44) 27.03.2025
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(11) AU-B-2019288756
(21) 2019288756 **(22)** 21.06.2019
(54) Enhanced microchannel or mesochannel devices and methods of additively manufacturing the same
(51) Int. Cl.
B01J 19/12 (2006.01)
C01B 3/48 (2006.01)
C10K 3/04 (2006.01)
F24S 20/20 (2018.01)
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(71) Bayer Aktiengesellschaft
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(21) 2020316872 **(22)** 20.07.2020
(54) Disc for spray unit
(51) Int. Cl.
B05B 3/10 (2006.01)
A01M 7/00 (2006.01)
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(21) 2018352592

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(11) AU-B-2020252546
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(54) Vascular access instrument having a fluid permeable structure and related devices
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A61M 25/06 (2006.01)
A61M 25/09 (2006.01)
(87) WO2020/206280
(31) 62/830,286 **(32)** 05.04.19 **(33)** US
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(21) 2023285849 **(22)** 21.12.2023
(54) Smart wearable injection and/or infusion device
(51) Int. Cl.
A61M 5/20 (2006.01)
A61M 5/24 (2006.01)
A61M 5/315 (2006.01)
(43) 18.01.2024
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C12N 5/10 (2006.01)
(87) WO2019/057102
(31) 201710853090.2 **(32)** 20.09.17 **(33)** CN
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(74) Wynnes Patent and Trade Mark Attorneys Pty Ltd

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(54) Operating multi-modal medicine delivery systems
(51) Int. Cl.
G16H 10/00 (2018.01)
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(51) Int. Cl.
C12N 5/074 (2010.01)
C12N 15/86 (2006.01)
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(72) POLEGANOV, Marco Alexander; PERKOVIC, Mario; SAHIN, Ugur; BEISSERT, Tim
(74) Phillips Ormonde Fitzpatrick

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(21) 2022282274 **(22)** 24.05.2022
(54) HYDRAULIC FRACTURING PUMPS TO ENHANCE FLOW OF FRACTURING FLUID INTO WELLHEADS AND RELATED METHODS
(51) Int. Cl.
F04B 47/00 (2006.01)
F04B 9/04 (2006.01)
F04B 23/06 (2006.01)
(87) WO2022/251160
(31) 63/202,031 **(32)** 24.05.21 **(33)** US
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(74) FB Rice Pty Ltd

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(71) BLUE PRISM LIMITED
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(21) 2023218956 **(22)** 07.02.2023
(54) METHODS AND SYSTEMS FOR RE-IDENTIFICATION IN A USER INTERFACE
(51) Int. Cl.
G06F 8/33 (2018.01)

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G06F 8/34 (2018.01)
G06F 8/38 (2018.01)
G06F 9/451 (2018.01)
(87) WO2023/152120
(31) 22155721.8 **(32)** 08.02.22 **(33)** EP
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(74) Davies Collison Cave Pty Ltd

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(21) 2019337392 **(22)** 11.09.2019
(54) Inducible expression system for plasmid-free production of a protein of interest
(51) Int. Cl.
C12N 15/63 (2006.01)
C12N 15/70 (2006.01)
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BOREA THERAPEUTICS S.R.L. see EUROPEAN MOLECULAR BIOLOGY LABORATORY
(21) 2021378075

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(71) BOSTON SCIENTIFIC NEUROMODULATION CORPORATION
(11) AU-B-2021451762
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(54) PARESTHESIA-FREE SPINAL CORD STIMULATION OCCURRING AT LOWER FREQUENCIES INVOLVING PERCEPTION THRESHOLD DETERMINATIONS
(51) Int. Cl.
A61N 1/36 (2006.01)
A61N 1/05 (2006.01)
A61N 1/372 (2006.01)
(87) WO2022/265620
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(51) Int. Cl.
G06F 16/29 (2019.01)
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(31) 62/694,333 **(32)** 05.07.18 **(33)** US
(43) 09.01.2020
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(11) AU-B-2023202627
(21) 2023202627 **(22)** 28.04.2023
(54) System and method for pre-authentication of customer support calls
(51) Int. Cl.
H04M 3/51 (2006.01)
H04L 9/08 (2006.01)
H04L 9/14 (2006.01)
H04W 4/80 (2018.01)
(43) 18.05.2023
(44) 27.03.2025
(62) 2020239994
(72) RULE, Jeffrey; ILINCIC, Rajko
(74) GLMR

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(71) Cardio Ring Technologies, Inc.
(11) AU-B-2020327353
(21) 2020327353 **(22)** 14.08.2020
(54) Blood pressure measurement systems and methods
(51) Int. Cl.
A61B 5/021 (2006.01)
A61B 5/0215 (2006.01)
A61B 5/022 (2006.01)
A61B 5/026 (2006.01)
A61B 5/0295 (2006.01)
(87) WO2021/030737
(31) 62/886,368 **(32)** 14.08.19 **(33)** US
(43) 18.02.2021
(44) 27.03.2025
(72) SHIH, Wen-Pin; CHIEN, Wei-Ting; CHEN, Leng-Chun
(74) Griffith Hack

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(71) CareFusion 303, Inc.
(11) AU-B-2024201384
(21) 2024201384 **(22)** 01.03.2024
(54) Needleless connector with support member
(51) Int. Cl.
A61M 39/24 (2006.01)
(43) 21.03.2024
(44) 27.03.2025
(62) 2021269422
(72) YEH, Jonathan; ZOLLINGER, Christopher J.; MANSOUR, George Michel; QUACH, Matthew
(74) FB Rice Pty Ltd

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(71) Carnegie Mellon University
(11) AU-B-2018391987
(21) 2018391987 **(22)** 21.12.2018
(54) Bivalent nucleic acid ligands and uses therefor
(51) Int. Cl.
A61K 39/00 (2006.01)
(87) WO2019/126638
(31) 62/708,783 **(32)** 21.12.17 **(33)** US
62/710,262 14.02.18 US
(43) 27.06.2019
(44) 27.03.2025
(72) LY, Danith H.; THADKE, Shivaji A.; PERERA, J. Dinithi R.
(74) Spruson & Ferguson

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(71) CARRAGHER, S.
(11) AU-B-2021221486
(21) 2021221486 **(22)** 24.08.2021
(54) AN AERATOR FOR IMPROVING SOIL
(51) Int. Cl.
A01B 1/24 (2006.01)
(31) 2021901002 **(32)** 06.04.21 **(33)** AU
(43) 20.10.2022
(44) 27.03.2025
(72) CARRAGHER, Shaun
(74) Baxter Patent Attorneys Pty Ltd

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(21) 2019325411

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(71) Caterpillar Inc.
(11) AU-B-2020216285
(21) 2020216285 **(22)** 16.01.2020
(54) Detection of unintended directional movement of an articulated implement of a machine
(51) Int. Cl.
E02F 3/84 (2006.01)
B62D 47/02 (2006.01)
B62D 53/08 (2006.01)
E02F 9/08 (2006.01)
E02F 9/26 (2006.01)
(87) WO2020/159711
(31) 16/263,465 **(32)** 31.01.19 **(33)** US
(43) 06.08.2020
(44) 27.03.2025
(72) SHARMA, Amit
(74) FPA Patent Attorneys Pty Ltd

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(71) CATERPILLAR INC.
(11) AU-B-2021357052
(21) 2021357052 **(22)** 21.09.2021
(54) FERRITIC NITRO-CARBURIZED TRACK PIN FOR TRACK CHAIN ASSEMBLY OF MACHINE
(51) Int. Cl.
C22C 38/02 (2006.01)
B62D 55/21 (2006.01)
C21D 1/06 (2006.01)
C21D 9/00 (2006.01)
C22C 38/04 (2006.01)
C22C 38/06 (2006.01)
C22C 38/24 (2006.01)
C23C 8/32 (2006.01)
C23C 8/56 (2006.01)
(87) WO2022/076159
(31) 17/063,940 **(32)** 06.10.20 **(33)** US
(43) 14.04.2022
(44) 27.03.2025
(72) BIERMAN, Robert D.
(74) FPA Patent Attorneys Pty Ltd

Applications Accepted - Name Index cont'd

(71) Celgene Corporation
(11) AU-B-2020206692
(21) 2020206692 **(22)** 08.01.2020
(54) Pharmaceutical compositions comprising (S)-4-(4-(4-(((2-(2,6-dioxopiperidin-3-yl)-1-oxoisoindolin-4-yl)oxy)methyl)benzyl)piperazin-1-yl)-3-fluorobenzonitrile and methods of using the same
(51) Int. Cl.
A61K 9/00 (2006.01)
A61K 9/48 (2006.01)
A61K 47/26 (2006.01)
A61K 47/36 (2006.01)
A61P 35/00 (2006.01)
(87) WO2020/146441
(31) 62/790,229 **(32)** 09.01.19 **(33)** US
(43) 16.07.2020
(44) 27.03.2025
(72) AGRAWAL, Anjali; CHEN, Ming J.; KARKI, Shyam Babu; THOOL, Prajwal Gunwanth; VISKY, Dora; XIE, Ruimin
(74) FB Rice Pty Ltd

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(71) Chen, C.
(11) AU-B-2020412607
(21) 2020412607 **(22)** 21.12.2020
(54) Method and kit for template-independent nucleic acid synthesis
(51) Int. Cl.
C12P 19/34 (2006.01)
C12N 9/12 (2006.01)
C12N 15/09 (2006.01)
C12Q 1/6844 (2018.01)
(87) WO2021/133713
(31) 16/725,420 **(32)** 23.12.19 **(33)** US
(43) 01.07.2021
(44) 27.03.2025
(72) CHEN, Cheng-Yao
(74) PHILLIPS ORMONDE FITZPATRICK

Children's Medical Center Corporation see Dana-Farber Cancer Institute, Inc.
(21) 2024200841

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(71) CHINT NEW ENERGY TECHNOLOGY CO., LTD.
(11) AU-B-2021411203
(21) 2021411203 **(22)** 02.02.2021
(54) Back Structure Of Solar Cell, And Solar Cell With Back Structure
(51) Int. Cl.
H10F 10/14 (2025.01)
H10F 77/30 (2025.01)
(87) WO2022/141738
(31) 202011594855.3 **(32)** 29.12.20 **(33)** CN
(43) 07.07.2022
(44) 27.03.2025
(72) LI, Hongbo; HE, Sheng; SHAN, Wei; HSU, Wei-Chih; ZENG, Xinlin; ZHAO, Yingcai
(74) James & Wells Intellectual Property

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(71) Christianson Systems, Inc.
(11) AU-B-2019229356
(21) 2019229356 **(22)** 11.09.2019
(54) FREEWHEELING HUB SYSTEM
(51) Int. Cl.
F16D 41/00 (2006.01)
(31) 62/730,418 **(32)** 12.09.18 **(33)** US
62/829,372 04.04.19 US
(43) 26.03.2020
(44) 27.03.2025
(72) Gerhardt, Jim; Hansen, Shannon; Orellana, Daniel
(74) Phillips Ormonde Fitzpatrick

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(71) CLR-Chemisches Laboratorium Dr. Kurt Richter GmbH
(11) AU-B-2023237059
(21) 2023237059 **(22)** 26.09.2023
(54) Seed extract of Annona cherimola
(51) Int. Cl.
A61K 8/9789 (2017.01)
A61K 36/185 (2006.01)
A61P 17/04 (2006.01)
A61Q 19/00 (2006.01)
(43) 12.10.2023
(44) 27.03.2025
(62) 2020230944
(72) JOHN, Sabrina; STEINMÜLLER, Anne; PRADE, Heiko
(74) Spruson & Ferguson

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(71) Codexis, Inc.
(11) AU-B-2018292104
(21) 2018292104 **(22)** 19.06.2018
(54) T7 RNA polymerase variants
(51) Int. Cl.
C12N 9/12 (2006.01)
(87) WO2019/005539
(31) 62/527,740 **(32)** 30.06.17 **(33)** US
62/528,840 05.07.17 US
(43) 03.01.2019
(44) 27.03.2025
(72) Miller, Mathew G.; Chng, Chinping; Alvizo, Oscar; Mayo, Melissa Ann; Riggins, James Nicholas; Yi, Xiang; Penfield, Jonathan S.; Huisman, Gjalt W.; Davis, Jared; Saotome, Yasushi
(74) Oxygene IP

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(71) Commonwealth Scientific and Industrial Research Organisation
(11) AU-B-2020277895
(21) 2020277895 **(22)** 20.05.2020
(54) Prediction and intervention of obstructive sleep apnoea
(51) Int. Cl.
A61B 5/08 (2006.01)
G06T 7/62 (2017.01)
G09B 23/28 (2006.01)
G16H 50/30 (2018.01)
G16H 50/50 (2018.01)
(87) WO2020/232502
(31) 2019901697 **(32)** 20.05.19 **(33)** AU
(43) 26.11.2020
(44) 27.03.2025
(72) BAFKAR, Omid; NGUYEN, Vu Thua; ROSENGARTEN, Gary; COLE, Ivan Stuart; GULIZIA, Stefan
(74) Phillips Ormonde Fitzpatrick

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(71) CompoSecure, LLC
(11) AU-B-2024200195
(21) 2024200195 **(22)** 11.01.2024
(54) TRANSACTION CARDS WITH DISCONTINUOUS METAL STRATA
(51) Int. Cl.
B42D 25/305 (2014.01)
B42D 25/351 (2014.01)
B42D 25/36 (2014.01)
B42D 25/373 (2014.01)
G06K 19/02 (2006.01)
(43) 01.02.2024
(44) 27.03.2025
(62) 2021283041
(72) LOWE, Adam; ESAU, John
(74) Houlihan Intellectual Property Pty Ltd

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(71) COOPERVISION INTERNATIONAL LIMITED
(11) AU-B-2024273946
(21) 2024273946 **(22)** 14.05.2024
(54) RADIATION BLOCKERS FOR CONTACT LENSES
(51) Int. Cl.
G02B 1/04 (2006.01)
(87) WO2024/236287
(31) 2307235.8 **(32)** 15.05.23 **(33)** GB
2310006.8 30.06.23 GB
23201595.8 04.10.23 EP
(43) 21.11.2024
(44) 27.03.2025
(72) MITCHELL, William; GIBSON, Ian; BROAD, Robert Andrew; MORSLEY, David; PISKORCZYK, Katarzyna; SIMPSON, Laura
(74) Griffith Hack

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(71) Crayola LLC
(11) AU-B-2020351142
(21) 2020351142 **(22)** 16.09.2020
(54) Putty and putty base compounds and methods of making thereof
(51) Int. Cl.
B05D 7/00 (2006.01)
B05D 7/14 (2006.01)
C09D 163/00 (2006.01)
(87) WO2021/055429
(31) 62/901,331 **(32)** 17.09.19 **(33)** US
16/883,422 26.05.20 US
(43) 25.03.2021
(44) 27.03.2025
(72) SPERA, Michael L.
(74) Griffith Hack

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(71) CrazeWeld LLC
(11) AU-B-2023203926
(21) 2023203926 **(22)** 21.06.2023
(54) Purge stand
(51) Int. Cl.
B08B 5/02 (2006.01)
F17D 1/065 (2006.01)
(31) 17/846,233 **(32)** 22.06.22 **(33)** US
(43) 18.01.2024
(44) 27.03.2025
(72) OTT, Joshua D.
(74) Spruson & Ferguson

Applications Accepted - Name Index cont'd

(71) CRISPR Therapeutics AG; Bayer Healthcare LLC
(11) AU-B-2018353012
(21) 2018353012 **(22)** 17.10.2018
(54) Compositions and methods for gene editing for Hemophilia A
(51) Int. Cl.
C12N 15/113 (2010.01)
A61P 7/04 (2006.01)
C07K 14/755 (2006.01)
C12N 9/22 (2006.01)
(87) WO2019/079527
(31) 62/573,633 **(32)** 17.10.17 **(33)** US
(43) 25.04.2019
(44) 27.03.2025
(72) BROOKS, Alan Richard
(74) RNB IP PTY LTD

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(71) Dana-Farber Cancer Institute, Inc.; Children's Medical Center Corporation; Ospedale San Raffaele S.r.l.; Politecnico di Milano; Fondazione Telethon
(11) AU-B-2024200841
(21) 2024200841 **(22)** 09.02.2024
(54) Compositions and methods for treating diseases and disorders of the central nervous system
(51) Int. Cl.
C12N 5/079 (2010.01)
C12N 5/0793 (2010.01)
C12N 5/0797 (2010.01)
(43) 07.03.2024
(44) 27.03.2025
(62) 2017342555
(72) Biffi, Alessandra; Peviani, Marco; Moscatelli, Davide; Capotondo, Alessia; Milazzo, Rita; Capasso Palmiero, Umberto
(74) Griffith Hack

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(71) Danimer IPCo, LLC
(11) AU-B-2021327928
(21) 2021327928 **(22)** 11.03.2021
(54) ANTIMICROBIAL BIODEGRADABLE COMPOSITIONS FOR FOOD CONTACT ARTICLES
(51) Int. Cl.
A01N 25/10 (2006.01)
A01P 1/00 (2006.01)
A01P 3/00 (2006.01)
A61L 29/16 (2006.01)
A61P 31/04 (2006.01)
C08L 67/04 (2006.01)
(87) WO2022/039789
(31) 63/068,401 **(32)** 21.08.20 **(33)** US
(43) 24.02.2022
(44) 27.03.2025
(72) LEGGETT, Carol, G.; VAN TRUMP, Phillip; LEGGETT, Thomas, K., III; MULLINS, Russell
(74) Spruson & Ferguson

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(71) Deere & Company
(11) AU-B-2019201175
(21) 2019201175 **(22)** 20.02.2019
(54) Using an accumulator to improve delivery of liquid through a valve on an agricultural machine
(51) Int. Cl.
A01M 7/00 (2006.01)
B60P 3/30 (2006.01)
(31) 62/648,190 **(32)** 26.03.18 **(33)** US
16/016,083 22.06.18 US
(43) 17.10.2019
(44) 27.03.2025
(72) Wonderlich, Grant J.; Herrmann, Kenneth
(74) Davies Collison Cave Pty Ltd

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(71) Deere & Company
(11) AU-B-2019279937
(21) 2019279937 **(22)** 10.12.2019
(54) Absorption of vibrations of a distributor linkage of an agricultural distributing machine
(51) Int. Cl.
A01M 7/00 (2006.01)
A01C 15/00 (2006.01)
A01C 23/00 (2006.01)
(31) 102019200252.8 **(32)** 10.01.19 **(33)** DE
(43) 30.07.2020
(44) 27.03.2025
(72) Jung, Benedikt; Waibel, Christian; Seimetz, Martin
(74) Davies Collison Cave Pty Ltd

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(71) DEMATIC GMBH
(11) AU-B-2022280325
(21) 2022280325 **(22)** 18.05.2022
(54) SORTING SYSTEM AND METHOD FOR OPERATING SAME
(51) Int. Cl.
B65G 47/04 (2006.01)
B07C 1/00 (2006.01)
(87) WO2022/248306
(31) 10 2021 113 886.8 **(32)** 28.05.21 **(33)** DE
(43) 01.12.2022
(44) 27.03.2025
(72) MEURER, Hans Christoph
(74) Griffith Hack

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(71) Dentsply Sirona Inc.
(11) AU-B-2020259278
(21) 2020259278 **(22)** 09.04.2020
(54) Dental composition
(51) Int. Cl.
A61K 6/61 (2020.01)
A61K 6/62 (2020.01)
A61K 6/71 (2020.01)
A61K 6/887 (2020.01)
(87) WO2020/214475
(31) 62/833,960 **(32)** 15.04.19 **(33)** US
(43) 22.10.2020
(44) 27.03.2025
(72) RITTER, Helmut; KLEE, Joachim E.; LU, Hui; NEUHAUS, Kira
(74) Davies Collison Cave Pty Ltd

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(71) Depuy Ireland Unlimited Company
(11) AU-B-2019296369
(21) 2019296369 **(22)** 24.06.2019
(54) Femoral neck resection guide
(51) Int. Cl.
A61B 17/15 (2006.01)
(87) WO2020/002198
(31) 1905474.1 **(32)** 17.04.19 **(33)** GB
1813421.3 17.08.18 GB
1810475.2 26.06.18 GB
(43) 02.01.2020
(44) 27.03.2025
(72) ATKIN, Jamie; BEVERLAND, David; BUSHELL, Sarah; COULTRUP, Oliver; DUTTON, Graeme; NAYLOR, Jason; ROBINSON, Stephen
(74) Spruson & Ferguson

DexCom, Inc. see Verily Life Sciences LLC
(21) 2019317336

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(71) Dow Global Technologies LLC; Rohm and Haas Company
(11) AU-B-2019425686
(21) 2019425686 **(22)** 31.01.2019
(54) Paint roller cover for multicolor paint, method of uniformly applying multicolor paint and method of quantifying uniformity of paint application
(51) Int. Cl.
B05C 1/08 (2006.01)
B05D 1/28 (2006.01)
E04F 21/08 (2006.01)
(87) WO2020/155004
(43) 06.08.2020
(44) 27.03.2025
(72) ZHAO, Ruijun; CHEN, Bin; LIU, Hui; LI, Ling; KEENE, Ellen C.; MONAENKOVA, Daria
(74) Phillips Ormonde Fitzpatrick

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(71) Duracell U.S. Operations, Inc.
(11) AU-B-2019317267
(21) 2019317267 **(22)** 09.07.2019
(54) Batteries having vents
(51) Int. Cl.
H01M 50/147 (2021.01)
H01M 50/30 (2021.01)
(87) WO2020/033090
(31) 16/058,735 **(32)** 08.08.18 **(33)** US
(43) 13.02.2020
(44) 27.03.2025
(72) ASHBOLT, Mark; SHELEKHIN, Alexander; MERRILL, Brien; PODOPRIGORA, Oleg; FERRIN, Robert S.
(74) Phillips Ormonde Fitzpatrick

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(71) Eavor Technologies Inc
(11) AU-B-2019203681
(21) 2019203681 **(22)** 27.05.2019
(54) METHOD FOR FORMING HIGH EFFICIENCY GEOTHERMAL WILLBORES
(51) Int. Cl.
E21B 43/26 (2006.01)
E21B 7/00 (2006.01)
F24T 10/10 (2018.01)
(31) 62/693,950 **(32)** 04.07.18 **(33)** US
62/714,674 04.08.18 US
(43) 23.01.2020
(44) 27.03.2025
(72) TOEWS, Matthew; CAIRNS, Paul; ANDREWS, Peter; CURTIS-SMITH, Andrew; HALE, Jonathan
(74) WRAYS PTY LTD

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(71) ENCORE MEDICAL, L.P. DBA DJO SURGICAL
(11) AU-B-2021391408
(21) 2021391408 **(22)** 29.11.2021
(54) KNEE REPLACEMENT IMPLANT HAVING STACKABLE SPACERS
(51) Int. Cl.
A61F 2/30 (2006.01)
A61F 2/38 (2006.01)
(87) WO2022/119777
(31) 63/119,802 **(32)** 01.12.20 **(33)** US
(43) 09.06.2022
(44) 27.03.2025
(72) GREEN, John, M., II; SMALL, Laura
(74) AJ PARK

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(71) Epizyme, Inc.
(11) AU-B-2019321464
(21) 2019321464 **(22)** 14.08.2019
(54) Substituted indoles and methods of use thereof
(51) Int. Cl.
C07D 209/08 (2006.01)
C07D 401/12 (2006.01)
C07D 403/12 (2006.01)
(87) WO2020/037079
(31) 62/718,746 **(32)** 14.08.18 **(33)** US
62/773,770 30.11.18 US
62/857,120 04.06.19 US
(43) 20.02.2020
(44) 27.03.2025
(72) LAMPE, John; CAMPBELL, John; DUNCAN, Kenneth; FOLEY, Megan Alene Cloonan; HARVEY, Darren Martin; MUNCHHOF, Michael John; THOMENIUS, Michael; REITER, Lawrence Alan
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Essity Hygiene and Health Aktiebolag
(11) AU-B-2019440869
(21) 2019440869 **(22)** 15.04.2019
(54) Data logger unit, sensor unit, absorbent article management system and identification method
(51) Int. Cl.
G01D 9/00 (2006.01)
A61F 13/15 (2006.01)
A61F 13/42 (2006.01)
G01D 21/00 (2006.01)
G01N 27/22 (2006.01)
(87) WO2020/211922
(43) 22.10.2020
(44) 27.03.2025
(72) PETTERSSON-FALK, Henrik
(74) Griffith Hack

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(71) ESS Tech, Inc.
(11) AU-B-2019384105
(21) 2019384105 **(22)** 14.11.2019
(54) Electrolyte health management for redox flow battery
(51) Int. Cl.
H01M 8/0438 (2016.01)
H01M 8/04186 (2016.01)
H01M 8/04276 (2016.01)
H01M 8/04537 (2016.01)
H01M 8/04791 (2016.01)
H01M 8/18 (2006.01)
(87) WO2020/106549
(31) 62/770,027 **(32)** 20.11.18 **(33)** US
(43) 28.05.2020
(44) 27.03.2025
(72) SONG, Yang; MCDONALD, Timothy J.; BEHR, Alexandria
(74) WRAYS PTY LTD

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(71) Eureka Therapeutics, Inc.
(11) AU-B-2018258049
(21) 2018258049 **(22)** 24.04.2018
(54) Constructs specifically recognizing glypican 3 and uses thereof
(51) Int. Cl.
C07K 16/30 (2006.01)
A61K 39/395 (2006.01)
A61P 35/00 (2006.01)
C07K 16/46 (2006.01)
C07K 19/00 (2006.01)
G01N 33/574 (2006.01)
(87) WO2018/200586
(31) 62/490,586 **(32)** 26.04.17 **(33)** US
(43) 01.11.2018
(44) 27.03.2025
(72) Zhang, Pengbo; Xu, Yiyang; Morales, Javier; Nakano, Yoko; Liu, Hong; Xiang, Jingyi; Acker, Timothy
(74) WRAYS PTY LTD

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(71) EUROPEAN MOLECULAR BIOLOGY LABORATORY; BOREA THERAPEUTICS S.R.L.
(11) AU-B-2021378075
(21) 2021378075 **(22)** 11.11.2021
(54) MODIFIED VIRAL PARTICLES FOR GENE THERAPY
(51) Int. Cl.
C07D 225/02 (2006.01)
(87) WO2022/101363
(31) 63/112,457 **(32)** 11.11.20 **(33)** US
(43) 19.05.2022
(44) 27.03.2025
(72) HEPPENSTALL, Paul Alexander
(74) FB Rice Pty Ltd

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(71) Exel Industries
(11) AU-B-2020224351
(21) 2020224351 **(22)** 21.02.2020
(54) Agriculture device for dispensing a liquid
(51) Int. Cl.
A01M 7/00 (2006.01)
(87) WO2020/169818
(31) 2022619 **(32)** 21.02.19 **(33)** NL
(43) 27.08.2020
(44) 27.03.2025
(72) VAN ALPHEN, Martinus Henricus
(74) Spruson & Ferguson

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(71) Fasteners For Retail, Inc.
(11) AU-B-2023203232
(21) 2023203232 **(22)** 23.05.2023
(54) SHELVING SYSTEM AND METHODS
(51) Int. Cl.
A47F 5/10 (2006.01)
A47B 57/00 (2006.01)
(43) 15.06.2023
(44) 27.03.2025
(62) 2021200458
(72) SMEDLEY, Jamie Aaron; GARDUNO, Gabriel; MERTZ, Billy
(74) Baxter Patent Attorneys Pty Ltd

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(71) Fazio, R.
(11) AU-B-2019398025
(21) 2019398025 **(22)** 11.12.2019
(54) Martial arts training device
(51) Int. Cl.
A63B 69/00 (2006.01)
A63B 69/34 (2006.01)
(87) WO2020/118364
(31) 2018904753 **(32)** 14.12.18 **(33)** AU
(43) 18.06.2020
(44) 27.03.2025
(72) FAZIO, Raimondo
(74) Armour IP Pty Ltd

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(71) Figene, LLC
(11) AU-B-2020208472
(21) 2020208472 **(22)** 17.01.2020
(54) Fibroblasts and microvesicles thereof for reduction of toxicity associated with cancer immunotherapy
(51) Int. Cl.
A61K 31/517 (2006.01)
C07D 217/14 (2006.01)
C07D 217/16 (2006.01)
(87) WO2020/150567
(31) 62/793,545 **(32)** 17.01.19 **(33)** US
(43) 23.07.2020
(44) 27.03.2025
(72) O'HEERON, Pete; ICHIM, Thomas
(74) FB Rice Pty Ltd

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(71) Fisher & Paykel Healthcare Limited
(11) AU-B-2019288940
(21) 2019288940 **(22)** 19.06.2019
(54) Nasal cannula and securement system
(51) Int. Cl.
A61M 16/06 (2006.01)
(87) WO2019/245391
(31) 62/769,531 **(32)** 19.11.18 **(33)** US
62/687,230 19.06.18 US
(43) 26.12.2019
(44) 27.03.2025
(72) RONAYNE, Michael Paul; NORTHEY, Anna Rose; HOWARTH, Brad Michael; STANLEY, Leon Tyler; DAVIS, Samuel Rollo Ross; MEECH, Julio Derek; STANTON, James William; MICHELSEN, Larissa Grace; MCGERTY, Oscar Elliot James
(74) AJ PARK

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(71) Fisher & Paykel Healthcare Limited
(11) AU-B-2019319426
(21) 2019319426 **(22)** 09.08.2019
(54) Heater plate assembly in humidifier systems for medical use
(51) Int. Cl.
A61M 16/16 (2006.01)
A61M 13/00 (2006.01)
(87) WO2020/032808

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(31) 62/717,217 **(32)** 10.08.18 **(33)** US
62/788,696 04.01.19 US
62/817,968 13.03.19 US
(43) 13.02.2020
(44) 27.03.2025
(72) GARG, Bhuvan; GLYNN, Francis; EVANS, Stephen David; LIANG, Wenjie Robin; YU, Yintao; ANDREW, Logan Ross
(74) AJ PARK

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(71) Fisher & Paykel Healthcare Limited
(11) AU-B-2023201885
(21) 2023201885 **(22)** 28.03.2023
(54) PATIENT INTERFACES
(51) Int. Cl.
A61M 16/06 (2006.01)
(43) 04.05.2023
(44) 27.03.2025
(62) 2017339844
(72) Patel, Roheet; Cox, Michael John Henri; Betteridge, Max Leon; Walls, Bruce Michael; Leahy, Ronan; Pedersen, Matthew James; Lim, Jae Yun
(74) AJ PARK

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(71) Fisher & Paykel Healthcare Limited
(11) AU-B-2023202009
(21) 2023202009 **(22)** 31.03.2023
(54) Headgear assembly
(51) Int. Cl.
A61M 11/00 (2006.01)
(43) 04.05.2023
(44) 27.03.2025
(62) 2021204789
(72) Freestone, Paul Mathew; Bornholdt, Melissa Catherine; Stephenson, Matthew Roger; Hocking, Jake Baker; Walls, Bruce Michael; Hipolito, Chris Onin Limpin; Sng, Jonathan Tong Lok; Farrow, Abby Rebecca
(74) AJ PARK

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(21) 2024200841

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(71) Forschungsverbund Berlin E.V.; Ludwig-Maximilians-Universitaet Muenchen
(11) AU-B-2019232602
(21) 2019232602 **(22)** 06.03.2019
(54) Chemoselective thiol-conjugation with alkene or alkyne-phosphonothiolates and -phosphonates
(51) Int. Cl.
C07K 16/28 (2006.01)
A61K 47/68 (2017.01)
C07F 9/40 (2006.01)
(87) WO2019/170710
(31) 18160384.6 **(32)** 07.03.18 **(33)** EP
(43) 12.09.2019
(44) 27.03.2025
(72) HACKENBERGER, Christian; BAUMANN, Alice Leonie; KASPER, Marc-André; BYRNE, Stephen; HELMA-SMETS, Jonas; LEONHARDT, Heinrich; STOSCHECK, Tina; GERLACH, Marcus; SCHUMACHER, Dominik
(74) Oxygene IP

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(71) FORSSAN SUOJAINVALMISTUS OY
(11) AU-B-2021415125
(21) 2021415125 **(22)** 23.12.2021
(54) A RESPIRATORY PROTECTIVE DEVICE OR FACE MASK HYGIENE PRODUCT, A METHOD FOR THE MANUFACTURE OF REINFORCED TEXTILE PART, NONWOVEN FABRIC PART OR THEIR COMBINATION PART, AND A FILTER
(51) Int. Cl.
A41D 13/11 (2006.01)
A62B 18/02 (2006.01)
(87) WO2022/144310
(31) 20217414.0 **(32)** 28.12.20 **(33)** EP
(43) 07.07.2022
(44) 27.03.2025
(72) PORANEN, Taneli; KOTINIEMI, Sami
(74) Griffith Hack

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(71) FOSHAN IDEAL CO., LTD.
(11) AU-B-2021431976
(21) 2021431976 **(22)** 12.03.2021
(54) BI-DIRECTIONAL DAMPER FOR SHOWER DOOR
(51) Int. Cl.
E05F 3/22 (2006.01)
(87) WO2022/188121
(43) 15.09.2022
(44) 27.03.2025
(72) WEI, Wuxiang
(74) FOUNDRY INTELLECTUAL PROPERTY PTY LTD

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(11) AU-B-2023254936
(21) 2023254936 **(22)** 25.10.2023
(54) Multi-channel signal generator, audio encoder and related methods relying on a mixing noise signal
(51) Int. Cl.
G10L 19/012 (2013.01)
G10L 19/008 (2013.01)
(43) 16.11.2023
(44) 27.03.2025
(62) 2021331096
(72) RAVELLI, Emmanuel; KIENE, Jan Frederik; FUCHS, Guillaume; KORSE, Srikanth; MULTRUS, Markus; FOTOPOULOU, Eleni
(74) GLMR

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(71) Fred Hutchinson Cancer Center
(11) AU-B-2018236461
(21) 2018236461 **(22)** 16.03.2018
(54) Immunomodulatory fusion proteins and uses thereof
(51) Int. Cl.
A61K 39/00 (2006.01)
(87) WO2018/170475
(31) 62/473,282 **(32)** 17.03.17 **(33)** US
62/629,663 12.02.18 US
(43) 20.09.2018
(44) 27.03.2025
(72) Oda, Shannon K.; Greenberg, Philip D.; Schmitt, Thomas M.
(74) Spruson & Ferguson

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(71) Fresenius Kabi Deutschland GmbH
(11) AU-B-2019348469
(21) 2019348469 **(22)** 24.09.2019
(54) Contour-forming welding tool for pulse welding and contour-forming pulse welding method for a medical pack formed as a bag
(51) Int. Cl.
B29C 65/22 (2006.01)
A61J 1/10 (2006.01)
B29C 65/38 (2006.01)
(87) WO2020/064675
(31) 18196536.9 **(32)** 25.09.18 **(33)** EP
(43) 02.04.2020
(44) 27.03.2025
(72) WITTORF, Joern; WEGNER, Gerald; LENHARDT, Tobias
(74) Spruson & Ferguson

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(71) Fujitsu General Limited
(11) AU-B-2021321659
(21) 2021321659 **(22)** 30.07.2021
(54) Heat exchanger
(51) Int. Cl.
F25B 39/00 (2006.01)
F25B 39/02 (2006.01)
F28D 1/053 (2006.01)
F28F 1/02 (2006.01)
F28F 9/02 (2006.01)
(87) WO2022/030376
(31) 2020-131928 **(32)** 03.08.20 **(33)** JP
(43) 10.02.2022
(44) 27.03.2025
(72) MAEMA, Yoshinari; SHIMANO, Daiki; NAKATA, Shohei
(74) Spruson & Ferguson

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(71) Fundació Institut de Bioenginyeria de Catalunya; Institució Catalana de Recerca i Estudis Avançats
(11) AU-B-2019394017
(21) 2019394017 **(22)** 04.12.2019
(54) Functionalized enzyme-powered nanomotors
(51) Int. Cl.
B82B 1/00 (2006.01)
(87) WO2020/115124
(31) 18382896.1 **(32)** 05.12.18 **(33)** EP
(43) 11.06.2020
(44) 27.03.2025
(72) SÁNCHEZ ORDÓÑEZ, Samuel; PATIÑO PADIAL, Tania; LOPES HORTELÃO, Ana Candida
(74) Griffith Hack

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(71) Fusion Pharmaceuticals Inc.
(11) AU-B-2019249160
(21) 2019249160 **(22)** 03.04.2019
(54) HSP90-targeting conjugates and formulations thereof
(51) Int. Cl.

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A61K 38/16 (2006.01)
A61K 39/395 (2006.01)
A61K 45/00 (2006.01)
A61P 43/00 (2006.01)
(87) WO2019/195384
(31) 62/731,543 **(32)** 14.09.18 **(33)** US
62/653,106 05.04.18 US
62/787,799 03.01.19 US
(43) 10.10.2019
(44) 27.03.2025
(72) BILODEAU, Mark T.; MOREAU, Benoît; KADIYALA, Sudhakar; WOOSTER, Richard; WHITE, Brian H.
(74) Griffith Hack

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(71) Galmed Research and Development Ltd.
(11) AU-B-2019334939
(21) 2019334939 **(22)** 03.09.2019
(54) Combination therapy for the treatment of liver disease
(51) Int. Cl.
A61K 31/575 (2006.01)
A61K 31/192 (2006.01)
A61K 31/53 (2006.01)
A61K 31/665 (2006.01)
(87) WO2020/049556
(31) 62/727,565 **(32)** 06.09.18 **(33)** US
(43) 12.03.2020
(44) 27.03.2025
(72) BAHARAFF, Allen; HAYARDENY-NISSIMOV, Liat; GORFINE, Tali
(74) Griffith Hack

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(11) AU-B-2022284054
(21) 2022284054 **(22)** 11.02.2022
(54) WALL-MOUNTED AIR CONDITIONER
(51) Int. Cl.
F24F 1/0007 (2019.01)
F24F 13/08 (2006.01)
F24F 13/20 (2006.01)
(87) WO2022/252682
(31) 202110610657.X **(32)** 01.06.21 **(33)** CN
(43) 08.12.2022
(44) 27.03.2025
(72) ZHOU, Baisong; WU, Duode; LI, Bo; WAN, Yongqiang; SU, Qiqin; TU, Yunchong
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) GD MIDEA HEATING & VENTILATING EQUIPMENT CO., LTD.; HEFEI MIDEA HEATING & VENTILATING EQUIPMENT CO., LTD.
(11) AU-B-2022285467
(21) 2022285467 **(22)** 11.02.2022
(54) WALL-MOUNTED AIR CONDITIONER
(51) Int. Cl.
F24F 1/00 (2019.01)
F24F 1/0059 (2019.01)
F24F 1/0067 (2019.01)
(87) WO2022/252680
(31) 202121216342.9 **(32)** 01.06.21 **(33)** CN
(43) 08.12.2022
(44) 27.03.2025
(72) ZHOU, Baisong; WU, Duode; YANG, Yuan; LI, Bo; WAN, Yongqiang; SU, Qiqin; TU, Yunchong
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) GELITA AG
(11) AU-B-2019323536
(21) 2019323536 **(22)** 29.07.2019
(54) Protein bar
(51) Int. Cl.
A23L 7/117 (2016.01)
A23L 29/281 (2016.01)
A23L 33/18 (2016.01)
A23L 33/28 (2016.01)
(87) WO2020/038685
(31) DE 10 2018 120 **(32)** 22.08.18 **(33)** DE 420.5
(43) 27.02.2020
(44) 27.03.2025
(72) GRÜBER, Anne-Sophie; HAHN, Martin; LANG, Elvira
(74) Griffith Hack

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(71) GENERAL DYNAMICS ORDNANCE AND TACTICAL SYSTEMS - CANADA, INC.
(11) AU-B-2023343601
(21) 2023343601 **(22)** 04.08.2023
(54) CLOSURE DISK ASSEMBLY FOR TRACER PROJECTILE
(51) Int. Cl.
F42B 12/38 (2006.01)
(87) WO2024/055097
(31) 17/931,795 **(32)** 13.09.22 **(33)** US
(43) 21.03.2024
(44) 27.03.2025
(72) LAFORTUNE, Eric
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Generation Bio Co.
(11) AU-B-2019210034
(21) 2019210034 **(22)** 18.01.2019
(54) Closed-ended DNA vectors obtainable from cell-free synthesis and process for obtaining ceDNA vectors
(51) Int. Cl.
C12N 15/09 (2006.01)
C12N 15/63 (2006.01)
C12N 15/64 (2006.01)
C12N 15/66 (2006.01)
C12N 15/86 (2006.01)
(87) WO2019/143885
(31) 62/619,392 **(32)** 19.01.18 **(33)** US
(43) 25.07.2019
(44) 27.03.2025
(72) ALKAN, Ozan; KOTIN, Robert Michael; STANTON, Matthew; KERR, Douglas Anthony; PELLETIER, Carolyn
(74) Griffith Hack

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(71) Google LLC
(11) AU-B-2024200224
(21) 2024200224 **(22)** 12.01.2024
(54) DETECTING AND HANDLING FAILURES IN AUTOMATED VOICE ASSISTANTS
(51) Int. Cl.
G10L 15/22 (2006.01)
G06F 3/16 (2006.01)
G10L 15/08 (2006.01)
G10L 15/18 (2013.01)
G10L 15/30 (2013.01)
G10L 15/32 (2013.01)
G10L 17/00 (2013.01)
(43) 01.02.2024
(44) 27.03.2025
(62) 2020472583
(72) CARBUNE, Victor; SHARIFI, Matthew
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Guangzhou Bio-Gene Technology Co., Ltd
(11) AU-B-2020480789
(21) 2020480789 **(22)** 22.12.2020
(54) CLL1-targeting chimeric antigen receptor and application thereof
(51) Int. Cl.
C07K 19/00 (2006.01)
A61K 39/00 (2006.01)
A61P 35/00 (2006.01)
A61P 35/02 (2006.01)
C12N 5/10 (2006.01)
C12N 7/01 (2006.01)
C12N 15/62 (2006.01)
C12N 15/867 (2006.01)
(87) WO2022/120942
(31) 202011461194.7 **(32)** 11.12.20 **(33)** CN
(43) 16.06.2022
(44) 27.03.2025
(72) LI, Guangchao; LUO, Min; DING, Wen; ZHOU, Zhao; WANG, Xuejun
(74) WRAYS PTY LTD

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(71) Guardant Health, Inc.
(11) AU-B-2020228058
(21) 2020228058 **(22)** 27.02.2020
(54) Computational modeling of loss of function based on allelic frequency
(51) Int. Cl.
G16B 20/20 (2019.01)
C12Q 1/6886 (2018.01)
G16H 50/20 (2018.01)
(87) WO2020/176775
(31) 62/811,159 **(32)** 27.02.19 **(33)** US
62/823,585 25.03.19 US
(43) 03.09.2020
(44) 27.03.2025
(72) BARBACIORU, Catalin; SIKORA, Marcin; CHUDOVA, Darya
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Halliburton Energy Services, Inc.
(11) AU-B-2019451953
(21) 2019451953 **(22)** 20.06.2019
(54) Bias fabric reinforced ELH element material for improved anchoring
(51) Int. Cl.
E21B 43/10 (2006.01)
E21B 23/01 (2006.01)

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E21B 33/00 (2006.01)
(87) WO2020/256729
(31) 16/446,976 **(32)** 20.06.19 **(33)** US
(43) 24.12.2020
(44) 27.03.2025
(72) SEVADJIAN, Emile Edmund; GLAESMAN, Chad William; KOHN, Gary Allen
(74) Phillips Ormonde Fitzpatrick

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(71) Halliburton Energy Services, Inc.
(11) AU-B-2019453393
(21) 2019453393 **(22)** 28.06.2019
(54) Concentric disconnect tool with multiple electrical conductors
(51) Int. Cl.
E21B 17/00 (2006.01)
E21B 17/02 (2006.01)
(87) WO2020/263272
(43) 30.12.2020
(44) 27.03.2025
(72) EL MALLAWANY, Ibrahim
(74) Phillips Ormonde Fitzpatrick

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(71) Halliburton Energy Services, Inc.
(11) AU-B-2019476328
(21) 2019476328 **(22)** 04.12.2019
(54) Downhole tools, multi-lateral intervention systems and methods to deploy a tubular into a lateral borehole of a multilateral well
(51) Int. Cl.
E21B 41/00 (2006.01)
E21B 17/05 (2006.01)
(87) WO2021/107963
(31) 16/696,992 **(32)** 26.11.19 **(33)** US
(43) 03.06.2021
(44) 27.03.2025
(72) RODRIGUEZ, Franklin Charles
(74) Phillips Ormonde Fitzpatrick

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(71) Halliburton Energy Services, Inc.
(11) AU-B-2020218189
(21) 2020218189 **(22)** 04.02.2020
(54) Deflector assembly and method for forming a multilateral well
(51) Int. Cl.
E21B 7/06 (2006.01)
E21B 23/01 (2006.01)
E21B 41/00 (2006.01)
(87) WO2020/163386
(31) 62/802,882 **(32)** 08.02.19 **(33)** US
16/781,737 04.02.20 US
(43) 13.08.2020
(44) 27.03.2025
(72) KUHLMAN, Michael Werner
(74) Phillips Ormonde Fitzpatrick

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(71) Halliburton Energy Services, Inc.
(11) AU-B-2020219850
(21) 2020219850 **(22)** 04.02.2020
(54) Deflector assembly and efficient method for multi-stage fracturing a multilateral well using the same
(51) Int. Cl.
E21B 41/00 (2006.01)
E21B 7/06 (2006.01)
E21B 23/01 (2006.01)
(87) WO2020/163394
(31) 62/802,751 **(32)** 08.02.19 **(33)** US
16/781,809 04.02.20 US
(43) 13.08.2020
(44) 27.03.2025
(72) CHO, Brian Williams; KELSEY, Matthew James; LANG, Loc Phuc; CAPPIELLO, Stefano
(74) Phillips Ormonde Fitzpatrick

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(71) Halliburton Energy Services, Inc.
(11) AU-B-2022201619
(21) 2022201619 **(22)** 09.03.2022
(54) SYSTEMS AND METHODS FOR POWER EQUALIZATION FOR MULTIPLE DOWNHOLE TRACTORS
(51) Int. Cl.
E21B 4/16 (2006.01)
E21B 4/18 (2006.01)
E21B 23/14 (2006.01)
H02P 5/46 (2006.01)
(31) 63/222,576 **(32)** 16.07.21 **(33)** US
(43) 02.02.2023
(44) 27.03.2025
(72) Qi, Yuan; Gupta, Sudhir Kumar
(74) Phillips Ormonde Fitzpatrick

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(71) HALO SMART SOLUTIONS, INC.
(11) AU-B-2022350847
(21) 2022350847 **(22)** 16.03.2022
(54) HEAT-NOT-BURN ACTIVITY DETECTION DEVICE, SYSTEM AND METHOD
(51) Int. Cl.
G08B 21/18 (2006.01)
G01N 33/00 (2006.01)
H04N 7/18 (2006.01)
(87) WO2023/048766
(31) 17/481,615 **(32)** 22.09.21 **(33)** US
(43) 30.03.2023
(44) 27.03.2025
(72) ANTAR, David; JACOVINO, Frank L.; GALBURT, Paul; PLUNKETT, John B.
(74) PHILLIPS ORMONDE FITZPATRICK

Healgen Scientific Limited see Zhejiang Orient Gene Biotech Co.,Ltd
(21) 2019206031

HEFEI MIDEA HEATING & VENTILATING EQUIPMENT CO., LTD. see GD MIDEA HEATING & VENTILATING EQUIPMENT CO., LTD.
(21) 2022284054

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(21) 2022285467

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(71) HITACHI ENERGY LTD
(11) AU-B-2021474712
(21) 2021474712 **(22)** 17.11.2021
(54) METHOD AND SYSTEM FOR OPERATING AN ENERGY MANAGEMENT SYSTEM
(51) Int. Cl.
H02J 3/00 (2006.01)
H02J 3/38 (2006.01)
H02J 3/46 (2006.01)
(87) WO2023/089640
(43) 25.05.2023
(44) 27.03.2025
(72) ALMALECK, Pablo; ZARRILLI, Donato; LA BELLA, Alessio; FAGIANO, Lorenzo Mario; RUIZ PALACIOS, Fredy Orlando; SCATTOLINI, Riccardo
(74) FB Rice Pty Ltd

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(71) Huawei Technologies Co., Ltd.
(11) AU-B-2023204301
(21) 2023204301 **(22)** 04.07.2023
(54) VIDEO ENCODER, VIDEO DECODER, AND CORRESPONDING ENCODING AND DECODING METHODS
(51) Int. Cl.
H04N 19/593 (2014.01)
H04N 19/59 (2014.01)
(43) 27.07.2023
(44) 27.03.2025
(62) 2019303720
(72) Ma, Xiang; Zhao, Yin; Yang, Haitao; Chen, Jianle
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) Hunt, R.
(11) AU-B-2020456269
(21) 2020456269 **(22)** 29.06.2020
(54) Toilet sealing device
(51) Int. Cl.
A47K 13/24 (2006.01)
(87) WO2022/000069
(43) 06.01.2022
(44) 27.03.2025
(72) HUNT, Ryan
(74) FB Rice Pty Ltd

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(71) Hurst, M.
(11) AU-B-2022252765
(21) 2022252765 **(22)** 16.09.2022
(54) Improved twist resistant roof structure
(51) Int. Cl.
E04D 13/16 (2006.01)
E04D 12/00 (2006.01)
E04G 21/32 (2006.01)
(43) 06.06.2024
(44) 27.03.2025
(72) HURST, Mario
(74) Spruson & Ferguson

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(71) I4F Licensing NV
(11) AU-B-2019392310
(21) 2019392310 **(22)** 30.09.2019
(54) Decorative panel, and decorative floor covering consisting of said panels
(51) Int. Cl.
B32B 13/10 (2006.01)
B32B 21/02 (2006.01)
C04B 28/10 (2006.01)
C04B 28/30 (2006.01)

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C04B 28/32 (2006.01)
C04B 28/34 (2006.01)
E04F 15/08 (2006.01)
(87) WO2020/114645
(31) 2022114 **(32)** 03.12.18 **(33)** NL
(43) 11.06.2020
(44) 27.03.2025
(72) BOUCKÉ, Eddy Alberic
(74) IP GATEWAY PATENT & TRADE MARK ATTORNEYS PTY LTD

Icahn School of Medicine at Mount Sinai see New York Stem Cell Foundation, Inc.
(21) 2018272068

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(71) Incitec Fertilisers Operations Pty Ltd
(11) AU-B-2024200928
(21) 2024200928 **(22)** 14.02.2024
(54) An Inhibitor for use in agriculture
(51) Int. Cl.
C05G 3/90 (2020.01)
C05C 9/00 (2006.01)
C05G 5/30 (2020.01)
(31) 2023900365 **(32)** 15.02.23 **(33)** AU
(43) 29.08.2024
(44) 27.03.2025
(72) Hughes, Timothy; Khalil, Roya
(74) FOUNDRY INTELLECTUAL PROPERTY PTY LTD

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(71) Inflowmatix Ltd
(11) AU-B-2019361325
(21) 2019361325 **(22)** 18.10.2019
(54) Computer-implemented method of modelling a hydraulic network
(51) Int. Cl.
G06Q 10/04 (2012.01)
G06Q 10/06 (2012.01)
G06Q 50/06 (2012.01)
(87) WO2020/079455
(31) 1817011.8 **(32)** 18.10.18 **(33)** GB
(43) 23.04.2020
(44) 27.03.2025
(72) WRIGHT, Robert; WILLIAMS, Mike; MAAS, Joost
(74) FB Rice Pty Ltd

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(71) Innovent Biologics (Suzhou) Co., Ltd.
(11) AU-B-2020347729
(21) 2020347729 **(22)** 18.09.2020
(54) Method for preventing or treating cholesterol-related diseases by using anti-PCSK9 antibody
(51) Int. Cl.
C12N 15/13 (2006.01)
A61K 39/395 (2006.01)
A61P 3/06 (2006.01)
G01N 33/573 (2006.01)
(87) WO2021/052472
(31) 201910884902.9 **(32)** 19.09.19 **(33)** CN
202010424274.9 19.05.20 CN
(43) 25.03.2021
(44) 27.03.2025
(72) QIAN, Lei; ZHENG, Shirui; DENG, Huan
(74) James & Wells Intellectual Property

Institució Catalana de Recerca i Estudis Avançats see Fundació Institut de Bioenginyeria de Catalunya
(21) 2019394017

Integral Health Holdings, LLC see Valo Health, Inc.
(21) 2020267757

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(71) intoDNA Spółka Akcyjna
(11) AU-B-2017427804
(21) 2017427804 **(22)** 17.08.2017
(54) Method of detection of DNA end(s) and its use
(51) Int. Cl.
C12Q 1/68 (2018.01)
(87) WO2019/035727
(43) 21.02.2019
(44) 27.03.2025
(72) KORDON, Magdalena; ZAREBSKI, Miroslaw; DOBRUCKI, Jerzy; SOLARCZYK, Kamil
(74) FB Rice Pty Ltd

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(71) INVENTIO AG
(11) AU-B-2022277610
(21) 2022277610 **(22)** 04.05.2022
(54) SLIDING DOOR SYSTEM FOR INSTALLATION IN A BUILDING WALL
(51) Int. Cl.
E05D 15/06 (2006.01)
E05D 15/10 (2006.01)
E05D 15/56 (2006.01)
(87) WO2022/243039
(31) 21173993.3 **(32)** 17.05.21 **(33)** EP
(43) 24.11.2022
(44) 27.03.2025
(72) VONAESCH, Jonas
(74) Griffith Hack

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(71) iRepertoire, Inc.
(11) AU-B-2022203233
(21) 2022203233 **(22)** 13.05.2022
(54) METHOD FOR IDENTIFYING DISEASE-ASSOCIATED CDR3 PATTERNS IN AN IMMUNE REPERTOIRE
(51) Int. Cl.
C12Q 1/04 (2006.01)
C12Q 1/68 (2018.01)
(43) 02.06.2022
(44) 27.03.2025
(62) 2016229866
(72) Han, Jian
(74) Phillips Ormonde Fitzpatrick

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(71) iTeos Belgium SA
(11) AU-B-2018306463
(21) 2018306463 **(22)** 26.07.2018
(54) Anti-TIGIT antibodies
(51) Int. Cl.
C07K 16/28 (2006.01)
(87) WO2019/023504
(31) 20175535 **(32)** 31.07.17 **(33)** BE
17184102.6 31.07.17 EP
62/606,159 27.07.17 US
62/660,640 20.04.18 US
(43) 31.01.2019
(44) 27.03.2025
(72) COOPER, Anthony; QUEVA, Christophe; DENIES, Sofie; HOOFD, Catherine; CUENDE, Julia; DRIESSENS, Gregory; LAMBOLEZ, Florence
(74) Davies Collison Cave Pty Ltd

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(71) Janssen Pharmaceutica NV
(11) AU-B-2019380072
(21) 2019380072 **(22)** 11.11.2019
(54) Improved synthetic methods of making fused heterocyclic compounds as orexin receptor modulators
(51) Int. Cl.
A61K 31/506 (2006.01)
C07D 263/08 (2006.01)
C07D 487/04 (2006.01)
(87) WO2020/100011
(31) 62/760,995 **(32)** 14.11.18 **(33)** US
(43) 22.05.2020
(44) 27.03.2025
(72) DEPRÉ, Dominique Paul Michel; MATCHA, Kiran; HUYGAERTS, Andy Josephina Joannes; MOENS, Luc Jozef Raphael; GALA, Dinesh
(74) Spruson & Ferguson

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(71) Janssen Pharmaceutica NV
(11) AU-B-2023200976
(21) 2023200976 **(22)** 20.02.2023
(54) Pharmaceutical composition of S-ketamine hydrochloride
(51) Int. Cl.
A61K 31/135 (2006.01)
A61K 9/00 (2006.01)
A61K 47/12 (2006.01)
A61P 25/24 (2006.01)
(43) 23.03.2023
(44) 27.03.2025
(62) 2021200072
(72) BASSTANIE, Esther D. G.; BENTZ, Johanna; EMBRECHTS, Roger C.A.; NIEMEIJER, Nico Rudolph
(74) Spruson & Ferguson

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(71) JFE STEEL CORPORATION
(11) AU-B-2022294428
(21) 2022294428 **(22)** 08.04.2022
(54) METHOD FOR OPERATING SHAFT FURNACE AND METHOD FOR PRODUCING REDUCED IRON
(51) Int. Cl.
C21B 13/02 (2006.01)
(87) WO2022/264666
(31) 2021-099710 **(32)** 15.06.21 **(33)** JP
(43) 22.12.2022
(44) 27.03.2025
(72) TERUI Koki; MORIYA Kota; OZAWA Sumito
(74) Davies Collison Cave Pty Ltd

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(71) JGC Corporation
(11) AU-B-2019448524
(21) 2019448524 **(22)** 28.05.2019
(54) Operation analysis method for production plant

Applications Accepted - Name Index cont'd

(51) Int. Cl.
G05B 23/02 (2006.01)
F25J 1/00 (2006.01)
F25J 5/00 (2006.01)
G01W 1/00 (2006.01)
(87) WO2020/240696
(43) 03.12.2020
(44) 27.03.2025
(72) KAKUTANI, Yuzuru; ASAKA, Teru
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

Jinko Solar Co., Ltd. see Zhejiang Jinko Solar Co., Ltd.
(21) 2023222978

Jinko Solar Co., Ltd. see Zhejiang Jinko Solar Co., Ltd.
(21) 2024201762

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(71) John Bean Technologies Corporation
(11) AU-B-2020221910
(21) 2020221910 **(22)** 10.02.2020
(54) Pick and throw harvesting
(51) Int. Cl.
A22C 17/00 (2006.01)
B25J 11/00 (2006.01)
B25J 15/06 (2006.01)
B65G 47/91 (2006.01)
(87) WO2020/167669
(31) 62/823,239 **(32)** 25.03.19 **(33)** US
62/803,824 11.02.19 US
(43) 20.08.2020
(44) 27.03.2025
(72) HOCKER, Jon A.; BLAINE, George R.; GILL, Harrison T.; KEOGH, Jonathan; SORENSON, Erick A.
(74) FPA Patent Attorneys Pty Ltd

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(71) Joint Stock Company "BIOCAD"
(11) AU-B-2019388217
(21) 2019388217 **(22)** 26.11.2019
(54) DNA-cutting agent
(51) Int. Cl.
C12Q 1/68 (2018.01)
C12N 15/11 (2006.01)
(87) WO2020/111984
(31) 2018141534 **(32)** 26.11.18 **(33)** RU
(43) 04.06.2020
(44) 27.03.2025
(72) SEVERINOV, Konstantin Viktorovich; SHMAKOV, Sergey Anatolevich; ARTAMONOVA, Daria Nikolaevna; GORYANIN, Ignatiy Igorevich; MUSHAROVA, Olga Sergeevna; PISKUNOVA, Iuliia Valerevna; FEDOROVA, Iana Vitalevna; ZYUBKO, Tatyana Igorevna; KHODORKOVSKIY, Mikhail Alekseevich; POBEGALOV, Georgii Evgenevich; ARSENIEV, Anatolii Nikolaevich; SELKOVA, Polina Anatolevna; VASILEVA, Aleksandra Andreevna; ARTAMONOVA, Tatiana Olegovna; ABRAMOVA, Marina Viktorovna
(74) Arceo IP

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(71) Joint Stock Company "BIOCAD"
(11) AU-B-2019388420
(21) 2019388420 **(22)** 26.11.2019
(54) DNA-cutting agent
(51) Int. Cl.
C12Q 1/68 (2018.01)
C12N 15/11 (2006.01)
(87) WO2020/111983
(31) 2018141524 **(32)** 26.11.18 **(33)** RU
(43) 04.06.2020
(44) 27.03.2025
(72) SEVERINOV, Konstantin Viktorovich; SHMAKOV, Sergey Anatolevich; ARTAMONOVA, Daria Nikolaevna; GORYANIN, Ignatiy Igorevich; MUSHAROVA, Olga Sergeevna; PISKUNOVA, Iuliia Valerevna; FEDOROVA, Iana Vitalevna; ZYUBKO, Tatyana Igorevna; KHODORKOVSKIY, Mikhail Alekseevich; POBEGALOV, Georgii Evgenevich; ARSENIEV, Anatolii Nikolaevich; SELKOVA, Polina Anatolevna; VASILEVA, Aleksandra Andreevna; ARTAMONOVA, Tatiana Olegovna; ABRAMOVA, Marina Viktorovna
(74) Arceo IP

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(71) JOST-Werke Deutschland GmbH
(11) AU-B-2023226768
(21) 2023226768 **(22)** 08.09.2023
(54) Alignment system for approaching a vehicle to a target object spatially spaced therefrom
(51) Int. Cl.
B60D 1/36 (2006.01)
(31) 10 2022 003 318.6 **(32)** 09.09.22 **(33)** DE
(43) 28.03.2024
(44) 27.03.2025
(72) MÜLLER, Mark; HABER, Steffen; ENDER, Yurtsever; KAUFHOLD, Benjamin; GITZEN, Stephan; JACOBS, Daniel
(74) FB Rice Pty Ltd

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(71) Joy Global Underground Mining LLC
(11) AU-B-2019309886
(21) 2019309886 **(22)** 25.07.2019
(54) Rock cutting assembly
(51) Int. Cl.
E21C 25/18 (2006.01)
E21C 31/08 (2006.01)
E21D 9/10 (2006.01)
(87) WO2020/023771
(31) 62/703,360 **(32)** 25.07.18 **(33)** US
(43) 30.01.2020
(44) 27.03.2025
(72) DAHER, Nagy; REEVES, Stuart; FRANSEN, Simon; BAGNALL, Eddy; CLAYTON, Angrew Michael; BALOCH, Christian; BOYD, Richard
(74) Griffith Hack

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(71) Joy Global Underground Mining LLC
(11) AU-B-2022263532
(21) 2022263532 **(22)** 03.11.2022
(54) Mining machine with multiple cutter heads
(51) Int. Cl.
E21C 27/24 (2006.01)
E21C 25/08 (2006.01)
E21C 27/00 (2006.01)
E21C 27/12 (2006.01)
E21C 27/20 (2006.01)
E21C 27/22 (2006.01)
(43) 08.12.2022
(44) 27.03.2025
(62) 2017211411
(72) Lugg, Peter A.; Keech, Geoffrey W.; Neilson, Bradley M.; Daher, Nagy; Boyd, Ric
(74) Griffith Hack

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(71) Juno Therapeutics GmbH
(11) AU-B-2022200527
(21) 2022200527 **(22)** 27.01.2022
(54) Methods, kits and apparatus for expanding a population of cells
(51) Int. Cl.
C12N 5/0783 (2010.01)
G01N 1/30 (2006.01)
G01N 33/557 (2006.01)
(43) 17.02.2022
(44) 27.03.2025
(62) 2015248786
(72) GERMEROTH, Lothar; STEMBERGER, Christian
(74) AJ PARK

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(71) Kabushiki Kaisha Toshiba; Toshiba Energy Systems & Solutions Corporation
(11) AU-B-2023226666
(21) 2023226666 **(22)** 05.09.2023
(54) Support, electrode, membrane electrode assembly, electrochemical cell, stack, and electrolyzer
(51) Int. Cl.
C25B 11/063 (2021.01)
C25B 11/031 (2021.01)
(31) 2022-159825 **(32)** 03.10.22 **(33)** JP
(43) 18.04.2024
(44) 27.03.2025
(72) YAMAGIWA, Masakazu; YOSHINAGA, Norihiro; SUGANO, Yoshitsune
(74) Griffith Hack

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(71) KABUSHIKI KAISHA TOYOTA JIDOSHOKKI
(11) AU-B-2022276789
(21) 2022276789 **(22)** 22.03.2022
(54) VEHICLE MANAGEMENT SYSTEM, VEHICLE, AND VEHICLE TRAVELING MANAGEMENT METHOD
(51) Int. Cl.
F02D 45/00 (2006.01)
F02D 29/02 (2006.01)
(87) WO2022/244448
(31) 2021-083014 **(32)** 17.05.21 **(33)** JP
(43) 24.11.2022
(44) 27.03.2025
(72) FUJITA, Kenji
(74) Griffith Hack

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(71) Kasis Environmental Ltd.
(11) AU-B-2020358146
(21) 2020358146 **(22)** 02.10.2020

Applications Accepted - Name Index cont'd

(54) Redox active materials, processes and uses thereof
(51) Int. Cl.
C07D 513/08 (2006.01)
A01N 25/08 (2006.01)
A01N 43/90 (2006.01)
A01P 1/00 (2006.01)
A61K 35/14 (2015.01)
B01D 15/04 (2006.01)
B01D 37/02 (2006.01)
B01D 39/00 (2006.01)
B01D 53/02 (2006.01)
B01J 20/22 (2006.01)
C08F 12/30 (2006.01)
C08F 38/00 (2006.01)
C08G 63/688 (2006.01)
C08G 69/42 (2006.01)
C09K 3/00 (2006.01)
C22B 3/44 (2006.01)
G01N 33/483 (2006.01)
G01N 33/58 (2006.01)
(87) WO2021/062549
(31) 62/910,525 **(32)** 04.10.19 **(33)** US
(43) 08.04.2021
(44) 27.03.2025
(72) GRANT, Andrew S.; OSMOND, Travis
(74) KINGS PATENT & TRADE MARKS ATTORNEYS PTY LTD

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(71) Katholieke Universiteit Leuven
(11) AU-B-2023258457
(21) 2023258457 **(22)** 03.11.2023
(54) LIVE-ATTENUATED FLAVIRUSES WITH HETEROLOGOUS ANTIGENS
(51) Int. Cl.
C07K 14/005 (2006.01)
A61K 39/12 (2006.01)
(43) 21.12.2023
(44) 27.03.2025
(62) 2018344508
(72) Robbert BOUDEWIJNS; Kai DALLMEIER; Johan NEYTS
(74) Collison & Co

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(71) KINDRED SYSTEMS INC.; Ocado Innovation Limited
(11) AU-B-2021309575
(21) 2021309575 **(22)** 16.07.2021
(54) Control of modular end-of-arm tooling for robotic manipulators
(51) Int. Cl.
B25J 9/16 (2006.01)
(87) WO2022/013428
(31) 16/931,232 **(32)** 16.07.20 **(33)** US
(43) 20.01.2022
(44) 27.03.2025
(72) JEONG, Jun; WOJCIECHOWSKI, Sara; KEYES, Nicholas; YEH, Cindy; DICK, Ryan; SONG, Jun; GEORGE, Kevin; MARTIN, Adrian; WHITTINGTON, Bryan; VILLELLA, Julian; WIECHULA, Stefan; HALLOCK, David
(74) James & Wells Intellectual Property

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(71) Knee Balancer IP Pty Ltd
(11) AU-B-2019333339
(21) 2019333339 **(22)** 30.08.2019
(54) Arrangements and methods in the preparation of the proximal surface of the tibia and/or femur and posterior femoral condyle proximal surfaces for the components of a prosthetic knee joint
(51) Int. Cl.
A61B 34/32 (2016.01)
A61B 5/103 (2006.01)
A61B 34/10 (2016.01)
A61F 2/38 (2006.01)
A61F 2/46 (2006.01)
(87) WO2020/041839
(31) 2018903218 **(32)** 31.08.18 **(33)** AU
(43) 05.03.2020
(44) 27.03.2025
(72) CABOT, Jonathan Peter
(74) Collison & Co

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(71) KOENIG & BAUER BANKNOTE SOLUTIONS SA
(11) AU-B-2023254429
(21) 2023254429 **(22)** 12.04.2023
(54) METHODS FOR DESIGNING A PRINTED IMAGE FOR A SECURITY FEATURE
(51) Int. Cl.
B42D 25/324 (2014.01)
B42D 25/342 (2014.01)
B42D 25/351 (2014.01)
B42D 25/425 (2014.01)
B42D 25/485 (2014.01)
G02B 3/00 (2006.01)
G02B 27/06 (2006.01)
(87) WO2023/198771
(31) 2205377.1 **(32)** 12.04.22 **(33)** GB
(43) 19.10.2023
(44) 27.03.2025
(72) STEWART, Robert Laird
(74) AJ PARK

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(71) KUNMING UNIVERSITY OF SCIENCE AND TECHNOLOGY
(11) AU-B-2023222824
(21) 2023222824 **(22)** 28.08.2023
(54) HIGH ENTROPY COLLECTING FLOTATION METHOD FOR LOW GRADE ZINC OXIDE ORE
(51) Int. Cl.
B03D 1/018 (2006.01)
B03D 1/002 (2006.01)
B03D 1/012 (2006.01)
B03D 1/02 (2006.01)
C22B 1/00 (2006.01)
C22B 3/12 (2006.01)
C22B 19/02 (2006.01)
C22B 19/20 (2006.01)
B03D 101/02 (2006.01)
B03D 103/04 (2006.01)
(31) 202211062016.6 **(32)** 01.09.22 **(33)** CN
(43) 21.03.2024
(44) 27.03.2025
(72) WEN, Shuming; LIAO, Runpeng; FENG, Qicheng; LIU, Dianwen; LIU, Jian; XIAN, Yongjun; BAI, Shaojun; LI, Zhiwei; ZHANG, Qian; HAN, Guang; SHEN, Zhihao; ZUO, Qi; ZHANG, Song; MIAO, Yongchao
(74) Northern Lights IP

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(71) Lactocore, Inc.
(11) AU-B-2020239245
(21) 2020239245 **(22)** 13.03.2020
(54) Synthetic neuromodulatory peptides
(51) Int. Cl.
C07K 5/10 (2006.01)
A61K 38/08 (2019.01)
A61P 3/06 (2006.01)
A61P 25/28 (2006.01)
C07K 7/64 (2006.01)
(87) WO2020/186155
(31) 62/818,458 **(32)** 14.03.19 **(33)** US
(43) 17.09.2020
(44) 27.03.2025
(72) MALYSHEV, Anton; DORONIN, Igor; BABKIN, Gennady; KUCHUMOV, Askar
(74) Allens Patent & Trade Mark Attorneys

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(71) Laila Nutraceuticals
(11) AU-B-2019264983
(21) 2019264983 **(22)** 08.05.2019
(54) Synergistic herbal compositions for testosterone boosting
(51) Int. Cl.
A61K 36/31 (2006.01)
A61K 36/54 (2006.01)
(87) WO2019/215755
(31) 201841017306 **(32)** 08.05.18 **(33)** IN
(43) 14.11.2019
(44) 27.03.2025
(72) GOKARAJU, Ganga Raju; GOKARAJU, Rama Raju; BHUPATHIRAJU, Kiran; GOLAKOTI, Trimurtulu; GOKARAJU, Venkata Kanaka Ranga Raju; SOMEPALLI, Venkateswarlu; ALLURI, Venkata Krishna Raju
(74) Acumen Intellectual Property

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(71) LANXESS DEUTSCHLAND GMBH
(11) AU-B-2022260398
(21) 2022260398 **(22)** 11.04.2022
(54) PROCESS FOR PREPARING CARBODIIMIDES
(51) Int. Cl.
C07C 267/00 (2006.01)
C08G 18/02 (2006.01)
C08G 18/09 (2006.01)
C08G 18/28 (2006.01)
(87) WO2022/223352
(31) 21169385.8 **(32)** 20.04.21 **(33)** EP
(43) 27.10.2022
(44) 27.03.2025
(72) LAUFER, Wilhelm
(74) Davies Collison Cave Pty Ltd

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(71) Lindsay Transportation Solutions, LLC
(11) AU-B-2019428452
(21) 2019428452 **(22)** 06.08.2019
(54) Anchorless crash cushion apparatus including crash cushion stabilizing structure
(51) Int. Cl.
E01F 13/00 (2006.01)
E01F 15/00 (2006.01)
(87) WO2020/162974
(31) 16/266,428 **(32)** 04.02.19 **(33)** US
(43) 13.08.2020
(44) 27.03.2025
(72) ELMORE, Matthew A.; LIM, Jason T.; DACAYANAN LOYA, Daniel Paul;

Applications Accepted - Name Index cont'd

MORALES FLORES, Alvaro E.; DYKE, Gerrit A.; THOMPSON, Jeff M.
(74) Phillips Ormonde Fitzpatrick

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(71) Lithium Australia NL; Australian Nuclear Science and Technology Organisation
(11) AU-B-2019277207
(21) 2019277207 **(22)** 30.05.2019
(54) Process for recovering lithium phosphate and lithium sulfate from lithium-bearing silicates
(51) Int. Cl.
C22B 26/12 (2006.01)
C01B 25/30 (2006.01)
C01D 15/06 (2006.01)
(87) WO2019/227158
(31) 2018901929 **(32)** 30.05.18 **(33)** AU
2018904919 21.12.18 AU
(43) 05.12.2019
(44) 27.03.2025
(72) NAPIER, Andrew; GRIFFITH, Christopher
(74) FB Rice Pty Ltd

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(71) LivePerson, Inc.
(11) AU-B-2024202824
(21) 2024202824 **(22)** 30.04.2024
(54) Context-aware redirection from telephony environment to messaging environment
(51) Int. Cl.
H04M 3/436 (2006.01)
H04M 3/42 (2006.01)
H04M 3/54 (2006.01)
H04M 7/00 (2006.01)
(43) 23.05.2024
(44) 27.03.2025
(62) 2022204603
(72) HAYES, Marc; FANNING, Matt
(74) Spruson & Ferguson

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(71) Lone Gull Holdings, Ltd.
(11) AU-B-2022241584
(21) 2022241584 **(22)** 30.09.2022
(54) Wind-powered Computing Buoy
(51) Int. Cl.
F03D 1/06 (2006.01)
B63B 22/24 (2006.01)
F03D 9/10 (2016.01)
F03D 9/11 (2016.01)
F03D 9/20 (2016.01)
F03D 9/34 (2016.01)
F03D 13/10 (2016.01)
(43) 27.10.2022
(44) 27.03.2025
(62) 2019212648
(72) MOFFAT, Brian Lee; SHELDON-COULSON, Garth Alexander
(74) Pearce IP Pty Ltd

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(71) LONGI GREEN ENERGY TECHNOLOGY CO., LTD.
(11) AU-B-2021383880
(21) 2021383880 **(22)** 18.11.2021
(54) PHOTOVOLTAIC CELL AND PHOTOVOLTAIC ASSEMBLY
(51) Int. Cl.
H10F 19/10 (2025.01)
(87) WO2022/105821
(31) 202011296656.4 **(32)** 18.11.20 **(33)** CN
(43) 27.05.2022
(44) 27.03.2025
(72) WU, Zhao; XU, Chen; LI, Zifeng; XIE, Junjie
(74) Madderns Pty Ltd

Ludwig-Maximilians-Universitaet Muenchen see Forschungsverbund Berlin E.V.
(21) 2019232602

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(71) MACK RIDES IP GMBH & CO. KG
(11) AU-B-2022326814
(21) 2022326814 **(22)** 10.08.2022
(54) AMUSEMENT RIDE AND METHOD FOR OPERATING AN AMUSEMENT RIDE
(51) Int. Cl.
A63G 7/00 (2006.01)
A63G 21/04 (2006.01)
A63G 31/02 (2006.01)
(87) WO2023/017067
(31) 10 2021 121 045.3 **(32)** 12.08.21 **(33)** DE
(43) 16.02.2023
(44) 27.03.2025
(72) GORDT, Dennis; HAASCH, Tobias; KRAUS, Michael
(74) Franke Hyland Pty Ltd

Macron Safety Systems (UK) Limited see Tyco Building Services Products Limited
(21) 2017339047

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(71) MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
(11) AU-B-2023201137
(21) 2023201137 **(22)** 24.02.2023
(54) Combination drug therapies of PDE-5 inhibitors and inhaled nitric oxide
(51) Int. Cl.
A61M 16/20 (2006.01)
(43) 30.03.2023
(44) 27.03.2025
(62) 2020209661
(72) SHAH, Parag; FERNANDES, Peter Paul; KIM, Bobae
(74) Spruson & Ferguson

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(71) Mars, Incorporated
(11) AU-B-2019299243
(21) 2019299243 **(22)** 01.07.2019
(54) Process and apparatus for the production of a meat analogue
(51) Int. Cl.
A23K 10/20 (2016.01)
A23K 10/00 (2016.01)
A23K 10/30 (2016.01)
(87) WO2020/009980
(31) 10 2018 115 961.7 **(32)** 02.07.18 **(33)** DE
(43) 09.01.2020
(44) 27.03.2025
(72) GAUDIG, Harm Henning; KRUEGER, Walter Wilhelm; MEYER, Lothar Helmut; OGNEVA, Elena
(74) Griffith Hack

Massachusetts Institute of Technology see The Broad Institute, Inc.
(21) 2018392709

Massachusetts Institute of Technology see Abiomed, Inc.
(21) 2023203674

MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH see W. L. GORE & ASSOCIATES, INC.
(21) 2021348056

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(71) MEDELA HOLDING AG
(11) AU-B-2022299406
(21) 2022299406 **(22)** 23.06.2022
(54) BREAST PUMP AND METHOD FOR OPERATING SUCH PUMP
(51) Int. Cl.
A61M 1/06 (2006.01)
(87) WO2022/268998
(31) 21181505.5 **(32)** 24.06.21 **(33)** EP
(43) 29.12.2022
(44) 27.03.2025
(72) WAJTRYT, Krzysztof; PAWLOWSKI, Jakub; SCHELLING, Daria; WEBER, Beda; GANDER, Romana
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) Medtronic, Inc.
(11) AU-B-2020268721
(21) 2020268721 **(22)** 13.04.2020
(54) Machine learning based depolarization identification and arrhythmia localization visualization
(51) Int. Cl.
A61B 5/339 (2021.01)
A61B 5/00 (2006.01)
A61B 5/349 (2021.01)
A61B 5/352 (2021.01)
A61B 5/361 (2021.01)
A61B 5/363 (2021.01)
A61B 5/364 (2021.01)
A61B 5/366 (2021.01)
G16H 50/20 (2018.01)
A61N 1/39 (2006.01)
(87) WO2020/226852
(31) 16/845,996 **(32)** 10.04.20 **(33)** US
62/843,786 06.05.19 US
(43) 12.11.2020
(44) 27.03.2025
(72) HADDAD, Tarek D.; CHAKRAVARTHY, Niranjan; MUSGROVE, Donald R.; RADTKE, Andrew; WARMAN, Eduardo N.; KATRA, Rodolphe; PEDALTY, Lindsay A.
(74) FB Rice Pty Ltd

Applications Accepted - Name Index cont'd

(71) Meduloc, LLC
(11) AU-B-2023219904
(21) 2023219904 **(22)** 24.08.2023
(54) Implant and method for long bone fixation
(51) Int. Cl.
A61B 17/58 (2006.01)
A61B 17/68 (2006.01)
A61B 17/72 (2006.01)
(43) 14.09.2023
(44) 27.03.2025
(62) 2022200106
(72) Hustedt, Joshua; Arnold, Benjamin; Bowman, Brian; Ybarra, Kristen
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Merck Patent GmbH
(11) AU-B-2018343982
(21) 2018343982 **(22)** 28.09.2018
(54) Metabolic biomarkers for predicting responsiveness to FGF-18 compound
(51) Int. Cl.
A61K 38/00 (2006.01)
A61K 38/18 (2006.01)
G01N 33/68 (2006.01)
(87) WO2019/063758
(31) 17194220.4 **(32)** 29.09.17 **(33)** EP
18169324.3 25.04.18 EP
(43) 04.04.2019
(44) 27.03.2025
(72) LADEL, Christoph H.; GUEHRING, Hans; BAY-JENSEN, Anne-Christine; KARSDAL, Morten; QVIST, Per
(74) Griffith Hack

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(71) Merus N.V.
(11) AU-B-2020221649
(21) 2020221649 **(22)** 13.02.2020
(54) Producing compositions comprising two or more antibodies.
(51) Int. Cl.
C07K 16/00 (2006.01)
C07K 1/18 (2006.01)
C07K 16/06 (2006.01)
C07K 16/30 (2006.01)
C07K 16/46 (2006.01)
(87) WO2020/167122
(31) 19157286.6 **(32)** 14.02.19 **(33)** EP
19178542.7 05.06.19 EP
(43) 20.08.2020
(44) 27.03.2025
(72) DOORNBOS, Robert Paul; BAKKER, Alexander Berthold Hendrik
(74) FPA Patent Attorneys Pty Ltd

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(71) Monash University
(11) AU-B-2018286475
(21) 2018286475 **(22)** 08.06.2018
(54) Non-viral gene delivery agent comprising lipopeptide (LP) compounds
(51) Int. Cl.
A61K 48/00 (2006.01)
A61K 38/08 (2006.01)
A61K 47/10 (2017.01)
A61K 47/14 (2017.01)
A61K 47/42 (2017.01)
(87) WO2018/227231
(31) 2017902238 **(32)** 13.06.17 **(33)** AU
(43) 20.12.2018
(44) 27.03.2025
(72) Pouton, Colin William; Ho, Kha Tu Joan; White, Paul James; Bui, Catherine Thoa; Akhtar, Nabila; Al-Wassiti, Hareth Ali
(74) Madderns Pty Ltd

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(71) Murdoch University
(11) AU-B-2019271311
(21) 2019271311 **(22)** 10.05.2019
(54) Methods for treating VEGF-related conditions
(51) Int. Cl.
C12N 15/113 (2010.01)
A61K 31/712 (2006.01)
A61K 31/7125 (2006.01)
A61K 48/00 (2006.01)
(87) WO2019/217997
(31) 2018901653 **(32)** 14.05.18 **(33)** AU
(43) 21.11.2019
(44) 27.03.2025
(72) VEEDU, Rakesh
(74) WRAYS PTY LTD

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(71) Neeralta Manufacturing Inc.
(11) AU-B-2019210522
(21) 2019210522 **(22)** 30.07.2019
(54) An Expandable Grain Bagging Apparatus and Method Thereof
(51) Int. Cl.
A01F 25/00 (2006.01)
B65B 1/00 (2006.01)
(31) 62/746,130 **(32)** 16.10.18 **(33)** US
(43) 30.04.2020
(44) 27.03.2025
(72) Wierenga, John Marvin; Vander Leest, Bryan Richard; Wierenga, Lambert Klass
(74) Chrysiliou IP

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(71) NetScout Systems, Inc.
(11) AU-B-2024202057
(21) 2024202057 **(22)** 28.03.2024
(54) Systems and methods for hierarchical deep packet inspection for scalable network monitoring and cyber security functions
(51) Int. Cl.
H04L 12/46 (2006.01)
H04L 12/22 (2006.01)
H04W 12/12 (2021.01)
(31) 63/455,681 **(32)** 30.03.23 **(33)** US
(43) 17.10.2024
(44) 27.03.2025
(72) SINGHAL, Anil K.; MUNSHI, Sanjay
(74) Spruson & Ferguson

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(71) New York Stem Cell Foundation, Inc.; Icahn School of Medicine at Mount Sinai
(11) AU-B-2018272068
(21) 2018272068 **(22)** 25.05.2018
(54) Method and composition for generating basal forebrain cholinergic neurons (BFCNs)
(51) Int. Cl.
C12N 5/0735 (2010.01)
C12N 5/074 (2010.01)
C12N 5/0797 (2010.01)
G01N 33/50 (2006.01)
(87) WO2018/218193
(31) 62/571,741 **(32)** 12.10.17 **(33)** US
62/586,571 15.11.17 US
62/574,639 19.10.17 US
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(43) 29.11.2018
(44) 27.03.2025
(72) Noggle, Scott; Ortiz-Virumbrales, Maitane; Gandy, Sam; Kruglikov, Ilya; Ehrlich, Michellle
(74) FB Rice Pty Ltd

Nippon Paper Industries Co., Ltd. see Shikoku Kakoki Co., Ltd.
(21) 2019375269

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(71) Nocira, LLC
(11) AU-B-2022204935
(21) 2022204935 **(22)** 11.07.2022
(54) External ear canal pressure regulation device
(51) Int. Cl.
A61F 11/00 (2022.01)
(43) 28.07.2022
(44) 27.03.2025
(62) 2020257086
(72) George, David; Buckler, George; Crown, Timothy A.; Sullivan, David Brice
(74) FPA Patent Attorneys Pty Ltd

Northeastern University see The Schepens Eye Research Institute, Inc.
(21) 2019361962

Notogen, Inc. see University Health Network
(21) 2021232825

Ocado Innovation Limited see KINDRED SYSTEMS INC.
(21) 2021309575

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(71) OCADO INNOVATION LIMITED
(11) AU-B-2022220214
(21) 2022220214 **(22)** 11.02.2022
(54) APPARATUS FOR CHARGING A ROBOTIC LOAD HANDLING DEVICE
(51) Int. Cl.
B60L 53/30 (2019.01)
B60L 53/16 (2019.01)
B60L 53/35 (2019.01)
B65G 1/00 (2006.01)
(87) WO2022/171838
(31) 2102023.5 **(32)** 12.02.21 **(33)** GB
(43) 18.08.2022
(44) 27.03.2025
(72) STAREY, Christopher
(74) James & Wells Intellectual Property

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(71) OilQuick Deutschland KG
(11) AU-B-2023219875
(21) 2023219875 **(22)** 23.08.2023
(54) QUICK COUPLER
(51) Int. Cl.
F16L 37/02 (2006.01)
E02F 3/36 (2006.01)
(31) 10 2022 125 112.8 **(32)** 29.09.22 **(33)** DE
(43) 18.04.2024
(44) 27.03.2025
(72) SCHAUER, Stefan
(74) IP GATEWAY PATENT & TRADE MARK ATTORNEYS PTY LTD

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(71) ORTHOFIX US LLC
(11) AU-B-2022245125
(21) 2022245125 **(22)** 15.03.2022
(54) SPINAL INTERBODY DEVICES WITH DENSITY GRADIENTS AND ASSOCIATED METHODS
(51) Int. Cl.
A61F 2/44 (2006.01)
A61B 17/70 (2006.01)
A61F 2/28 (2006.01)
(87) WO2022/203900
(31) 17/208,546 **(32)** 22.03.21 **(33)** US
(43) 29.09.2022
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(72) FANG, Samuel; BRAITHWAITE, Easton; DEWILLIE, Brian
(74) FB Rice Pty Ltd

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(21) 2024200841

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(71) Outset Medical, Inc.
(11) AU-B-2019325668
(21) 2019325668 **(22)** 23.08.2019
(54) Dialysis system and methods
(51) Int. Cl.
A61M 1/16 (2006.01)
A61M 1/36 (2006.01)
(87) WO2020/041753
(31) 62/722,119 **(32)** 23.08.18 **(33)** US
(43) 27.02.2020
(44) 27.03.2025
(72) HOGARD, Michael Edward; HU, Dean; CHEN, Shih-Paul; RITSON, James; LINGAM, Gopi K.; OBICO, Peter Velasco; CURTIS, James R.; MILLER, Steven M.
(74) RnB IP Pty Ltd

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(71) Owens-Brockway Glass Container Inc.
(11) AU-B-2025200290
(21) 2025200290 **(22)** 15.01.2025
(54) Glass redox control in submerged combustion melting
(51) Int. Cl.
C03B 5/235 (2006.01)
C03B 5/24 (2006.01)
C03C 1/00 (2006.01)
C03C 3/087 (2006.01)
(43) 13.02.2025
(44) 27.03.2025
(62) 2021218407
(72) VEMPATI, Udaya; PINC, William
(74) Spruson & Ferguson

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(71) OxiWear, Inc.
(11) AU-B-2020296003
(21) 2020296003 **(22)** 17.06.2020
(54) Wearable earpiece oxygen monitor
(51) Int. Cl.
A61B 5/1455 (2006.01)
A61B 5/00 (2006.01)
G08B 21/02 (2006.01)
H04R 1/10 (2006.01)
(87) WO2020/257291
(31) 62/862,316 **(32)** 17.06.19 **(33)** US
(43) 24.12.2020
(44) 27.03.2025
(72) FERNANDO, Shavini
(74) RnB IP Pty Ltd

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(71) Perfusion Tech ApS
(11) AU-B-2019285086
(21) 2019285086 **(22)** 14.06.2019
(54) System and method for automatic perfusion measurement
(51) Int. Cl.
A61B 5/00 (2006.01)
A61B 5/026 (2006.01)
A61B 5/0275 (2006.01)
(87) WO2019/238912
(31) 18177783.0 **(32)** 14.06.18 **(33)** EP
(43) 19.12.2019
(44) 27.03.2025
(72) LUND, Morten Toft; MADSEN, Mads Holst Aagaard
(74) FB Rice Pty Ltd

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(71) Pfizer Inc.
(11) AU-B-2020355401
(21) 2020355401 **(22)** 24.09.2020
(54) Neisseria meningitidis compositions and methods thereof
(51) Int. Cl.
A61K 39/095 (2006.01)
A61K 39/00 (2006.01)
A61P 31/04 (2006.01)
(87) WO2021/059181
(31) 62/907,097 **(32)** 27.09.19 **(33)** US
63/040,498 17.06.20 US
(43) 01.04.2021
(44) 27.03.2025
(72) ABSALON, Judith; ANDERSON, Annaliesa Sybil; BEESLAAR, Johannes Frederick; HARRIS, Shannon Lea; JANSEN, Kathrin Ute; JONES, Thomas Richard; LIBERATOR, Paul; MAGUIRE, Jason Douglas; PEREZ, John Lance; TAN, Cuiwen
(74) Davies Collison Cave Pty Ltd

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(71) PI Industries Limited
(11) AU-B-2020272217
(21) 2020272217 **(22)** 07.04.2020
(54) Novel oxadiazole compounds for controlling or preventing phytopathogenic fungi
(51) Int. Cl.
C07D 271/06 (2006.01)
A01N 43/82 (2006.01)
C07D 401/12 (2006.01)
C07D 403/12 (2006.01)
C07D 413/12 (2006.01)
C07D 419/12 (2006.01)
(87) WO2020/208511
(31) 201911014149 **(32)** 08.04.19 **(33)** IN
(43) 15.10.2020
(44) 27.03.2025
(72) BHUJADE, Paras Raybhan; NAIK, Maruti N.; PAWAR, Rajesh; BELKAR, Yogesh Kashiram; AUTKAR, Santosh Shridhar; GARG, Ruchi; GADE, Vishwanath; KLAUSENER, Alexander G.M.; KULKARNI, Shantanu Ganesh; RATHORE, Karan
(74) Forte Intellectual Property Pty Ltd

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(71) Piscitelli, M.
(11) AU-B-2023241340
(21) 2023241340 **(22)** 05.10.2023
(54) Apparatus and method for measuring far-field luminous intensity and color characteristics of light sources
(51) Int. Cl.
G02B 6/00 (2006.01)
(43) 26.10.2023
(44) 27.03.2025
(62) 2021245205
(72) PISCITELLI, Michael
(74) Spruson & Ferguson

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(71) Polaris Industries Inc.
(11) AU-B-2023201614
(21) 2023201614 **(22)** 15.03.2023
(54) Device and method for improving route planning computing devices
(51) Int. Cl.
G01C 21/20 (2006.01)
G06Q 10/04 (2023.01)
(43) 13.04.2023
(44) 27.03.2025
(62) 2021201050
(72) Freed, Erik S.
(74) Griffith Hack

Politecnico di Milano see Dana-Farber Cancer Institute, Inc.
(21) 2024200841

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(71) Precision Planting LLC
(11) AU-B-2019326066
(21) 2019326066 **(22)** 16.08.2019
(54) Agricultural trench depth sensing systems, methods, and apparatus
(51) Int. Cl.
A01C 5/06 (2006.01)
A01B 79/00 (2006.01)
A01C 7/00 (2006.01)
A01C 7/06 (2006.01)
A01C 7/20 (2006.01)
A01C 23/02 (2006.01)
G01B 11/24 (2006.01)
A01C 21/00 (2006.01)
(87) WO2020/039322

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(43) 27.02.2020
(44) 27.03.2025
(72) STRNAD, Michael; MINARICH, Nicholas
(74) Griffith Hack

President and Fellows of Harvard College see The Broad Institute, Inc.
(21) 2018352592

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(21) 2018392709

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(71) Probi AB
(11) AU-B-2018286837
(21) 2018286837 **(22)** 18.06.2018
(54) Therapeutic uses of Lactobacillus plantarum
(51) Int. Cl.
A61K 35/747 (2015.01)
A61P 1/00 (2006.01)
A61P 3/00 (2006.01)
A61P 5/00 (2006.01)
A61P 17/00 (2006.01)
(87) WO2018/234255
(31) 1709763.5 **(32)** 19.06.17 **(33)** GB
(43) 27.12.2018
(44) 27.03.2025
(72) ROBERTSON, Anna-Karin
(74) Davies Collison Cave Pty Ltd

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(71) Proton Technologies Canada Inc.
(11) AU-B-2019231362
(21) 2019231362 **(22)** 06.03.2019
(54) In-situ process to produce synthesis gas from underground hydrocarbon reservoirs
(51) Int. Cl.
E21B 43/295 (2006.01)
E21B 43/24 (2006.01)
(87) WO2019/169492
(31) 62/639,184 **(32)** 06.03.18 **(33)** US
(43) 12.09.2019
(44) 27.03.2025
(72) STREM, Grant D.; GATES, Ian D.; WANG, Jingyi
(74) FPA Patent Attorneys Pty Ltd

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(71) Putzmeister Engineering GmbH
(11) AU-B-2020247393
(21) 2020247393 **(22)** 25.03.2020
(54) Extruder device, extruder system and use of an extruder device and/or of an extruder system
(51) Int. Cl.
B28B 1/00 (2006.01)
B28B 3/26 (2006.01)
E04G 21/04 (2006.01)
(87) WO2020/193605
(31) 10 2019 204 228.7 **(32)** 27.03.19 **(33)** DE
(43) 01.10.2020
(44) 27.03.2025
(72) HÄFNER, Jens; HUTH, Tobias; KASTEN, Knut; MÖGLE, Peter
(74) Griffith Hack

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(71) Qualcomm Incorporated
(11) AU-B-2023203870
(21) 2023203870 **(22)** 20.06.2023
(54) SYSTEMS AND METHODS FOR DOWNLINK CONTROL INFORMATION FORMAT SIZING
(51) Int. Cl.
H04L 5/00 (2006.01)
H04W 72/12 (2023.01)
H04L 1/00 (2006.01)
H04W 72/04 (2023.01)
(43) 13.07.2023
(44) 27.03.2025
(62) 2019240408
(72) LEE, Heechoon; ANG, Peter Pui Lok; CHEN, Wanshi; XU, Huilin; SUN, Jing; LUO, Tao
(74) Madderns Pty Ltd

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(71) Quartus Engineering, Inc.
(11) AU-B-2024200986
(21) 2024200986 **(22)** 15.02.2024
(54) STERILIZABLE WIRELESS COMMUNICATION DEVICES
(51) Int. Cl.
A61N 1/372 (2006.01)
A61N 1/00 (2006.01)
A61N 1/375 (2006.01)
(43) 07.03.2024
(44) 27.03.2025
(62) 2018301337
(72) Hoglund, David H.; Anderson, Wayne; Perry, John J.; Karch, Michael M.; Park, Laura; Dohring, Edward J.
(74) PHILLIPS ORMONDE FITZPATRICK

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(71) Raytheon Company
(11) AU-B-2020435345
(21) 2020435345 **(22)** 30.09.2020
(54) System and method for mitigating platform motion in a communications system
(51) Int. Cl.
H04J 3/06 (2006.01)
(87) WO2021/183184
(31) 16/814,834 **(32)** 10.03.20 **(33)** US
(43) 16.09.2021
(44) 27.03.2025
(72) GARDINER, Thomas E.
(74) RnB IP Pty Ltd

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(71) Raytheon Company
(11) AU-B-2021231830
(21) 2021231830 **(22)** 04.03.2021
(54) Underwater mono-static laser imaging
(51) Int. Cl.
G01S 17/89 (2020.01)
G01S 7/481 (2006.01)
(87) WO2021/178615
(31) 62/986,162 **(32)** 06.03.20 **(33)** US
(43) 10.09.2021
(44) 27.03.2025
(72) THOREN, Matthew D.; PIPER, Andrew M.; RADZELOVAGE, William C.; REGAN, Richard F.; DIMARE, Joseph C.
(74) RnB IP Pty Ltd

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(71) REFLEX LABELS LIMITED
(11) AU-B-2021462156
(21) 2021462156 **(22)** 19.10.2021
(54) LINERLESS LABELS
(51) Int. Cl.
G09F 3/10 (2006.01)
G09F 1/02 (2006.01)
G09F 3/02 (2006.01)
(87) WO2023/026017
(31) 2112079.5 **(32)** 23.08.21 **(33)** GB
(43) 02.03.2023
(44) 27.03.2025
(72) DUDMAN, Kevin
(74) James & Wells Intellectual Property

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(71) Regeneron Pharmaceuticals, Inc.
(11) AU-B-2020256225
(21) 2020256225 **(22)** 02.04.2020
(54) Methods and compositions for insertion of antibody coding sequences into a safe harbor locus
(51) Int. Cl.
A01K 67/027 (2006.01)
C07K 16/10 (2006.01)
C12N 15/90 (2006.01)
(87) WO2020/206162
(31) 62/828,518 **(32)** 03.04.19 **(33)** US
62/887,885 16.08.19 US
(43) 08.10.2020
(44) 27.03.2025
(72) HARTFORD, Suzanne; WANG, Cheng; GONG, Guochun; KYRATSOUS, Christos; ZAMBROWICZ, Brian; YANCOPOULOS, George D.
(74) Phillips Ormonde Fitzpatrick

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(71) Regeneron Pharmaceuticals, Inc.
(11) AU-B-2021286369
(21) 2021286369 **(22)** 16.12.2021
(54) NON-HUMAN ANIMALS HAVING A HUMANIZED CLUSTER OF DIFFERENTIATION 274 GENE
(51) Int. Cl.
C07K 16/28 (2006.01)
A01K 67/027 (2006.01)
A61K 39/395 (2006.01)
A61P 35/00 (2006.01)
C07K 16/22 (2006.01)
C07K 16/30 (2006.01)
A61K 39/00 (2006.01)
(43) 20.01.2022
(44) 27.03.2025
(62) 2015360667
(72) Burova, Elena; Tang, Yajun; Lai, Ka-Man Venus; Murphy, Andrew J.
(74) Phillips Ormonde Fitzpatrick

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(71) Reliance Worldwide Corporation (Aust.) Pty. Ltd.
(11) AU-B-2023201575

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(21) 2023201575 **(22)** 14.03.2023
(54) Pipe connection fitting
(51) Int. Cl.
F16L 37/091 (2006.01)
(43) 13.04.2023
(44) 27.03.2025
(62) 2022200128
(72) GLEDHILL, Jeremy; KLUSS, William Vernon
(74) Allens Patent & Trade Mark Attorneys

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(71) Research Development Foundation
(11) AU-B-2018314257
(21) 2018314257 **(22)** 11.08.2018
(54) Engineered antibody Fc variants for enhanced serum half life
(51) Int. Cl.
C07K 16/18 (2006.01)
C07K 16/00 (2006.01)
(87) WO2019/033087
(31) 62/544,622 **(32)** 11.08.17 **(33)** US
(43) 14.02.2019
(44) 27.03.2025
(72) GEORGIOU, George; LEE, Chang-han; KANG, Tae Hyun
(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(71) Research Institute at Nationwide Children's Hospital
(11) AU-B-2018280116
(21) 2018280116 **(22)** 04.06.2018
(54) Enhanced modified viral capsid proteins
(51) Int. Cl.
C12N 9/22 (2006.01)
C12N 15/113 (2010.01)
C12N 15/864 (2006.01)
(87) WO2018/226602
(31) 62/562,058 **(32)** 22.09.17 **(33)** US
62/515,468 05.06.17 US
(43) 13.12.2018
(44) 27.03.2025
(72) Loiler, Scott Allen
(74) HENRY HUGHES IP LTD

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(71) RHEINMETALL LANDSYSTEME GMBH
(11) AU-B-2022326745
(21) 2022326745 **(22)** 08.07.2022
(54) TRACKED VEHICLE HAVING A TRACK TENSIONER
(51) Int. Cl.
B62D 55/30 (2006.01)
(87) WO2023/016722
(31) 10 2021 120 647.2 **(32)** 09.08.21 **(33)** DE
(43) 16.02.2023
(44) 27.03.2025
(72) ECKHOFF, Detlev
(74) FB Rice Pty Ltd

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(71) Ribbon Biolabs GmbH
(11) AU-B-2018350212
(21) 2018350212 **(22)** 15.10.2018
(54) A novel method for synthesis of polynucleotides using a diverse library of oligonucleotides
(51) Int. Cl.
C12N 15/10 (2006.01)
(87) WO2019/073072
(31) 17196317.6 **(32)** 13.10.17 **(33)** EP
(43) 18.04.2019
(44) 27.03.2025
(72) VLADAR, Harold Paul; FERNANDES REDONDO, Rodrigo Aparecido
(74) Davies Collison Cave Pty Ltd

Rohm and Haas Company see Dow Global Technologies LLC
(21) 2019425686

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(71) S.A. Lhoist Recherche et Developpement
(11) AU-B-2019300344
(21) 2019300344 **(22)** 11.07.2019
(54) Process for obtaining size-calibrated tricalcium aluminate particles and use of such particles in a process of alumina refining
(51) Int. Cl.
C01F 7/16 (2006.01)
C01F 11/02 (2006.01)
C04B 2/06 (2006.01)
(87) WO2020/011952
(31) 18182967.2 **(32)** 11.07.18 **(33)** EP
(43) 16.01.2020
(44) 27.03.2025
(72) DU PLESSIS, Chris; LAMBERT, Hugues; GÄRTNER, Robert
(74) AJ PARK

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(71) Saban Ventures Pty Limited
(11) AU-B-2019290029
(21) 2019290029 **(22)** 14.06.2019
(54) Clamp for a medical device
(51) Int. Cl.
A61M 39/28 (2006.01)
(87) WO2019/241833
(31) 2018902195 **(32)** 20.06.18 **(33)** AU
(43) 26.12.2019
(44) 27.03.2025
(72) LEA, Stephen; JONES, Richard
(74) Spruson & Ferguson

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(71) SafetyLink Pty Ltd
(11) AU-B-2020226141
(21) 2020226141 **(22)** 18.02.2020
(54) A mounting device
(51) Int. Cl.
E04G 21/32 (2006.01)
H02S 20/23 (2014.01)
(87) WO2020/168378
(31) 2019900534 **(32)** 19.02.19 **(33)** AU
(43) 27.08.2020
(44) 27.03.2025
(72) ELLARD, Robin James
(74) Integrated IP

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(71) Sage Therapeutics, Inc.
(11) AU-B-2019357040
(21) 2019357040 **(22)** 11.10.2019
(54) Neuroactive steroids substituted in position 10 with a cyclic group for use in the treatment of CNS disorders
(51) Int. Cl.
C07J 7/00 (2006.01)
A61K 31/57 (2006.01)
A61K 31/58 (2006.01)
A61P 25/00 (2006.01)
A61P 25/24 (2006.01)
C07J 43/00 (2006.01)
C07J 1/00 (2006.01)
C07J 13/00 (2006.01)
C07J 21/00 (2006.01)
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(51) Int. Cl.
E04H 4/00 (2006.01)
B29C 37/00 (2006.01)
B29C 70/08 (2006.01)
B29C 70/84 (2006.01)
B32B 5/26 (2006.01)
B32B 27/36 (2006.01)
E04H 4/14 (2006.01)
B29C 70/30 (2006.01)
B29C 70/70 (2006.01)
(43) 27.03.2025
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(72) Salter, Tom
(74) LexGeneris Pty Ltd

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(54) Improved antibody-oligonucleotide conjugate
(51) Int. Cl.
A61K 47/59 (2017.01)
A61K 47/64 (2017.01)
A61K 47/68 (2017.01)
A61P 35/00 (2006.01)
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(74) Griffith Hack

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(51) Int. Cl.
A61K 31/5375 (2006.01)

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(87) WO2019/231824
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15/993,267 30.05.18 US
62/677,484 29.05.18 US
(43) 05.12.2019
(44) 27.03.2025
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(11) AU-B-2023237011
(21) 2023237011 **(22)** 25.09.2023
(54) CHARGING DEVICE AND METHOD FOR PREVENTING DEW CONDENSATION OF CHARGING DEVICE
(51) Int. Cl.
H05B 1/02 (2006.01)
H02J 7/02 (2016.01)
(31) 202211193173.0 **(32)** 28.09.22 **(33)** CN
202311205920.2 18.09.23 CN
(43) 11.04.2024
(44) 27.03.2025
(72) De Cesaris, Stefano; Sun, Wei
(74) Madderns Pty Ltd

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(21) 2024201371 **(22)** 29.02.2024
(54) MICROPUMP WITH CAM MECHANISM FOR AXIAL DISPLACEMENT OF ROTOR
(51) Int. Cl.
F04B 7/06 (2006.01)
F04B 9/04 (2006.01)
F04B 19/00 (2006.01)
(43) 21.03.2024
(44) 27.03.2025
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(11) AU-B-2023274061
(21) 2023274061 **(22)** 27.11.2023
(54) COMPUTATIONALLY EFFICIENT TRAVERSAL OF VIRTUAL TABLES
(51) Int. Cl.
G06F 16/33 (2019.01)
(31) 18/076,744 **(32)** 07.12.22 **(33)** US
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(44) 27.03.2025
(72) Brian James Waplington
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(21) 2022314096 **(22)** 22.07.2022
(54) PREPARATION METHOD FOR HEPATITIS B VIRUS NUCLEOCAPSID INHIBITOR
(51) Int. Cl.
C07D 413/14 (2006.01)
C07D 413/04 (2006.01)
(87) WO2023/001298
(31) 202110839582.2 **(32)** 23.07.21 **(33)** CN
(43) 26.01.2023
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(72) LIU, Gang; LIANG, Bo; CHEN, Huanming; JIANG, Zhaojian
(74) FPA Patent Attorneys Pty Ltd

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(11) AU-B-2019253107
(21) 2019253107 **(22)** 15.04.2019
(54) Viewing optic with wind direction capture and method of using the same
(51) Int. Cl.
F41G 3/06 (2006.01)
F41G 3/08 (2006.01)
G01C 3/02 (2006.01)
G01C 3/04 (2006.01)
(87) WO2019/200399
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(21) 2019375269 **(22)** 26.09.2019
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(51) Int. Cl.
B65B 9/20 (2012.01)
(87) WO2020/095562
(31) 2018-208549 **(32)** 06.11.18 **(33)** JP
2019-015864 31.01.19 JP
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(44) 27.03.2025
(72) MORIKAWA, Yasuhiro; SATO, Seiji; SORA, Hiroshi; SASE, Kazuhiko; MIYAGAWA, Shigekazu
(74) Griffith Hack

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(21) 2022457748 **(22)** 20.12.2022
(54) SYSTEMS AND METHODS FOR INTERACTING WITH AUGMENTED REALITY CONTENT USING A DUAL-INTERFACE
(51) Int. Cl.
G06F 3/01 (2006.01)
G06F 3/04815 (2022.01)
G06F 3/04845 (2022.01)
G06F 3/0488 (2022.01)
G06Q 30/0601 (2023.01)
G06T 19/00 (2011.01)
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(31) 17/739,714 **(32)** 09.05.22 **(33)** US
(43) 16.11.2023
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(54) Injection device
(51) Int. Cl.
A61M 5/24 (2006.01)
A61M 5/178 (2006.01)
A61M 5/32 (2006.01)
(87) WO2021/012035
(31) 3,050,501 **(32)** 24.07.19 **(33)** CA
(43) 28.01.2021
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(74) Patent Attorney Services

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(11) AU-B-2019344261
(21) 2019344261 **(22)** 20.09.2019
(54) Carbamate compound and use of formulation comprising same in preventing, alleviating, or treating acute stress disorder or post-traumatic stress disorder
(51) Int. Cl.
A61K 31/41 (2006.01)
A61K 31/137 (2006.01)
A61K 31/138 (2006.01)
A61K 31/4525 (2006.01)
A61K 45/06 (2006.01)
A61P 25/00 (2006.01)
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(71) SONOS, INC.
(11) AU-B-2023289383
(21) 2023289383 **(22)** 21.06.2023
(54) SYSTEMS AND METHODS OF CHARGING PLAYBACK DEVICE BATTERIES
(51) Int. Cl.
H02J 7/00 (2006.01)
(87) WO2023/250359
(31) 63/367,006 **(32)** 24.06.22 **(33)** US
(43) 28.12.2023
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(72) RIEMER, Joern; NESFIELD, James; BENATAN, Matthew
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(11) AU-B-2019384660
(21) 2019384660 **(22)** 04.09.2019
(54) Implantable nuclear prosthesis, kits, and related methods
(51) Int. Cl.
A61F 2/44 (2006.01)
A61B 17/58 (2006.01)
A61F 2/46 (2006.01)
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(71) STORMINATOR LIMITED
(11) AU-B-2019239016
(21) 2019239016 **(22)** 22.03.2019
(54) A device for treating roof runoff
(51) Int. Cl.
E04D 13/08 (2006.01)
B01D 24/00 (2006.01)
B01D 24/20 (2006.01)
B01D 35/00 (2006.01)
C02F 5/06 (2006.01)
E04D 13/00 (2006.01)
(87) WO2019/182460
(31) 740976 **(32)** 23.03.18 **(33)** NZ
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(74) AJ PARK

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(71) Sungbo Industrial Co., Ltd.
(11) AU-B-2023222859
(21) 2023222859 **(22)** 29.08.2023
(54) Fastening device for different components
(51) Int. Cl.
E02F 9/28 (2006.01)
F16B 17/00 (2006.01)
F16B 21/02 (2006.01)
(31) 10-2022-0113732 **(32)** 07.09.22 **(33)** KR
(43) 21.03.2024
(44) 27.03.2025
(72) SONG, Keun Chul; LEE, Hyun Soo; JIN, Min Gyun; SONG, Jong Gwi
(74) FB Rice Pty Ltd

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(71) SUNRESIN NEW MATERIALS CO.LTD.
(11) AU-B-2022347466
(21) 2022347466 **(22)** 12.08.2022
(54) METHOD FOR LITHIUM ADSORPTION IN CARBONATE- AND/OR SULFATE-CONTAINING SOLUTION
(51) Int. Cl.
B01D 15/08 (2006.01)
C01D 15/00 (2006.01)
C22B 7/00 (2006.01)
C22B 26/12 (2006.01)
(87) WO2023/040534
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(21) 2019365385 **(22)** 22.10.2019
(54) New abamectin soluble concentrate composition (SL)
(51) Int. Cl.
A01N 25/02 (2006.01)
A01N 43/90 (2006.01)
A01P 7/00 (2006.01)
(87) WO2020/083925
(31) 18202400.0 **(32)** 24.10.18 **(33)** EP
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(21) 2020281612 **(22)** 21.05.2020
(54) Herbicidal compounds
(51) Int. Cl.
C07D 413/10 (2006.01)
A01N 43/80 (2006.01)
C07D 413/14 (2006.01)
(87) WO2020/239607
(31) 1907602.5 **(32)** 29.05.19 **(33)** GB
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(43) 03.12.2020
(44) 27.03.2025
(72) WHITTINGHAM, William Guy; WILLIAMS, John; MATHEWS, Christopher John
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C07K 19/00 (2006.01)
A61K 39/395 (2006.01)
A61K 39/44 (2006.01)
A61P 35/00 (2006.01)
A61P 37/02 (2006.01)
(87) WO2019/095358
(43) 23.05.2019
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(74) Griffith Hack

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(21) 2019246864 **(22)** 11.10.2019
(54) Composite structures constructed of wound tubular braiding
(51) Int. Cl.
B29C 70/24 (2006.01)
B29C 53/60 (2006.01)
B29K 105/08 (2006.01)
(31) 16/179,324 **(32)** 02.11.18 **(33)** US
(43) 21.05.2020
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(72) OGALE, Amol
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(21) 2019261717 **(22)** 06.11.2019
(54) Multifunctional battery packaging and insulation
(51) Int. Cl.
H01M 50/40 (2021.01)
H01M 50/183 (2021.01)
(31) 16/183,093 **(32)** 07.11.18 **(33)** US
(43) 21.05.2020
(44) 27.03.2025
(72) Jeffrey E. Polus
(74) Spruson & Ferguson

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(71) THE BRIGHAM AND WOMEN'S HOSPITAL, INC.; THE GENERAL HOSPITAL CORPORATION
(11) AU-B-2021338858
(21) 2021338858 **(22)** 13.09.2021
(54) DETERMINING LOCATIONS IN REPRODUCTIVE CELLULAR STRUCTURES
(51) Int. Cl.
A61B 5/00 (2006.01)
(87) WO2022/056370
(31) 63/077,405 **(32)** 11.09.20 **(33)** US
63/077,398 11.09.20 US
(43) 17.03.2022
(44) 27.03.2025
(72) SHAFIEE, Hadi; BORMANN, Charles; KANAKASABAPATHY, Manoj Kumar; THIRUMALARAJU, Prudhvi
(74) James & Wells Intellectual Property

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(11) AU-B-2018352592
(21) 2018352592 **(22)** 16.10.2018
(54) Uses of adenosine base editors
(51) Int. Cl.
C12N 15/113 (2010.01)
C12N 9/22 (2006.01)
C12N 9/78 (2006.01)
C12N 15/10 (2006.01)
C12N 15/62 (2006.01)
(87) WO2019/079347
(31) 62/573,127 **(32)** 16.10.17 **(33)** US
(43) 25.04.2019
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(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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(21) 2018392709 **(22)** 20.12.2018
(54) CRISPR effector system based multiplex diagnostics
(51) Int. Cl.
C12N 15/90 (2006.01)
C12N 9/22 (2006.01)
C12N 15/10 (2006.01)
C12N 15/11 (2006.01)
C12Q 1/68 (2018.01)
(87) WO2019/126577

(31) 62/741,501 **(32)** 04.10.18 **(33)** US
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62/610,066 22.12.17 US
(43) 27.06.2019
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(72) ZHANG, Feng; ZETSCHE, Bernd; GOOTENBERG, Jonathan; ABUDAYYEH, Omar
(74) Phillips Ormonde Fitzpatrick

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(21) 2021338858

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(71) The NOCO Company
(11) AU-B-2024201886
(21) 2024201886 **(22)** 22.03.2024
(54) Lithium-ion battery management system (BMS)
(51) Int. Cl.
H02J 7/00 (2006.01)
(43) 11.04.2024
(44) 27.03.2025
(62) 2023200163
(72) MCBRIDE, James P.; BOSWAY, Matthew Michael
(74) Griffith Hack

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(21) 2018326582 **(22)** 03.09.2018
(54) Retinal promoter and uses thereof
(51) Int. Cl.
C12N 15/85 (2006.01)
A61K 48/00 (2006.01)
C12N 5/079 (2010.01)
(87) WO2019/043234
(31) 1714066.6 **(32)** 01.09.17 **(33)** GB
(43) 07.03.2019
(44) 27.03.2025
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(74) Allens Patent & Trade Mark Attorneys

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(11) AU-B-2019347771
(21) 2019347771 **(22)** 27.09.2019
(54) Methods and compositions for bioprotection of tomatoes from Clavibacter michiganensis subsp. michiganensis
(51) Int. Cl.
A01N 63/00 (2020.01)
(87) WO2020/069438
(31) 62/737,765 **(32)** 27.09.18 **(33)** US
62/744,110 10.10.18 US
(43) 02.04.2020
(44) 27.03.2025
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(74) FB Rice Pty Ltd

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(11) AU-B-2019361962
(21) 2019361962 **(22)** 16.10.2019
(54) Bioadhesive for soft tissue repair
(51) Int. Cl.
A61F 2/14 (2006.01)
C08G 81/00 (2006.01)
C08L 101/14 (2006.01)
(87) WO2020/081673
(31) 62/746,165 **(32)** 16.10.18 **(33)** US
(43) 23.04.2020
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(74) RnB IP Pty Ltd

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(11) AU-B-2019325411
(21) 2019325411 **(22)** 23.08.2019
(54) Devices, systems, and methods for remotely monitoring and treating wounds or wound infections
(51) Int. Cl.
A61B 5/01 (2006.01)
A61F 13/00 (2006.01)
A61N 1/32 (2006.01)
A61N 1/36 (2006.01)
A61N 1/372 (2006.01)
(87) WO2020/041678
(31) 62/722,471 **(32)** 24.08.18 **(33)** US
(43) 27.02.2020
(44) 27.03.2025
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(74) Griffith Hack

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(21) 2017405996 **(22)** 07.09.2017
(54) Chimeric insect-specific flaviviruses
(51) Int. Cl.
C07K 19/00 (2006.01)
A61K 38/17 (2006.01)
A61K 39/12 (2006.01)
A61K 39/42 (2006.01)
A61P 31/14 (2006.01)
C07K 14/18 (2006.01)
C12N 7/02 (2006.01)
C12N 7/04 (2006.01)
G01N 33/53 (2006.01)
(87) WO2018/176075
(31) 2017901093 **(32)** 27.03.17 **(33)** AU
(43) 04.10.2018
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(74) Spruson & Ferguson

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(11) AU-B-2020251526
(21) 2020251526 **(22)** 17.03.2020
(54) A sugarcane harvester with improved basecutter gearbox assembly
(51) Int. Cl.
A01D 45/10 (2006.01)
A01D 67/00 (2006.01)
(87) WO2020/202175
(31) 201921012556 **(32)** 29.03.19 **(33)** IN
(43) 08.10.2020
(44) 27.03.2025
(72) DAMANI, Kaushik Anilbhai; GOHIL, Hasmukh Gatorbhai
(74) LexGeneris Pty Ltd

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(71) Tokai Optical Co.,Ltd.
(11) AU-B-2019428531
(21) 2019428531 **(22)** 08.02.2019
(54) Negative-strength eyeglass lens blank, eyeglass lens, and method of processing negative-strength eyeglass lens blank
(51) Int. Cl.
G02C 13/00 (2006.01)
B23B 5/00 (2006.01)
G02C 7/02 (2006.01)
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(43) 13.08.2020
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(71) Tokamak Energy Ltd
(11) AU-B-2020384656
(21) 2020384656 **(22)** 10.11.2020
(54) Strain- or magnetic field-based quench detection
(51) Int. Cl.
H01F 6/02 (2006.01)
H01F 6/06 (2006.01)
(87) WO2021/094333
(31) 1916454.0 **(32)** 12.11.19 **(33)** GB
(43) 20.05.2021
(44) 27.03.2025
(72) SLADE, Robert; BATEMAN, Rod
(74) Phillips Ormonde Fitzpatrick

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(71) Toko Yakuhin Kogyo Co., Ltd.
(11) AU-B-2019283247
(21) 2019283247 **(22)** 07.06.2019
(54) Fluticasone furoate nasal preparation composition
(51) Int. Cl.
A61K 31/58 (2006.01)
A61K 9/08 (2006.01)
A61K 9/12 (2006.01)
A61K 47/02 (2006.01)
A61K 47/10 (2017.01)
A61K 47/18 (2017.01)
A61K 47/32 (2006.01)
A61K 47/34 (2017.01)
A61P 11/02 (2006.01)
A61P 29/00 (2006.01)
A61P 37/08 (2006.01)
(87) WO2019/235616

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(43) 12.12.2019
(44) 27.03.2025
(72) KAMISHITA, Taizou; MIYAZAKI, Takashi
(74) Davies Collison Cave Pty Ltd

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(71) TONGWEI SOLAR (MEISHAN) CO., LTD.
(11) AU-B-2022397987
(21) 2022397987 **(22)** 30.05.2022
(54) METHOD FOR PREPARING TUNNEL OXIDE LAYER AND AMORPHOUS SILICON THIN FILM, AND TOPCON CELL
(51) Int. Cl.
H10F 71/10 (2025.01)
H10F 10/17 (2025.01)
(87) WO2023/092977
(31) 202111420983.0 **(32)** 26.11.21 **(33)** CN
(43) 01.06.2023
(44) 27.03.2025
(72) DENG, Mingzhang; CHEN, Hao; MENG, Xiajie; XING, Guoqiang
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(21) 2023226666

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(71) Transportation IP Holdings, LLC
(11) AU-B-2023202130
(21) 2023202130 **(22)** 06.04.2023
(54) SENSOR ASSEMBLY, DRYER, AND VEHICLE CONTROL SYSTEM USING THE SAME
(51) Int. Cl.
F24F 11/49 (2018.01)
B01D 53/18 (2006.01)
G05D 22/00 (2006.01)
F24F 110/20 (2018.01)
(43) 04.05.2023
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(21) 2024204845 **(22)** 15.07.2024
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(51) Int. Cl.
H10F 10/00 (2025.01)
H10F 77/14 (2025.01)
H10F 77/20 (2025.01)
H10F 77/30 (2025.01)
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(43) 01.08.2024
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(51) Int. Cl.
C12Q 1/68 (2018.01)
A61K 38/17 (2006.01)
A61P 25/18 (2006.01)
A61P 25/24 (2006.01)
(87) WO2021/147977
(31) 202010075636.8 **(32)** 22.01.20 **(33)** CN
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A62C 13/62 (2006.01)
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C07K 14/495 (2006.01)
A61K 9/08 (2006.01)
A61K 31/7008 (2006.01)
A61K 31/737 (2006.01)
A61K 38/18 (2006.01)
A61P 19/00 (2006.01)
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C07H 5/06 (2006.01)
C07K 14/475 (2006.01)
C08B 37/08 (2006.01)
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A61K 9/00 (2006.01)
A61K 9/127 (2006.01)
A61K 9/51 (2006.01)
A61K 47/54 (2017.01)
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A61B 5/00 (2006.01)
A61K 31/00 (2006.01)
A61K 31/7088 (2006.01)
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G01N 33/68 (2006.01)
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(51) Int. Cl.
A61M 5/142 (2006.01)
A61M 5/172 (2006.01)
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(74) Pizzeys Patent and Trade Mark Attorneys Pty Ltd

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G16H 80/00 (2018.01)
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G08B 13/06 (2006.01)
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C07D 207/08 (2006.01)
C07D 207/09 (2006.01)
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C07D 213/70 (2006.01)
C07D 213/74 (2006.01)
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C07D 401/04 (2006.01)
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H01Q 21/00 (2006.01)
H01Q 1/22 (2006.01)
H01Q 9/04 (2006.01)
H01Q 21/06 (2006.01)
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A61B 17/00 (2006.01)
A61B 17/22 (2006.01)
A61B 90/00 (2016.01)
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(51) Int. Cl.
A61B 17/3207 (2006.01)
A61M 25/00 (2006.01)
A61M 25/10 (2013.01)
A61M 25/14 (2006.01)
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(54) PRESSURE COMPENSATION SYSTEMS, LIQUID SUPPLY SYSTEMS AND METHODS USING THE SAME
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E03B 7/07 (2006.01)
E03C 1/10 (2006.01)
G01M 3/16 (2006.01)
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(21) 2023203676 **(22)** 13.06.2023
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A61B 50/31 (2016.01)
A61M 5/00 (2006.01)
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(54) Medical devices for airway management and methods of placement
(51) Int. Cl.
A61M 16/04 (2006.01)
A61B 1/00 (2006.01)
A61B 1/01 (2006.01)
A61B 1/05 (2006.01)
A61M 16/00 (2006.01)
A61M 16/06 (2006.01)
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C07K 16/30 (2006.01)
A61K 39/395 (2006.01)
A61P 35/00 (2006.01)
C07K 16/28 (2006.01)
C12N 15/13 (2006.01)
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(21) 2022299298 **(22)** 24.06.2022
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(51) Int. Cl.
G01D 1/00 (2006.01)
H02J 13/00 (2006.01)
H02J 3/00 (2006.01)
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C10B 53/07 (2006.01)
B01D 3/38 (2006.01)
C08J 11/12 (2006.01)
C10G 1/00 (2006.01)
C10G 1/10 (2006.01)
C10L 1/06 (2006.01)
C10L 1/08 (2006.01)
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(31) 18185720.2 **(32)** 26.07.18 **(33)** EP
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(74) FPA Patent Attorneys Pty Ltd

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(21) 2022202797 **(22)** 28.04.2022
(54) Reducing systemic regulatory T cell levels or activity for treatment of disease and injury of the CNS
(51) Int. Cl.
A61K 39/395 (2006.01)
A61K 38/00 (2006.01)
A61P 25/00 (2006.01)
A61P 25/14 (2006.01)
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A23K 10/20 (2016.01)
A23K 40/10 (2016.01)
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(74) Griffith Hack

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(54) PHOTOVOLTAIC CELL, METHOD FOR PREPARING SAME, AND PHOTOVOLTAIC MODULE
(51) Int. Cl.
H01L 21/02 (2006.01)
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(21) 2024201762 **(22)** 18.03.2024
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H10F 77/164 (2025.01)
H10F 10/165 (2025.01)
H10F 10/166 (2025.01)
H10F 71/10 (2025.01)
H10F 77/14 (2025.01)
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(54) READING APPARATUS
(51) Int. Cl.
G01N 1/00 (2006.01)
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(74) Baxter Patent Attorneys Pty Ltd

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F02P 3/04 (2006.01)
F02P 3/055 (2006.01)
F02P 17/00 (2006.01)
(87) WO2023/280225
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2020277895 Commonwealth Scientific and Industrial Research Organisation
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2020296003 OxiWear, Inc.
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2020347729 Innovent Biologics (Suzhou) Co., Ltd.
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2021241718 Aeovian Pharmaceuticals, Inc.
2021250910 ALLEGIANCE CORPORATION
2021277720 argenx BV
2021286369 Regeneron Pharmaceuticals, Inc.
2021288568 AnnJi Pharmaceutical Co., Ltd.
2021309575 KINDRED SYSTEMS INC.; Ocado Innovation Limited
2021321659 Fujitsu General Limited
2021327928 Danimer IPCo, LLC
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2021348056 W. L. GORE & ASSOCIATES, INC.; MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH
2021357052 CATERPILLAR INC.
2021378075 EUROPEAN MOLECULAR BIOLOGY LABORATORY; BOREA THERAPEUTICS S.R.L.
2021383880 LONGI GREEN ENERGY TECHNOLOGY CO., LTD.
2021391408 ENCORE MEDICAL, L.P. DBA DJO SURGICAL
2021411203 CHINT NEW ENERGY TECHNOLOGY CO., LTD.
2021415125 FORSSAN SUOJAINVALMISTUS OY
2021431976 FOSHAN IDEAL CO., LTD.
2021451762 BOSTON SCIENTIFIC NEUROMODULATION CORPORATION
2021462156 REFLEX LABELS LIMITED
2021474712 HITACHI ENERGY LTD
2022200527 Juno Therapeutics GmbH
2022201619 Halliburton Energy Services, Inc.
2022202797 Yeda Research and Development Co. Ltd.
2022203233 iRepertoire, Inc.
2022204935 Nocira, LLC
2022220214 OCADO INNOVATION LIMITED
2022220304 WATTS REGULATOR CO.
2022224723 UNL Holdings LLC
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2022245125 ORTHOFIX US LLC
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2022284054 GD MIDEA HEATING & VENTILATING EQUIPMENT CO., LTD.; HEFEI MIDEA HEATING & VENTILATING EQUIPMENT CO., LTD.
2022285467 GD MIDEA HEATING & VENTILATING EQUIPMENT CO., LTD.; HEFEI MIDEA HEATING & VENTILATING EQUIPMENT CO., LTD.
2022294428 JFE STEEL CORPORATION
2022299298 X DEVELOPMENT LLC
2022299406 MEDELA HOLDING AG
2022306442 ZHU, C.
2022311775 ANTERIS TECHNOLOGIES CORPORATION
2022314096 SHANGHAI ZHIMENG BIOPHARMA, INC.
2022326745 RHEINMETALL LANDSYSTEME GMBH
2022326814 MACK RIDES IP GMBH & CO. KG
2022347466 SUNRESIN NEW MATERIALS CO.LTD.
2022350847 HALO SMART SOLUTIONS, INC.
2022397987 TONGWEI SOLAR (MEISHAN) CO., LTD.
2022457748 SHOPIFY INC.
2023200976 Janssen Pharmaceutica NV
2023201137 MALLINCKRODT PHARMACEUTICALS IRELAND LIMITED
2023201575 Reliance Worldwide Corporation (Aust.) Pty. Ltd.
2023201614 Polaris Industries Inc.
2023201702 Ynsect
2023201885 Fisher & Paykel Healthcare Limited
2023202009 Fisher & Paykel Healthcare Limited
2023202130 Transportation IP Holdings, LLC
2023202627 Capital One Services, LLC
2023203232 Fasteners For Retail, Inc.
2023203536 Bigfoot Biomedical, Inc.
2023203674 Abiomed, Inc.; Massachusetts Institute of Technology
2023203676 Wearne Digital Pte Ltd
2023203870 Qualcomm Incorporated
2023203926 CrazeWeld LLC
2023204301 Huawei Technologies Co., Ltd.
2023214385 BAEK, I.S.
2023218956 BLUE PRISM LIMITED
2023219875 OilQuick Deutschland KG
2023219904 Meduloc, LLC
2023222824 KUNMING UNIVERSITY OF SCIENCE AND TECHNOLOGY
2023222859 Sungbo Industrial Co., Ltd.
2023222978 Zhejiang Jinko Solar Co., Ltd.; Jinko Solar Co., Ltd.
2023226666 Kabushiki Kaisha Toshiba; Toshiba Energy Systems & Solutions Corporation
2023226768 JOST-Werke Deutschland GmbH
2023237011 Schneider Electric Industries SAS
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2023241340 Piscitelli, M.
2023248135 Apple Inc.
2023254429 KOENIG & BAUER BANKNOTE SOLUTIONS SA
2023254936 Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.
2023258457 Katholieke Universiteit Leuven
2023274061 ServiceNow, Inc.
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2023343601 GENERAL DYNAMICS ORDNANCE AND TACTICAL SYSTEMS - CANADA, INC.
2024200195 CompoSecure, LLC
2024200224 Google LLC
2024200841 Dana-Farber Cancer Institute, Inc.; Children's Medical Center Corporation; Ospedale San Raffaele S.r.l.; Politecnico di Milano; Fondazione Telethon
2024200928 Incitec Fertilisers Operations Pty Ltd
2024200986 Quartus Engineering, Inc.
2024201371 Sensile Medical AG
2024201384 CareFusion 303, Inc.
2024201762 Zhejiang Jinko Solar Co., Ltd.; Jinko Solar Co., Ltd.
2024201886 The NOCO Company

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2024202057 NetScout Systems, Inc.
2024202824 LivePerson, Inc.
2024204845 Trina Solar Co., Ltd.
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2024273946 COOPERVISION INTERNATIONAL LIMITED
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(71) OzGreen Energy Pty Ltd
(11) AU-B-2020101528
(21) 2020101528 **(22)** 28.07.2020
(54) Method of Measuring Water Quality
(51) Int. Cl.
G01N 33/18 (2006.01)
C02F 1/00 (2006.01)
(31) 2019902727 **(32)** 31.07.19 **(33)** AU
(45) 27.03.2025
(72) McKelvey, Len
(74) Michael Buck IP

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(71) Techtronic Outdoor Products Technology Limited.
(11) AU-B-2016100324
(21) 2016100324 **(22)** 24.03.2016
(54) An electrical module for a power tool and a power tool
(51) Int. Cl.
B25F 5/02 (2006.01)
H02J 7/00 (2006.01)
(31) 201520179347.7 **(32)** 27.03.15 **(33)** CN
(45) 27.03.2025
(72) COLBER Jr., William E.
(74) WRAYS PTY LTD

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Opposition Proceedings

(The name in parentheses is that of the opponent)

Opposition Lodged

2019271303 **ARD Core Pty Limited** (The Scotch Whisky Association)

Opposition Withdrawn

2018269327 **Kerry Group Services International Ltd** (International N&H Denmark ApS)

Applications Withdrawn

2019234659 **Solenis Technologies Cayman, L.P.** (PRAYON)

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Offer to Surrender

It is hereby notified that **Janssen Biotech, Inc. 800/850 Ridgeview Drive** , **Horsham Pennsylvania 19044** , the Patentee of Patent 2024100044 dated 08.01.2025 for an invention titled ' Safe and effective method of treating ulcerative colitis with anti-il12/il23 antibody' offers to surrender the said Patent. Any person desiring to be heard before the said offer to surrender is accepted must lodge a request to be heard within one month from the date of this journal.

It is hereby notified that **Janssen Biotech, Inc. 800/850 Ridgeview Drive** , **Horsham Pennsylvania 19044** , the Patentee of Patent 2024100045 dated 08.01.2025 for an invention titled ' Safe and effective method of treating ulcerative colitis with anti-il12/il23 antibody' offers to surrender the said Patent. Any person desiring to be heard before the said offer to surrender is accepted must lodge a request to be heard within one month from the date of this journal.

It is hereby notified that **Janssen Biotech, Inc. 800/850 Ridgeview Drive** , **Horsham Pennsylvania 19044** , the Patentee of Patent 2024100046 dated 08.01.2025 for an invention titled ' Safe and effective method of treating ulcerative colitis with anti-il12/il23 antibody' offers to surrender the said Patent. Any person desiring to be heard before the said offer to surrender is accepted must lodge a request to be heard within one month from the date of this journal.

Revocation

It is hereby notified that as a consequence of a decision by the Commissioner dated 12.03.2025 , Patent 2020103956 in the name of **Kutti Bay Investments Pty Ltd** has been revoked in relation to a re examination and subsequent revocation under Section 101(1) of the Patents Act.

Assignments Registered

2005325213 Evonik Corporation The patent has been assigned to **Evonik Operations GmbH**

Assignments Registered

2006307938 Pharmaleads The patent has been assigned to **KOS THERAPEUTICS, INC.**

2010322478 Bellus Health Cough Inc. The patent has been assigned to **GlaxoSmithKline Intellectual Property (No. 3) Limited**

2011238646 Evonik Corporation The patent has been assigned to **Evonik Operations GmbH**

2011280054 Evonik Corporation The patent has been assigned to **Evonik Operations GmbH**

2011340827 Covestro (Netherlands) B.V. The patent has been assigned to **Object Carpet GmbH**

2011348141 Evonik Corporation The patent has been assigned to **Evonik Operations GmbH**

2014211962 Bellus Health Cough Inc. The patent has been assigned to **GlaxoSmithKline Intellectual Property (No. 3) Limited**

2014230009 Freefly Systems Inc. The patent has been assigned to **Arashi Vision Inc.**

2014280263 Covestro (Netherlands) B.V. The patent has been assigned to **Object Carpet GmbH**

2014280264 Covestro (Netherlands) B.V. The patent has been assigned to **Object Carpet GmbH**

2015279248 APTATARGETS, S.L. The patent has been assigned to **Merck Patent GmbH**

2016336891 Pharmaleads The patent has been assigned to **KOS THERAPEUTICS, INC.**

2017287819 GROWPURA LIMITED The patent has been assigned to **R & G Fresh Herbs**

2018217860 Bayer Aktiengesellschaft; Bayer Pharma Aktiengesellschaft The patent has been assigned to **Deutsches Krebsforschungszentrum Stiftung des öffentlichen Rechts**

2019232751 Advanced New Technologies Co., Ltd. The patent has been assigned to **Antchain Technology Pte. Ltd.**

2019265827 Advanced New Technologies Co., Ltd. The patent has been assigned to **Antchain Technology Pte. Ltd.**

2019320957 Alipay (Hangzhou) Information Technology Co., Ltd. The patent has been assigned to **Ant Blockchain Technology (Shanghai) Co., Ltd.**

2021256235 Chengdu Baiyu Pharmaceutical Co., Ltd. The patent has been assigned to **Kangbaida (Sichuan) Biotechnology Co., Ltd.**

Licences Registered - Section 187, Reg. 19

(The name in the parentheses is that of the licensee)

2015407253 Dyno Nobel Asia Pacific Pty Ltd (Oliver Innovation Pty Ltd)

2019279427 Mogam Institute for Biomedical Research (GREEN CROSS CORPORATION)

Extensions of Term of Standard Patents

Extension of Term of a Standard Patent relating to Pharmaceutical Substances

Applications Accepted

The following application(s) for Extension of Term have been accepted under Section 74.

Extensions of Term of Standard Patents

Extension of Term of a Standard Patent relating to Pharmaceutical Substances

Applications Accepted

Notice of opposition under Section 75(1) to the undermentioned application(s) for an extension of term may be filed at the Patent Office within the prescribed time.

2020289768 **Alexion Pharmaceuticals, Inc.**

The earliest first regulatory approval date provided by the patentee 03 Jul 2023

For the goods ANDEXXA andexanet alfa

Address for service : PHILLIPS ORMONDE FITZPATRICK PO Box 323 COLLINS STREET WEST VIC 8007 AU

Extensions granted

The following application(s) for Extension of Term have been granted under Section 76.

2021202394 **Janssen Biotech, Inc.**

The earliest first regulatory approval date provided by the patentee 01 Dec 2022

For the goods RYBREVANT amivantamab

Extension of Term of patent pursuant to Section 77 expires on 01 Dec 2037

Corrigenda

In Vol 59 , No 11 , Page(s) 1463 under the heading **Amendments - Application for Amendments** Under the name Boehringer Ingelheim Vetmedica GmbH, Patent Application No. 2017245601 correct the date of the statements filed to read 06 Feb 2025 and 07 Feb 2025

In Vol 59 , No 11 , Page(s) 1464 under the heading **Amendments - Application for Amendments** Under the name Todd Martin, Patent No. 2018350362 correct the date of the statements filed to read 19 Nov 2024 and 06 Jan 2025

In Vol 59 , No 12 , Page(s) 1618 under the heading **Amendments - Application for Amendments** Under the name Ecograf Limited, Patent Application No. 2021261902 correct the date of the statements filed to read 16 May 2024 and 07 Nov 2024

In Vol 59 , No 6 , Page(s) 811 under the heading **Applications Accepted - Name Index** Under the name MedinCell, Application No. 2020205438, under INID (71) correct the applicant name to MEDINCELL S.A.

Specifications Republished

The following specifications contained errors when advertised OPI, Accepted or Certified. They have been reissued on the date of this Journal.

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SECTION 105(1) PATENTS ACT 1990 (CTH)
Advertisement for publication in Official Journal

Patent Matter Details

Australian Patent No. 2015255248 in the name of Kutti Bay Investments Pty Ltd (formerly Jusand Nominees Pty Ltd) entitled "Safety System and Method For Protecting Against a Hazard of Drill Rod Failure in a Drilled Rock Bore".

Identity of Court Proceeding

Federal Court Proceeding No. VID 1372 of 2024 – Kutti Bay Investments Pty Ltd v Rattlejack Innovations Pty Ltd and others.

Particulars of Proposed Amendments

The particulars of the amendments sought are shown in the attached documents (in clean and marked up form) and are as follows:

(i) to delete Description pages 1 – 15 currently on file and replace with new Description pages 1 – 16 as attached;

(ii) to delete Claim pages 16 – 19 currently on file and replace with new Claim pages 17 – 20 as attached;

(iii) to delete the Abstract (identified as specification page 20) currently on file and replace with new Abstract (identified as specification page 21) as attached; and

(iv) to delete Figure pages 1/5 – 5/5 currently on file and replace with new Figure pages 1/5 – 5/5 as attached.

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Opposition

Any person intending to oppose the application who is not a party to the proceeding must, within 28 days after publication of this advertisement, give written notice of that intention to:

(v) the Commissioner; and

(vi) each party to the proceeding at the above addresses for service.

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SAFETY SYSTEM AND METHOD FOR PROTECTING AGAINST A HAZARD OF DRILL ROD FAILURE IN A DRILLED ROCK BORE

FIELD OF THE INVENTION

The present invention relates to a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially a hazard posed by a broken drill rod section lodged within a drilled rock bore. The invention also relates to a method of protecting against such a hazard of drill rod failure. Thus, it will be appreciated that the invention has particular application or use in the mining industry, although applications may also be contemplated in other fields, such as in the construction industry.

BACKGROUND OF THE INVENTION

In underground mine environments, a body or vein of ore will often be accessed by excavating cavities into the rock strata below the ore body or vein and then working towards the ore deposit from below. This technique is referred to in the mining field as "overhand stoping" and has become the predominant direction of mining with the advent of rock blasting and power drills. In particular, the technique commonly involves drilling multiple bores upwards from the cavity into the rock strata towards the ore deposit above. Explosive charges are then set in the bores to blast away the intervening rock and to access the ore deposit directly. Indeed, the bores and the explosive charges may extend into the ore deposit itself, which together with the intervening rock then collapses into the cavity below for removal.

A significant problem associated with this mining technique is associated with drill rod failure when drilling the multiple bores extending upwards into the rock strata towards the ore body. The individual bores drilled are often tens of metres long (for example, in the range of 20 to 60 metres) and the drill rods which extend over that length may only have a diameter of about 80 millimetres. As the composition and properties of the rock strata will typically vary through its depth, the drill rods are

subjected to varying and also somewhat unpredictable loading during the drilling of each bore. Perhaps not surprisingly, therefore, the failure or breakage of a drill rod is not uncommon when the multiple bores are being drilled to lay the explosive charges. This has the problem that a section of drill rod, which may, for example, be fifteen or twenty metres long with a mass in the range of 100 kg to 500 kg, is left lodged in the bore extending upwards from the cavity. It is therefore not difficult to imagine that the hazard posed to personnel and/or to equipment by such a massive broken drill rod section, which could unexpectedly drop out of the bore, is extreme.

In the event of such a drill rod failure in a bore extending above horizontal (where the risk of the broken drill rod section dropping out exists), occupational health and safety regulations in many countries require the affected bore to be covered and/or otherwise rendered safe before work in that particular area may continue. In the absence of a tailored solution to this problem to date, however, miners have had to improvise with very provisional and suboptimal measures. These have not only been extremely time-consuming, leading to long delays in the further progress of the mining, but the real safety provided by such provisional measures has at times also been questionable.

SUMMARY OF THE INVENTION

In view of the above, it is an object of the present invention to provide a new and improved safety system and an associated method for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially for protecting against the hazard of a broken drill rod section falling out of the bore into an excavated area.

According to one aspect, therefore, the present invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore above the horizontal, especially a hazard posed by a broken drill rod section within the bore, the safety system comprising:

an anchor member configured to be fixed in a friction fit or interference fit in a proximal region of the drilled bore; and

an impact reduction member for reducing an impact of a drill rod section striking the anchor member in the proximal region of the drilled bore, wherein the impact reduction member is configured to be located within the proximal region of the bore and to extend within the bore above the anchor member.

Thus, the safety system of the invention is configured and arranged to be fixed at the proximal region of the bore to absorb the force or impact of a broken drill rod section falling within the bore towards the opening in the rock-face. Further, the safety system desirably prevents such a broken drill rod section from falling out into the space or area in which the work is taking place. In this way, the safety system is able to protect the area in which workers and/or equipment may still be active in further mining operations from the hazard of a drill rod section falling from a drilled bore in which the drill rod has suffered a failure and broken or sheared off within the bore.

In an embodiment of the safety system, the anchor member is configured to plug into the drilled bore and at least partially block or obscure the bore. In this way, the anchor member may form a plug member which is configured and arranged to at least partially block or close a proximal region of the bore against the hazard of the broken drill rod section falling out into the area in which workers and/or equipment may be active in further mining operations or other activities.

According to an embodiment, therefore, the invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore which extends above horizontal, especially a hazard posed by a broken drill rod section within the bore, the safety system comprising:

a plug member for insertion into a proximal region of the drilled bore, the plug member being configured to be fixed in a friction fit or interference fit within the proximal region of the bore; and

an impact reduction member for reducing an impact of the broken drill rod section striking the plug member in the proximal region of the bore, wherein the impact reduction member is configured to be located within the proximal region of the bore and to extend within the bore above the plug member.

In an embodiment of the safety system, the plug member is configured to be fixed in a friction fit or interference fit within the proximal region of the drilled bore in a friction fit or interference fit. In this regard, the plug member may, for example, comprise a split tube having a longitudinal slit or gap and an outer diameter sized larger than an inner diameter of the drilled bore. The split tube is configured to be driven into the proximal region of the drilled bore and the longitudinal slit or gap is thus configured to allow the outer diameter of the split tube (i.e. of the plug member) to be compressed or to reduce when the plug member is driven into the drilled bore of smaller diameter. In this way, the plug member comprising the split tube can be fixed in the proximal region of the bore in a friction fit or an interference fit, in a manner similar to that known for a "split-set" type of rock anchor. The plug member is thereby configured to at least partially close or block the drilled bore. To assist insertion of the plug member into the proximal region of the drilled bore, the plug member (split tube member) preferably has a front or leading end region of a reduced diameter smaller than an inner diameter of the drilled bore.

In an embodiment of the safety system, the impact reduction member comprises a tapered portion for a gradual or extended transfer of an impact loading imparted by a falling drill rod section to the plug member. In this regard, the impact reduction member is configured and arranged to be impacted or struck directly by the falling drill rod section, and the tapered portion is configured to allow movement of the impact reduction member relative to the plug member for gradual or extended transfer of the impact loading from the drill rod section to the plug member. By the gradual or extended transfer of the impact loading to the plug member, the impact force can be significantly reduced. In this regard, the stopping distance for a falling object (i.e. the distance travelled by the object after initial impact) has a profound effect on the impact force imparted. Specifically, the larger the stopping distance,

the lower the impact force by virtue of an inversely proportional relationship; i.e. by doubling the stopping distance, the impact force can effectively be halved. For this reason, the tapered portion of the impact reduction member is desirably configured and arranged to provide for movement of the falling drill rod section relative to the plug member for gradual or extended transfer of the impact loading from the drill rod section to the plug member.

In an embodiment of the system, the impact reduction member is configured for movement into an interior of the anchor member or the plug member when it is impacted or struck by the drill rod section.

In an alternative embodiment of the system, the tapered portion is configured and arranged to allow movement of the drill rod section relative to the impact reduction member. In this regard, the tapered portion of the impact reduction member may be fixed relative to the anchor member or the plug member.

In an embodiment, the safety system further comprises an adapter member which is configured for connection to a rock drilling apparatus for driving or inserting the safety system, especially the plug member and the impact reduction member, into the proximal region of the drilled bore. In this way, the safety system may be designed to operate with the same equipment used for drilling the bores. This is particularly helpful because no new or additional equipment is required to deploy the safety system of the invention, resulting in minimal disruption and minimal time loss. Rather, the operator is able to continue working with the same equipment and use that equipment to secure the compromised bore with the broken drill rod section by introducing or inserting the safety system. The adapter member may, for example, be configured to cooperate with and/or to be received in a drill rod carousel of the rock drilling apparatus. This thereby enables the safety system to be placed in and held by the drill rod carousel and then be introduced or inserted (e.g. driven or forced) into the proximal region of the bore by the rock drilling apparatus.

In an embodiment, the adapter member includes a collar against which the plug member seats such that the collar is configured to impart or transfer an axial force to the plug member to drive the plug member into the proximal region of the drilled bore in a friction fit or interference fit. Preferably, the tapered portion of the impact reduction member is connected to, and optionally integrally formed with, the adapter member.

In an embodiment of the safety system, the impact reduction member comprises an impact dampening material which is introduced into the drilled bore above the anchor member or the plug member. In this way, the impact dampening material may serve to physically fill and block or obscure part of the proximal region of the bore, and also to provide an impact dampening effect. The impact dampening material may, for example, comprise a polymer foam material which can preferably be introduced or injected into the drilled bore in a liquid or fluid form. The polymer foam then preferably solidifies within the bore and serves not only to physically fill and block or obscure part of the proximal region of the bore, but also provides an impact dampening effect. The impact dampening material may also comprise sand or a similar material, for introduction or injection into the bore above the anchor member or the plug member.

According to another aspect, the present invention provides a method of protecting against a hazard of drill rod failure in a drilled rock bore which extends above horizontal, especially a hazard posed by a broken drill rod section in the bore, the method comprising:

fixing an anchor member in a proximal region of the drilled bore in a friction fit or interference fit to at least partially plug or obscure the proximal region of the bore; and

reducing an impact of a broken drill rod section striking the anchor member within the proximal region of the bore.

In an embodiment of the inventive method, the step of fixing the anchor member in a proximal region of the bore comprises inserting an over-sized split tube into the proximal region of the bore, e.g. by driving or forcing the split tube into the bore.

In an embodiment of the method, the step of reducing the impact of the broken drill rod section striking the anchor member comprises: arranging an impact reduction member within the proximal region of the bore above the anchor member. Preferably, the impact reduction member comprises a tapered portion for gradual or extended transfer of the impact loading from the falling drill rod section to the anchor member.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the invention and the advantages thereof, exemplary embodiments of the invention are explained in more detail in the following description with reference to the accompanying drawing figures, in which like reference signs designate like parts and in which:

Fig. 1 is a schematic cross-sectional view of an excavated cavity in a mine environment illustrating bores drilled in rock strata extending towards an ore deposit;

Fig. 2 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to an embodiment of the invention;

Fig. 3 is a schematic partial perspective view of the safety system of Fig. 2 shown in an installed state in a proximal region of a bore;

Fig. 4 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to another embodiment of the invention; and

Fig. 5 is a flow diagram which schematically represents a method according to an embodiment of the invention.

The accompanying drawings are included to provide a further understanding of the present invention and are incorporated in and constitute a part of this specification. The drawings illustrate particular embodiments of the invention and together with the description serve to explain the principles of the invention. Other embodiments of the invention and many of the attendant advantages of the invention will be readily appreciated as they become better understood with reference to the following detailed description.

It will be appreciated that common and/or well understood elements that may be useful or necessary in a commercially feasible embodiment are not necessarily depicted in order to facilitate a more abstracted view of the embodiments. The elements of the drawings are not necessarily illustrated to scale relative to each other. It will also be understood that certain actions and/or steps in an embodiment of a method may be described or depicted in a particular order of occurrences while those skilled in the art will understand that such specificity with respect to sequence is not actually required.

DETAILED DESCRIPTION OF EMBODIMENTS

With reference firstly to Fig. 1 of the drawings, a cross-sectional view of a mine environment is illustrated schematically. An excavated cavity or chamber C of the mine is shown in a cross-section taken normal or transverse to a length of that cavity or chamber C into the page. The cavity C is essentially surrounded by rock strata R and an ore deposit O above the cavity C can also be seen. To access the ore deposit O, the cavity C is excavated into the rock strata R below that body or vein of ore O and then multiple bores B are drilled upwards from the cavity C into the rock strata R towards the ore deposit O above. In this way, explosive charges can be set in the bores B to blast away the intervening rock, which together with

the ore deposit O then collapses into the cavity C below for collection and removal for processing.

When drilling the multiple bores B upwards into the rock strata R towards the ore body O, the individual bores drilled are often tens of metres long (e.g. in the range of 20 to 60 metres) and the drill rods (not shown) which extend over that length may have a diameter of about 80 millimetres. As the composition and properties of the rock strata R typically varies through its depth, and in any case in comparison to the composition and properties of the ore deposit O, the drill rods are subjected to varying and unpredictable loading during the drilling of each bore B. Failure or breakage of a drill rod is not uncommon when multiple bores B are being drilled to lay the explosive charges above the cavity C. Thus, a section S of drill rod, which may, for example, be 20 or 30 metres long with a mass in the range of 100 kg to 500 kg, may be left in the bore B extending above the cavity C presenting a major hazard to personnel and/or equipment in the cavity C, as this massive broken drill rod section S could unexpectedly fall out of the bore B.

With reference now to Figs. 2 and 3 of the drawings, a safety system 1 according to a preferred embodiment for protecting against just such a hazard posed by the broken drill rod section S in the drilled bore B is shown schematically. The safety system 1 comprises an anchor member 2, which is configured to be inserted and fixed in a proximal region E of the bore B . The anchor member 2 is provided in the form of a plug member which is configured to be driven into and fixed within the proximal region E of the drilled bore B in a friction fit or interference fit. In this regard, the plug member 2 comprises a split tube 3 formed from a round steel tube or pipe having an outer diameter Do sized larger than an inner diameter Di of the bore B. For example, if the bore B has an inner diameter Di of 89 mm, the split tube 3 may have an outer diameter Do of about 100 mm and a wall thickness t of about 6 mm to 9 mm, e.g. about 8 mm in this case. Furthermore, the split tube 3 has a longitudinally extending slit or gap G formed or cut in the wall (as seen in Fig. 3) which allows the outer diameter Do of the split tube 3 (i.e. plug member 2) to be compressed or to reduce when the plug member 2 is driven into the drilled bore B

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of smaller diameter Di. A front or leading end region 4 of the split tube 3 also has a reduced diameter Dr that is smaller than an inner diameter Di of the drilled bore B to assist the initial introduction or insertion of the plug member 2 into the proximal region E of the bore B. In this way, the plug member 2 comprised of the split tube 3 can be fixed in the proximal region E of the bore B in a friction fit, in a manner similar to that known for a "split-set" type of rock anchor. As with the other dimensions of the split tube 3, the length Ls of the split tube 3 may be selected as appropriate to the rock-strata R, but it is preferably in the range of about 400 mm to 800 mm; e.g. 600 mm in this case.

The safety system 1 further comprises an impact reduction member 5 for reducing an impact of the broken drill rod section S in the event that it falls and strikes the anchor member or plug member 2 in the proximal region E of the bore B. The impact reduction member 5 is also arranged in the proximal region E of the bore B and extends within the bore B above the anchor or plug member 2. In this embodiment, the impact reduction member 5 comprises an elongate body 6 which is arranged centrally of the plug member 2 and which is configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. The elongate body 6 may be formed of steel (e.g. mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the elongate body 6 within the split tube 3 preferably has a substantially constant diameter Dc and a portion 8 of the elongate body 6 extending above the split tube 3 is tapered, i.e. an outer surface 9 of the elongate body 6 in the tapered portion 8 tapers outwardly at an angle α of about 1° to 3°; e.g. about 1° in this case. The length Lt of the tapered portion 8 may be selected as appropriate to the safety system, but this length is preferably in the range of about 200 mm to 400 mm; e.g. 290 mm in this case, with the tapered portion 8 tapering from a maximum diameter of about 80 mm at its distal end to a diameter of about 70 mm at the constant diameter portion 7 within the split tube 3.

In this embodiment, the impact reduction member 5 is configured for movement relative to the plug member 2 upon impact by the falling broken drill rod section S.

That is, the body 6 of the impact reduction member 5 is configured for movement into an interior of the plug member 2 if impacted or struck by the drill rod section S. In this way, the outer surface 9 of the tapered portion 8 of the body 6 contacts and bears against an inner surface of the split tube 3. As an initial impact by the broken drill rod section S drives the elongate body 6 downwards into the split tube 3, the slight taper of the tapered portion 8 exerts an outward force on the split tube 3 and thus enhances or increases engagement between the bore B and the tube 3. The tapered portion 8 thereby acts to effect a gradual or extended transfer of impact loading from the broken drill rod section S to the plug member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is reduced significantly, such that the friction fit or interference fit of the anchor member or plug member 2 within the bore B can readily withstand the impact loading. In this way, the safety system 1 of this embodiment can effectively and reliably protect workers and/or equipment in the cavity C from the hazard of broken drill rod sections S falling from a bore B drilled above horizontal.

To facilitate deployment of the safety system 1 described above, the safety system 1 may include an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for introducing the plug member 2 and the impact reduction member 5, into the proximal E of the bore B. The adapter member 10 may, for example, be configured to be received in a drill rod carousel of the rock drilling apparatus. This enables the safety system 1 to be placed in and held by the drill rod carousel and then introduced or inserted (e.g. hydraulically driven or forced) into the proximal region E of the bore B by the rock drilling apparatus. To this end, the adapter 10 may include a head 11 configured for connection with the rock drilling apparatus. Furthermore, the adapter member 10 may be connected to, and preferably integrally formed with, the body 6 of the impact reduction member 5. The adapter member 10 further includes a collar 12 which sits within and engages a corresponding groove or slot 13 in the adapter member 10. The split tube 3 of the plug member 2 seats against the collar 12, such that the collar 12 imparts an axial force to the plug member 2 to drive the plug member 2 (together with impact

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reduction member 5) into the proximal E of the drilled bore B in a friction fit. As is apparent from Fig. 2, the collar 12 preferably has an outer diameter slightly less than the inner diameter Di of the bore B and a rear or trailing end region 14 of the split tube 3 which abuts and seats against the collar 12 is also swaged inwards to a reduced diameter Dr, i.e. like the front or leading end region 4. This configuration enables the anchor member 2 and the impact reduction member 5 of the safety system 1 to be driven into the drilled bore B beyond the rock face F. This may be particularly useful where the rock at the rock face F is friable or crumbling, because it enables the safety system 1 to be driven deeper into the bore B beyond the rock face F where it can be soundly founded in competent rock.

With reference now to drawing Fig. 4, another embodiment of a safety system 1 is shown and like parts are designated with like or corresponding reference signs compared with the embodiment of Figs. 2 and 3. In this embodiment, the safety system 1 again includes a plug type anchor member 2 comprising a split tube 3 having longitudinally extending slit or gap (not shown) and a front or leading end region 4 of reduced diameter Dr to assist driven or forced insertion into a proximal region E of a bore B in an interference fit or a friction fit. The safety system 1 furthermore again includes an impact reduction member 5 comprising an elongate body 6 arranged within the plug member 2. The body 6 may again be formed of steel (e.g. mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the body 6 within the split tube 3 may have a substantially constant diameter Dc and a portion 8 of impact reduction member 5 which extends above the split tube 3 is tapered; that is, a surface 9 of the tapered portion 8 tapers at an angle α of about 3° to 8°; e.g. about 5° in this case, such that the tapered portion 8 forms an elongate wedge that tapers along its length Lt towards an inner periphery of the bore B.

The impact reduction member 5 is again configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. Specifically, in this embodiment, the wedge surface 9 of the tapered portion 8 is configured and arranged to be impacted or

struck directly by the broken drill rod section S. In this embodiment, however, the impact reduction member 5 is not configured for any significant movement relative to the plug member 2 upon impact by the falling broken drill rod section S. Rather, as the falling broken drill rod section S initially impacts or contacts the surface 9 of the tapered portion 8, the drill rod section S is gradually deflected towards and into contact with the opposite inner wall of the bore B. This contact generates friction which acts to brake the falling object and dissipate the impact. Again, therefore, the tapered portion 8 acts to cause gradual or extended transfer of impact loading from the drill rod section S to the anchor member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is again reduced significantly, such that the friction fit or interference fit of the anchor member 2 within the bore B can readily withstand the impact loading. The safety system 1 of this embodiment may thus also effectively and reliably protect workers and/or equipment in the cavity C from the hazard of a broken drill rod section S. As before, the safety system 1 of Fig. 4 includes an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for deploying the plug-like anchor member 2 and the impact reduction member 5 into the proximal E of the bore B.

Finally, referring to Fig. 5 of the drawings, a flow diagram is shown that illustrates schematically the steps in a method of protecting against a hazard resulting from drill rod failure, particularly the hazard posed by a broken drill rod section S falling out of an upwardly drilled rock bore B, according to the embodiments of the invention described above with respect to Figs. 1 to 4. In this regard, the first box i of Fig. 5 represents the step of providing a safety system 1 according to any one of the embodiments of the invention described above. The second box ii then represents the step of fixing an anchor member 2 of the safety system 1 within the proximal region E of the bore B in a friction fit or interference fit to at least partially plug or block the proximal region E of the bore B. The third box iii represents the step of arranging an impact reduction member 5 within the proximal region E of the bore B above the anchor member 2. In this regard, it will be appreciated by persons

skilled in the art that steps represented by boxes ii and iii in Fig. 5 may occur simultaneously or in reverse order. The final box iv in Fig. 5 of the drawings represents the step of reducing an impact of a drill rod section S striking the plug member 2 within the proximal region E of the drilled bore B via the impact reduction member 5.

Although specific embodiments of the invention are illustrated and described herein, it will be appreciated by those of ordinary skill in the art that a variety of alternative and/or equivalent implementations exist. It should be appreciated that the exemplary embodiment or exemplary embodiments are examples only and are not intended to limit the scope, applicability, or configuration in any way. Rather, the foregoing summary and detailed description will provide those skilled in the art with a convenient road map for implementing at least one exemplary embodiment, it being understood that various changes may be made in the function and arrangement of elements described in an exemplary embodiment without departing from the scope as set forth in the appended claims and their legal equivalents. Generally, this application is intended to cover any adaptations or variations of the specific embodiments discussed herein. By way of example, a skilled person will readily appreciate that the safety system of the invention is not limited to being made from any specific material described in the embodiments. Rather, the skilled person will appreciate that a range of suitable materials may exist, and the skilled person can select a material based upon the known mechanical properties of that material which may make it suitable for use in this invention.

It will also be appreciated that in this document the terms "comprise", "comprising", "include", "including", "contain", "containing", "have", "having", and any variations thereof, are intended to be understood in an inclusive (i.e. non-exclusive) sense, such that the process, method, device, apparatus or system described herein is not limited to those features or parts or elements or steps recited but may include other elements, features, parts or steps not expressly listed or inherent to such process, method, device, apparatus or system. Furthermore, the terms "a" and "an" used herein are intended to be understood as meaning one or more unless

explicitly stated otherwise. Moreover, the terms "first", "second", "third", etc. are used merely as labels, and are not intended to impose numerical requirements on or to establish a certain ranking of importance of their objects.

List of reference signs

1	safety system
2	anchor member or plug member
3	split tube
4	front or leading end region of split tube
5	impact reduction member
6	elongate body
7	constant diameter portion of elongate body
8	tapered portion
9	outer surface of tapered portion
10	adapter member
11	head of adapter member
12	collar
13	groove or slot
14	rear or trailing end region of split tube
C	cavity or chamber
R	rock strata
O	ore deposit or ore body
F	rock-face
B	bore
S	broken drill rod section
E	proximal region of bore
t	wall thickness of split tube
G	longitudinal slit or gap
Di	inner diameter of bore
Do	outer diameter of split tube
Dr	reduced diameter of leading and/or trailing end region of split tube
Ls	length of split tube
Lt	length of tapered portion
α	taper angle

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CLAIMS:

1. A safety system for protecting against a hazard of a drill rod failure in a drilled rock bore above horizontal, and especially a hazard posed by a broken drill rod section within the bore, comprising:

an anchor member configured to be fixed in a friction fit or interference fit in a proximal region of the bore; and

an impact reduction member for reducing an impact of the drill rod section striking the anchor member in the proximal region of the bore, wherein the impact reduction member is configured to be located in the proximal region of the drilled bore and to extend within the bore above the anchor member.

2. A safety system according to claim 1, wherein the anchor member is configured to fit or plug into the drilled bore and to at least partially block or obscure the drilled bore, whereby the anchor member comprises or forms a plug member.

3. A safety system for protecting against a hazard of a drill rod failure in a drilled rock bore above horizontal, and especially a hazard posed by a broken drill rod section lodged within the bore, the safety system comprising:

a plug member for insertion into a proximal region of the bore, the plug member being configured to be fixed in a friction fit or interference fit within the proximal region of the bore; and

an impact reduction member for reducing an impact of the drill rod section striking the plug member within the proximal region of the bore, wherein the impact reduction member is configured to be located within the proximal region of the bore and to extend within the bore above the plug member.

4. This claim has been deleted.

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5. A safety system according to claim 3, wherein the anchor member or plug member comprises a split tube having a longitudinal slit or gap and an outer diameter larger than an inner diameter of the drilled bore, wherein the anchor or plug member is configured to be driven into the proximal region of the bore and wherein the longitudinal slit or gap is configured to allow the outer diameter of the split tube to reduce or to be compressed when the anchor member or plug member is driven into the bore.

6. A safety system according to claim 5, wherein the plug member has a front or leading end region of a reduced diameter which is smaller than an inner diameter of the drilled bore for assisting introduction or insertion of the plug member into the proximal region of the bore.

7. A safety system according to any one of claims 1 to 3, 5 or 6, wherein the impact reduction member comprises a tapered portion for a gradual or extended transfer of an impact loading imparted by a drill rod section to the anchor member or plug member.

8. A safety system according to claim 7, wherein the impact reduction member is configured and arranged to be impacted or struck directly by the drill rod section, and wherein the tapered portion is configured to allow movement of the impact reduction member relative to the anchor member or plug member for gradual or extended transfer of the impact loading from the drill rod section to the anchor or plug member.

9. A safety system according to claim 8, wherein the impact reduction member is configured for movement into an interior of the anchor or plug member when impacted or struck by the drill rod section.

10. A safety system according to claim 7, wherein the impact reduction member is configured and arranged to be impacted or struck directly by the drill rod section, and wherein the tapered portion is configured and arranged to provide movement of the drill rod section relative to the anchor member or plug member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member.

11. A safety system according to claim 7 or claim 10, wherein the tapered portion is configured to allow movement of the drill rod section relative to the impact reduction member, and/or wherein the tapered portion is fixed relative to the anchor member or plug member.

12. A safety system according to any one of claims 1 to 3 or 5 to 10, comprising an adapter member configured for connection to a rock drilling apparatus for driving the safety system, and especially the anchor member or plug member and the impact reduction member, into the proximal region of the bore.

13. A safety system according to claim 12, wherein adapter member includes a collar against which the plug member seats such that the collar is configured to impart an axial force to the plug member to drive the plug member into the proximal region of the drilled bore.

14. A safety system according to claim 12 or 13, wherein the tapered portion of the impact reduction member is connected to, preferably integrally formed with, the adapter member.

15. A method of protecting against a hazard of drill rod failure in a drilled rock bore above horizontal, especially a hazard posed by a broken drill rod section within the bore, comprising:

fixing an anchor member in a proximal region of the bore in a friction fit or interference fit to at least partially plug or block the said proximal region of the bore; and

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reducing an impact of a drill rod section striking the anchor member within the proximal region of the drilled bore.

16. A method according to claim 15, wherein the step of fixing the anchor member in the proximal region of the bore includes inserting an over-sized split tube into the proximal region of the bore, preferably by driving or forcing the split tube into the bore, in a friction fit or an interference fit.

17. A method according to claim 15 or 16, wherein the step of reducing an impact of a drill rod section striking the anchor member comprises gradual or extended transfer of an impact loading from the falling drill rod section to the anchor member.

18. A method according to claim 15 or 16, wherein the step of reducing an impact of a drill rod section striking the anchor member comprises:

arranging an impact reduction member within the proximal region of the bore above the anchor member.

19. A method according to claim 18, wherein the impact reduction member comprises a tapered portion for gradual or extended transfer of impact loading from the falling drill rod section to the anchor member.

ABSTRACT

The present invention provides a safety system (1) for protecting against a hazard of a drill rod failure in a drilled rock bore (B) above horizontal, and especially a hazard posed by a broken drill rod section (S) lodged within the bore (B). The safety system (1) comprises: a plug member (2) for insertion into a proximal region (E) of the bore (B), the plug member (2) being configured to be fixed in a friction fit or interference fit within the proximal region (E) of the bore (B); and an impact reduction member (5) for reducing an impact of the broken drill rod section (S) striking the plug member (2) within the proximal region (E) of the bore (B). The impact reduction member (5) is configured to be located within the proximal region (E) of the bore (B) and to extend within the bore (B) above the plug member (2).

(Fig. 3)

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SAFETY SYSTEM AND METHOD FOR PROTECTING AGAINST A HAZARD OF DRILL ROD FAILURE IN A DRILLED ROCK BORE

FIELD OF THE INVENTION

The present invention relates to a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially a hazard posed by a broken drill rod section lodged within a drilled rock bore. The invention also relates to a method of protecting against such a hazard of drill rod failure. Thus, it will be appreciated that the invention has particular application or use in the mining industry, although applications may also be contemplated in other fields, such as in the construction industry.

BACKGROUND OF THE INVENTION

In underground mine environments, a body or vein of ore will often be accessed by excavating cavities into the rock strata below the ore body or vein and then working towards the ore deposit from below. This technique is referred to in the mining field as "overhand stoping" and has become the predominant direction of mining with the advent of rock blasting and power drills. In particular, the technique commonly involves drilling multiple bores upwards from the cavity into the rock strata towards the ore deposit above. Explosive charges are then set in the bores to blast away the intervening rock and to access the ore deposit directly. Indeed, the bores and the explosive charges may extend into the ore deposit itself, which together with the intervening rock then collapses into the cavity below for removal.

A significant problem associated with this mining technique is associated with drill rod failure when drilling the multiple bores extending upwards into the rock strata towards the ore body. The individual bores drilled are often tens of metres long (for example, in the range of 20 to 60 metres) and the drill rods which extend over that length may only have a diameter of about 80 millimetres. As the composition and properties of the rock strata will typically vary through its depth, the drill rods are

subjected to varying and also somewhat unpredictable loading during the drilling of each bore. Perhaps not surprisingly, therefore, the failure or breakage of a drill rod is not uncommon when the multiple bores are being drilled to lay the explosive charges. This has the problem that a section of drill rod, which may, for example, be fifteen or twenty metres long with a mass in the range of 100 kg to 500 kg, is left lodged in the bore extending upwards from the cavity. It is therefore not difficult to imagine that the hazard posed to personnel and/or to equipment by such a massive broken drill rod section, which could unexpectedly drop out of the bore, is extreme.

In the event of such a drill rod failure in a bore extending above horizontal (where the risk of the broken drill rod section dropping out exists), occupational health and safety regulations in many countries require the affected bore to be covered and/or otherwise rendered safe before work in that particular area may continue. In the absence of a tailored solution to this problem to date, however, miners have had to improvise with very provisional and suboptimal measures. These have not only been extremely time-consuming, leading to long delays in the further progress of the mining, but the real safety provided by such provisional measures has at times also been questionable.

SUMMARY OF THE INVENTION

In view of the above, it is an object of the present invention to provide a new and improved safety system and an associated method for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially for protecting against the hazard of a broken drill rod section falling out of the bore into an excavated area.

According to one aspect, therefore, the present invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore above the horizontal, especially a hazard posed by a broken drill rod section within the bore, the safety system comprising:

an anchor member configured to be fixed in a friction fit or interference fit in a proximal ~~end~~ region of the drilled bore ~~adjacent a rock-face~~; and

an impact reduction member for reducing an impact of a drill rod section striking the anchor member in the proximal ~~end~~ region of the drilled bore, wherein the impact reduction member is configured to be located within the proximal ~~end~~ region of the bore and to extend within the bore above the anchor member.

Thus, the safety system of the invention is configured and arranged to be fixed at the proximal ~~end~~ region of the bore ~~adjacent the rock-face and~~ to absorb the force or impact of a broken drill rod section falling within the bore towards the opening in the rock-face. Further, the safety system desirably prevents such a broken drill rod section from falling out into the space or area in which the work is taking place. In this way, the safety system is able to protect the area in which workers and/or equipment may still be active in further mining operations from the hazard of a drill rod section falling from a drilled bore in which the drill rod has suffered a failure and broken or sheared off within the bore.

In an embodiment of the safety system, the anchor member is configured to plug into the drilled bore and at least partially block or obscure the bore. In this way, the anchor member may form a plug member which is configured and arranged to at least partially block or close a proximal ~~end~~ region of the bore against the hazard of the broken drill rod section falling out into the area in which workers and/or equipment may be active in further mining operations or other activities.

According to an embodiment, therefore, the invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore which extends above horizontal, especially a hazard posed by a broken drill rod section within the bore, the safety system comprising:

a plug member for insertion into a proximal ~~end~~ region of the drilled bore ~~adjacent or proximate a rock-face~~, the plug member being configured to be fixed in a friction fit or interference fit within the proximal ~~end~~ region of the bore; and

an impact reduction member for reducing an impact of the broken drill rod section striking the plug member in the proximal ~~end~~ region of the bore, wherein the impact reduction member is configured to be located within the proximal ~~end~~ region of the bore and to extend within the bore above the plug member.

In an embodiment of the safety system, the plug member is configured to be fixed in a friction fit or interference fit within the proximal ~~end~~ region of the drilled bore in a friction fit or interference fit. In this regard, the plug member may, for example, comprise a split tube having a longitudinal slit or gap and an outer diameter sized larger than an inner diameter of the drilled bore. The split tube is configured to be driven into the proximal ~~end~~ region of the drilled bore and the longitudinal slit or gap is thus configured to allow the outer diameter of the split tube (i.e. of the plug member) to be compressed or to reduce when the plug member is driven into the drilled bore of smaller diameter. In this way, the plug member comprising the split tube can be fixed in the proximal ~~end~~ region of the bore ~~adjacent the rock face~~ in a friction fit or an interference fit, in a manner similar to that known for a "split-set" type of rock anchor. The plug member is thereby configured to at least partially close or block the drilled bore. To assist insertion of the plug member into the proximal ~~end~~ region of the drilled bore, the plug member (split tube member) preferably has a front or leading end region of a reduced diameter smaller than an inner diameter of the drilled bore.

In an embodiment of the safety system, the impact reduction member comprises a tapered portion for a gradual or extended transfer of an impact loading imparted by a falling drill rod section to the plug member. In this regard, the impact reduction member is configured and arranged to be impacted or struck directly by the falling drill rod section, and the tapered portion is configured to allow movement of the impact reduction member relative to the plug member for gradual or extended transfer of the impact loading from the drill rod section to the plug member. By the gradual or extended transfer of the impact loading to the plug member, the impact force can be significantly reduced. In this regard, the stopping distance for a falling object (i.e. the distance travelled by the object after initial impact) has a profound

effect on the impact force imparted. Specifically, the larger the stopping distance, the lower the impact force by virtue of an inversely proportional relationship; i.e. by doubling the stopping distance, the impact force can effectively be halved. For this reason, the tapered portion of the impact reduction member is desirably configured and arranged to provide for movement of the falling drill rod section relative to the plug member for gradual or extended transfer of the impact loading from the drill rod section to the plug member.

In an embodiment of the system, the impact reduction member is configured for movement into an interior of the anchor member or the plug member when it is impacted or struck by the drill rod section.

In an alternative embodiment of the system, the tapered portion is configured and arranged to allow movement of the drill rod section relative to the impact reduction member. In this regard, the tapered portion of the impact reduction member may be fixed relative to the anchor member or the plug member.

In an embodiment, the safety system further comprises an adapter member which is configured for connection to a rock drilling apparatus for driving or inserting the safety system, especially the plug member and the impact reduction member, into the proximal ~~end~~ region of the drilled bore. In this way, the safety system may be designed to operate with the same equipment used for drilling the bores. This is particularly helpful because no new or additional equipment is required to deploy the safety system of the invention, resulting in minimal disruption and minimal time loss. Rather, the operator is able to continue working with the same equipment and use that equipment to secure the compromised bore with the broken drill rod section by introducing or inserting the safety system. The adapter member may, for example, be configured to cooperate with and/or to be received in a drill rod carousel of the rock drilling apparatus. This thereby enables the safety system to be placed in and held by the drill rod carousel and then be introduced or inserted (e.g. driven or forced) into the proximal ~~end~~ region of the bore by the rock drilling apparatus.

In an embodiment, the adapter member includes a collar against which the plug member seats such that the collar is configured to impart or transfer an axial force to the plug member to drive the plug member into the proximal ~~end~~ region of the drilled bore in a friction fit or interference fit. Preferably, the tapered portion of the impact reduction member is connected to, and optionally integrally formed with, the adapter member.

In an embodiment of the safety system, the impact reduction member comprises an impact dampening material which is introduced into the drilled bore above the anchor member or the plug member. In this way, the impact dampening material may serve to physically fill and block or obscure part of the proximal ~~end~~ region of the bore, and also to provide an impact dampening effect. The impact dampening material may, for example, comprise a polymer foam material which can preferably be introduced or injected into the drilled bore in a liquid or fluid form. The polymer foam then preferably solidifies within the bore and serves not only to physically fill and block or obscure part of the proximal ~~end~~ region of the bore, but also provides an impact dampening effect. The impact dampening material may also comprise sand or a similar material, for introduction or injection into the bore above the anchor member or the plug member.

According to another aspect, the present invention provides a method of protecting against a hazard of drill rod failure in a drilled rock bore which extends above horizontal, especially a hazard posed by a broken drill rod section in the bore, the method comprising:

fixing an anchor member in ~~or at~~ a proximal ~~end~~ region of the drilled bore in a friction fit or interference fit to at least partially plug or obscure the proximal ~~end~~ region of the bore ~~adjacent to or in the vicinity of a rock face~~; and

reducing an impact of a broken drill rod section striking the anchor member within the proximal ~~end~~ region of the bore.

In an embodiment of the inventive method, the step of fixing the anchor member in ~~or at~~ a proximal ~~end~~ region of the bore comprises inserting an over-sized split tube into the proximal ~~end~~ region of the bore, e.g. by driving or forcing the split tube into the bore~~, in a friction fit or an interference fit~~.

In an embodiment of the method, the step of reducing the impact of the broken drill rod section striking the anchor member comprises: arranging an impact reduction member within the proximal ~~end~~ region of the bore above the anchor member. Preferably, the impact reduction member comprises a tapered portion for gradual or extended transfer of the impact loading from the falling drill rod section to the anchor member.

BRIEF DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the invention and the advantages thereof, exemplary embodiments of the invention are explained in more detail in the following description with reference to the accompanying drawing figures, in which like reference signs designate like parts and in which:

Fig. 1 is a schematic cross-sectional view of an excavated cavity in a mine environment illustrating bores drilled in rock strata extending towards an ore deposit;

Fig. 2 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to an embodiment of the invention;

Fig. 3 is a schematic partial perspective view of the safety system of Fig. 2 shown in an installed state in a proximal ~~end~~ region of a bore;

Fig. 4 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to another embodiment of the invention; and

Fig. 5 is a flow diagram which schematically represents a method according to an embodiment of the invention.

The accompanying drawings are included to provide a further understanding of the present invention and are incorporated in and constitute a part of this specification. The drawings illustrate particular embodiments of the invention and together with the description serve to explain the principles of the invention. Other embodiments of the invention and many of the attendant advantages of the invention will be readily appreciated as they become better understood with reference to the following detailed description.

It will be appreciated that common and/or well understood elements that may be useful or necessary in a commercially feasible embodiment are not necessarily depicted in order to facilitate a more abstracted view of the embodiments. The elements of the drawings are not necessarily illustrated to scale relative to each other. It will also be understood that certain actions and/or steps in an embodiment of a method may be described or depicted in a particular order of occurrences while those skilled in the art will understand that such specificity with respect to sequence is not actually required.

DETAILED DESCRIPTION OF EMBODIMENTS

With reference firstly to Fig. 1 of the drawings, a cross-sectional view of a mine environment is illustrated schematically. An excavated cavity or chamber C of the mine is shown in a cross-section taken normal or transverse to a length of that cavity or chamber C into the page. The cavity C is essentially surrounded by rock strata R and an ore deposit O above the cavity C can also be seen. To access the ore deposit O, the cavity C is excavated into the rock strata R below that body or

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vein of ore O and then multiple bores B are drilled upwards from the cavity C into the rock strata R towards the ore deposit O above. In this way, explosive charges can be set in the bores B to blast away the intervening rock, which together with the ore deposit O then collapses into the cavity C below for collection and removal for processing.

When drilling the multiple bores B upwards into the rock strata R towards the ore body O, the individual bores drilled are often tens of metres long (e.g. in the range of 20 to 60 metres) and the drill rods (not shown) which extend over that length may have a diameter of about 80 millimetres. As the composition and properties of the rock strata R typically varies through its depth, and in any case in comparison to the composition and properties of the ore deposit O, the drill rods are subjected to varying and unpredictable loading during the drilling of each bore B. Failure or breakage of a drill rod is not uncommon when multiple bores B are being drilled to lay the explosive charges above the cavity C. Thus, a section S of drill rod, which may, for example, be 20 or 30 metres long with a mass in the range of 100 kg to 500 kg, may be left in the bore B extending above the cavity C presenting a major hazard to personnel and/or equipment in the cavity C, as this massive broken drill rod section S could unexpectedly fall out of the bore B.

With reference now to Figs. 2 and 3 of the drawings, a safety system 1 according to a preferred embodiment for protecting against just such a hazard posed by the broken drill rod section S in the drilled bore B is shown schematically. The safety system 1 comprises an anchor member 2, which is configured to be inserted and fixed in a proximal ~~end~~ region E of the bore B ~~adjacent or close to a rock-face F of the cavity C at which the drilling takes place~~. The anchor member 2 is provided in the form of a plug member which is configured to be driven into and fixed within the proximal ~~end~~ region E of the drilled bore B in a friction fit or interference fit. In this regard, the plug member 2 comprises a split tube 3 formed from a round steel tube or pipe having an outer diameter Do sized larger than an inner diameter Di of the bore B. For example, if the bore B has an inner diameter Di of 89 mm, the split tube 3 may have an outer diameter Do of about 100 mm and a wall thickness t of

about 6 mm to 9 mm, e.g. about 8 mm in this case. Furthermore, the split tube 3 has a longitudinally extending slit or gap G formed or cut in the wall (as seen in Fig. 3) which allows the outer diameter Do of the split tube 3 (i.e. plug member 2) to be compressed or to reduce when the plug member 2 is driven into the drilled bore B of smaller diameter Di. A front or leading end region 4 of the split tube 3 also has a reduced diameter Dr that is smaller than an inner diameter Di of the drilled bore B to assist the initial introduction or insertion of the plug member 2 into the proximal ~~end~~ region E of the bore B. In this way, the plug member 2 comprised of the split tube 3 can be fixed in the proximal ~~end~~ region E of the bore B ~~adjacent the rock face F~~ in a friction fit, in a manner similar to that known for a "split-set" type of rock anchor. As with the other dimensions of the split tube 3, the length Ls of the split tube 3 may be selected as appropriate to the rock-strata R, but it is preferably in the range of about 400 mm to 800 mm; e.g. 600 mm in this case.

The safety system 1 further comprises an impact reduction member 5 for reducing an impact of the broken drill rod section S in the event that it falls and strikes the anchor member or plug member 2 in the proximal ~~end~~ region E of the bore B. The impact reduction member 5 is also arranged in the proximal ~~end~~ region E of the bore B and extends within the bore B above the anchor or plug member 2. In this embodiment, the impact reduction member 5 comprises an elongate body 6 which is arranged centrally of the plug member 2 and which is configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. The elongate body 6 may be formed of steel (e.g. mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the elongate body 6 within the split tube 3 preferably has a substantially constant diameter Dc and a portion 8 of the elongate body 6 extending above the split tube 3 is tapered, i.e. an outer surface 9 of the elongate body 6 in the tapered portion 8 tapers outwardly at an angle α of about 1° to 3°; e.g. about 1° in this case. The length Lt of the tapered portion 8 may be selected as appropriate to the safety system, but this length is preferably in the range of about 200 mm to 400 mm; e.g. 290 mm in this case, with the tapered portion 8

tapering from a maximum diameter of about 80 mm at its distal end to a diameter of about 70 mm at the constant diameter portion 7 within the split tube 3.

In this embodiment, the impact reduction member 5 is configured for movement relative to the plug member 2 upon impact by the falling broken drill rod section S. That is, the body 6 of the impact reduction member 5 is configured for movement into an interior of the plug member 2 if impacted or struck by the drill rod section S. In this way, the outer surface 9 of the tapered portion 8 of the body 6 contacts and bears against an inner surface of the split tube 3. As an initial impact by the broken drill rod section S drives the elongate body 6 downwards into the split tube 3, the slight taper of the tapered portion 8 exerts an outward force on the split tube 3 and thus enhances or increases engagement between the bore B and the tube 3. The tapered portion 8 thereby acts to effect a gradual or extended transfer of impact loading from the broken drill rod section S to the plug member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is reduced significantly, such that the friction fit or interference fit of the anchor member or plug member 2 within the bore B can readily withstand the impact loading. In this way, the safety system 1 of this embodiment can effectively and reliably protect workers and/or equipment in the cavity C from the hazard of broken drill rod sections S falling from a bore B drilled above horizontal.

To facilitate deployment of the safety system 1 described above, the safety system 1 may include an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for introducing the plug member 2 and the impact reduction member 5, into the proximal ~~end~~ E of the bore B. The adapter member 10 may, for example, be configured to be received in a drill rod carousel of the rock drilling apparatus. This enables the safety system 1 to be placed in and held by the drill rod carousel and then introduced or inserted (e.g. hydraulically driven or forced) into the proximal ~~end~~ region E of the bore B by the rock drilling apparatus. To this end, the adapter 10 may include a head 11 configured for connection with the rock drilling apparatus. Furthermore, the adapter member 10 may be connected to, and

preferably integrally formed with, the body 6 of the impact reduction member 5. The adapter member 10 further includes a collar 12 which sits within and engages a corresponding groove or slot 13 in the adapter member 10. The split tube 3 of the plug member 2 seats against the collar 12, such that the collar 12 imparts an axial force to the plug member 2 to drive the plug member 2 (together with impact reduction member 5) into the proximal ~~end~~ E of the drilled bore B in a friction fit. As is apparent from Fig. 2, the collar 12 preferably has an outer diameter slightly less than the inner diameter Di of the bore B and a rear or trailing end region 14 of the split tube 3 which abuts and seats against the collar 12 is also swaged inwards to a reduced diameter Dr, i.e. like the front or leading end region 4. This configuration enables the anchor member 2 and the impact reduction member 5 of the safety system 1 to be driven into the drilled bore B beyond the rock face F. This may be particularly useful where the rock at the rock face F is friable or crumbling, because it enables the safety system 1 to be driven deeper into the bore B beyond the rock face F where it can be soundly founded in competent rock.

With reference now to drawing Fig. 4, another embodiment of a safety system 1 is shown and like parts are designated with like or corresponding reference signs compared with the embodiment of Figs. 2 and 3. In this embodiment, the safety system 1 again includes a plug type anchor member 2 comprising a split tube 3 having longitudinally extending slit or gap (not shown) and a front or leading end region 4 of reduced diameter Dr to assist driven or forced insertion into a proximal ~~end~~ region E of a bore B in an interference fit or a friction fit. The safety system 1 furthermore again includes an impact reduction member 5 comprising an elongate body 6 arranged within the plug member 2. The body 6 may again be formed of steel (e.g. mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the body 6 within the split tube 3 may have a substantially constant diameter Dc and a portion 8 of impact reduction member 5 which extends above the split tube 3 is tapered; that is, a surface 9 of the tapered portion 8 tapers at an angle α of about 3° to 8°; e.g. about 5° in this case, such that the tapered portion 8 forms an elongate wedge that tapers along its length Lt towards an inner periphery of the bore B.

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The impact reduction member 5 is again configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. Specifically, in this embodiment, the wedge surface 9 of the tapered portion 8 is configured and arranged to be impacted or struck directly by the broken drill rod section S. In this embodiment, however, the impact reduction member 5 is not configured for any significant movement relative to the plug member 2 upon impact by the falling broken drill rod section S. Rather, as the falling broken drill rod section S initially impacts or contacts the surface 9 of the tapered portion 8, the drill rod section S is gradually deflected towards and into contact with the opposite inner wall of the bore B. This contact generates friction which acts to brake the falling object and dissipate the impact. Again, therefore, the tapered portion 8 acts to cause gradual or extended transfer of impact loading from the drill rod section S to the anchor member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is again reduced significantly, such that the friction fit or interference fit of the anchor member 2 within the bore B can readily withstand the impact loading. The safety system 1 of this embodiment may thus also effectively and reliably protect workers and/or equipment in the cavity C from the hazard of a broken drill rod section S. As before, the safety system 1 of Fig. 4 includes an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for deploying the plug-like anchor member 2 and the impact reduction member 5 into the proximal ~~end~~ E of the bore B.

Finally, referring to Fig. 5 of the drawings, a flow diagram is shown that illustrates schematically the steps in a method of protecting against a hazard resulting from drill rod failure, particularly the hazard posed by a broken drill rod section S falling out of an upwardly drilled rock bore B, according to the embodiments of the invention described above with respect to Figs. 1 to 4. In this regard, the first box i of Fig. 5 represents the step of providing a safety system 1 according to any one of the embodiments of the invention described above. The second box ii then

represents the step of fixing an anchor member 2 of the safety system 1 within the proximal ~~end~~ region E of the bore B in a friction fit or interference fit to at least partially plug or block the proximal ~~end~~ region E of the bore B ~~adjacent or near an outer rock face F~~. The third box iii represents the step of arranging an impact reduction member 5 within the proximal ~~end~~ region E of the bore B above the anchor member 2. In this regard, it will be appreciated by persons skilled in the art that steps represented by boxes ii and iii in Fig. 5 may occur simultaneously or in reverse order. The final box iv in Fig. 5 of the drawings represents the step of reducing an impact of a drill rod section S striking the plug member 2 within the proximal ~~end~~ region E of the drilled bore B via the impact reduction member 5.

Although specific embodiments of the invention are illustrated and described herein, it will be appreciated by those of ordinary skill in the art that a variety of alternative and/or equivalent implementations exist. It should be appreciated that the exemplary embodiment or exemplary embodiments are examples only and are not intended to limit the scope, applicability, or configuration in any way. Rather, the foregoing summary and detailed description will provide those skilled in the art with a convenient road map for implementing at least one exemplary embodiment, it being understood that various changes may be made in the function and arrangement of elements described in an exemplary embodiment without departing from the scope as set forth in the appended claims and their legal equivalents. Generally, this application is intended to cover any adaptations or variations of the specific embodiments discussed herein. By way of example, a skilled person will readily appreciate that the safety system of the invention is not limited to being made from any specific material described in the embodiments. Rather, the skilled person will appreciate that a range of suitable materials may exist, and the skilled person can select a material based upon the known mechanical properties of that material which may make it suitable for use in this invention.

It will also be appreciated that in this document the terms "comprise", "comprising", "include", "including", "contain", "containing", "have", "having", and any variations thereof, are intended to be understood in an inclusive (i.e. non-exclusive) sense,

such that the process, method, device, apparatus or system described herein is not limited to those features or parts or elements or steps recited but may include other elements, features, parts or steps not expressly listed or inherent to such process, method, device, apparatus or system. Furthermore, the terms "a" and "an" used herein are intended to be understood as meaning one or more unless explicitly stated otherwise. Moreover, the terms "first", "second", "third", etc. are used merely as labels, and are not intended to impose numerical requirements on or to establish a certain ranking of importance of their objects.

List of reference signs

1	safety system
2	anchor member or plug member
3	split tube
4	front or leading end region of split tube
5	impact reduction member
6	elongate body
7	constant diameter portion of elongate body
8	tapered portion
9	outer surface of tapered portion
10	adapter member
11	head of adapter member
12	collar
13	groove or slot
14	rear or trailing end region of split tube
C	cavity or chamber
R	rock strata
O	ore deposit or ore body
F	rock-face
B	bore
S	broken drill rod section
E	proximal ~~end~~ region of bore
t	wall thickness of split tube
G	longitudinal slit or gap
Di	inner diameter of bore
Do	outer diameter of split tube
Dr	reduced diameter of leading and/or trailing end region of split tube
Ls	length of split tube
Lt	length of tapered portion
α	taper angle

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CLAIMS:

1. A safety system for protecting against a hazard of a drill rod failure in a drilled rock bore above horizontal, and especially a hazard posed by a broken drill rod section within the bore, comprising:

an anchor member configured to be fixed in a friction fit or interference fit in a proximal ~~end~~ region of the bore ~~adjacent to a rock-face~~; and

an impact reduction member for reducing an impact of the drill rod section striking the anchor member in the proximal ~~end~~ region of the bore, wherein the impact reduction member is configured to be located in the proximal ~~end~~ region of the drilled bore and to extend within the bore above the anchor member.

2. A safety system according to claim 1, wherein the anchor member is configured to fit or plug into the drilled bore and to at least partially block or obscure the drilled bore, whereby the anchor member comprises or forms a plug member.

3. A safety system for protecting against a hazard of a drill rod failure in a drilled rock bore above horizontal, and especially a hazard posed by a broken drill rod section lodged within the bore, the safety system comprising:

a plug member for insertion into a proximal ~~end~~ region of the bore ~~adjacent a rock-face~~, the plug member being configured to be fixed in a friction fit or interference fit within the proximal ~~end~~ region of the bore; and

an impact reduction member for reducing an impact of the drill rod section striking the plug member within the proximal ~~end~~ region of the bore, wherein the impact reduction member is configured to be located within the proximal ~~end~~ region of the bore and to extend within the bore above the plug member.

4. ~~A safety system according to any of claims 1 to 3, wherein the anchor member or plug member is configured to be fixed within the proximal end~~

~~region of the bore in a friction fit or an interference fit.~~ This claim has been deleted.

5. A safety system according to claim 3~~ or 4~~, wherein the anchor member or plug member comprises a split tube having a longitudinal slit or gap and an outer diameter larger than an inner diameter of the drilled bore, wherein the anchor or plug member is configured to be driven into the proximal ~~end~~ region of the bore and wherein the longitudinal slit or gap is configured to allow the outer diameter of the split tube to reduce or to be compressed when the anchor member or plug member is driven into the bore.

6. A safety system according to claim 5, wherein the plug member has a front or leading end region of a reduced diameter which is smaller than an inner diameter of the drilled bore for assisting introduction or insertion of the plug member into the proximal ~~end~~ region of the bore.

7. A safety system according to any one of claims 1 to ~~6~~3, 5 or 6, wherein the impact reduction member comprises a tapered portion for a gradual or extended transfer of an impact loading imparted by a drill rod section to the anchor member or plug member.

8. A safety system according to claim 7, wherein the impact reduction member is configured and arranged to be impacted or struck directly by the drill rod section, and wherein the tapered portion is configured to allow movement of the impact reduction member relative to the anchor member or plug member for gradual or extended transfer of the impact loading from the drill rod section to the anchor or plug member.

9. A safety system according to claim 8, wherein the impact reduction member is configured for movement into an interior of the anchor or plug member when impacted or struck by the drill rod section.

10. A safety system according to claim 7, wherein the impact reduction member is configured and arranged to be impacted or struck directly by the drill rod section, and wherein the tapered portion is configured and arranged to provide movement of the drill rod section relative to the anchor member or plug member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member.

11. A safety system according to claim 7 or claim 10, wherein the tapered portion is configured to allow movement of the drill rod section relative to the impact reduction member, and/or wherein the tapered portion is fixed relative to the anchor member or plug member.

12. A safety system according to any one of claims 1 to 3 or 5 to 10~~11~~, comprising an adapter member configured for connection to a rock drilling apparatus for driving the safety system, and especially the anchor member or plug member and the impact reduction member, into the proximal ~~end~~ region of the bore.

13. A safety system according to claim 12, wherein adapter member includes a collar against which the plug member seats such that the collar is configured to impart an axial force to the plug member to drive the plug member into the proximal region ~~end~~ of the drilled bore. ~~in a friction fit or an interference fit.~~

14. A safety system according to claim 12 or 13, wherein the tapered portion of the impact reduction member is connected to, preferably integrally formed with, the adapter member.

15. A method of protecting against a hazard of drill rod failure in a drilled rock bore above horizontal, especially a hazard posed by a broken drill rod section within the bore, comprising:

fixing an anchor member ~~at or~~ in a proximal ~~end~~ region of the bore in a friction fit or interference fit to at least partially plug or block the said proximal ~~end~~ region of the bore ~~adjacent or near a rock face~~; and

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reducing an impact of a drill rod section striking the anchor member within the proximal ~~end~~ region of the drilled bore.

16. A method according to claim 15, wherein the step of fixing the anchor member ~~at or~~ in the proximal ~~end~~ region of the bore includes inserting an over-sized split tube into the proximal ~~end~~ region of the bore, preferably by driving or forcing the split tube into the bore, in a friction fit or an interference fit.

17. A method according to claim 15 or 16, wherein the step of reducing an impact of a drill rod section striking the anchor member comprises gradual or extended transfer of an impact loading from the falling drill rod section to the anchor member.

18. A method according to claim 15 or 16, wherein the step of reducing an impact of a drill rod section striking the anchor member comprises:

arranging an impact reduction member within the proximal ~~end~~ region of the bore above the anchor member.

19. A method according to claim 18, wherein the impact reduction member comprises a tapered portion for gradual or extended transfer of impact loading from the falling drill rod section to the anchor member.

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ABSTRACT

The present invention provides a safety system (1) for protecting against a hazard of a drill rod failure in a drilled rock bore (B) above horizontal, and especially a hazard posed by a broken drill rod section (S) lodged within the bore (B). The safety system (1) comprises: a plug member (2) for insertion into a proximal ~~end~~ region (E) of the bore (B) ~~adjacent a rock face (F)~~, the plug member (2) being configured to be fixed in a friction fit or interference fit within the proximal ~~end~~ region (E) of the bore (B); and an impact reduction member (5) for reducing an impact of the broken drill rod section (S) striking the plug member (2) within the proximal ~~end~~ region (E) of the bore (B). The impact reduction member (5) is configured to be located within the proximal ~~end~~ region (E) of the bore (B) and to extend within the bore (B) above the plug member (2).

(Fig. 3~~2~~)

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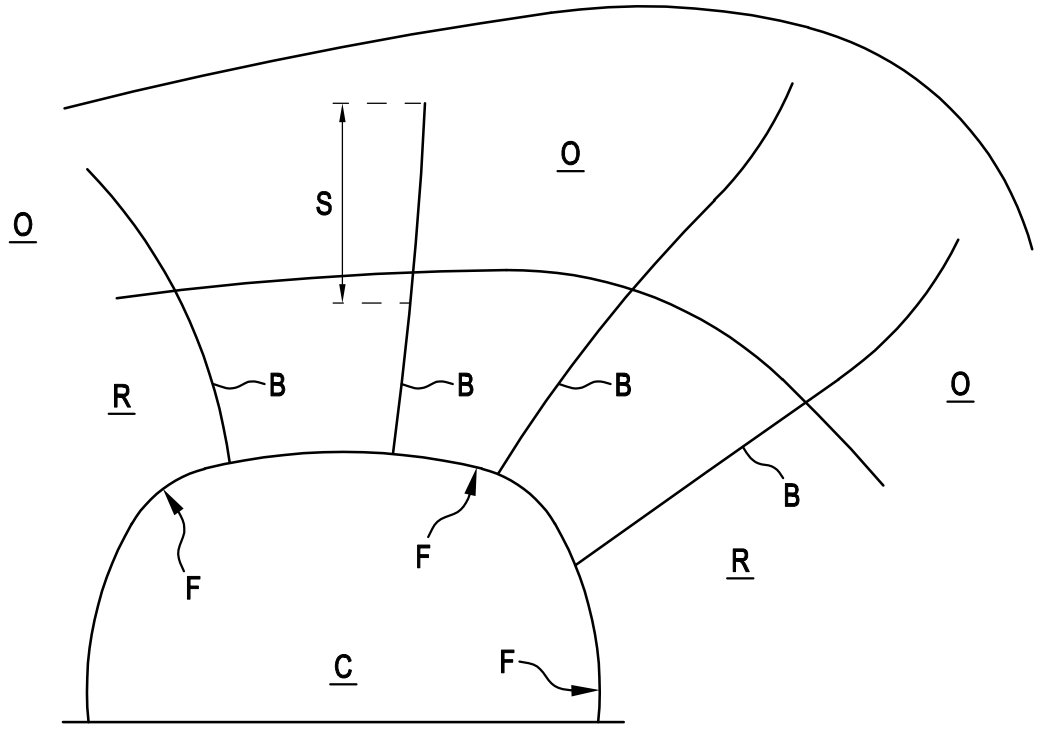

FIG. 1

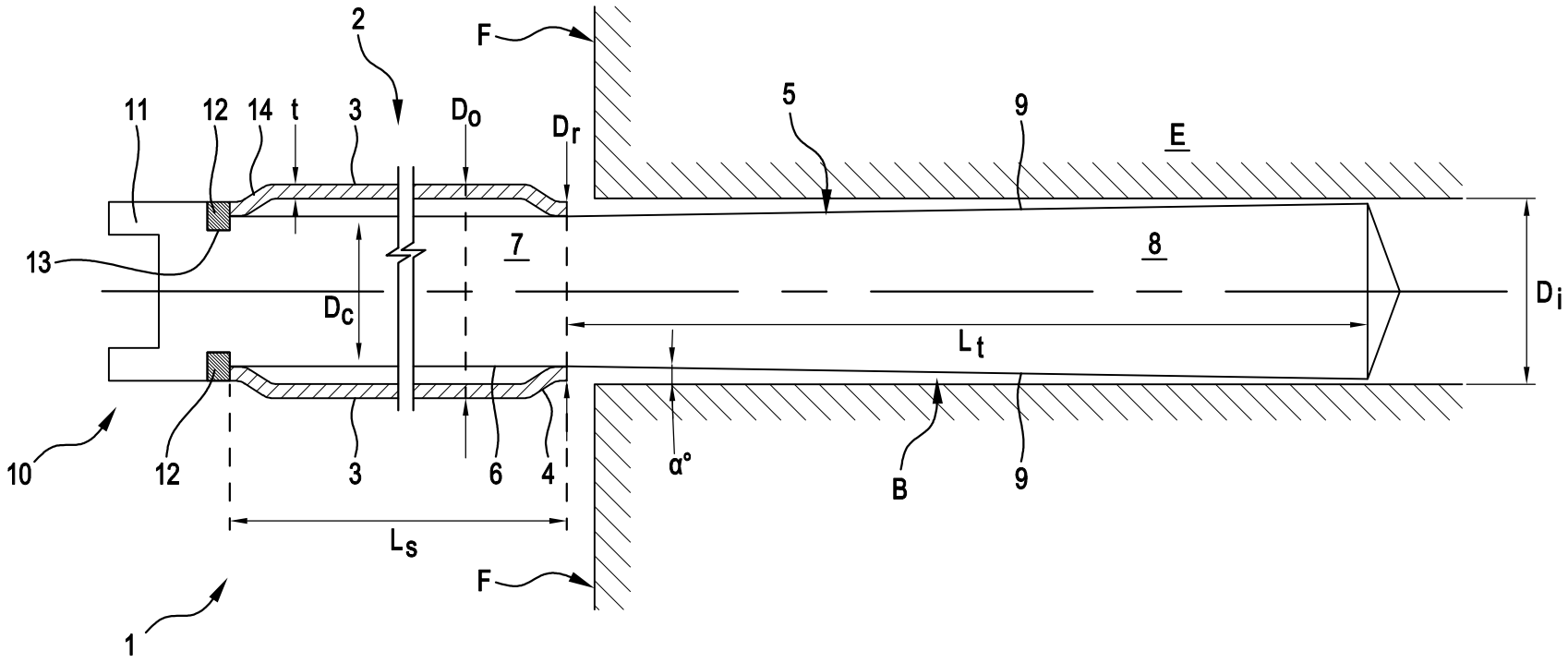

FIG. 2

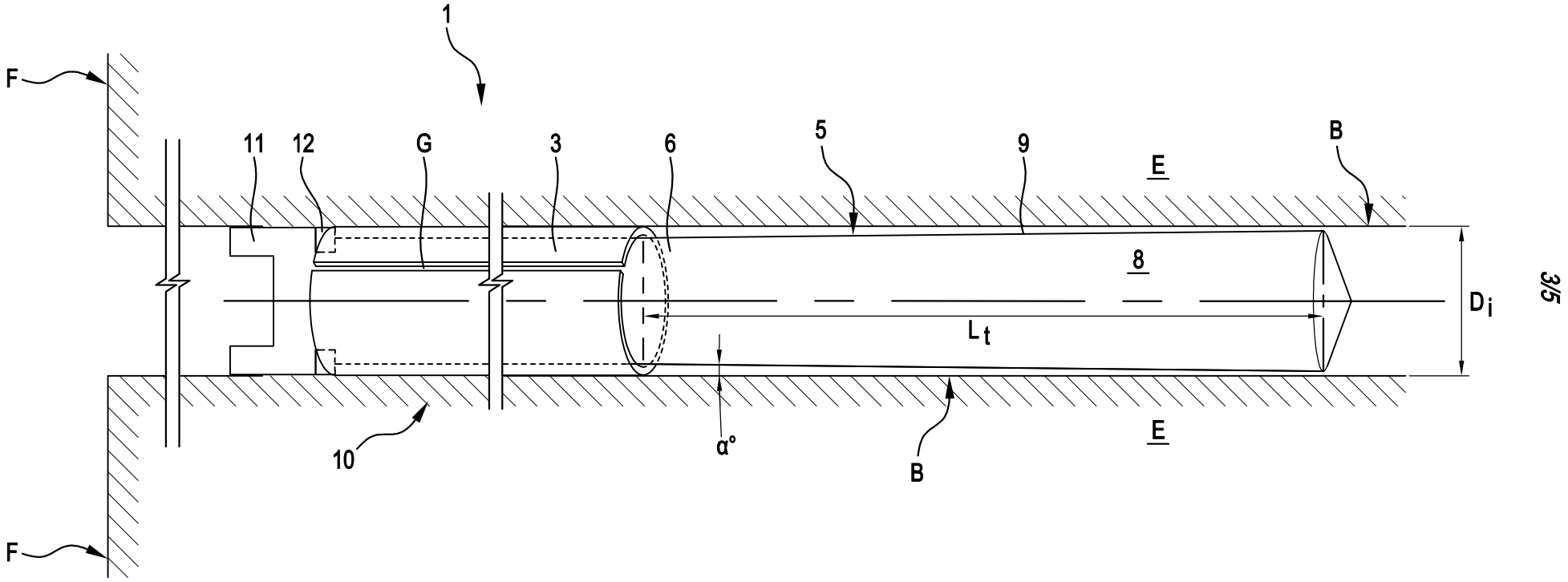

FIG. 3

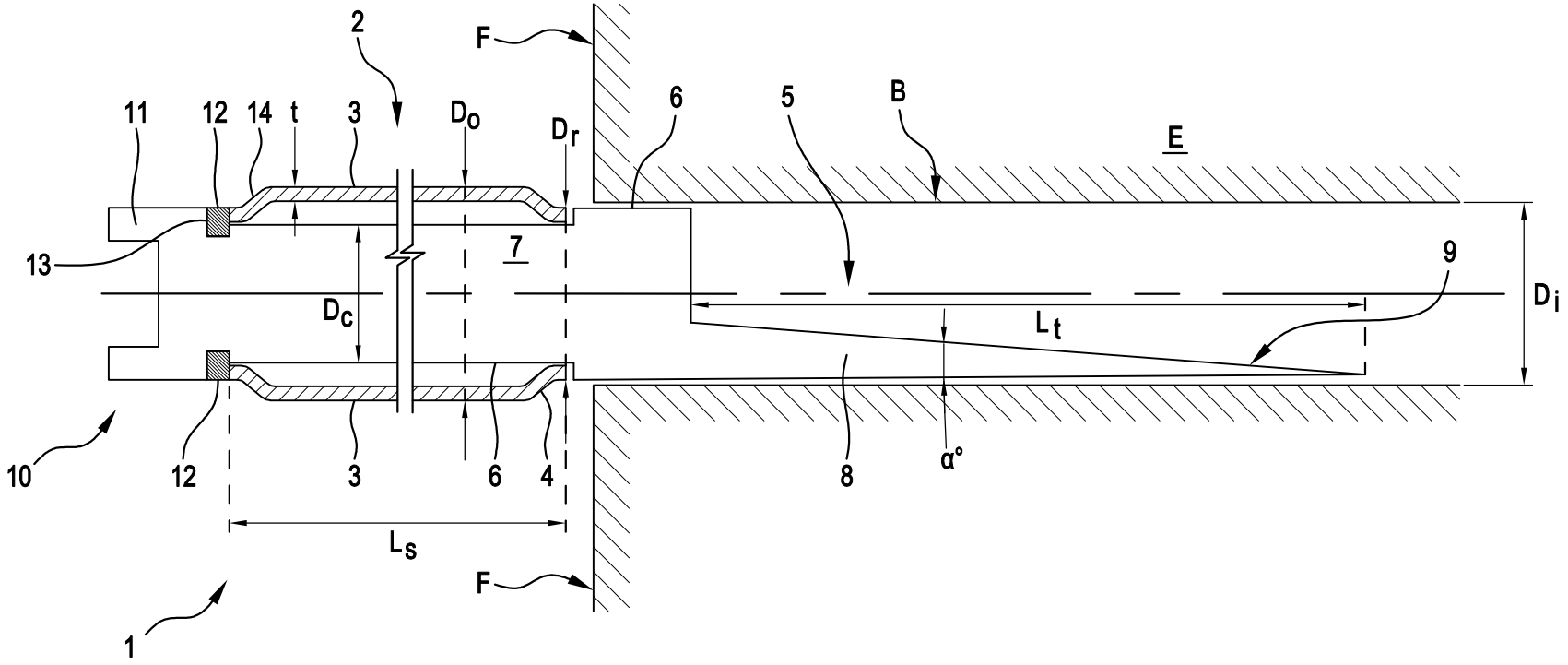

FIG. 4

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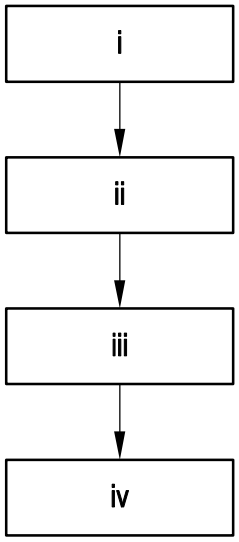

FIG. 5

SECTION 105(1) PATENTS ACT 1990 (CTH)
Advertisement for publication in Official Journal

Patent Matter Details

Australian Patent No. 2021200376 in the name of Kutti Bay Investments Pty Ltd (formerly Jusand Nominees Pty Ltd) entitled "Safety System and Method For Protecting Against a Hazard of Drill Rod Failure in a Drilled Rock Bore".

Identity of Court Proceeding

Federal Court Proceeding No. VID 1372 of 2024 – Kutti Bay Investments Pty Ltd v Rattlejack Innovations Pty Ltd and others.

Particulars of Proposed Amendments

The particulars of the amendments sought are shown in the attached documents (in clean and marked up forms) and are as follows:

(i) to delete Description pages 1 – 14 currently on file and replace with new Description pages 1 – 14 as attached;

(ii) to delete Claim page 15 currently on file and replace with new Claim page 15 as attached;

(iii) to delete the Abstract currently on file and replace with new Abstract as attached; and

(iv) to delete Figure pages 1/4 – 4/4 currently on file and replace with new Figure pages 1/4 – 4/4 as attached.

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Opposition

Any person intending to oppose the application who is not a party to the proceeding must, within 28 days after publication of this advertisement, give written notice of that intention to:

(i) the Commissioner; and

(ii) each party to the proceeding at the above addresses for service.

SAFETY SYSTEM AND METHOD FOR PROTECTING AGAINST A HAZARD OF DRILL ROD FAILURE IN A DRILLED ROCK BORE

FIELD OF THE INVENTION

[0001] The present invention relates to a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially a hazard posed by a drill rod section lodged within a drilled rock bore. The invention also relates to a method of protecting against such a hazard of drill rod failure. Thus, it will be appreciated that the invention has particular application or use in the mining industry, although applications may also be contemplated in other fields, such as in the construction industry.

BACKGROUND OF THE INVENTION

[0002] In underground mine environments, a body or vein of ore will often be accessed by excavating cavities or working chamber (hereinafter cavity) into the rock strata below the ore body or vein and then working towards the ore deposit from below. This technique is referred to in the mining field as "overhand stoping" and has become the predominant direction of mining with the advent of rock blasting and power drills. In particular, the technique commonly involves drilling multiple bores upwards from the cavity into the rock strata towards the ore deposit above. Explosive charges are then set in the bores to blast away the intervening rock and to access the ore deposit directly. Indeed, the bores and the explosive charges may extend into the ore deposit itself, which together with the intervening rock then collapses into the cavity below for removal.

[0003] A significant problem associated with this mining technique is associated with drill rod failure when drilling the multiple bores extending upwards into the rock strata towards the ore body. The individual bores drilled are often tens of metres long (for example, in the range of 20 to 60 metres) and the drill rods which extend over that length may only have a diameter of about 80 millimetres. As the composition and properties of the rock strata will typically vary through its depth, the

drill rods are subjected to varying and also somewhat unpredictable loading during the drilling of each bore. Perhaps not surprisingly, therefore, the failure or breakage of a drill rod is not uncommon when the multiple bores are being drilled to lay the explosive charges. This has the problem that a section of drill rod, which may, for example, be fifteen or twenty metres long with a mass in the range of 100 kg to 500 kg, can be left lodged in the bore extending upwards from the cavity. The pressure produced by the rock strata can alter either naturally, or as a result of further drilling of adjacent holes. This can result in the drill rod dislodging and falling though the proximal region of the bore hole below the drill rod into the cavity . It is therefore not difficult to imagine that the hazard posed to personnel and/or to equipment by such a massive broken drill rod section, which could unexpectedly drop out of the bore, is extreme.

[0004] In the event of such a drill rod failure in a bore extending above horizontal (where the risk of the drill rod section dropping out exists), occupational health and safety regulations in many countries require the affected bore to be covered and/or otherwise rendered safe before work in that particular area may continue. In the absence of a tailored solution to this problem to date, however, miners have had to improvise with very provisional and suboptimal measures. These have not only been extremely time-consuming, leading to long delays in the further progress of the mining, but the real safety provided by such provisional measures has at times also been questionable.

SUMMARY OF THE INVENTION

[0005] In view of the above, it would be desirable to provide a new and improved safety system and an associated method for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially for protecting against the hazard of a drill rod section falling out of the bore into an excavated cavity area.

[0006] According to an aspect of the invention, there is provided a safety system for protecting against a hazard posed by a drill rod section as a result of drill rod failure in a drilled rock bore above horizontal, the safety system comprising:

an anchor member configured to enable the safety system to be fixed within the proximal region of the bore below the drill rod section, by fixing the anchor member in the proximal region of the bore in a friction fit or interference fit;

an impact reduction member for reducing an impact of the drill rod section on the anchor member when fixed in the bore, wherein the impact reduction member is configured to extend above the anchor member within the proximal region of the bore; and

an adaptor member configured for connection to a drilling apparatus to enable the safety system to be driven into the bore using the drilling apparatus, further wherein, the adaptor is configured to have a diameter less than the diameter of the bore to enable the safety system to be driven into the proximal region of the bore beyond the rock face.

[0007] Thus, the safety system desirably prevents such a drill rod section from falling out into the space or area in which the work is taking place. In this way, the safety system is able to protect the area in which workers and/or equipment may still be active in further mining operations from the hazard of a drill rod section falling from a drilled bore in which the drill rod has suffered a failure and broken or sheared off within the bore. The safety system of the invention is configured to enable the safety system to be driven deep into proximal region of the bore beyond the rock face. This may be particularly useful where the rock at the rock face is friable or crumbling, because the safety system may be driven deeply into the proximal region of the bore beyond the rock face where it can be soundly founded in competent rock.

[0008] The safety system is further desirably configured for connection with a rock drilling apparatus for driving the safety system, particularly the anchor member and the impact reduction member, into the bore for deploying the safety system in the bore past the rock face. That is, the safety system is configured to be

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deployed with a rock drilling apparatus for driving the anchor member and the impact reduction member into the bore past the rock face. In this way, the safety system is designed to operate with the same equipment used for drilling the bores. This is particularly helpful as no new or additional equipment is required to deploy the safety system, resulting in minimal disruption and minimal time loss. Rather, the operator is able to continue working with the same equipment and use that equipment to secure the compromised bore with the broken drill rod section by introducing or inserting the safety system. To this end, the safety system comprises an adapter member configured for connection to a rock drilling apparatus for driving or inserting the safety system, and especially the anchor member and the impact reduction member, deep into the drilled bore. The adapter member may, according to certain embodiments, be configured to cooperate with and/or to be received in a drill rod carousel of the rock drilling apparatus and/or be configured to connect directly to a drill rod for driving deep into the bore. This thereby enables the safety system to be placed in and held by the drill rod carousel and then be introduced or inserted (e.g. driven or forced) into the proximal region of the bore below the lodged drill rod by the rock drilling apparatus.

[0009] In an embodiment, the impact reduction member is configured to be impacted directly by the drill rod section. In this way, the impact reduction member may shield the anchor member from the full impact of a falling drill rod section and according to certain embodiments enable the anchor member to avoid being directly impacted by the falling drill rod section. This may in turn prevent or otherwise reduces the likelihood of the anchor member becoming dislodged by the falling drill rod member.

[0010] In an embodiment of the safety system, the impact reduction member comprises a tapered portion for effecting a gradual or extended transfer of an impact loading imparted by a falling drill rod section to the anchor member or plug member. In this regard, the impact reduction member is configured and arranged to be impacted or struck directly by the falling drill rod section, and the tapered portion is configured to allow movement of the drill rod section relative to the anchor member or plug member for effecting the gradual or extended transfer of the impact loading

from the drill rod section to the anchor member or plug member. By the gradual or extended transfer of the impact loading to the anchor member or plug member, the impact force can be significantly reduced. In this regard, the stopping distance for a falling object (i.e. the distance travelled by the object after initial impact) has a profound effect on the impact force imparted. Specifically, the larger the stopping distance, the lower the impact force by virtue of an inversely proportional relationship, i.e. by doubling the stopping distance, the impact force can effectively be halved. For this reason, the tapered portion of the impact reduction member is desirably configured and arranged to provide for movement of the falling drill rod section relative to the anchor member or plug member for the gradual or extended transfer of the impact loading from the drill rod section to the anchor or plug member.

[0011] [Intentionally Blank]

[0012] In an embodiment, the adaptor member is integrally formed with the impact reduction member. According to further embodiments, the adapter member may include a collar against which the anchor member or plug member seats such that the collar is configured to impart or transfer an axial force to the anchor or plug member to drive the anchor member into the drilled bore in a friction fit or interference fit. According to still further embodiments in which the impact reduction member comprises a tapered portion, the adapter member may be integrally formed with the tapered portion.

[0013] According to a further aspect, the present invention provides a method of protecting against a hazard posed by a drill rod section as a result of drill rod failure in a drilled rock bore above horizontal, the method comprising introducing a safety system into the bore in response to drill rod failure, the safety system comprising:

an anchor member configured to enable the safety system to be fixed in a friction fit or interference fit within a proximal region of the bore below the drill rod section;

an impact reduction member for reducing an impact of the drill rod section on the anchor member when fixed in the bore, wherein the impact reduction member

is configured to extend above the anchor member within the proximal region of the bore; and

an adaptor member configured for connection to a drilling apparatus to enable the safety system to be driven into the bore using the drilling apparatus, further wherein, the adaptor is configured to have a diameter less than the diameter of the bore to enable the safety system to be driven into the bore beyond the rock face.

[0014] In an embodiment of the method, the step of introducing the safety system comprises driving the anchor member and the impact reduction member into the bore together using a rock drilling apparatus.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] For a more complete understanding of the invention and the advantages thereof, exemplary embodiments of the invention are explained in more detail in the following description with reference to the accompanying drawing figures, in which like reference signs designate like parts and in which:

Fig. 1 is a schematic cross-sectional view of an excavated cavity in a mine environment illustrating bores drilled in rock strata extending towards an ore deposit;

Fig. 2 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to an embodiment of the invention;

Fig. 3 is a schematic partial perspective view of the safety system of Fig. 2 shown in an installed state within the proximal region of a bore; and

Fig. 4 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to another embodiment of the invention.

[0016] The accompanying drawings are included to provide a further understanding of the present invention and are incorporated in and constitute a part of this specification. The drawings illustrate particular embodiments of the invention and together with the description serve to explain the principles of the invention. Other embodiments of the invention and many of the attendant advantages of the invention will be readily appreciated as they become better understood with reference to the following detailed description.

[0017] It will be appreciated that common and/or well understood elements that may be useful or necessary in a commercially feasible embodiment are not necessarily depicted in order to facilitate a more abstracted view of the embodiments. The elements of the drawings are not necessarily illustrated to scale relative to each other. It will also be understood that certain actions and/or steps in an embodiment of a method may be described or depicted in a particular order of occurrences while those skilled in the art will understand that such specificity with respect to sequence may not necessarily be required.

DETAILED DESCRIPTION OF EMBODIMENTS

[0018] With reference firstly to Fig. 1 of the drawings, a cross-sectional view of a mine environment is illustrated schematically. An excavated cavity or chamber C of the mine is shown in a cross-section taken normal or transverse to a length of that cavity or chamber C into the page. The cavity C is essentially surrounded by rock strata R and an ore deposit O above the cavity C can also be seen. To access the ore deposit O, the cavity C is excavated into the rock strata R below that body or vein of ore O and then multiple bores B are drilled upwards from the cavity C into the rock strata R towards the ore deposit O above. In this way, explosive charges can be set in the bores B to blast away the intervening rock, which together with the ore deposit O then collapses into the cavity C below for collection and removal for processing.

[0019] When drilling the multiple bores B upwards into the rock strata R towards the ore body O, the individual bores drilled are often tens of metres long (e.g. in the range of 20 to 60 metres) and the drill rods (not shown) which extend over that length may have a diameter of about 80 millimetres. As the composition and properties of the rock strata R typically varies through its depth, and in any case in comparison to the composition and properties of the ore deposit O, the drill rods are subjected to varying and unpredictable loading during the drilling of each bore B. Failure or breakage of a drill rod is not uncommon when multiple bores B are being drilled to lay the explosive charges above the cavity C. Thus, a section S of drill rod, which may, for example, be 20 or 30 metres long with a mass in the range of 100 kg to 500 kg, may be left in the bore B extending above the cavity C presenting a major hazard to personnel and/or equipment in the cavity C, as this massive broken drill rod section S could unexpectedly fall out of the bore B.

[0020] With reference now to Figs. 2 and 3 of the drawings, a safety system 1 according to a preferred embodiment for protecting against just such a hazard posed by the broken drill rod section S in the drilled bore B is shown schematically. The safety system 1 comprises an anchor member 2, which is configured to be inserted and fixed in a proximal region E of the bore B existing below the drill rod section. The anchor member 2 is provided in the form of a plug member which is configured to be driven into and fixed within the proximal region E of the drilled bore B existing below the drill rod section S in a friction fit or interference fit. In this regard, the plug member 2 may comprise a split tube 3 formed from a round steel tube or pipe having an outer diameter Do sized larger than an inner diameter Di of the bore B. For example, if the bore B has an inner diameter Di of 89 mm, the split tube 3 may have an outer diameter Do of about 100 mm and a wall thickness t of about 6 mm to 9 mm, e.g. about 8 mm in this case. Furthermore, the split tube 3 has a longitudinally extending slit or gap G formed or cut in the wall (as seen in Fig. 3) which allows the outer diameter Do of the split tube 3 (i.e. plug member 2) to be compressed or to reduce when the plug member 2 is driven into the drilled bore B of smaller diameter Di. A front or leading end region 4 of the split tube 3 also has a reduced diameter Dr that is smaller than an inner diameter Di of the drilled bore B to assist the initial introduction or insertion of the plug member 2

into the proximal region E bore B existing below the drill rod section S. In this way, the plug member 2 comprised of the split tube 3 can be fixed in a friction fit or interference fit in the proximal region E of the bore B below the drill rod section in a manner similar to that known for a "split-set" type of rock anchor. As with the other dimensions of the split tube 3, the length Ls of the split tube 3 may be selected as appropriate to the rock-strata R, but it is preferably in the range of about 400 mm to 800 mm; e.g. 600 mm in this case.

[0021] The safety system 1 further comprises an impact reduction member 5 for reducing an impact of the broken drill rod section S in the event that it falls and strikes the anchor member or plug member 2 located in the proximal region E of the bore B below the drill rod section S. The impact reduction member 5 extends within the bore B above the anchor or plug member 2 and within the proximal region E of the bore B and. In the embodiment shown, the impact reduction member 5 comprises an elongate body 6 which is arranged centrally of the plug member 2 and which is configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. The elongate body 6 may be formed of steel (e.g. mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the elongate body 6 within the split tube 3 preferably has a substantially constant diameter Dc and a portion 8 of the elongate body 6 extending above the split tube 3 is tapered, i.e. an outer surface 9 of the elongate body 6 in the tapered portion 8 tapers outwardly at an angle α of about 1° to 3°, e.g. about 1° in this case. The length Lt of the tapered portion 8 may be selected as appropriate to the safety system, but this length is preferably in the range of about 200 mm to 400 mm; e.g. 290 mm in this case, with the tapered portion 8 tapering from a maximum diameter of about 80 mm at its distal end to a diameter of about 70 mm at the constant diameter portion 7 within the split tube 3.

[0022] In this embodiment, the impact reduction member 5 is configured for movement relative to the plug member 2 upon impact by the falling broken drill rod section S. That is, the body 6 of the impact reduction member 5 is configured for movement into an interior of the plug member 2 if impacted or struck by the drill rod

section S. In this way, the outer surface 9 of the tapered portion 8 of the body 6 contacts and bears against an inner surface of the split tube 3. As an initial impact by the broken drill rod section S drives the elongate body 6 downwards into the split tube 3, the slight taper of the tapered portion 8 exerts an outward force on the split tube 3 and thus enhances or increases engagement between the bore B and the tube 3. The tapered portion 8 thereby acts to effect a gradual or extended transfer of impact loading from the broken drill rod section S to the plug member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is reduced significantly, such that the friction fit or interference fit of the anchor member or plug member 2 within the bore B can readily withstand the impact loading. In this way, the safety system 1 of this embodiment can effectively and reliably protect workers and/or equipment in the cavity C from the hazard of broken drill rod sections S falling from a bore B drilled above horizontal.

[0023] To facilitate deployment of the safety system 1 described above, the safety system 1 includes an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for introducing the plug member 2 and the impact reduction member 5, into the proximal region E of the bore B. The adapter member 10 may, for example, be configured to be received in a drill rod carousel of the rock drilling apparatus. This enables the safety system 1 to be placed in and held by the drill rod carousel and then introduced or inserted (e.g. hydraulically driven or forced) into the proximal region E of the bore B by the rock drilling apparatus. To this end, the adapter 10 may include a head 11 configured for connection with the rock drilling apparatus. Furthermore, the adapter member 10 may be connected to, and preferably integrally formed with, the body 6 of the impact reduction member 5. The adapter member 10 further includes a collar 12 which sits within and engages a corresponding groove or slot 13 in the adapter member 10. The split tube 3 of the plug member 2 seats against the collar 12, such that the collar 12 imparts an axial force to the plug member 2 to drive the plug member 2 (together with impact reduction member 5) into the drilled bore B in a friction fit. As is apparent from Fig. 2, the collar 12 preferably has an outer diameter slightly less than the inner diameter

Di of the bore B and a rear or trailing end region 14 of the split tube 3 which abuts and seats against the collar 12 is also swaged inwards to a reduced diameter Dr, i.e. like the front or leading end region 4. This configuration enables the anchor member 2 and the impact reduction member 5 of the safety system 1 to be driven deep into the drilled bore B beyond the rock face F. This may be particularly useful where the rock at the rock face F is friable or crumbling, because it enables the safety system 1 to be driven deeper into the bore B beyond the rock face F where it can be soundly founded in competent rock.

[0024] With reference now to drawing Fig. 4, another embodiment of a safety system 1 is shown and like parts are designated with like or corresponding reference signs compared with the embodiment of Figs. 2 and 3. In this embodiment, the safety system 1 again includes a plug type anchor member 2 comprising a split tube 3 having longitudinally extending slit or gap (not shown) and a front or leading end region 4 of reduced diameter Dr to assist driven or forced insertion into a bore B in an interference fit or a friction fit. The safety system 1 furthermore again includes an impact reduction member 5 comprising an elongate body 6 arranged within the plug member 2. The body 6 may again be formed of steel (e.g. mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the body 6 within the split tube 3 may have a substantially constant diameter Dc and a portion 8 of impact reduction member 5 which extends above the split tube 3 is tapered; that is, a surface 9 of the tapered portion 8 tapers at an angle α of about 3° to 8°, e.g. about 5° in this case, such that the tapered portion 8 forms an elongate wedge that tapers along its length Lt towards an inner periphery of the bore B.

[0025] The impact reduction member 5 is again configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. Specifically, in this embodiment, the wedge surface 9 of the tapered portion 8 is configured and arranged to be impacted or struck directly by the broken drill rod section S. In this embodiment, however, the impact reduction member 5 is not configured for any significant movement relative to the plug member 2 upon impact by the falling broken drill rod

section S. Rather, as the falling broken drill rod section S initially impacts or contacts the surface 9 of the tapered portion 8, the drill rod section S is gradually deflected towards and into contact with the opposite inner wall of the bore B. This contact generates friction which acts to brake the falling object and dissipate the impact. Again, therefore, the tapered portion 8 acts to cause gradual or extended transfer of impact loading from the drill rod section S to the anchor member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is again reduced significantly, such that the friction fit or interference fit of the anchor member 2 within the bore B can readily withstand the impact loading. The safety system 1 of this embodiment may thus also effectively and reliably protect workers and/or equipment in the cavity C from the hazard of a broken drill rod section S. As before, the safety system 1 of Fig. 4 includes an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for deploying the plug-like anchor member 2 and the impact reduction member 5 into the proximal region E of the bore B.

[0026] Although specific embodiments of the invention are illustrated and described herein, it will be appreciated by those of ordinary skill in the art that a variety of alternative and/or equivalent implementations exist. It should be appreciated that the exemplary embodiment or exemplary embodiments are examples only and are not intended to limit the scope, applicability, or configuration in any way. Rather, the foregoing summary and detailed description will provide those skilled in the art with a convenient road map for implementing at least one exemplary embodiment, it being understood that various changes may be made in the function and arrangement of elements described in an exemplary embodiment without departing from the scope as set forth in the appended claims and their legal equivalents. Generally, this application is intended to cover any adaptations or variations of the specific embodiments discussed herein. By way of example, a skilled person will readily appreciate that the safety system of the invention is not limited to being made from any specific material described in the embodiments. Rather, the skilled person will appreciate that a range of suitable materials may exist, and the skilled person can select a material based upon the known

mechanical properties of that material which may make it suitable for use in this invention.

[0027] It will also be appreciated that in this document the terms "comprise", "comprising", "include", "including", "contain", "containing", "have", "having", and any variations thereof, are intended to be understood in an inclusive (i.e. non exclusive) sense, such that the system, method, process, device or apparatus described herein is not limited to the features or parts or elements or steps recited but may include other features, parts, elements or steps not expressly listed or inherent to such system, method, process, device or apparatus. Furthermore, the terms "a" and "an" used herein are intended to be understood as meaning one or more unless explicitly stated otherwise. Moreover, the terms "first", "second", "third", etc. are used merely as labels, and are not intended to impose numerical requirements on or to establish a certain ranking of importance of their objects.

[0036] List of reference signs

1	safety system
2	anchor member or plug member
3	split tube
4	front or leading end region of split tube
5	impact reduction member
6	elongate body
7	constant diameter portion of elongate body
8	tapered portion
9	outer surface of tapered portion
10	adapter member
11	head of adapter member
12	collar
13	groove or slot
14	rear or trailing end region of split tube
C	cavity or chamber
R	rock strata
O	ore deposit or ore body
F	rock-face
B	bore
S	broken drill rod section
E	proximal region of bore
t	wall thickness of split tube
G	longitudinal slit or gap
Di	inner diameter of bore
Do	outer diameter of split tube
Dr	reduced diameter of leading and/or trailing end region of split tube
Ls	length of split tube
Lt	length of tapered portion
α	taper angle

CLAIMS:

1. A safety system for protecting against a hazard posed by a drill rod section as a result of drill rod failure in a drilled rock bore above horizontal, the safety system comprising:

an anchor member configured to enable the safety system to be fixed within the proximal region of the bore below the drill rod section, by fixing the anchor member in the proximal region of the bore in a friction fit or interference fit;

an impact reduction member for reducing an impact of the drill rod section on the anchor member when fixed in the bore, wherein the impact reduction member is configured to extend above the anchor member within the proximal region the bore; and

an adaptor member configured for connection to a drilling apparatus to enable the safety system to be driven into the bore using the drilling apparatus, wherein the adaptor member is configured to have a diameter less than the diameter of the bore to enable the safety system to be driven into the proximal region of the bore beyond the rock face.

2. A safety system according to claim 1, wherein the impact reduction member is configured to be impacted to struck directly by the drill rod section.

3. A safety system according to either of claims 1 or 2, wherein the impact reduction member comprises a tapered portion, the tapered portion configured to allow movement of the impact reduction member relative to the anchor member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member.

4. This claim has been deleted.

5. A safety system according to any one of claims 1 to 3, wherein the adaptor member is integrally formed with the impact reduction member.

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ABSTRACT

The invention provides a safety system (1) and an associated method for protecting against a hazard of drill rod failure in a drilled rock bore (B) above horizontal, and especially a hazard posed by a drill rod section (S) lodged within the bore (B). The safety system (1) comprises: an anchor member (2) configured to enable the safety system to be fixed within the proximal region (E) of the bore (B) below the drill rod section (S), by fixing the anchor member in the proximal region of the bore in a friction fit or interference fit; an impact reduction member (5) for reducing an impact of the drill rod section (S) on the anchor member (2) when fixed in the bore (B), wherein the impact reduction (5) member is configured to extend above the anchor member (2) in the proximal region (E) of the bore (B); and an adaptor member (10) configured for connection to a drilling apparatus to enable the safety system to be driven into the bore (B) using the drilling apparatus, further wherein, the adaptor member (10) is configured to have a diameter less than the diameter of the bore (B) to enable the safety system to be driven into the proximal region (E) the bore (B) beyond the rock face.

SAFETY SYSTEM AND METHOD FOR PROTECTING AGAINST A HAZARD OF DRILL ROD FAILURE IN A DRILLED ROCK BORE

FIELD OF THE INVENTION

[0001] The present invention relates to a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially a hazard posed by a drill rod section lodged within a drilled rock bore. The invention also relates to a method of protecting against such a hazard of drill rod failure. Thus, it will be appreciated that the invention has particular application or use in the mining industry, although applications may also be contemplated in other fields, such as in the construction industry.

BACKGROUND OF THE INVENTION

[0002] In underground mine environments, a body or vein of ore will often be accessed by excavating cavities or working chamber (hereinafter cavity) into the rock strata below the ore body or vein and then working towards the ore deposit from below. This technique is referred to in the mining field as "overhand stoping" and has become the predominant direction of mining with the advent of rock blasting and power drills. In particular, the technique commonly involves drilling multiple bores upwards from the cavity into the rock strata towards the ore deposit above. Explosive charges are then set in the bores to blast away the intervening rock and to access the ore deposit directly. Indeed, the bores and the explosive charges may extend into the ore deposit itself, which together with the intervening rock then collapses into the cavity below for removal.

[0003] A significant problem associated with this mining technique is associated with drill rod failure when drilling the multiple bores extending upwards into the rock strata towards the ore body. The individual bores drilled are often tens of metres long (for example, in the range of 20 to 60 metres) and the drill rods which extend over that length may only have a diameter of about 80 millimetres. As the composition and properties of the rock strata will typically vary through its depth, the

drill rods are subjected to varying and also somewhat unpredictable loading during the drilling of each bore. Perhaps not surprisingly, therefore, the failure or breakage of a drill rod is not uncommon when the multiple bores are being drilled to lay the explosive charges. This has the problem that a section of drill rod, which may, for example, be fifteen or twenty metres long with a mass in the range of 100 kg to 500 kg, can be left lodged in the bore extending upwards from the cavity. The pressure produced by the rock strata can alter either naturally, or as a result of further drilling of adjacent holes. This can result in the drill rod dislodging and falling though the proximal region of the bore hole below the drill rod into the cavity . It is therefore not difficult to imagine that the hazard posed to personnel and/or to equipment by such a massive broken drill rod section, which could unexpectedly drop out of the bore, is extreme.

[0004] In the event of such a drill rod failure in a bore extending above horizontal (where the risk of the drill rod section dropping out exists), occupational health and safety regulations in many countries require the affected bore to be covered and/or otherwise rendered safe before work in that particular area may continue. In the absence of a tailored solution to this problem to date, however, miners have had to improvise with very provisional and suboptimal measures. These have not only been extremely time-consuming, leading to long delays in the further progress of the mining, but the real safety provided by such provisional measures has at times also been questionable.

SUMMARY OF THE INVENTION

[0005] In view of the above, it would be desirable to provide a new and improved safety system and an associated method for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially for protecting against the hazard of a drill rod section falling out of the bore into an excavated cavity area.

[0006] According to an aspect of the invention, there is provided a safety system for protecting against a hazard posed by a drill rod section as a result of drill rod failure in a drilled rock bore above horizontal, the safety system comprising:

an anchor member configured to enable the safety system to be fixed within the proximal region of the bore below the drill rod section, by fixing the anchor member in the proximal region of the bore in a friction fit or interference fit;

an impact reduction member for reducing an impact of the drill rod section on the anchor member when fixed in the bore, wherein the impact reduction member is configured to extend above the anchor member within the proximal region of the bore; and

an adaptor member configured for connection to a drilling apparatus to enable the safety system to be driven into the bore using the drilling apparatus, further wherein, the adaptor is configured to have a diameter less than the diameter of the bore to enable the safety system to be driven into the proximal region of the bore beyond the rock face.

[0007] Thus, the safety system desirably prevents such a drill rod section from falling out into the space or area in which the work is taking place. In this way, the safety system is able to protect the area in which workers and/or equipment may still be active in further mining operations from the hazard of a drill rod section falling from a drilled bore in which the drill rod has suffered a failure and broken or sheared off within the bore. The safety system of the invention is configured to enable the safety system to be driven deep into proximal region of the bore beyond the rock face. This may be particularly useful where the rock at the rock face is friable or crumbling, because the safety system may be driven deeply into the proximal region of the bore beyond the rock face where it can be soundly founded in competent rock.

[0008] The safety system is further desirably configured for connection with a rock drilling apparatus for driving the safety system, particularly the anchor member and the impact reduction member, into the bore for deploying the safety system in the bore past the rock face. That is, the safety system is configured to be

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deployed with a rock drilling apparatus for driving the anchor member and the impact reduction member into the bore past the rock face. In this way, the safety system is designed to operate with the same equipment used for drilling the bores. This is particularly helpful as no new or additional equipment is required to deploy the safety system, resulting in minimal disruption and minimal time loss. Rather, the operator is able to continue working with the same equipment and use that equipment to secure the compromised bore with the broken drill rod section by introducing or inserting the safety system. To this end, the safety system comprises an adapter member configured for connection to a rock drilling apparatus for driving or inserting the safety system, and especially the anchor member and the impact reduction member, deep into the drilled bore. The adapter member may, according to certain embodiments, be configured to cooperate with and/or to be received in a drill rod carousel of the rock drilling apparatus and/or be configured to connect directly to a drill rod for driving deep into the bore. This thereby enables the safety system to be placed in and held by the drill rod carousel and then be introduced or inserted (e.g. driven or forced) into the proximal region of the bore below the lodged drill rod by the rock drilling apparatus.

[0009] In an embodiment, the impact reduction member is configured to be impacted directly by the drill rod section. In this way, the impact reduction member may shield the anchor member from the full impact of a falling drill rod section and according to certain embodiments enable the anchor member to avoid being directly impacted by the falling drill rod section. This may in turn prevent or otherwise reduces the likelihood of the anchor member becoming dislodged by the falling drill rod member.

[0010] In an embodiment of the safety system, the impact reduction member comprises a tapered portion for effecting a gradual or extended transfer of an impact loading imparted by a falling drill rod section to the anchor member or plug member. In this regard, the impact reduction member is configured and arranged to be impacted or struck directly by the falling drill rod section, and the tapered portion is configured to allow movement of the drill rod section relative to the anchor member or plug member for effecting the gradual or extended transfer of the impact loading

from the drill rod section to the anchor member or plug member. By the gradual or extended transfer of the impact loading to the anchor member or plug member, the impact force can be significantly reduced. In this regard, the stopping distance for a falling object (i.e. the distance travelled by the object after initial impact) has a profound effect on the impact force imparted. Specifically, the larger the stopping distance, the lower the impact force by virtue of an inversely proportional relationship, i.e. by doubling the stopping distance, the impact force can effectively be halved. For this reason, the tapered portion of the impact reduction member is desirably configured and arranged to provide for movement of the falling drill rod section relative to the anchor member or plug member for the gradual or extended transfer of the impact loading from the drill rod section to the anchor or plug member.

[0011] [Intentionally Blank] ~~In an embodiment, the anchor member is configured to enable the safety system to be fixed in a friction fit or interference fit within the bore. In this way, other means of ensuring fixture within the bore, such as use of cements or adhesives, which may involve further separate steps or require time to fix the anchor member and safety system into place, may optionally be avoided.~~

[0012] In an embodiment, the adaptor member is integrally formed with the impact reduction member. According to further embodiments, the adapter member may include a collar against which the anchor member or plug member seats such that the collar is configured to impart or transfer an axial force to the anchor or plug member to drive the anchor member into the drilled bore in a friction fit or interference fit. According to still further embodiments in which the impact reduction member comprises a tapered portion, the adapter member may be integrally formed with the tapered portion.

[0013] According to a further aspect, the present invention provides a method of protecting against a hazard posed by a drill rod section as a result of drill rod failure in a drilled rock bore above horizontal, the method comprising introducing a safety system into the bore in response to drill rod failure, the safety system comprising:

an anchor member configured to enable the safety system to be fixed in a friction fit or interference fit within a proximal region of the bore below the drill rod section;

an impact reduction member for reducing an impact of the drill rod section on the anchor member when fixed in the bore, wherein the impact reduction member is configured to extend above the anchor member within the proximal region of the bore; and

an adaptor member configured for connection to a drilling apparatus to enable the safety system to be driven into the bore using the drilling apparatus, further wherein, the adaptor is configured to have a diameter less than the diameter of the bore to enable the safety system to be driven into the bore beyond the rock face.

[0014] In an embodiment of the method, the step of introducing the safety system comprises driving the anchor member and the impact reduction member into the bore together using a rock drilling apparatus.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] For a more complete understanding of the invention and the advantages thereof, exemplary embodiments of the invention are explained in more detail in the following description with reference to the accompanying drawing figures, in which like reference signs designate like parts and in which:

Fig. 1 is a schematic cross-sectional view of an excavated cavity in a mine environment illustrating bores drilled in rock strata extending towards an ore deposit;

Fig. 2 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to an embodiment of the invention;

Fig. 3 is a schematic partial perspective view of the safety system of Fig. 2 shown in an installed state within the proximal region of a bore ~~at the rock face~~; and

Fig. 4 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to another embodiment of the invention.

[0016] The accompanying drawings are included to provide a further understanding of the present invention and are incorporated in and constitute a part of this specification. The drawings illustrate particular embodiments of the invention and together with the description serve to explain the principles of the invention. Other embodiments of the invention and many of the attendant advantages of the invention will be readily appreciated as they become better understood with reference to the following detailed description.

[0017] It will be appreciated that common and/or well understood elements that may be useful or necessary in a commercially feasible embodiment are not necessarily depicted in order to facilitate a more abstracted view of the embodiments. The elements of the drawings are not necessarily illustrated to scale relative to each other. It will also be understood that certain actions and/or steps in an embodiment of a method may be described or depicted in a particular order of occurrences while those skilled in the art will understand that such specificity with respect to sequence may not necessarily be required.

DETAILED DESCRIPTION OF EMBODIMENTS

[0018] With reference firstly to Fig. 1 of the drawings, a cross-sectional view of a mine environment is illustrated schematically. An excavated cavity or chamber C of the mine is shown in a cross-section taken normal or transverse to a length of that cavity or chamber C into the page. The cavity C is essentially surrounded by rock strata R and an ore deposit O above the cavity C can also be seen. To access the ore deposit O, the cavity C is excavated into the rock strata R below that body or

vein of ore O and then multiple bores B are drilled upwards from the cavity C into the rock strata R towards the ore deposit O above. In this way, explosive charges can be set in the bores B to blast away the intervening rock, which together with the ore deposit O then collapses into the cavity C below for collection and removal for processing.

[0019] When drilling the multiple bores B upwards into the rock strata R towards the ore body O, the individual bores drilled are often tens of metres long (e.g. in the range of 20 to 60 metres) and the drill rods (not shown) which extend over that length may have a diameter of about 80 millimetres. As the composition and properties of the rock strata R typically varies through its depth, and in any case in comparison to the composition and properties of the ore deposit O, the drill rods are subjected to varying and unpredictable loading during the drilling of each bore B. Failure or breakage of a drill rod is not uncommon when multiple bores B are being drilled to lay the explosive charges above the cavity C. Thus, a section S of drill rod, which may, for example, be 20 or 30 metres long with a mass in the range of 100 kg to 500 kg, may be left in the bore B extending above the cavity C presenting a major hazard to personnel and/or equipment in the cavity C, as this massive broken drill rod section S could unexpectedly fall out of the bore B.

[0020] With reference now to Figs. 2 and 3 of the drawings, a safety system 1 according to a preferred embodiment for protecting against just such a hazard posed by the broken drill rod section S in the drilled bore B is shown schematically. The safety system 1 comprises an anchor member 2, which is configured to be inserted and fixed in a proximal region E of the bore B existing below the drill rod section~~, and in certain embodiments fixed adjacent or close to a rock face F of the cavity C at which the drilling takes place~~. The anchor member 2 is provided in the form of a plug member which is configured to be driven into and fixed within the proximal ~~end~~ region E of the drilled bore B existing below the drill rod section S in a friction fit or interference fit. In this regard, the plug member 2 may comprise a split tube 3 formed from a round steel tube or pipe having an outer diameter Do sized larger than an inner diameter Di of the bore B. For example, if the bore B has an inner diameter Di of 89 mm, the split tube 3 may have an outer

diameter Do of about 100 mm and a wall thickness t of about 6 mm to 9 mm, e.g. about 8 mm in this case. Furthermore, the split tube 3 has a longitudinally extending slit or gap G formed or cut in the wall (as seen in Fig. 3) which allows the outer diameter Do of the split tube 3 (i.e. plug member 2) to be compressed or to reduce when the plug member 2 is driven into the drilled bore B of smaller diameter Di. A front or leading end region 4 of the split tube 3 also has a reduced diameter Dr that is smaller than an inner diameter Di of the drilled bore B to assist the initial introduction or insertion of the plug member 2 into the proximal region E bore B existing below the drill rod section S. In this way, the plug member 2 comprised of the split tube 3 can be fixed in a friction fit or interference fit in the proximal region E of the bore B below the drill rod section ~~, desirably adjacent the rock-face F in a friction fit,~~ in a manner similar to that known for a "split-set" type of rock anchor. As with the other dimensions of the split tube 3, the length Ls of the split tube 3 may be selected as appropriate to the rock-strata R, but it is preferably in the range of about 400 mm to 800 mm; e.g. 600 mm in this case.

[0021] The safety system 1 further comprises an impact reduction member 5 for reducing an impact of the broken drill rod section S in the event that it falls and strikes the anchor member or plug member 2 located in the proximal region E of the bore B below the drill rod section S. The impact reduction member 5 extends within the bore B above the anchor or plug member 2 and within the proximal region E of the bore B and. In the embodiment shown, the impact reduction member 5 comprises an elongate body 6 which is arranged centrally of the plug member 2 and which is configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. The elongate body 6 may be formed of steel (e.g. mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the elongate body 6 within the split tube 3 preferably has a substantially constant diameter Dc and a portion 8 of the elongate body 6 extending above the split tube 3 is tapered, i.e. an outer surface 9 of the elongate body 6 in the tapered portion 8 tapers outwardly at an angle α of about 1° to 3°, e.g. about 1° in this case. The length Lt of the tapered portion 8 may be selected as appropriate to the safety system, but this length is preferably in the range of about 200 mm to 400 mm; e.g. 290 mm in this

case, with the tapered portion 8 tapering from a maximum diameter of about 80 mm at its distal end to a diameter of about 70 mm at the constant diameter portion 7 within the split tube 3.

[0022] In this embodiment, the impact reduction member 5 is configured for movement relative to the plug member 2 upon impact by the falling broken drill rod section S. That is, the body 6 of the impact reduction member 5 is configured for movement into an interior of the plug member 2 if impacted or struck by the drill rod section S. In this way, the outer surface 9 of the tapered portion 8 of the body 6 contacts and bears against an inner surface of the split tube 3. As an initial impact by the broken drill rod section S drives the elongate body 6 downwards into the split tube 3, the slight taper of the tapered portion 8 exerts an outward force on the split tube 3 and thus enhances or increases engagement between the bore B and the tube 3. The tapered portion 8 thereby acts to effect a gradual or extended transfer of impact loading from the broken drill rod section S to the plug member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is reduced significantly, such that the friction fit or interference fit of the anchor member or plug member 2 within the bore B can readily withstand the impact loading. In this way, the safety system 1 of this embodiment can effectively and reliably protect workers and/or equipment in the cavity C from the hazard of broken drill rod sections S falling from a bore B drilled above horizontal.

[0023] To facilitate deployment of the safety system 1 described above, the safety system 1 includes an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for introducing the plug member 2 and the impact reduction member 5, into the proximal ~~end~~ region E of the bore B. The adapter member 10 may, for example, be configured to be received in a drill rod carousel of the rock drilling apparatus. This enables the safety system 1 to be placed in and held by the drill rod carousel and then introduced or inserted (e.g. hydraulically driven or forced) into the proximal region E of the bore B by the rock drilling apparatus. To this end, the adapter 10 may include a head 11 configured for

connection with the rock drilling apparatus. Furthermore, the adapter member 10 may be connected to, and preferably integrally formed with, the body 6 of the impact reduction member 5. The adapter member 10 further includes a collar 12 which sits within and engages a corresponding groove or slot 13 in the adapter member 10. The split tube 3 of the plug member 2 seats against the collar 12, such that the collar 12 imparts an axial force to the plug member 2 to drive the plug member 2 (together with impact reduction member 5) into the drilled bore B in a friction fit. As is apparent from Fig. 2, the collar 12 preferably has an outer diameter slightly less than the inner diameter Di of the bore B and a rear or trailing end region 14 of the split tube 3 which abuts and seats against the collar 12 is also swaged inwards to a reduced diameter Dr, i.e. like the front or leading end region 4. This configuration enables the anchor member 2 and the impact reduction member 5 of the safety system 1 to be driven deep into the drilled bore B beyond the rock face F. This may be particularly useful where the rock at the rock face F is friable or crumbling, because it enables the safety system 1 to be driven deeper into the bore B beyond the rock face F where it can be soundly founded in competent rock.

[0024] With reference now to drawing Fig. 4, another embodiment of a safety system 1 is shown and like parts are designated with like or corresponding reference signs compared with the embodiment of Figs. 2 and 3. In this embodiment, the safety system 1 again includes a plug type anchor member 2 comprising a split tube 3 having longitudinally extending slit or gap (not shown) and a front or leading end region 4 of reduced diameter Dr to assist driven or forced insertion into a bore B in an interference fit or a friction fit. The safety system 1 furthermore again includes an impact reduction member 5 comprising an elongate body 6 arranged within the plug member 2. The body 6 may again be formed of steel (e.g. mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the body 6 within the split tube 3 may have a substantially constant diameter Dc and a portion 8 of impact reduction member 5 which extends above the split tube 3 is tapered; that is, a surface 9 of the tapered portion 8 tapers at an angle α of about 3° to 8°, e.g. about 5° in this case, such that the tapered portion 8 forms an elongate wedge that tapers along its length Lt towards an inner periphery of the bore B.

[0025] The impact reduction member 5 is again configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. Specifically, in this embodiment, the wedge surface 9 of the tapered portion 8 is configured and arranged to be impacted or struck directly by the broken drill rod section S. In this embodiment, however, the impact reduction member 5 is not configured for any significant movement relative to the plug member 2 upon impact by the falling broken drill rod section S. Rather, as the falling broken drill rod section S initially impacts or contacts the surface 9 of the tapered portion 8, the drill rod section S is gradually deflected towards and into contact with the opposite inner wall of the bore B. This contact generates friction which acts to brake the falling object and dissipate the impact. Again, therefore, the tapered portion 8 acts to cause gradual or extended transfer of impact loading from the drill rod section S to the anchor member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is again reduced significantly, such that the friction fit or interference fit of the anchor member 2 within the bore B can readily withstand the impact loading. The safety system 1 of this embodiment may thus also effectively and reliably protect workers and/or equipment in the cavity C from the hazard of a broken drill rod section S. As before, the safety system 1 of Fig. 4 includes an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for deploying the plug-like anchor member 2 and the impact reduction member 5 into the proximal ~~end~~ region E of the bore B.

[0026] Although specific embodiments of the invention are illustrated and described herein, it will be appreciated by those of ordinary skill in the art that a variety of alternative and/or equivalent implementations exist. It should be appreciated that the exemplary embodiment or exemplary embodiments are examples only and are not intended to limit the scope, applicability, or configuration in any way. Rather, the foregoing summary and detailed description will provide those skilled in the art with a convenient road map for implementing at least one exemplary embodiment, it being understood that various changes may be made in

the function and arrangement of elements described in an exemplary embodiment without departing from the scope as set forth in the appended claims and their legal equivalents. Generally, this application is intended to cover any adaptations or variations of the specific embodiments discussed herein. By way of example, a skilled person will readily appreciate that the safety system of the invention is not limited to being made from any specific material described in the embodiments. Rather, the skilled person will appreciate that a range of suitable materials may exist, and the skilled person can select a material based upon the known mechanical properties of that material which may make it suitable for use in this invention.

[0027] It will also be appreciated that in this document the terms "comprise", "comprising", "include", "including", "contain", "containing", "have", "having", and any variations thereof, are intended to be understood in an inclusive (i.e. non exclusive) sense, such that the system, method, process, device or apparatus described herein is not limited to the features or parts or elements or steps recited but may include other features, parts, elements or steps not expressly listed or inherent to such system, method, process, device or apparatus. Furthermore, the terms "a" and "an" used herein are intended to be understood as meaning one or more unless explicitly stated otherwise. Moreover, the terms "first", "second", "third", etc. are used merely as labels, and are not intended to impose numerical requirements on or to establish a certain ranking of importance of their objects.

[0036] List of reference signs

1	safety system
2	anchor member or plug member
3	split tube
4	front or leading end region of split tube
5	impact reduction member
6	elongate body
7	constant diameter portion of elongate body
8	tapered portion
9	outer surface of tapered portion
10	adapter member
11	head of adapter member
12	collar
13	groove or slot
14	rear or trailing end region of split tube
C	cavity or chamber
R	rock strata
O	ore deposit or ore body
F	rock-face
B	bore
S	broken drill rod section
E	proximal region of bore
t	wall thickness of split tube
G	longitudinal slit or gap
Di	inner diameter of bore
Do	outer diameter of split tube
Dr	reduced diameter of leading and/or trailing end region of split tube
Ls	length of split tube
Lt	length of tapered portion
α	taper angle

CLAIMS:

1. A safety system for protecting against a hazard posed by a drill rod section as a result of drill rod failure in a drilled rock bore above horizontal, the safety system comprising:

an anchor member configured to enable the safety system to be fixed within the proximal region of the bore below the drill rod section, by fixing the anchor member in the proximal region of the bore in a friction fit or interference fit;

an impact reduction member for reducing an impact of the drill rod section on the anchor member when fixed in the bore, wherein the impact reduction member is configured to extend above the anchor member within the proximal region the bore; and

an adaptor member configured for connection to a drilling apparatus to enable the safety system to be driven into the bore using the drilling apparatus, wherein the adaptor member is configured to have a diameter less than the diameter of the bore to enable the safety system to be driven into the proximal region of the bore beyond the rock face.

2. A safety system according to claim 1, wherein the impact reduction member is configured to be impacted to struck directly by the drill rod section.

3. A safety system according to either of claims 1 or 2, wherein the impact reduction member comprises a tapered portion, the tapered portion configured to allow movement of the impact reduction member relative to the anchor member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member.

4. ~~A safety system according to any one of the previous claims, wherein the anchor member is configured to enable the safety system to be fixed in a friction or interference fit within the bore.~~ This claim has been deleted.

5. A safety system according to any one of ~~the previous~~ claims 1 to 3, wherein the adaptor member is integrally formed with the impact reduction member.

ABSTRACT

The invention provides a safety system (1) and an associated method for protecting against a hazard of drill rod failure in a drilled rock bore (B) above horizontal, and especially a hazard posed by a drill rod section (S) lodged within the bore (B). The safety system (1) comprises: an anchor member (2) configured to enable the safety system to be fixed within the proximal region (E) of the bore (B) below the drill rod section (S), by fixing the anchor member in the proximal region of the bore in a friction fit or interference fit; an impact reduction member (5) for reducing an impact of the drill rod section (S) on the anchor member (2) when fixed in the bore (B), wherein the impact reduction (5) member is configured to extend above the anchor member (2) in the proximal region (E) of the bore (B); and an adaptor member (10) configured for connection to a drilling apparatus to enable the safety system to be driven into the bore (B) using the drilling apparatus, further wherein, the adaptor member (10) is configured to have a diameter less than the diameter of the bore (B) to enable the safety system to be driven into the proximal region (E) the bore (B) beyond the rock face.

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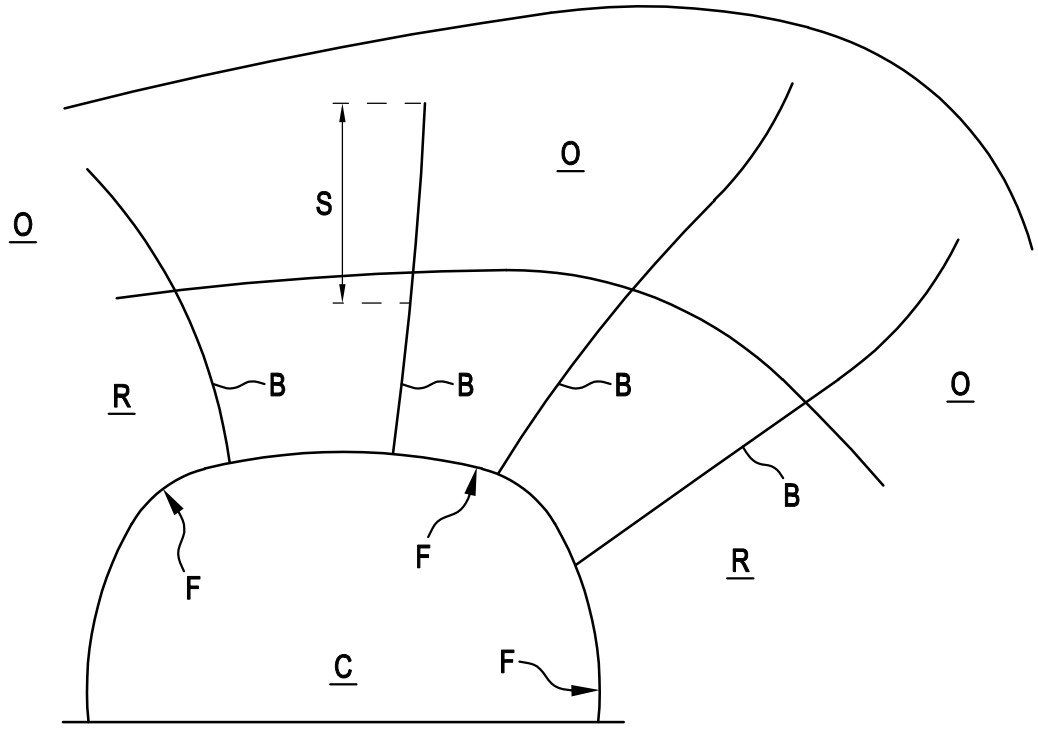

FIG. 1

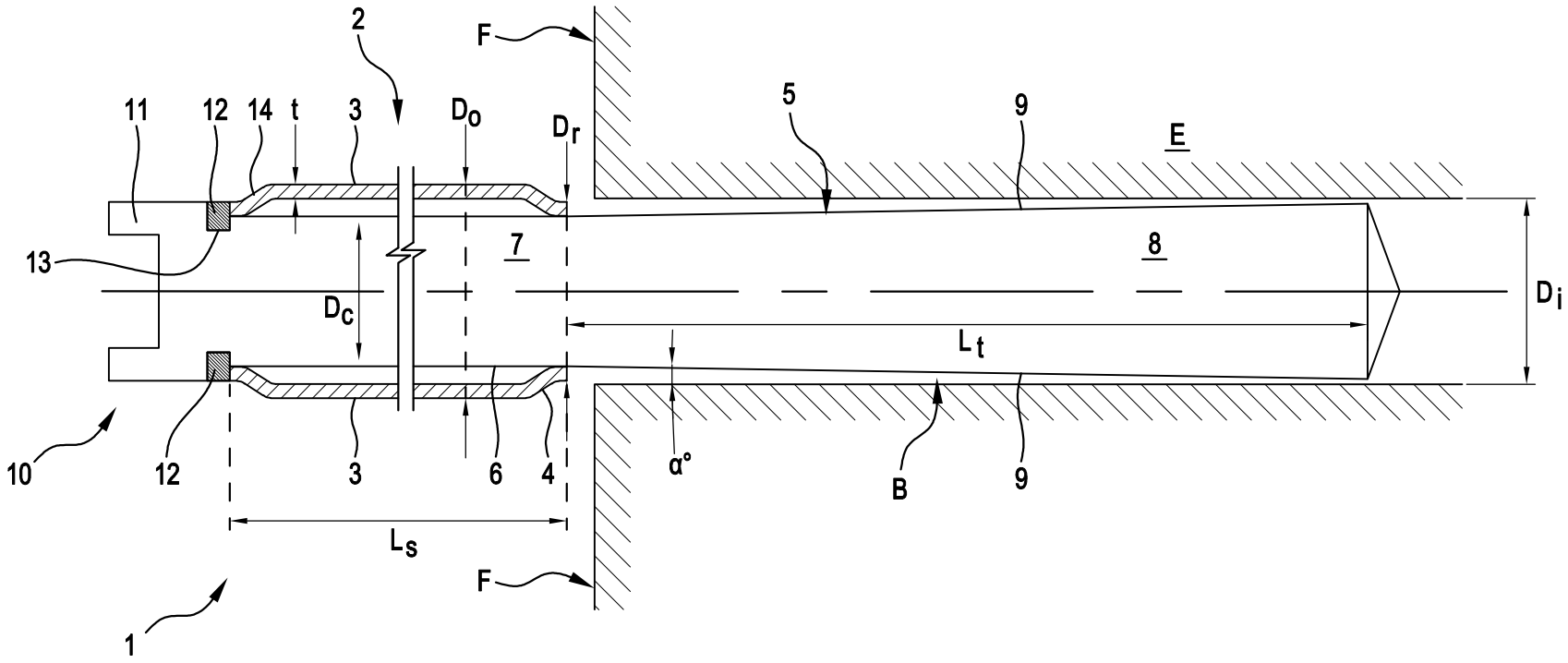

FIG. 2

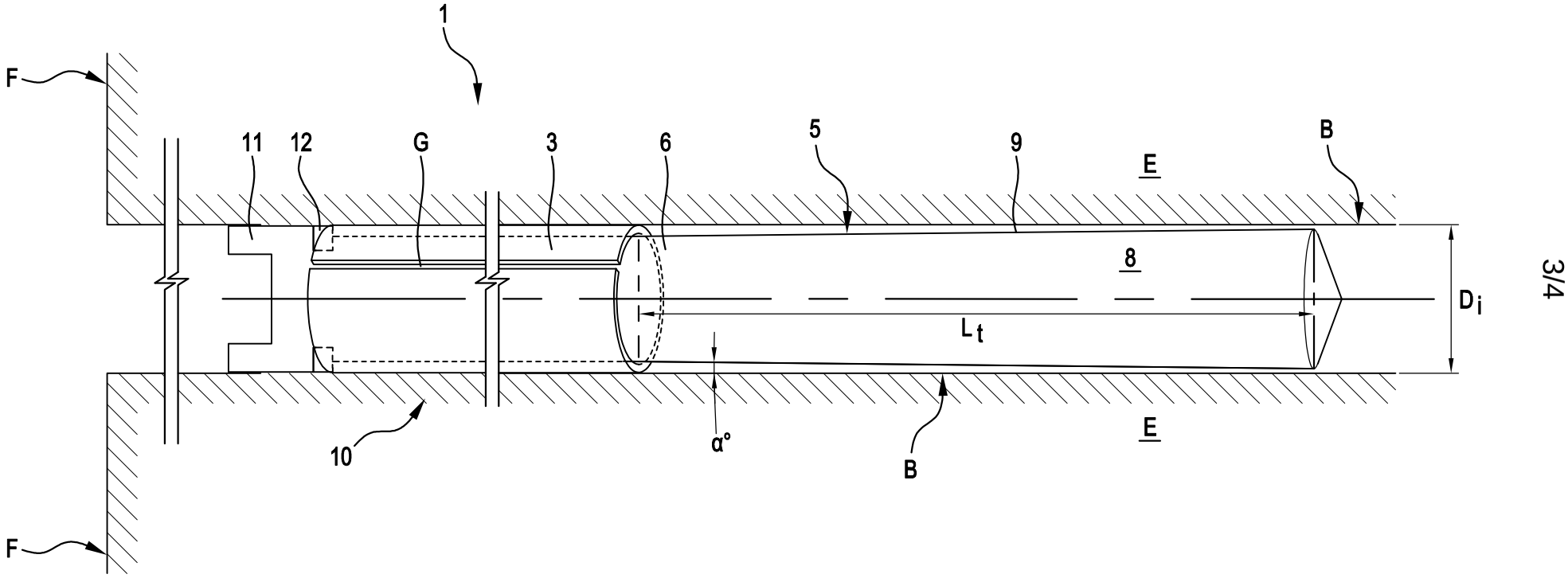

FIG. 3

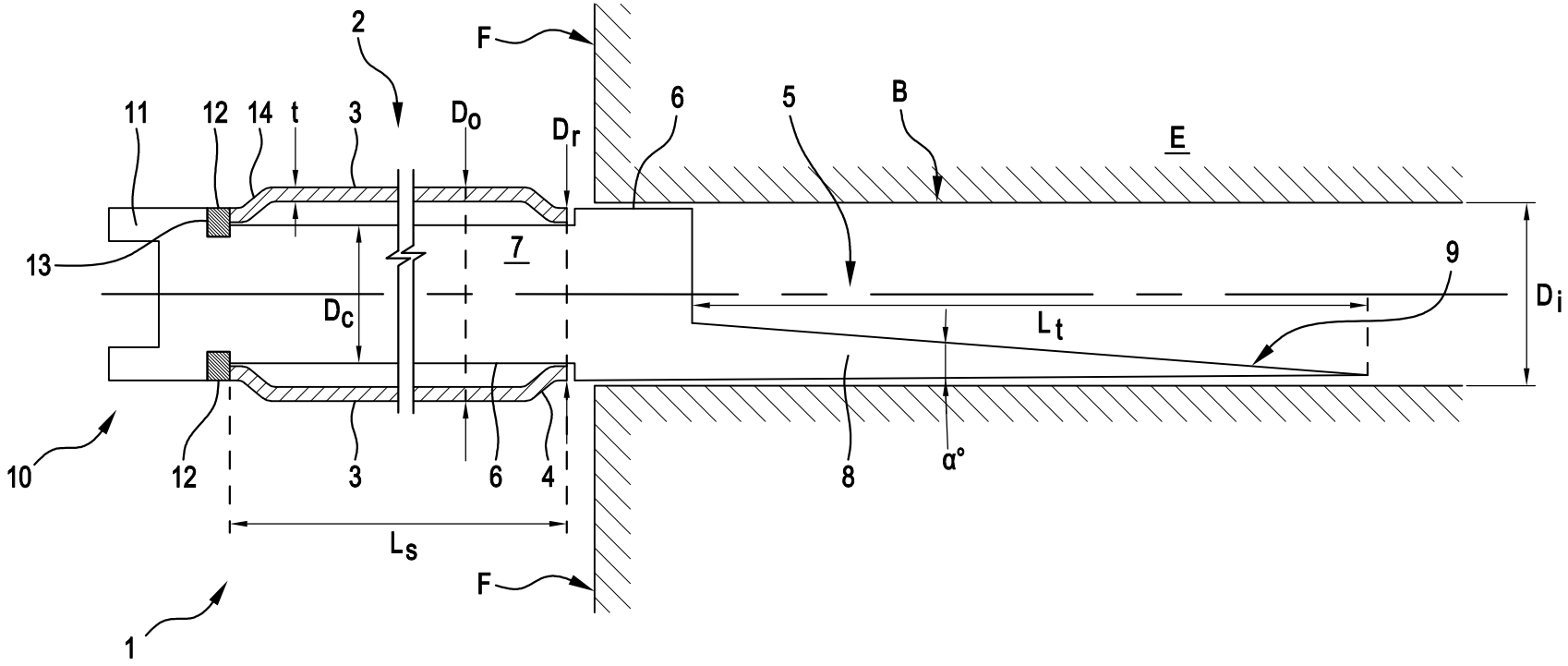

FIG. 4

SECTION 105(1) PATENTS ACT 1990 (CTH)
Advertisement for publication in Official Journal

Patent Matter Details

Australian Patent No. 2021215238 in the name of Kutti Bay Investments Pty Ltd (formerly Jusand Nominees Pty Ltd) entitled "Safety System and Method For Protecting Against a Hazard of Drill Rod Failure in a Drilled Rock Bore".

Identity of Court Proceeding

Federal Court Proceeding No. VID 1372 of 2024 – Kutti Bay Investments Pty Ltd v Rattlejack Innovations Pty Ltd and others.

Particulars of Proposed Amendments

The particulars of the amendments sought are shown in the attached documents (in clean and marked up form) and are as follows:

(i) to delete Description pages 1 – 18 currently on file and replace with new Description pages 1 – 18 as attached;

(ii) to delete Claim pages 19 – 24 currently on file and replace with new Claim pages 19 – 24 as attached;

(iii) to delete the Abstract currently on file and replace with new Abstract as attached; and

(iv) to delete Figure pages 1/5 – 5/5 currently on file and replace with new Figure pages 1/5 – 5/5 as attached.

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Opposition

Any person intending to oppose the application who is not a party to the proceeding must, within 28 days after publication of this advertisement, give written notice of that intention to:

(i) the Commissioner; and

(ii) each party to the proceeding at the above addresses for service.

Safety System And Method For Protecting Against A Hazard Of Drill Rod Failure In A Drilled Rock Bore

This is a divisional application of Australian Patent Application No. 2015255248, the contents of which are incorporated herein in their entirety by reference.

Technical Field

[0001] The present invention relates to a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially a hazard posed by a broken drill rod section lodged within a drilled rock bore. The invention also relates to a method of protecting against such a hazard of drill rod failure. Thus, it will be appreciated that the invention has particular application or use in the mining industry, although applications may also be contemplated in other fields, such as in the construction industry.

Background

[0002] In underground mine environments, a body or vein of ore will often be accessed by excavating cavities or working chamber (hereinafter cavity) into the rock strata below the ore body or vein and then working towards the ore deposit from below. This technique is referred to in the mining field as "overhand stoping" and has become the predominant direction of mining with the advent of rock blasting and power drills. In particular, the technique commonly involves drilling multiple bores upwards from the cavity into the rock strata towards the ore deposit above. Explosive charges are then set in the bores to blast away the intervening rock and to access the ore deposit directly. Indeed, the bores and the explosive charges may extend into the ore deposit itself, which together with the intervening rock then collapses into the cavity below for removal.

[0003] A significant problem associated with this mining technique is associated with drill rod failure when drilling the multiple bores extending upwards into the rock strata towards the ore body. The individual bores drilled are often tens of metres long

(for example, in the range of 20 to 60 metres) and the drill rods which extend over that length may only have a diameter of about 80 millimetres. As the composition and properties of the rock strata will typically vary through its depth, the drill rods are subjected to varying and also somewhat unpredictable loading during the drilling of each bore. Perhaps not surprisingly, therefore, the failure or breakage of a drill rod is not uncommon when the multiple bores are being drilled to lay the explosive charges. This has the problem that a section of drill rod, which may, for example, be fifteen or twenty metres long with a mass in the range of 100 kg to 500 kg, is left lodged in the bore extending upwards from the cavity. The pressure produced by the rock strata can alter either naturally, or as a result of further drilling of adjacent holes. This can result in the drill rod dislodging from the bore hole and falling into the cavity. It is therefore not difficult to imagine that the hazard posed to personnel and/or to equipment by such a massive broken drill rod section, which could unexpectedly drop out of the bore, is extreme.

[0004] In the event of such a drill rod failure in a bore extending above horizontal (where the risk of the drill rod section dropping out exists), occupational health and safety regulations in many countries require the affected bore to be covered and/or otherwise rendered safe before work in that particular area may continue. In the absence of a tailored solution to this problem to date, however, miners have had to improvise with very provisional and suboptimal measures. These have not only been extremely time-consuming, leading to long delays in the further progress of the mining, but the real safety provided by such provisional measures has at times also been questionable.

Summary of the Invention

[0005] In view of the above, it would be desirable to provide an improved safety system and associated method for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially for protecting against the hazard of a drill rod section falling out of the bore into an excavated cavity area.

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[0006] According to one aspect, the present invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising:

an anchor member for insertion into a proximal region of the bore, the anchor member configured to be fixed in a friction fit or interference fit within the proximal region of the bore to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, the impact reduction member being configured to be located within the proximal region of the bore and to extend within the bore above the anchor member to be impacted by the falling drill rod section.

[0007] Thus, the safety system of the invention is configured and arranged to be fixed in the proximal region of the bore and to absorb the force or impact of a broken drill rod section falling within the bore towards the opening in the rock-face. Further, the safety system desirably prevents such a drill rod section from falling out into the space or area in which the work is taking place. In this way, the safety system is able to protect the area in which workers and/or equipment may still be active in further mining operations from the hazard of a drill rod section falling from a drilled bore in which the drill rod has suffered a failure and broken or sheared off within the bore.

[0008] In an embodiment of the safety system, the anchor member is provided as a plug member and is configured to plug into the drilled bore and to at least partially block or obscure the bore. In this way, the anchor member / plug member is configured and arranged to at least partially block or close the proximal region of the bore against the hazard of the broken drill rod section falling out into the area in which workers and/or equipment may be active in further mining operations or other activities. The plug member thus forms an anchor member in the sense that it operates to hold the safety system in the bore and to resist the safety system and/or the drill rod section from falling out of the bore into the area below.

[0009] According to another aspect, therefore, the present invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising:

a plug member for insertion into a proximal region of the bore, the plug member configured to be fixed in a friction fit or interference fit within the proximal region of the bore to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the plug member, wherein the impact reduction member is configured to be located within the proximal region of the bore and to extend within the bore above the plug member to be impacted by the falling drill rod section.

[0010] The anchor member or plug member may, for example, have an outer diameter larger than an inner diameter of the drilled bore and may include a slit or gap configured to allow the outer diameter to reduce when the anchor member or plug member is driven into the bore. In this way, the anchor member or plug member can be configured to be fixed within the bore in a friction fit or an interference fit. For example, the plug member may comprise a split tube having a longitudinal slit or gap and an outer diameter sized larger than an inner diameter of the drilled bore. The split tube is configured to be driven into the proximal region of the drilled bore and the longitudinal slit or gap is thus configured to allow the outer diameter of the split tube (i.e., of the plug member) to be compressed or to reduce when the plug member is driven into the drilled bore of smaller diameter. In this way, the plug member comprising the split tube can be fixed in the proximal region of the bore in a friction fit or an interference fit, in a manner similar to that known for a "split-set" type of rock anchor. The plug member is thereby configured to at least partially close or block the drilled bore. To assist the insertion of the plug member into the proximal region of the drilled bore, the plug member (e.g., split tube member) preferably has a front or leading end region of a reduced diameter smaller than an inner diameter of the drilled bore.

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[0011] In an embodiment of the safety system, the impact reduction member includes a tapered portion for a gradual or extended transfer of an impact loading imparted by a falling drill rod section to the anchor member or plug member. In this regard, the impact reduction member may be configured and arranged to be impacted or struck by the falling drill rod section, and the tapered portion is configured to allow movement of the impact reduction member relative to the anchor member or plug member for gradual or extended transfer of the impact loading from the drill rod section to the anchor or plug member. By the gradual or extended transfer of the impact loading to the anchor member or plug member, the impact force can be significantly reduced. In this regard, the stopping distance for a falling object (i.e., the distance travelled by the object after initial impact) has a profound effect on the impact force imparted. Specifically, the larger the stopping distance, the lower the impact force by virtue of an inversely proportional relationship; i.e., by doubling the stopping distance, the impact force can effectively be halved. For this reason, the tapered portion of the impact reduction member is desirably configured and arranged to provide for movement of the falling drill rod section relative to the anchor member or plug member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member or plug member.

[0012] In an embodiment of the safety system, the impact reduction member includes an elongate body which is arranged substantially centrally of the anchor member or plug member and which is configured to be movable relative to the anchor or plug member when impacted by the drill rod section. The elongate body may include a tapered portion configured to allow movement of the impact reduction member relative to the anchor member or plug member for effecting a gradual or extended transfer of impact loading imparted by a falling drill rod section to the plug member.

[0013] In an embodiment of the safety system, the elongate body comprises a tapered portion configured to allow movement of the impact reduction member relative to the plug member for a gradual or extended transfer of impact loading from the drill rod section to the plug member. A portion of the elongate body may

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preferably be arranged within the plug member and the tapered portion may be configured to exert an outward force on the plug member when the elongate body moves on impact by the drill rod section. Thus, in an embodiment of the system, the impact reduction member may be configured for movement into an interior of the plug member when it is impacted or struck by the drill rod section.

[0014] Thus, in at least one embodiment, the invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section within the bore, comprising: an anchor member configured to be fixed in a proximal region of the bore in a friction fit or interference fit to at least partially block or obscure the drilled bore, and an impact reduction member for reducing an impact of a falling drill rod section on the anchor member in the proximal region of the bore, wherein the impact reduction member is configured to be located in the proximal region of the drilled bore and to extend within the bore above the anchor member. The impact reduction member comprises an elongate body arranged substantially centrally of the anchor member and configured to move relative to the anchor member when impacted by the drill rod section, the elongate body having a tapered portion configured to exert an outward force on the anchor member when the elongate body moves on impact by the drill rod section for effecting a gradual or extended transfer of impact loading from the drill rod section to the anchor member.

[0015] Further, in at least one embodiment, the invention provides a safety system for protecting against a hazard of a drill rod failure in a drilled rock bore above horizontal, and especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising: a plug member for insertion into a proximal region of the bore, the plug member configured to be fixed in a friction fit or interference fit within the proximal region of the bore, and an impact reduction member for reducing an impact of a falling drill rod section on the plug member within the proximal region of the bore, wherein the impact reduction member is configured to be located within the proximal region of the bore and to extend within the bore above the plug member; wherein the impact reduction member comprises an

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elongate body arranged substantially centrally of the plug member and configured to move relative to the plug member when impacted by the drill rod section, the elongate body having a tapered portion configured to exert an outward force on the plug member when the elongate body moves on impact by the drill rod section for effecting a gradual or extended transfer of impact loading from the drill rod section to the plug member.

[0016] In an alternative embodiment of the system, the tapered portion may be configured and arranged to allow movement of the drill rod section relative to the impact reduction member. In this regard, the tapered portion of the impact reduction member may be fixed relative to the plug member.

[0017] In an embodiment, the safety system may further comprise an adapter member which is configured for connection to a rock drilling apparatus for driving or inserting the safety system, especially the plug member and the impact reduction member, into the proximal region of the drilled bore. In this way, the safety system may be designed to operate with the same equipment used for drilling the bores. This is particularly helpful because no new or additional equipment is required to deploy the safety system of the invention, resulting in minimal disruption and minimal time loss. Rather, the operator is able to continue working with the same equipment and use that equipment to secure the compromised bore with the broken drill rod section by introducing or inserting the safety system. The adapter member may, for example, be configured to cooperate with and/or to be received in a drill rod carousel of the rock drilling apparatus. This thereby enables the safety system to be placed in and held by the drill rod carousel and then be introduced or inserted (e.g., driven or forced) into the proximal region of the bore by the rock drilling apparatus.

[0018] In an embodiment of the safety system, therefore, the plug member and the impact reduction member are configured to be driven into the proximal region of the bore together, preferably by a rock drilling apparatus. In this regard, the safety system is desirably adapted to be driven deeper into the bore beyond friable or

crumbling rock (i.e., unstable rock) at the rock face at which drilling takes place, to be soundly founded in competent rock.

[0019] Thus, in at least one embodiment, a safety system for protecting against a hazard of drill rod failure in a rock bore drilled above horizontal is provided, and especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising: an anchor member for insertion into a proximal region of the bore, the anchor member being configured to be fixed within the proximal region of the bore in a friction fit or an interference fit to at least partially block or obscure the bore; and an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, wherein the impact reduction member is configured to be located within the proximal region of the bore and to extend within the bore above the anchor member to be impacted by a falling drill rod section, and wherein the anchor member and the impact reduction member are configured to be driven into the bore together with a rock drilling apparatus, the safety system being configured to be driven into the bore beyond unstable rock at the rock face so that the anchor member is soundly founded in competent rock in the friction fit or interference fit within the proximal region of the bore.

[0020] In an embodiment of the safety system, the impact reduction member may comprise an impact dampening material which is introduced into the drilled bore above the plug member. In this way, the impact dampening material may serve to physically fill and block or obscure part of the proximal region of the bore, and also to provide an impact dampening effect. The impact dampening material may, for example, comprise a polymer foam material. The polymer foam could optionally be introduced or injected into the drilled bore in a liquid or fluid form. The polymer foam then preferably solidifies within the bore and serves not only to physically fill and block or obscure part of the proximal region of the bore, but also provides an impact dampening effect.

[0021] In another aspect, the present invention provides a method of protecting against a hazard posed by a drill rod section upon drill rod failure in a drilled rock

bore extending above horizontal, the method comprising deploying a safety system into the bore in response to drill rod failure, the safety system comprising:

an anchor member for insertion into the bore, the anchor member configured to be fixed in a friction fit or interference fit within a proximal region of the bore to at least partially block or obscure the bore, and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, wherein the impact reduction member is configured to be located in the proximal region of the bore and to extend within the bore above the anchor member to be impacted or struck by the falling drill rod section;

wherein deploying the safety system comprises driving the anchor member and the impact reduction member into the bore together via a rock drilling apparatus, whereby the safety system is driven into the bore beyond friable or crumbling rock at the rock face so that the anchor member is soundly founded in competent rock in the friction fit or interference fit within the proximal region of the bore.

[0022] According to a further aspect, the present invention provides a method of protecting against a hazard posed by a drill rod section upon drill rod failure in a drilled rock bore above horizontal, the method comprising deploying a safety system into the bore in response to drill rod failure, the safety system comprising:

a plug member for insertion into the bore, the plug member configured to be fixed in a friction fit or interference fit within a proximal region of the bore to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the plug member, wherein the impact reduction member is configured to be located in the proximal region of the bore and to extend within the bore above the plug member to be impacted or struck by the falling drill rod section;

wherein deploying the safety system comprises driving the plug member and the impact reduction member into the bore together, preferably via a rock drilling apparatus, whereby the safety system is driven into the bore so that the plug member is soundly founded in competent rock in the friction fit or interference fit within proximal region of the bore, e.g., beyond friable or crumbling rock at the rock face.

Brief Description of the Drawings

[0023] For a more complete understanding of the invention and the advantages thereof, exemplary embodiments of the invention are explained in more detail in the following description with reference to the accompanying drawing figures, in which like reference signs designate like parts and in which:

Fig. 1 is a schematic cross-sectional view of an excavated cavity in a mine environment illustrating bores drilled in rock strata extending towards an ore deposit;

Fig. 2 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to an embodiment of the invention;

Fig. 3 is a schematic partial perspective view of the safety system of Fig. 2 shown in an installed state in a proximal region of a bore;

Fig. 4 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to another embodiment of the invention; and

Fig. 5 is a flow diagram which schematically represents a method according to an embodiment of the invention.

[0024] The accompanying drawings are included to provide a further understanding of the present invention and are incorporated in and constitute a part of this specification. The drawings illustrate particular embodiments of the invention and together with the description serve to explain the principles of the invention. Other embodiments of the invention and many of the attendant advantages of the invention will be readily appreciated as they become better understood with reference to the following detailed description.

[0025] It will be appreciated that common and/or well understood elements that may be useful or necessary in a commercially feasible embodiment are not necessarily depicted in order to facilitate a more abstracted view of the embodiments. The elements of the drawings are not necessarily illustrated to scale relative to each other. It will also be understood that certain actions and/or steps in an embodiment of a method may be described or depicted in a particular order of occurrences while those skilled in the art will understand that such specificity with respect to sequence is not actually required.

Detailed Description of Embodiments

[0026] With reference firstly to Fig. 1 of the drawings, a cross-sectional view of a mine environment is illustrated schematically. An excavated cavity or chamber C of the mine is shown in a cross-section taken normal or transverse to a length of that cavity or chamber C into the page. The cavity C is essentially surrounded by rock strata R and an ore deposit O above the cavity C can also be seen. To access the ore deposit O, the cavity C is excavated into the rock strata R below that body or vein of ore O and then multiple bores B are drilled upwards from the cavity C into the rock strata R towards the ore deposit O above. In this way, explosive charges can be set in the bores B to blast away the intervening rock, which together with the ore deposit O then collapses into the cavity C below for collection and removal for processing.

[0027] When drilling the multiple bores B upwards into the rock strata R towards the ore body O, the individual bores drilled are often tens of metres long (e.g., in the range of 20 to 60 metres) and the drill rods (not shown) which extend over that length may have a diameter of about 80 millimetres. As the composition and properties of the rock strata R typically varies through its depth, and in any case in comparison to the composition and properties of the ore deposit O, the drill rods are subjected to varying and unpredictable loading during the drilling of each bore B. Failure or breakage of a drill rod is not uncommon when multiple bores B are being drilled to lay the explosive charges above the cavity C. Thus, a section S of drill rod, which

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may, for example, be 20 or 30 metres long with a mass in the range of 100 kg to 500 kg, may be left in the bore B extending above the cavity C presenting a major hazard to personnel and/or equipment in the cavity C, as this massive broken drill rod section S could unexpectedly fall out of the bore B.

[0028] With reference now to Figs. 2 and 3 of the drawings, a safety system 1 according to a preferred embodiment for protecting against just such a hazard posed by the broken drill rod section S in the drilled bore B is shown schematically. The safety system 1 comprises an anchor member 2, which is configured to be inserted and fixed in a proximal region E of the bore B. The anchor member 2 is in the form of a plug member, which is configured to be driven into and fixed within the proximal region E of the drilled bore B in a friction fit or interference fit. In this regard, the plug member 2 comprises a split tube 3 formed from a round steel tube or pipe having an outer diameter Do sized larger than an inner diameter Di of the bore B. For example, if the bore B has an inner diameter Di of 89 mm, the split tube 3 may have an outer diameter Do of about 100 mm and a wall thickness t of about 6 mm to 9 mm, e.g., about 8 mm in this case. Furthermore, the split tube 3 has a longitudinally extending slit or gap G formed or cut in the wall (as seen in Fig. 3) which allows the outer diameter Do of the split tube 3 (i.e., plug member 2) to be compressed or to reduce when the plug member 2 is driven into the drilled bore B of smaller diameter Di. A front or leading end region 4 of the split tube 3 also has a reduced diameter Dr that is smaller than an inner diameter Di of the drilled bore B to assist the initial introduction or insertion of the plug member 2 into the proximal region E of the bore B. In this way, the plug member 2 comprised of the split tube 3 can be fixed in the proximal region E of the bore B in a friction fit, in a manner similar to that known for a "split-set" type of rock anchor. As with the other dimensions of the split tube 3, the length Ls of the split tube 3 may be selected as appropriate to the rock-strata R, but it is preferably in the range of about 400 mm to 800 mm; e.g., 600 mm in this case.

[0029] The safety system 1 further comprises an impact reduction member 5 for reducing an impact of the broken drill rod section S in the event that it falls and strikes the anchor member or plug member 2 in the proximal region E of the bore B. The

impact reduction member 5 is also arranged in the proximal region E of the bore B and extends within the bore B above the anchor or plug member 2. In this embodiment, the impact reduction member 5 comprises an elongate body 6 which is arranged centrally of the plug member 2 and which is configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. The elongate body 6 may be formed of steel (e.g., mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the elongate body 6 within the split tube 3 preferably has a substantially constant diameter Dc and a portion 8 of the elongate body 6 extending above the split tube 3 is tapered, i.e., an outer surface 9 of the elongate body 6 in the tapered portion 8 tapers outwardly at an angle α of about 1° to 3°, e.g. about 1° in this case. The length Lt of the tapered portion 8 may be selected as appropriate to the safety system, but this length is preferably in the range of about 200 mm to 400 mm; e.g., 290 mm in this case, with the tapered portion 8 tapering from a maximum diameter of about 80 mm at its distal end to a diameter of about 70 mm at the constant diameter portion 7 within the split tube 3.

[0030] In this embodiment, the impact reduction member 5 is configured for movement relative to the plug member 2 upon impact by the falling broken drill rod section S. That is, the body 6 of the impact reduction member 5 is configured for movement into an interior of the plug member 2 if impacted or struck by the drill rod section S. In this way, the outer surface 9 of the tapered portion 8 of the body 6 contacts and bears against an inner surface of the split tube 3. As an initial impact by the broken drill rod section S drives the elongate body 6 downwards into the split tube 3, the slight taper of the tapered portion 8 exerts an outward force on the split tube 3 and thus enhances or increases engagement between the bore B and the tube 3. The tapered portion 8 thereby acts to effect a gradual or extended transfer of impact loading from the broken drill rod section S to the plug member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e., the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is reduced significantly, such that the friction fit or

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interference fit of the anchor member or plug member 2 within the bore B can readily withstand the impact loading. In this way, the safety system 1 of this embodiment can effectively and reliably protect workers and/or equipment in the cavity C from the hazard of broken drill rod sections S falling from a bore B drilled above horizontal.

[0031] To facilitate deployment of the safety system 1 described above, the safety system 1 may include an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for introducing the plug member 2 and the impact reduction member 5, into the proximal region E of the bore B. The adapter member 10 may, for example, be configured to be received in a drill rod carousel of the rock drilling apparatus. This enables the safety system 1 to be placed in and held by the drill rod carousel and then introduced or inserted (e.g., hydraulically driven or forced) into the proximal region E of the bore B by the rock drilling apparatus. To this end, the adapter 10 may include a head 11 configured for connection with the rock drilling apparatus. Furthermore, the adapter member 10 may be connected to, and preferably integrally formed with, the body 6 of the impact reduction member 5. The adapter member 10 further includes a collar 12 which sits within and engages a corresponding groove or slot 13 in the adapter member 10. The split tube 3 of the plug member 2 seats against the collar 12, such that the collar 12 imparts an axial force to the plug member 2 to drive the plug member 2 (together with impact reduction member 5) into the proximal region E of the drilled bore B in a friction fit. As is apparent from Fig. 2, the collar 12 preferably has an outer diameter slightly less than the inner diameter Di of the bore B and a rear or trailing end region 14 of the split tube 3 which abuts and seats against the collar 12 is also swaged inwards to a reduced diameter Dr, i.e., like the front or leading end region 4. This configuration enables the anchor member 2 and the impact reduction member 5 of the safety system 1 to be driven into the drilled bore B beyond the rock face F. This may be particularly useful where the rock at the rock face F is friable or crumbling, because it enables the safety system 1 to be driven deeper into the bore B beyond the rock face F where it can be soundly founded in competent rock.

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[0032] With reference now to drawing Fig. 4, another embodiment of a safety system 1 is shown and like parts are designated with like or corresponding reference signs compared with the embodiment of Figs. 2 and 3. In this embodiment, the safety system 1 again includes a plug type anchor member 2 comprising a split tube 3 having longitudinally extending slit or gap (not shown) and a front or leading end region 4 of reduced diameter Dr to assist driven or forced insertion into a proximal region E of a bore B in an interference fit or a friction fit. The safety system 1 furthermore again includes an impact reduction member 5 comprising an elongate body 6 arranged within the plug member 2. The body 6 may again be formed of steel (e.g., mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the body 6 within the split tube 3 may have a substantially constant diameter Dc and a portion 8 of impact reduction member 5 which extends above the split tube 3 is tapered; that is, a surface 9 of the tapered portion 8 tapers at an angle α of about 3° to 8°, e.g., about 5° in this case, such that the tapered portion 8 forms an elongate wedge that tapers along its length Lt towards an inner periphery of the bore B.

[0033] The impact reduction member 5 is again configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. Specifically, in this embodiment, the wedge surface 9 of the tapered portion 8 is configured and arranged to be impacted or struck directly by the broken drill rod section S. In this embodiment, however, the impact reduction member 5 is not configured for any significant movement relative to the plug member 2 upon impact by the falling broken drill rod section S. Rather, as the falling broken drill rod section S initially impacts or contacts the surface 9 of the tapered portion 8, the drill rod section S is gradually deflected towards and into contact with the opposite inner wall of the bore B. This contact generates friction which acts to brake the falling object and dissipate the impact. Again, therefore, the tapered portion 8 acts to cause gradual or extended transfer of impact loading from the drill rod section S to the anchor member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the

drill rod section S after initial impact) via the tapered portion 8, the impact force is again reduced significantly, such that the friction fit or interference fit of the anchor member 2 within the bore B can readily withstand the impact loading. The safety system 1 of this embodiment may thus also effectively and reliably protect workers and/or equipment in the cavity C from the hazard of a broken drill rod section S. As before, the safety system 1 of Fig. 4 includes an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for deploying the plug-like anchor member 2 and the impact reduction member 5 into the proximal region E of the bore B.

[0034] Finally, referring to Fig. 5 of the drawings, a flow diagram is shown that illustrates schematically the steps in a method of protecting against a hazard resulting from drill rod failure, particularly the hazard posed by a broken drill rod section S falling out of an upwardly drilled rock bore B, according to the embodiments of the invention described above with respect to Figs. 1 to 4. In this regard, the first box i of Fig. 5 represents the step of providing a safety system 1 according to any one of the embodiments of the invention described above. The second box ii then represents the step of fixing an anchor member 2 of the safety system 1 within the proximal region E of the bore B in a friction fit or interference fit to at least partially plug or block the proximal region E of the bore B. The third box iii represents the step of arranging an impact reduction member 5 within the proximal region E of the bore B above the anchor member 2. In this regard, it will be appreciated by persons skilled in the art that steps represented by boxes ii and iii in Fig. 5 may occur simultaneously or in reverse order. The final box iv in Fig. 5 of the drawings represents the step of reducing an impact of a drill rod section S striking the plug member 2 within the proximal E of the drilled bore B via the impact reduction member 5.

[0035] Although specific embodiments of the invention are illustrated and described herein, it will be appreciated by those of ordinary skill in the art that a variety of alternative and/or equivalent implementations exist. It should be appreciated that the exemplary embodiment or exemplary embodiments are examples only and are not intended to limit the scope, applicability, or configuration

in any way. Rather, the foregoing summary and detailed description will provide those skilled in the art with a convenient road map for implementing at least one exemplary embodiment, it being understood that various changes may be made in the function and arrangement of elements described in an exemplary embodiment without departing from the scope as set forth in the appended claims and their legal equivalents. Generally, this application is intended to cover any adaptations or variations of the specific embodiments discussed herein. By way of example, a skilled person will readily appreciate that the safety system of the invention is not limited to being made from any specific material described in the embodiments. Rather, the skilled person will appreciate that a range of suitable materials may exist, and the skilled person can select a material based upon the known mechanical properties of that material which may make it suitable for use in this invention.

[0036] It will also be appreciated that in this document the terms "comprise", "comprising", "include", "including", "contain", "containing", "have", "having", and any variations thereof, are intended to be understood in an inclusive (i.e. non-exclusive) sense, such that the device, apparatus, system, method or process described herein is not limited to those features or parts or elements or steps recited but may include other features or parts or elements or steps not expressly listed or inherent to such device, apparatus, system, method or process. Further, the terms "a" and "an" used herein are intended to be understood as meaning one or more unless explicitly stated otherwise. Moreover, unless indicated to the contrary, the terms "first", "second", "third", etc. are used merely as labels, and are not intended to impose numerical requirements on, or to establish a certain ranking of importance, of their objects.

[0037] List of reference signs

1	safety system
2	anchor member or plug member
3	split tube
4	front or leading end region of split tube
5	impact reduction member
6	elongate body
7	constant diameter portion of elongate body
8	tapered portion
9	outer surface of tapered portion
10	adapter member
11	head of adapter member
12	collar
13	groove or slot
14	rear or trailing end region of split tube
C	cavity or chamber
R	rock strata
O	ore deposit or ore body
F	rock-face
B	bore
S	broken drill rod section
E	proximal region of bore
t	wall thickness of split tube
G	longitudinal slit or gap
Di	inner diameter of bore
Do	outer diameter of split tube
Dr	reduced diameter of leading and/or trailing end region of split tube
Ls	length of split tube
Lt	length of tapered portion
α	taper angle

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Claims:

1. A safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section within the bore, comprising:

an anchor member configured to be fixed in a friction fit or interference fit within a proximal region of the bore to at least partially block or obscure the drilled bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member in the proximal region of the bore, wherein the impact reduction member is configured to be located in the proximal region of the drilled bore and to extend within the bore above the anchor member,

wherein the impact reduction member comprises an elongate body arranged substantially centrally of the anchor member and configured to move relative to the anchor member when impacted by the drill rod section, the elongate body having a tapered portion configured to exert an outward force on the anchor member when the elongate body moves on impact by the drill rod section for effecting a gradual or extended transfer of impact loading from the drill rod section to the anchor member.

2. A safety system according to claim 1, wherein the anchor member is generally cylindrical or tubular and is configured to fit or plug into the drilled bore, the anchor member having an outer diameter larger than an inner diameter of the bore and including a slit or gap configured to allow the outer diameter to reduce when the anchor member is driven into the bore.

3. A safety system for protecting against a hazard of a drill rod failure in a drilled rock bore above horizontal, and especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising:

a plug member for insertion into a proximal region of the bore, the plug member configured to be fixed within the proximal region of the bore in a friction fit or interference fit; and

an impact reduction member for reducing an impact of a falling drill rod section on the plug member within the proximal region of the bore, wherein the impact reduction member is configured to be located within the proximal region of the bore and to extend within the bore above the plug member;

wherein the impact reduction member comprises an elongate body arranged substantially centrally of the plug member and configured to move relative to the plug member when impacted by the drill rod section, the elongate body having a tapered portion configured to exert an outward force on the plug member when the elongate body moves on impact by the drill rod section for effecting a gradual or extended transfer of impact loading from the drill rod section to the plug member.

4. This claim has been deleted.

5. A safety system according to claim 3, wherein the plug member is cylindrical or tubular with a longitudinal slit or gap and an outer diameter that is larger than an inner diameter of the drilled bore, wherein the plug member is configured to be driven into the proximal region of the bore and wherein the longitudinal slit or gap is configured to allow the outer diameter of the plug member to reduce or to be compressed when the plug member is driven into the bore.

6. A safety system according to claim 5, wherein the plug member has a front or leading end region of a reduced diameter which is smaller than an inner diameter of the drilled bore for assisting introduction or insertion of the plug member into the proximal region of the bore.

7. A safety system according to any one of claims 1 to 3, 5 or 6, wherein the impact reduction member is configured for movement into an interior of the anchor member or plug member when impacted by the drill rod section.

8. A safety system according to any one of claims 1 to 3, or 5 to 7, wherein the safety system is configured for connection to a rock drilling apparatus via an adapter member for driving the safety system, and especially the anchor member or plug member and impact reduction member, into the proximal region of the bore.

9. A safety system according to claim 8, wherein the adapter member includes a collar against which the anchor member or plug member seats such that the collar is configured to impart an axial force to the anchor member or plug member to drive the anchor member or plug member into the proximal region of the drilled bore.

10. A method of protecting against a hazard posed by a drill rod section upon drill rod failure in a drilled rock bore extending above horizontal, the method comprising deploying a safety system into the bore in response to drill rod failure, the safety system comprising:

an anchor member for insertion into the bore, the anchor member configured to be fixed in a friction fit or interference fit within a proximal region of the bore to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, wherein the impact reduction member is configured to be located in the proximal region of the bore and to extend within the bore above the anchor member to be impacted or struck by the falling drill rod section;

wherein deploying the safety system comprises driving the anchor member and the impact reduction member into the bore together via a rock drilling apparatus, whereby the safety system is driven into the bore beyond friable or crumbling rock at the rock face so that the anchor

member is soundly founded in competent rock in the friction fit or interference fit within the proximal region of the bore.

11. This claim has been deleted.

12. A method according to claim 10, wherein the anchor member comprises an over-sized cylindrical or tubular member for insertion into the proximal region of the bore, the cylindrical or tubular anchor member having a slit or gap configured to allow its outer diameter to reduce when the anchor member is driven into the bore.

13. A method according to any one of claims 10 or 12, wherein the impact reduction member comprises a tapered portion for effecting a gradual or extended transfer of impact loading from the falling drill rod section to the anchor member.

14. A safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising:

an anchor member for insertion into a proximal region of the bore, the anchor member being configured to be fixed within the proximal region of the bore in a friction fit or an interference fit to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, wherein the impact reduction member is configured to be located within the proximal region of the bore and to extend within the bore above the anchor member to be impacted directly by a falling drill rod section;

wherein the anchor member and the impact reduction member are configured to be driven into the bore together with a rock drilling apparatus, the safety system being configured to be driven into the bore beyond the rock face so that the anchor member is soundly founded in competent rock in the friction fit or interference fit within the proximal region of the bore.

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15. A safety system according to claim 14, wherein the anchor member is cylindrical or tubular with an outer diameter that is larger than an inner diameter of the bore and a slit or gap adapted to allow the outer diameter to reduce when the anchor member is driven into the bore; the anchor member preferably having a leading end region of a diameter smaller than the inner diameter of the bore to assist insertion of the anchor member into the bore.

16. A safety system according to claim 14 or 15, wherein the impact reduction member comprises a tapered portion for effecting a gradual or extended transfer of impact loading imparted by the falling drill rod section to the anchor member, wherein the tapered portion is configured and arranged to allow movement of the drill rod section relative to the anchor member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member.

17. A safety system according to claim 16, wherein the impact reduction member includes an elongate body that is arranged substantially centrally of the anchor member and that is configured to move relative to the anchor member when impacted by the falling drill rod section, wherein the elongate body comprises the tapered portion for movement of the impact reduction member relative to the anchor member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member.

18. A safety system according to claim 16, wherein the tapered portion is fixed relative to the anchor member and is configured and arranged to allow for movement of the falling drill rod section relative to the impact reduction member.

19. A method of protecting against a hazard of drill rod failure posed by a drill rod section in a drilled rock bore above horizontal, the method comprising

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deploying a safety system into the bore in response to drill rod failure, the safety system comprising:

a plug member for insertion into a proximal region of the bore, the plug member configured to be fixed within the proximal region of the bore in a friction fit or interference fit to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the plug member, wherein the impact reduction member is configured to be located in the proximal region of the bore and to extend within the bore above the plug member to be impacted or struck by the falling drill rod section;

wherein deploying the safety system comprises driving the plug member and the impact reduction member into the proximal region of the bore together by a rock drilling apparatus, whereby the safety system is driven into the bore so that the plug member is soundly founded in competent rock in the friction fit or interference fit in the proximal region of the bore.

20. A method according to claim 19, wherein the plug member is cylindrical or tubular with an outer diameter that is larger than an inner diameter of the bore and a slit or gap adapted to allow the outer diameter to reduce when the plug member is driven into the bore.

Abstract

The invention provides a safety system (1) for protecting against a hazard of a drill rod failure in a drilled rock bore (B) above horizontal, and especially a hazard posed by a broken drill rod section (S) lodged within the bore (B). The safety system (1) comprises: a plug member (2) for insertion into a proximal region (E) of the bore (B), the plug member (2) being configured to be fixed within the proximal region (E) of the bore (B) in a friction fit or interference fit; and an impact reduction member (5) for reducing an impact of a falling drill rod section (S) on the plug member (2) within the proximal region (E) of the bore (B). The impact reduction member (5) is configured to be located within the proximal region (E) of the bore (B) and to extend within the bore (B) above the plug member (2). The invention further provides a method of protecting against a hazard posed by a drill rod section (S) upon drill rod failure in a drilled rock bore (B) extending above horizontal, the method comprising deploying a safety system (1) into the bore (B) in response to drill rod failure.

(Fig. 3)

Safety System And Method For Protecting Against A Hazard Of Drill Rod Failure In A Drilled Rock Bore

This is a divisional application of Australian Patent Application No. 2015255248, the contents of which are incorporated herein in their entirety by reference.

Technical Field

[0001] The present invention relates to a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially a hazard posed by a broken drill rod section lodged within a drilled rock bore. The invention also relates to a method of protecting against such a hazard of drill rod failure. Thus, it will be appreciated that the invention has particular application or use in the mining industry, although applications may also be contemplated in other fields, such as in the construction industry.

Background

[0002] In underground mine environments, a body or vein of ore will often be accessed by excavating cavities or working chamber (hereinafter cavity) into the rock strata below the ore body or vein and then working towards the ore deposit from below. This technique is referred to in the mining field as "overhand stoping" and has become the predominant direction of mining with the advent of rock blasting and power drills. In particular, the technique commonly involves drilling multiple bores upwards from the cavity into the rock strata towards the ore deposit above. Explosive charges are then set in the bores to blast away the intervening rock and to access the ore deposit directly. Indeed, the bores and the explosive charges may extend into the ore deposit itself, which together with the intervening rock then collapses into the cavity below for removal.

[0003] A significant problem associated with this mining technique is associated with drill rod failure when drilling the multiple bores extending upwards into the rock strata towards the ore body. The individual bores drilled are often tens of metres long

(for example, in the range of 20 to 60 metres) and the drill rods which extend over that length may only have a diameter of about 80 millimetres. As the composition and properties of the rock strata will typically vary through its depth, the drill rods are subjected to varying and also somewhat unpredictable loading during the drilling of each bore. Perhaps not surprisingly, therefore, the failure or breakage of a drill rod is not uncommon when the multiple bores are being drilled to lay the explosive charges. This has the problem that a section of drill rod, which may, for example, be fifteen or twenty metres long with a mass in the range of 100 kg to 500 kg, is left lodged in the bore extending upwards from the cavity. The pressure produced by the rock strata can alter either naturally, or as a result of further drilling of adjacent holes. This can result in the drill rod dislodging from the bore hole and falling into the cavity. It is therefore not difficult to imagine that the hazard posed to personnel and/or to equipment by such a massive broken drill rod section, which could unexpectedly drop out of the bore, is extreme.

[0004] In the event of such a drill rod failure in a bore extending above horizontal (where the risk of the drill rod section dropping out exists), occupational health and safety regulations in many countries require the affected bore to be covered and/or otherwise rendered safe before work in that particular area may continue. In the absence of a tailored solution to this problem to date, however, miners have had to improvise with very provisional and suboptimal measures. These have not only been extremely time-consuming, leading to long delays in the further progress of the mining, but the real safety provided by such provisional measures has at times also been questionable.

Summary of the Invention

[0005] In view of the above, it would be desirable to provide an improved safety system and associated method for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, and especially for protecting against the hazard of a drill rod section falling out of the bore into an excavated cavity area.

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[0006] According to one aspect, the present invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising:

an anchor member for insertion into a proximal ~~end~~ region of the bore, the anchor member configured to be fixed in a friction fit or interference fit within the proximal ~~end~~ region of the bore to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, the impact reduction member being configured to be located within the proximal ~~end~~ region of the bore and to extend within the bore above the anchor member to be impacted by the falling drill rod section.

[0007] Thus, the safety system of the invention is configured and arranged to be fixed in the proximal ~~end~~ region of the bore ~~(i.e., the end region of the bore proximate or adjacent the rock-face at which drilling takes place, as distinct from the remote or distal end region of the bore)~~ and to absorb the force or impact of a broken drill rod section falling within the bore towards the opening in the rock-face. Further, the safety system desirably prevents such a drill rod section from falling out into the space or area in which the work is taking place. In this way, the safety system is able to protect the area in which workers and/or equipment may still be active in further mining operations from the hazard of a drill rod section falling from a drilled bore in which the drill rod has suffered a failure and broken or sheared off within the bore.

[0008] In an embodiment of the safety system, the anchor member is provided as a plug member and is configured to plug into the drilled bore and to at least partially block or obscure the bore. In this way, the anchor member / plug member is configured and arranged to at least partially block or close the proximal ~~end~~ region of the bore against the hazard of the broken drill rod section falling out into the area in which workers and/or equipment may be active in further mining operations or other activities. The plug member thus forms an anchor member in the sense that it operates to hold the safety system in the bore and to resist the safety system and/or the drill rod section from falling out of the bore into the area below.

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[0009] According to another aspect, therefore, the present invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising:

a plug member for insertion into a proximal ~~end~~ region of the bore, the plug member configured to be fixed in a friction fit or interference fit within the proximal ~~end~~ region of the bore to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the plug member, wherein the impact reduction member is configured to be located within the proximal ~~end~~ region of the bore and to extend within the bore above the plug member to be impacted by the falling drill rod section.

[0010] ~~In an embodiment of the safety system, the anchor member or plug member is configured to be fixed within the proximal end region of the drilled bore in a friction fit or an interference fit. In this regard, the~~ The anchor member or plug member may, for example, have an outer diameter larger than an inner diameter of the drilled bore and may include a slit or gap configured to allow the outer diameter to reduce when the anchor member or plug member is driven into the bore. In this way, the anchor member or plug member can be configured to be fixed within the bore in a friction fit or an interference fit. For example, the plug member may comprise a split tube having a longitudinal slit or gap and an outer diameter sized larger than an inner diameter of the drilled bore. The split tube is configured to be driven into the proximal ~~end~~ region of the drilled bore and the longitudinal slit or gap is thus configured to allow the outer diameter of the split tube (i.e., of the plug member) to be compressed or to reduce when the plug member is driven into the drilled bore of smaller diameter. In this way, the plug member comprising the split tube can be fixed in the proximal ~~end~~ region of the bore ~~adjacent the rock face~~ in a friction fit or an interference fit, in a manner similar to that known for a "split-set" type of rock anchor. The plug member is thereby configured to at least partially close or block the drilled bore. To assist the insertion of the plug member into the proximal ~~end~~ region of the drilled bore, the plug member (e.g., split tube member) preferably

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has a front or leading end region of a reduced diameter smaller than an inner diameter of the drilled bore.

[0011] In an embodiment of the safety system, the impact reduction member includes a tapered portion for a gradual or extended transfer of an impact loading imparted by a falling drill rod section to the anchor member or plug member. In this regard, the impact reduction member may be configured and arranged to be impacted or struck by the falling drill rod section, and the tapered portion is configured to allow movement of the impact reduction member relative to the anchor member or plug member for gradual or extended transfer of the impact loading from the drill rod section to the anchor or plug member. By the gradual or extended transfer of the impact loading to the anchor member or plug member, the impact force can be significantly reduced. In this regard, the stopping distance for a falling object (i.e., the distance travelled by the object after initial impact) has a profound effect on the impact force imparted. Specifically, the larger the stopping distance, the lower the impact force by virtue of an inversely proportional relationship; i.e., by doubling the stopping distance, the impact force can effectively be halved. For this reason, the tapered portion of the impact reduction member is desirably configured and arranged to provide for movement of the falling drill rod section relative to the anchor member or plug member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member or plug member.

[0012] In an embodiment of the safety system, the impact reduction member includes an elongate body which is arranged substantially centrally of the anchor member or plug member and which is configured to be movable relative to the anchor or plug member when impacted by the drill rod section. The elongate body may include a tapered portion configured to allow movement of the impact reduction member relative to the anchor member or plug member for effecting a gradual or extended transfer of impact loading imparted by a falling drill rod section to the plug member.

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[0013] In an embodiment of the safety system, the elongate body comprises a tapered portion configured to allow movement of the impact reduction member relative to the plug member for a gradual or extended transfer of impact loading from the drill rod section to the plug member. A portion of the elongate body may preferably be arranged within the plug member and the tapered portion may be configured to exert an outward force on the plug member when the elongate body moves on impact by the drill rod section. Thus, in an embodiment of the system, the impact reduction member may be configured for movement into an interior of the plug member when it is impacted or struck by the drill rod section.

[0014] Thus, in at least one embodiment, the invention provides a safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section within the bore, comprising: an anchor member configured to be fixed in a proximal ~~end~~ region of the bore in a friction fit or interference fit to at least partially block or obscure the drilled bore, and an impact reduction member for reducing an impact of a falling drill rod section on the anchor member in the proximal ~~end~~ region of the bore, wherein the impact reduction member is configured to be located in the proximal ~~end~~ region of the drilled bore and to extend within the bore above the anchor member. The impact reduction member comprises an elongate body arranged substantially centrally of the anchor member and configured to move relative to the anchor member when impacted by the drill rod section, the elongate body having a tapered portion configured to exert an outward force on the anchor member when the elongate body moves on impact by the drill rod section for effecting a gradual or extended transfer of impact loading from the drill rod section to the anchor member.

[0015] Further, in at least one embodiment, the invention provides a safety system for protecting against a hazard of a drill rod failure in a drilled rock bore above horizontal, and especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising: a plug member for insertion into a proximal ~~end~~ region of the bore, the plug member configured to be fixed in a friction fit or interference fit within the proximal ~~end~~ region of the bore, and an impact reduction

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member for reducing an impact of a falling drill rod section on the plug member within the proximal ~~end~~ region of the bore, wherein the impact reduction member is configured to be located within the proximal ~~end~~ region of the bore and to extend within the bore above the plug member; wherein the impact reduction member comprises an elongate body arranged substantially centrally of the plug member and configured to move relative to the plug member when impacted by the drill rod section, the elongate body having a tapered portion configured to exert an outward force on the plug member when the elongate body moves on impact by the drill rod section for effecting a gradual or extended transfer of impact loading from the drill rod section to the plug member.

[0016] In an alternative embodiment of the system, the tapered portion may be configured and arranged to allow movement of the drill rod section relative to the impact reduction member. In this regard, the tapered portion of the impact reduction member may be fixed relative to the plug member.

[0017] In an embodiment, the safety system may further comprise an adapter member which is configured for connection to a rock drilling apparatus for driving or inserting the safety system, especially the plug member and the impact reduction member, into the proximal ~~end~~ region of the drilled bore. In this way, the safety system may be designed to operate with the same equipment used for drilling the bores. This is particularly helpful because no new or additional equipment is required to deploy the safety system of the invention, resulting in minimal disruption and minimal time loss. Rather, the operator is able to continue working with the same equipment and use that equipment to secure the compromised bore with the broken drill rod section by introducing or inserting the safety system. The adapter member may, for example, be configured to cooperate with and/or to be received in a drill rod carousel of the rock drilling apparatus. This thereby enables the safety system to be placed in and held by the drill rod carousel and then be introduced or inserted (e.g., driven or forced) into the proximal ~~end~~ region of the bore by the rock drilling apparatus.

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[0018] In an embodiment of the safety system, therefore, the plug member and the impact reduction member are configured to be driven into the proximal ~~end~~ region of the bore together, preferably by a rock drilling apparatus. In this regard, the safety system is desirably adapted to be driven deeper into the bore beyond friable or crumbling rock (i.e., unstable rock) at the rock face at which drilling takes place, to be soundly founded in competent rock.

[0019] Thus, in at least one embodiment, a safety system for protecting against a hazard of drill rod failure in a rock bore drilled above horizontal is provided, and especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising: an anchor member for insertion into a proximal ~~end~~ region of the bore, the anchor member being configured to be fixed within the proximal ~~end~~ region of the bore in a friction fit or an interference fit to at least partially block or obscure the bore; and an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, wherein the impact reduction member is configured to be located within the proximal ~~end~~ region of the bore and to extend within the bore above the anchor member to be impacted by a falling drill rod section, and wherein the anchor member and the impact reduction member are configured to be driven into the bore together with a rock drilling apparatus, the safety system being configured to be driven into the bore beyond unstable rock at the rock face so that the anchor member is ~~to be~~ soundly founded in competent rock in the friction fit or interference fit within the proximal region of the bore.

[0020] In an embodiment of the safety system, the impact reduction member may comprise an impact dampening material which is introduced into the drilled bore above the plug member. In this way, the impact dampening material may serve to physically fill and block or obscure part of the proximal ~~end~~ region of the bore, and also to provide an impact dampening effect. The impact dampening material may, for example, comprise a polymer foam material. The polymer foam could optionally be introduced or injected into the drilled bore in a liquid or fluid form. The polymer foam then preferably solidifies within the bore and serves not only to physically fill

and block or obscure part of the proximal ~~end~~ region of the bore, but also provides an impact dampening effect.

[0021] In another aspect, the present invention provides a method of protecting against a hazard posed by a drill rod section upon drill rod failure in a drilled rock bore extending above horizontal, the method comprising deploying a safety system into the bore in response to drill rod failure, the safety system comprising:

an anchor member for insertion into the bore, the anchor member configured to be fixed in a friction fit or interference fit within a proximal ~~end~~ region of the bore to at least partially block or obscure the bore, and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, wherein the impact reduction member is configured to be located in the proximal ~~end~~ region of the bore and to extend within the bore above the anchor member to be impacted or struck by the falling drill rod section;

wherein deploying the safety system comprises driving the anchor member and the impact reduction member into the bore together via a rock drilling apparatus, whereby the safety system is driven into the bore beyond friable or crumbling rock at the rock face so that the anchor member is soundly founded in competent rock in the friction fit or interference fit within the proximal region of the bore.

[0022] According to a further aspect, the present invention provides a method of protecting against a hazard posed by a drill rod section upon drill rod failure in a drilled rock bore above horizontal, the method comprising deploying a safety system into the bore in response to drill rod failure, the safety system comprising:

a plug member for insertion into the bore, the plug member configured to be fixed in a friction fit or interference fit within a proximal ~~end~~ region of the bore to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the plug member, wherein the impact reduction member is configured to be located in the proximal ~~end~~ region of the bore and to extend within the bore above the plug member to be impacted or struck by the falling drill rod section;

wherein deploying the safety system comprises driving the plug member and the impact reduction member into the bore together, preferably via a rock drilling apparatus, whereby the safety system is driven into the bore so that the plug member is ~~to be~~ soundly founded in competent rock in the friction fit or interference fit within proximal region of the bore, e.g., beyond friable or crumbling rock at the rock face.

Brief Description of the Drawings

[0023] For a more complete understanding of the invention and the advantages thereof, exemplary embodiments of the invention are explained in more detail in the following description with reference to the accompanying drawing figures, in which like reference signs designate like parts and in which:

Fig. 1 is a schematic cross-sectional view of an excavated cavity in a mine environment illustrating bores drilled in rock strata extending towards an ore deposit;

Fig. 2 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to an embodiment of the invention;

Fig. 3 is a schematic partial perspective view of the safety system of Fig. 2 shown in an installed state in a proximal ~~end~~ region of a bore;

Fig. 4 is a schematic cross-sectional side view of a safety system to protect against the hazard of a broken drill rod section in a drilled rock bore according to another embodiment of the invention; and

Fig. 5~~4~~ is a flow diagram which schematically represents a method according to an embodiment of the invention.

[0024] The accompanying drawings are included to provide a further understanding of the present invention and are incorporated in and constitute a part of this specification. The drawings illustrate particular embodiments of the invention

and together with the description serve to explain the principles of the invention. Other embodiments of the invention and many of the attendant advantages of the invention will be readily appreciated as they become better understood with reference to the following detailed description.

[0025] It will be appreciated that common and/or well understood elements that may be useful or necessary in a commercially feasible embodiment are not necessarily depicted in order to facilitate a more abstracted view of the embodiments. The elements of the drawings are not necessarily illustrated to scale relative to each other. It will also be understood that certain actions and/or steps in an embodiment of a method may be described or depicted in a particular order of occurrences while those skilled in the art will understand that such specificity with respect to sequence is not actually required.

Detailed Description of Embodiments

[0026] With reference firstly to Fig. 1 of the drawings, a cross-sectional view of a mine environment is illustrated schematically. An excavated cavity or chamber C of the mine is shown in a cross-section taken normal or transverse to a length of that cavity or chamber C into the page. The cavity C is essentially surrounded by rock strata R and an ore deposit O above the cavity C can also be seen. To access the ore deposit O, the cavity C is excavated into the rock strata R below that body or vein of ore O and then multiple bores B are drilled upwards from the cavity C into the rock strata R towards the ore deposit O above. In this way, explosive charges can be set in the bores B to blast away the intervening rock, which together with the ore deposit O then collapses into the cavity C below for collection and removal for processing.

[0027] When drilling the multiple bores B upwards into the rock strata R towards the ore body O, the individual bores drilled are often tens of metres long (e.g., in the range of 20 to 60 metres) and the drill rods (not shown) which extend over that length may have a diameter of about 80 millimetres. As the composition and properties of the rock strata R typically varies through its depth, and in any case in comparison to

the composition and properties of the ore deposit O, the drill rods are subjected to varying and unpredictable loading during the drilling of each bore B. Failure or breakage of a drill rod is not uncommon when multiple bores B are being drilled to lay the explosive charges above the cavity C. Thus, a section S of drill rod, which may, for example, be 20 or 30 metres long with a mass in the range of 100 kg to 500 kg, may be left in the bore B extending above the cavity C presenting a major hazard to personnel and/or equipment in the cavity C, as this massive broken drill rod section S could unexpectedly fall out of the bore B.

[0028] With reference now to Figs. 2 and 3 of the drawings, a safety system 1 according to a preferred embodiment for protecting against just such a hazard posed by the broken drill rod section S in the drilled bore B is shown schematically. The safety system 1 comprises an anchor member 2, which is configured to be inserted and fixed in a proximal ~~end~~ region E of the bore B ~~adjacent or close to a rock-face F of the cavity C at which the drilling takes place~~. The anchor member 2 is in the form of a plug member, which is configured to be driven into and fixed within the proximal ~~end~~ region E of the drilled bore B in a friction fit or interference fit. In this regard, the plug member 2 comprises a split tube 3 formed from a round steel tube or pipe having an outer diameter Do sized larger than an inner diameter Di of the bore B. For example, if the bore B has an inner diameter Di of 89 mm, the split tube 3 may have an outer diameter Do of about 100 mm and a wall thickness t of about 6 mm to 9 mm, e.g., about 8 mm in this case. Furthermore, the split tube 3 has a longitudinally extending slit or gap G formed or cut in the wall (as seen in Fig. 3) which allows the outer diameter Do of the split tube 3 (i.e., plug member 2) to be compressed or to reduce when the plug member 2 is driven into the drilled bore B of smaller diameter Di. A front or leading end region 4 of the split tube 3 also has a reduced diameter Dr that is smaller than an inner diameter Di of the drilled bore B to assist the initial introduction or insertion of the plug member 2 into the proximal ~~end~~ region E of the bore B. In this way, the plug member 2 comprised of the split tube 3 can be fixed in the proximal ~~end~~ region E of the bore B ~~adjacent the rock-face F~~ in a friction fit, in a manner similar to that known for a "split-set" type of rock anchor. As with the other

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dimensions of the split tube 3, the length Ls of the split tube 3 may be selected as appropriate to the rock-strata R, but it is preferably in the range of about 400 mm to 800 mm; e.g., 600 mm in this case.

[0029] The safety system 1 further comprises an impact reduction member 5 for reducing an impact of the broken drill rod section S in the event that it falls and strikes the anchor member or plug member 2 in the proximal ~~end~~ region E of the bore B. The impact reduction member 5 is also arranged in the proximal ~~end~~ region E of the bore B and extends within the bore B above the anchor or plug member 2. In this embodiment, the impact reduction member 5 comprises an elongate body 6 which is arranged centrally of the plug member 2 and which is configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. The elongate body 6 may be formed of steel (e.g., mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the elongate body 6 within the split tube 3 preferably has a substantially constant diameter Dc and a portion 8 of the elongate body 6 extending above the split tube 3 is tapered, i.e., an outer surface 9 of the elongate body 6 in the tapered portion 8 tapers outwardly at an angle α of about 1° to 3°, e.g. about 1° in this case. The length Lt of the tapered portion 8 may be selected as appropriate to the safety system, but this length is preferably in the range of about 200 mm to 400 mm; e.g., 290 mm in this case, with the tapered portion 8 tapering from a maximum diameter of about 80 mm at its distal end to a diameter of about 70 mm at the constant diameter portion 7 within the split tube 3.

[0030] In this embodiment, the impact reduction member 5 is configured for movement relative to the plug member 2 upon impact by the falling broken drill rod section S. That is, the body 6 of the impact reduction member 5 is configured for movement into an interior of the plug member 2 if impacted or struck by the drill rod section S. In this way, the outer surface 9 of the tapered portion 8 of the body 6 contacts and bears against an inner surface of the split tube 3. As an initial impact by the broken drill rod section S drives the elongate body 6 downwards into the split tube 3, the slight taper of the tapered portion 8 exerts an outward force on the split

tube 3 and thus enhances or increases engagement between the bore B and the tube 3. The tapered portion 8 thereby acts to effect a gradual or extended transfer of impact loading from the broken drill rod section S to the plug member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e., the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is reduced significantly, such that the friction fit or interference fit of the anchor member or plug member 2 within the bore B can readily withstand the impact loading. In this way, the safety system 1 of this embodiment can effectively and reliably protect workers and/or equipment in the cavity C from the hazard of broken drill rod sections S falling from a bore B drilled above horizontal.

[0031] To facilitate deployment of the safety system 1 described above, the safety system 1 may include an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for introducing the plug member 2 and the impact reduction member 5, into the proximal region ~~end~~ E of the bore B. The adapter member 10 may, for example, be configured to be received in a drill rod carousel of the rock drilling apparatus. This enables the safety system 1 to be placed in and held by the drill rod carousel and then introduced or inserted (e.g., hydraulically driven or forced) into the proximal ~~end~~ region E of the bore B by the rock drilling apparatus. To this end, the adapter 10 may include a head 11 configured for connection with the rock drilling apparatus. Furthermore, the adapter member 10 may be connected to, and preferably integrally formed with, the body 6 of the impact reduction member 5. The adapter member 10 further includes a collar 12 which sits within and engages a corresponding groove or slot 13 in the adapter member 10. The split tube 3 of the plug member 2 seats against the collar 12, such that the collar 12 imparts an axial force to the plug member 2 to drive the plug member 2 (together with impact reduction member 5) into the proximal ~~end~~ region E of the drilled bore B in a friction fit. As is apparent from Fig. 2, the collar 12 preferably has an outer diameter slightly less than the inner diameter Di of the bore B and a rear or trailing end region 14 of the split tube 3 which abuts and seats against the collar 12 is also swaged inwards to a reduced diameter Dr, i.e., like the front or leading end region 4. This

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configuration enables the anchor member 2 and the impact reduction member 5 of the safety system 1 to be driven into the drilled bore B beyond the rock face F. This may be particularly useful where the rock at the rock face F is friable or crumbling, because it enables the safety system 1 to be driven deeper into the bore B beyond the rock face F where it can be soundly founded in competent rock.

[0032] With reference now to drawing Fig. 4, another embodiment of a safety system 1 is shown and like parts are designated with like or corresponding reference signs compared with the embodiment of Figs. 2 and 3. In this embodiment, the safety system 1 again includes a plug type anchor member 2 comprising a split tube 3 having longitudinally extending slit or gap (not shown) and a front or leading end region 4 of reduced diameter Dr to assist driven or forced insertion into a proximal ~~end~~ region E of a bore B in an interference fit or a friction fit. The safety system 1 furthermore again includes an impact reduction member 5 comprising an elongate body 6 arranged within the plug member 2. The body 6 may again be formed of steel (e.g., mild steel) and may be machined from bar stock with a round cross-section. A portion 7 of the body 6 within the split tube 3 may have a substantially constant diameter Dc and a portion 8 of impact reduction member 5 which extends above the split tube 3 is tapered; that is, a surface 9 of the tapered portion 8 tapers at an angle α of about 3° to 8°, e.g., about 5° in this case, such that the tapered portion 8 forms an elongate wedge that tapers along its length Lt towards an inner periphery of the bore B.

[0033] The impact reduction member 5 is again configured and arranged to be impacted or struck directly by the broken drill rod section S, in the event that the broken drill rod section S falls within the bore B. Specifically, in this embodiment, the wedge surface 9 of the tapered portion 8 is configured and arranged to be impacted or struck directly by the broken drill rod section S. In this embodiment, however, the impact reduction member 5 is not configured for any significant movement relative to the plug member 2 upon impact by the falling broken drill rod section S. Rather, as the falling broken drill rod section S initially impacts or contacts the surface 9 of the tapered portion 8, the drill rod section S is gradually deflected towards and into

contact with the opposite inner wall of the bore B. This contact generates friction which acts to brake the falling object and dissipate the impact. Again, therefore, the tapered portion 8 acts to cause gradual or extended transfer of impact loading from the drill rod section S to the anchor member 2. In particular, by extending the stopping distance for the falling drill rod section S (i.e. the distance travelled by the drill rod section S after initial impact) via the tapered portion 8, the impact force is again reduced significantly, such that the friction fit or interference fit of the anchor member 2 within the bore B can readily withstand the impact loading. The safety system 1 of this embodiment may thus also effectively and reliably protect workers and/or equipment in the cavity C from the hazard of a broken drill rod section S. As before, the safety system 1 of Fig. 4 includes an adapter member 10 configured to cooperate with a rock drilling apparatus (not shown) for deploying the plug-like anchor member 2 and the impact reduction member 5 into the proximal ~~end~~ region E of the bore B.

[0034] Finally, referring to Fig. 5 of the drawings, a flow diagram is shown that illustrates schematically the steps in a method of protecting against a hazard resulting from drill rod failure, particularly the hazard posed by a broken drill rod section S falling out of an upwardly drilled rock bore B, according to the embodiments of the invention described above with respect to Figs. 1 to 4. In this regard, the first box i of Fig. 5 represents the step of providing a safety system 1 according to any one of the embodiments of the invention described above. The second box ii then represents the step of fixing an anchor member 2 of the safety system 1 within the proximal ~~end~~ region E of the bore B in a friction fit or interference fit to at least partially plug or block the proximal ~~end~~ region E of the bore B ~~adjacent or near an outer rock face F~~. The third box iii represents the step of arranging an impact reduction member 5 within the proximal ~~end~~ region E of the bore B above the anchor member 2. In this regard, it will be appreciated by persons skilled in the art that steps represented by boxes ii and iii in Fig. 5 may occur simultaneously or in reverse order. The final box iv in Fig. 5 of the drawings represents the step of reducing an impact of a drill rod

section S striking the plug member 2 within the proximal ~~end~~ E of the drilled bore B via the impact reduction member 5.

[0035] Although specific embodiments of the invention are illustrated and described herein, it will be appreciated by those of ordinary skill in the art that a variety of alternative and/or equivalent implementations exist. It should be appreciated that the exemplary embodiment or exemplary embodiments are examples only and are not intended to limit the scope, applicability, or configuration in any way. Rather, the foregoing summary and detailed description will provide those skilled in the art with a convenient road map for implementing at least one exemplary embodiment, it being understood that various changes may be made in the function and arrangement of elements described in an exemplary embodiment without departing from the scope as set forth in the appended claims and their legal equivalents. Generally, this application is intended to cover any adaptations or variations of the specific embodiments discussed herein. By way of example, a skilled person will readily appreciate that the safety system of the invention is not limited to being made from any specific material described in the embodiments. Rather, the skilled person will appreciate that a range of suitable materials may exist, and the skilled person can select a material based upon the known mechanical properties of that material which may make it suitable for use in this invention.

[0036] It will also be appreciated that in this document the terms "comprise", "comprising", "include", "including", "contain", "containing", "have", "having", and any variations thereof, are intended to be understood in an inclusive (i.e. non-exclusive) sense, such that the device, apparatus, system, method or process described herein is not limited to those features or parts or elements or steps recited but may include other features or parts or elements or steps not expressly listed or inherent to such device, apparatus, system, method or process. Further, the terms "a" and "an" used herein are intended to be understood as meaning one or more unless explicitly stated otherwise. Moreover, unless indicated to the contrary, the terms "first", "second", "third", etc. are used merely as labels, and are not intended to impose numerical requirements on, or to establish a certain ranking of importance, of their objects.

[0037] List of reference signs

1	safety system
2	anchor member or plug member
3	split tube
4	front or leading end region of split tube
5	impact reduction member
6	elongate body
7	constant diameter portion of elongate body
8	tapered portion
9	outer surface of tapered portion
10	adapter member
11	head of adapter member
12	collar
13	groove or slot
14	rear or trailing end region of split tube
C	cavity or chamber
R	rock strata
O	ore deposit or ore body
F	rock-face
B	bore
S	broken drill rod section
E	proximal ~~end~~ region of bore
t	wall thickness of split tube
G	longitudinal slit or gap
Di	inner diameter of bore
Do	outer diameter of split tube
Dr	reduced diameter of leading and/or trailing end region of split tube
Ls	length of split tube
Lt	length of tapered portion
α	taper angle

Claims:

1. A safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section within the bore, comprising:

an anchor member configured to be fixed in a friction fit or interference fit within a proximal ~~end~~ region of the bore to at least partially block or obscure the drilled bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member in the proximal ~~end~~ region of the bore, wherein the impact reduction member is configured to be located in the proximal ~~end~~ region of the drilled bore and to extend within the bore above the anchor member,

wherein the impact reduction member comprises an elongate body arranged substantially centrally of the anchor member and configured to move relative to the anchor member when impacted by the drill rod section, the elongate body having a tapered portion configured to exert an outward force on the anchor member when the elongate body moves on impact by the drill rod section for effecting a gradual or extended transfer of impact loading from the drill rod section to the anchor member.

2. A safety system according to claim 1, wherein the anchor member is generally cylindrical or tubular and is configured to fit or plug into the drilled bore ~~in a friction fit or an interference fit~~, the anchor member having an outer diameter larger than an inner diameter of the bore and including a slit or gap configured to allow the outer diameter to reduce when the anchor member is driven into the bore.

3. A safety system for protecting against a hazard of a drill rod failure in a drilled rock bore above horizontal, and especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising:

a plug member for insertion into a proximal ~~end~~ region of the bore, the plug member configured to be fixed within the proximal ~~end~~ region of the bore in a friction fit or interference fit; and

an impact reduction member for reducing an impact of a falling drill rod section on the plug member within the proximal ~~end~~ region of the bore, wherein the impact reduction member is configured to be located within the proximal ~~end~~ region of the bore and to extend within the bore above the plug member;

wherein the impact reduction member comprises an elongate body arranged substantially centrally of the plug member and configured to move relative to the plug member when impacted by the drill rod section, the elongate body having a tapered portion configured to exert an outward force on the plug member when the elongate body moves on impact by the drill rod section for effecting a gradual or extended transfer of impact loading from the drill rod section to the plug member.

4. ~~A safety system according to claim 3, wherein the plug member is configured to be fixed within the proximal end region of the bore in a friction fit or an interference fit.~~This claim has been deleted.

5. A safety system according to claim 3 ~~or claim 4~~, wherein the plug member is cylindrical or tubular with a longitudinal slit or gap and an outer diameter that is larger than an inner diameter of the drilled bore, wherein the plug member is configured to be driven into the proximal ~~end~~ region of the bore and wherein the longitudinal slit or gap is configured to allow the outer diameter of the plug member to reduce or to be compressed when the plug member is driven into the bore.

6. A safety system according to claim 5, wherein the plug member has a front or leading end region of a reduced diameter which is smaller than an inner diameter of the drilled bore for assisting introduction or insertion of the plug member into the proximal ~~end~~ region of the bore.

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7. A safety system according to any one of claims 1 to ~~6~~3, 5 or 6, wherein the impact reduction member is configured for movement into an interior of the anchor member or plug member when impacted by the drill rod section.

8. A safety system according to any one of claims 1 to ~~7~~3, or 5 to 7, wherein the safety system is configured for connection to a rock drilling apparatus via an adapter member for driving the safety system, and especially the anchor member or plug member and impact reduction member, into the proximal ~~end~~ region of the bore.

9. A safety system according to claim 8, wherein the adapter member includes a collar against which the anchor member or plug member seats such that the collar is configured to impart an axial force to the anchor member or plug member to drive the anchor member or plug member into the proximal ~~end~~ region of the drilled bore.

10. A method of protecting against a hazard posed by a drill rod section upon drill rod failure in a drilled rock bore extending above horizontal, the method comprising deploying a safety system into the bore in response to drill rod failure, the safety system comprising:

an anchor member for insertion into the bore, the anchor member configured to be fixed in a friction fit or interference fit within a proximal ~~end~~ region of the bore to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, wherein the impact reduction member is configured to be located in the proximal ~~end~~ region of the bore and to extend within the bore above the anchor member to be impacted or struck by the falling drill rod section;

wherein deploying the safety system comprises driving the anchor member and the impact reduction member into the bore together via a rock drilling apparatus, whereby the safety system is driven into the bore beyond friable or crumbling rock at the rock face so that the anchor

member is soundly founded in competent rock in the friction fit or interference fit within the proximal region of the bore.

11. ~~A method according to claim 10, whereby the safety system is driven into the bore beyond friable or crumbing rock at the rock face to be soundly founded in competent rock.~~This claim has been deleted.

12. A method according to claim 10 ~~or claim 11~~, wherein the anchor member comprises an over-sized cylindrical or tubular member for insertion into the proximal ~~end~~ region of the bore, ~~and wherein deploying the safety system comprises driving or forcing the anchor member into the bore in a friction fit or an interference fit,~~ the cylindrical or tubular anchor member having a slit or gap configured to allow its outer diameter to reduce when the anchor member is driven into the bore.

13. A method according to any one of claims 10 or~~to~~ 12, wherein the impact reduction member comprises a tapered portion for effecting a gradual or extended transfer of impact loading from the falling drill rod section to the anchor member.

14. A safety system for protecting against a hazard of drill rod failure in a drilled rock bore extending above horizontal, especially a hazard posed by a drill rod section lodged within the bore, the safety system comprising:

an anchor member for insertion into a proximal ~~end~~ region of the bore, the anchor member being configured to be fixed within the proximal ~~end~~ region of the bore in a friction fit or an interference fit to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the anchor member, wherein the impact reduction member is configured to be located within the proximal ~~end~~ region of the bore and to extend within the bore above the anchor member to be impacted directly by a falling drill rod section;

wherein the anchor member and the impact reduction member are configured to be driven into the bore together with a rock drilling apparatus, the safety system being configured to be driven into the bore beyond the rock face so that the anchor member is ~~to be~~ soundly founded in competent rock in the friction fit or interference fit within the proximal region of the bore.

15. A safety system according to claim 14, wherein the anchor member is cylindrical or tubular with an outer diameter that is larger than an inner diameter of the bore and a slit or gap adapted to allow the outer diameter to reduce when the anchor member is driven into the bore; the anchor member preferably having a leading end region of a diameter smaller than the inner diameter of the bore to assist insertion of the anchor member into the bore.

16. A safety system according to claim 14 or 15, wherein the impact reduction member comprises a tapered portion for effecting a gradual or extended transfer of impact loading imparted by the falling drill rod section to the anchor member, wherein the tapered portion is configured and arranged to allow movement of the drill rod section relative to the anchor member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member.

17. A safety system according to claim 16, wherein the impact reduction member includes an elongate body that is arranged substantially centrally of the anchor member and that is configured to move relative to the anchor member when impacted by the falling drill rod section, wherein the elongate body comprises the tapered portion for movement of the impact reduction member relative to the anchor member for gradual or extended transfer of the impact loading from the drill rod section to the anchor member.

18. A safety system according to claim 16, wherein the tapered portion is fixed relative to the anchor member and is configured and arranged to allow for movement of the falling drill rod section relative to the impact reduction member.

19. A method of protecting against a hazard of drill rod failure posed by a drill rod section in a drilled rock bore above horizontal, the method comprising deploying a safety system into the bore in response to drill rod failure, the safety system comprising:

a plug member for insertion into a proximal ~~end~~ region of the bore, the plug member configured to be fixed within the proximal ~~end~~ region of the bore in a friction fit or interference fit to at least partially block or obscure the bore; and

an impact reduction member for reducing an impact of a falling drill rod section on the plug member, wherein the impact reduction member is configured to be located in the proximal ~~end~~ region of the bore and to extend within the bore above the plug member to be impacted or struck by the falling drill rod section;

wherein deploying the safety system comprises driving the plug member and the impact reduction member into the proximal ~~end~~ region of the bore together by a rock drilling apparatus, whereby the safety system is driven into the bore ~~to be~~so that the plug member is soundly founded in competent rock in the friction fit or interference fit in the proximal region of the bore.

20. A method according to claim 19, wherein the plug member is cylindrical or tubular with an outer diameter that is larger than an inner diameter of the bore and a slit or gap adapted to allow the outer diameter to reduce when the plug member is driven into the bore~~, wherein deploying the safety system comprises driving or forcing the plug member into the bore in a friction fit or an interference fit~~.

Abstract

The invention provides a safety system (1) for protecting against a hazard of a drill rod failure in a drilled rock bore (B) above horizontal, and especially a hazard posed by a broken drill rod section (S) lodged within the bore (B). The safety system (1) comprises: a plug member (2) for insertion into a proximal ~~end~~ region (E) of the bore (B), the plug member (2) being configured to be fixed within the proximal ~~end~~ region (E) of the bore (B) in a friction fit or interference fit; and an impact reduction member (5) for reducing an impact of a falling drill rod section (S) on the plug member (2) within the proximal ~~end~~ region (E) of the bore (B). The impact reduction member (5) is configured to be located within the proximal ~~end~~ region (E) of the bore (B) and to extend within the bore (B) above the plug member (2). The invention further provides a method of protecting against a hazard posed by a drill rod section (S) upon drill rod failure in a drilled rock bore (B) extending above horizontal, the method comprising deploying a safety system (1) into the bore (B) in response to drill rod failure.

(Fig. 3~~2~~)

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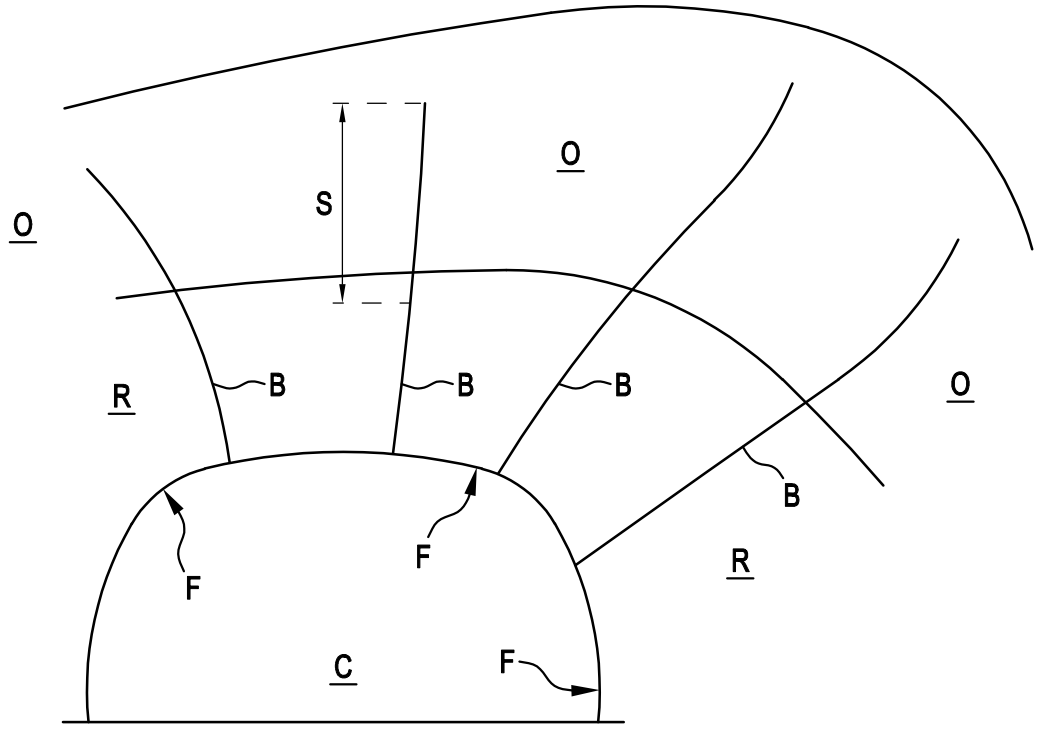

FIG. 1

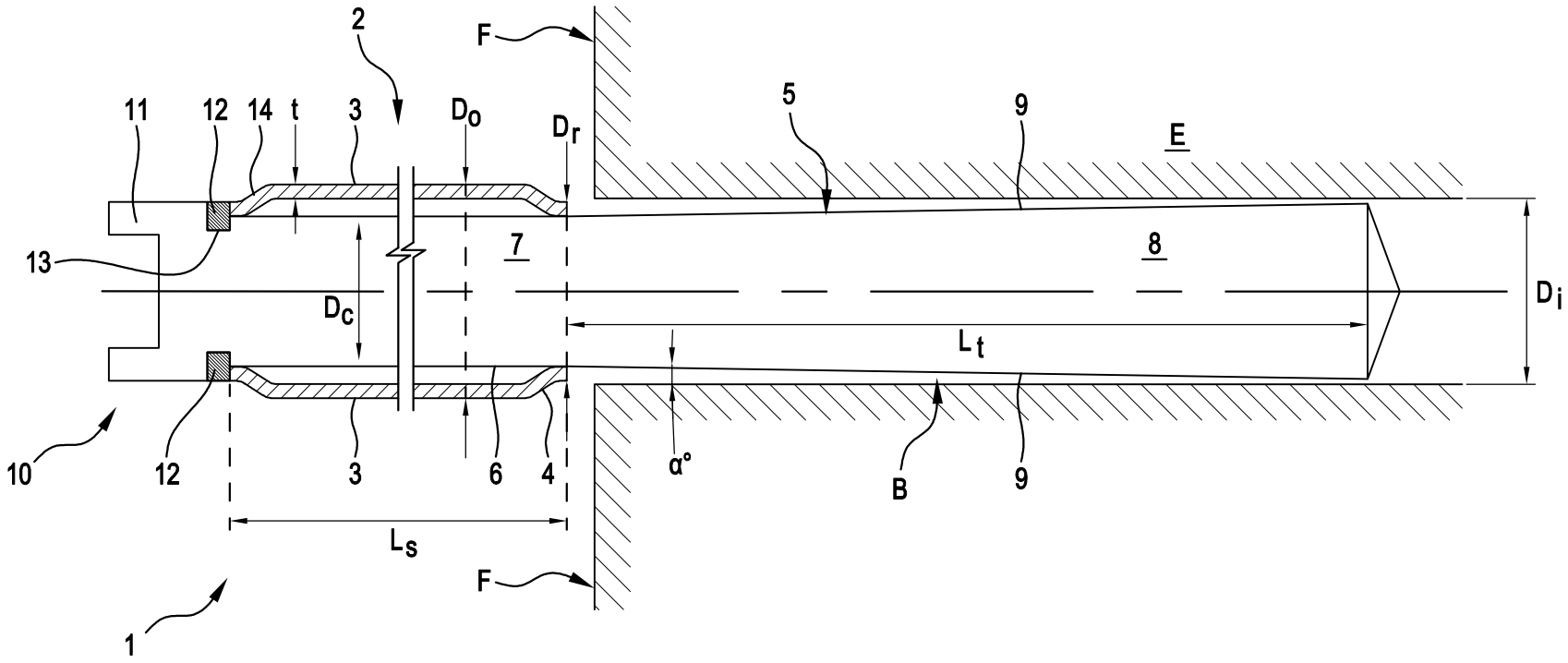

FIG. 2

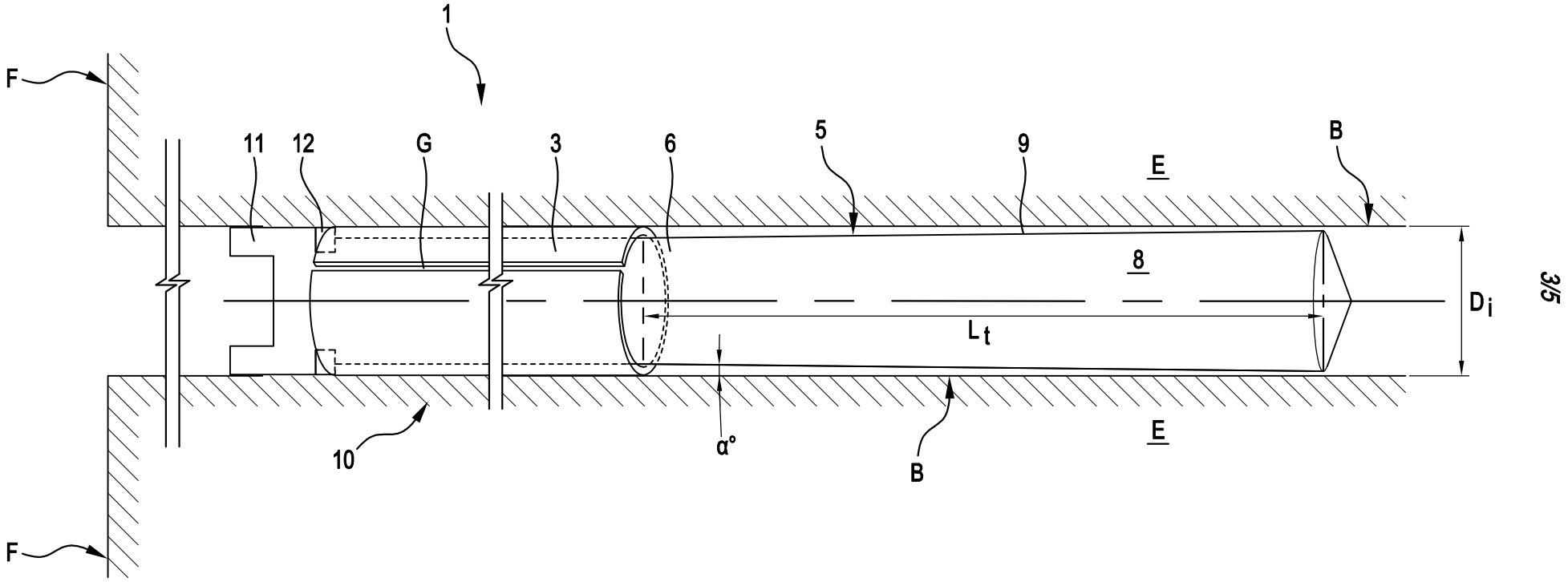

FIG. 3

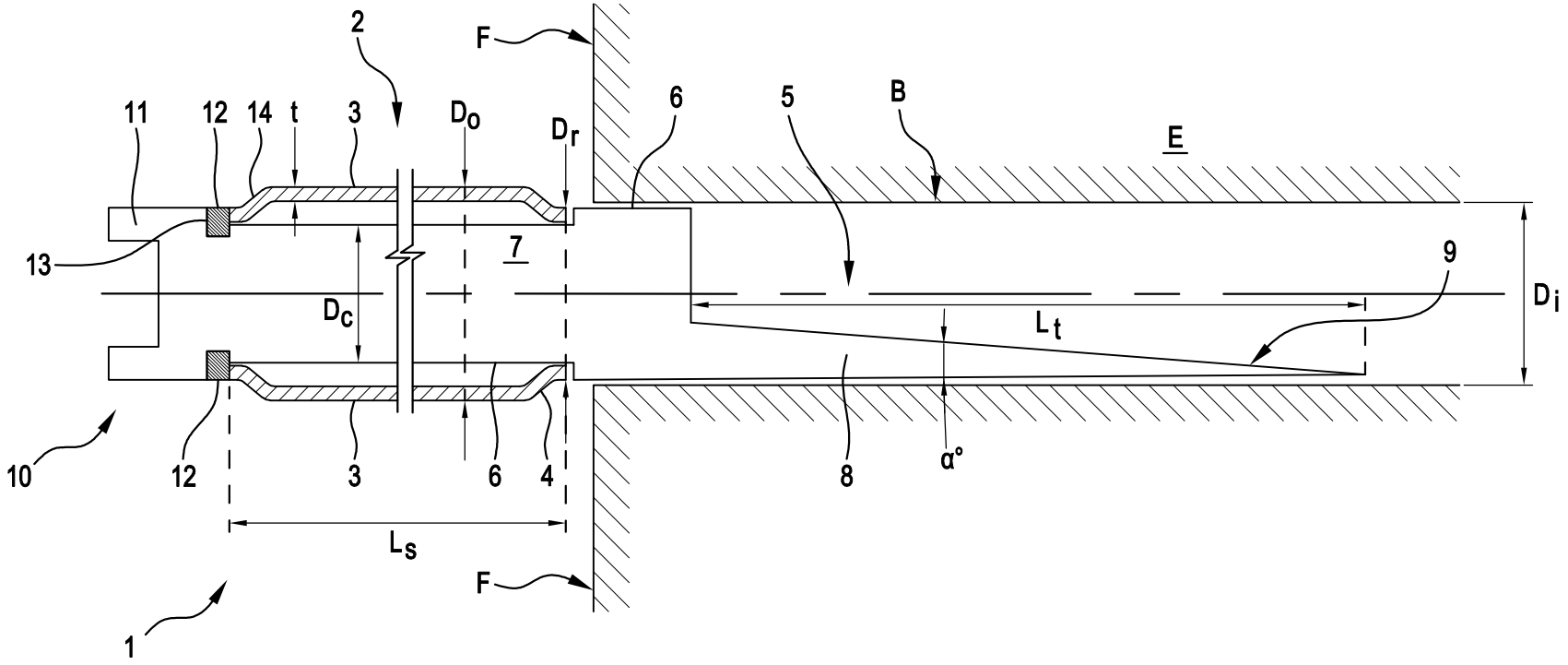

FIG. 4

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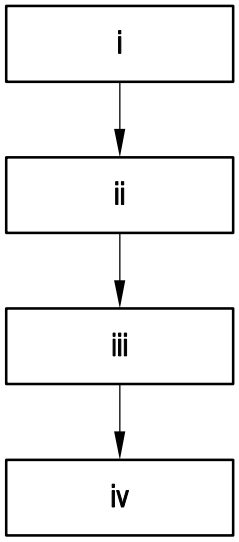

FIG. 5