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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 18/597,874 | 03/06/2024 | Thomas A. Howell | IPVCP003X1C4X1C2 | 7223 |

34071 7590 01/28/2025
IPVENTURE, INC.
4010 Moorpark Avenue
Suite 211
San Jose, CA 95117

| EXAMINER |
|---|
| LEI, JIE |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2872 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 01/28/2025 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

| ***Corrected*** ***Notice of Allowability*** | **Application No.** 18/597,874 | **Applicant(s)** Howell et al. | |
|---|---|---|---|
| | **Examiner** JIE LEI | **Art Unit** 2872 | **AIA (FITF) Status** Yes |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--***

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to IDS of 1/10/2025.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-3 and 5-120 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   a) ☐ All  b) ☐ Some*  c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 1/10/2025.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JIE LEI/
Primary Examiner, Art Unit 2872

| Form 1449 (Modified) | Atty. Docket No. | IPVCP003X1C4X1C2 |
|---|---|---|
| | Application No.: | 18/597,874 |
| Information Disclosure Statement By Applicant | Applicant | HOWELL et al. |
| | Filing Date | March 6, 2024 |
| | Group | 2872 |
| (Use Several Sheets if Necessary) | | Page 1 of 2 |

## U.S. Patent Documents

| Examiner Initial | No. | Patent No. | Date | Patentee | Class | Sub-class | Filing Date |
|---|---|---|---|---|---|---|---|
| | 1. | 2001/0043266 A1 | Nov-01 | Robinson et al. | | | |
| | 2. | 2002/0089469 A1 | Jul-02 | Cone et al. | | | |
| | 3. | 2002/0101510 A1 | Aug-02 | Basson et al. | | | |
| | 4. | 2004/0178970 A1 | Sep-04 | El Sayed et al. | | | |
| | 5. | 2005/0275714 A1 | Dec-05 | Ishikawa et al. | | | |
| | 6. | 2006/0115130 A1 | Jun-06 | Kozlay | | | |
| | 7. | 2007/0081123 A1 | Oct-05 | Lewis | | | |
| | 8. | 4,902,120 | Feb-90 | Weyer | | | |
| | 9. | 5,455,638 | Oct-95 | Kallman et al. | | | |
| | 10. | 6,181,304 | Jan-01 | Robinson et al. | | | |

## Foreign Documents

| Init. | | Document No. | Date | Country | Class | Subclass | Translation Yes | Translation No |
|---|---|---|---|---|---|---|---|---|
| | | CN 2145478Y | Nov-93 | China | | | X abstract | |
| | | CN 2365848Y | Feb-00 | China | | | X abstract | |
| | | EP 0 403 701 A1 | Dec-90 | Europe | | | | |
| | | GB 2,343,263 A | May-00 | Great Britain | | | | |
| | | GB 2,405,049 | Feb-05 | Great Britain | | | | |
| | | GB 2,411,009 A | Aug-05 | Great Britain | | | | |
| | | DE 20009219 U1 | Dec-00 | Germany | | | X | |
| | | JP 2000197173A | Jul-00 | Japan | | | X abstract | |
| | | JP 3077384U | May-01 | Japan | | | X | |
| | | KR 200221392 Y1 | Apr-01 | South Korea | | | X | |

## Other Documents (Including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|---|---|---|
| | A | Spitzer, Paul M. Zavracky, Tom Holzel, Noa M. Rensing, Angela Hyatt Hockman, P. D. Aquilino, Robert W. McClelland, J. Zardeskas, "Eyewear-based displays for personal electronics," Proc. SPIE 4021, Helmet- and Head-Mounted Displays V, (23 June 2000), pp. 27-32; https://doi.org/10.1117/12.389166 |

| Examiner | Date Considered |
|---|---|
| | |

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.L/

| Form 1449 (Modified) | Atty. Docket No. | IPVCP003X1C4X1C2 |
|---|---|---|
| | Application No.: | 18/597,874 |
| **Information Disclosure** | Applicant | HOWELL et al. |
| **Statement By Applicant** | Filing Date | March 6, 2024 |
| | Group | 2872 |
| (Use Several Sheets if Necessary) | | Page 2 of 2 |

| | | |
|---|---|---|
| | B | Falahee, M., Latham, K., Geelhoed, E. (2000). Safety and Comfort of Eyeglass Displays. In: Thomas, P., Gellersen, HW. (eds) Handheld and Ubiquitous Computing. HUC 2000, pp 236–247. Lecture Notes in Computer Science, vol 1927. Springer, Berlin, Heidelberg. https://doi.org/10.1007/3-540-39959-3_18 |
| | C | Tse, Mimi MY, Jacobus KF Ng, Joanne WY Chung, and Thomas KS Wong. "The effect of visual stimulation via the eyeglass display and the perception of pain." *CyberPsychology & Behavior* 5, no. 1 (2002): 65-75. https://doi.org/10.1089/109493102753685890 |
| | | |

| Examiner | Date Considered |
|---|---|
| /JIE LEI/ | 01/23/2025 |

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.L/

UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

# NOTICE OF ALLOWANCE AND FEE(S) DUE

34071 7590 01/13/2025
IPVENTURE, INC.
4010 Moorpark Avenue
Suite 211
San Jose, CA 95117

| EXAMINER |
|---|
| LEI, JIE |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2872 | |

DATE MAILED: 01/13/2025

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 18/597,874 | 03/06/2024 | Thomas A. Howell | IPVCP003X1C4X1C2 | 7223 |

TITLE OF INVENTION: SYSTEM FOR CHARGING EMBEDDED BATTERY IN WIRELESS HEAD-WORN PERSONAL ELECTRONIC APPARATUS

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1200 | $0.00 | $0.00 | $1200 | 04/14/2025 |

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

**HOW TO REPLY TO THIS NOTICE:**

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.**



PTOL-85 (Rev. 11/23)

## PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

34071 7590 01/13/2025
IPVENTURE, INC.
4010 Moorpark Avenue
Suite 211
San Jose, CA 95117

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via the USPTO patent electronic filing system or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 18/597,874 | 03/06/2024 | Thomas A. Howell | IPVCP003X1C4X1C2 | 7223 |

TITLE OF INVENTION: SYSTEM FOR CHARGING EMBEDDED BATTERY IN WIRELESS HEAD-WORN PERSONAL ELECTRONIC APPARATUS

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $1200 | $0.00 | $0.00 | $1200 | 04/14/2025 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| LEI, JIE | 2872 | 351-158000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/AIA/122 or PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1_____
2_____
3_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required)

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via the USPTO patent electronic filing system ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

❑ Applicant asserting small entity status. See 37 CFR 1.27

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

❑ Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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| EXAMINER |
|---|
| LEI, JIE |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2872 | |

DATE MAILED: 01/13/2025

**Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)**
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

## OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

## Privacy Act Statement

**The Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/ owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).
https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf

Routine uses of the information in this record may include disclosure to:

1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
2) a federal, state, local, or international agency, in response to its request;
3) a contractor of the USPTO having need for the information in order to perform a contract;
4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c));
9) the Office of Personnel Management (OPM) for personnel research purposes; and
10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

| Notice of Allowability | Application No. 18/597,874 | Applicant(s) Howell et al. | |
|---|---|---|---|
| | Examiner JIE LEI | Art Unit 2872 | AIA (FITF) Status Yes |

***-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--***

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1. ☑ This communication is responsive to filings of 12/4/2024.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-3 and 5-120 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information , please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   a) ☐ All  b) ☐ Some*  c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
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5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

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**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 12/4/2024.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JIE LEI/
Primary Examiner, Art Unit 2872

## *REASONS FOR ALLOWANCE*

1. The present application is being examined under the pre-AIA first to invent provisions. This office action is in response to filings of 12/4/2024.

### *Continued Examination*

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/4/2024 has been entered.

### *Terminal Disclaimer*

3. The terminal disclaimer filed on 10/18/2024 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US patent 12044901 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### *Allowable Subject Matter*

4. Claims 1-3 and 5-120 are allowed.

5. The following is an examiner's statement of reasons for allowance: the prior art taken singularly or in combination fails to anticipate or fairly suggest the limitations of

the independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

**In regard to independent claims 1, 2, 72, 95, 100 and 108,** the closest prior art are US 6349001 of Spitzer, US 20050201585 of Jannard et al, US 20050052537 of Mizusawa and US 5835185 of Kallman et al.

**Regarding Claims 1, 2, 72, 95, 100 and 108,** Spitzer teaches a system, comprising: a head-worn personal electronic apparatus, including at least: a head-worn structure configured to be worn by a user; a speaker at least partially contained with the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user; a position detector at least partially contained within the head-worn structure; a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user; a second microphone at least partially contained within the head-worn structure; a battery contained within the head-worn structure; electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the battery; wireless communication circuitry at least partially contained within the head-worn structure, the wireless communication circuitry being electrically connected to at least the battery; and at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being electrically connected to at least the battery.

Jannard teaches a head-worn personal electronic apparatus, wherein a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus; a button device configured to receive a user input based on a force induced on the button device, the button device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus; a rechargeable battery contained within the head-worn structure.

Mizusawa teaches a mounted imaging apparatus, wherein the button device is a piezoelectric device, and the piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device.

Kallman teaches an eyewear system, wherein, a charging apparatus having at least a charging connector, at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results at least from the at least one conductive element connecting with the charging connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus.

But none of them teaches that wherein the piezoelectric device being contained within the head-worn structure; a first speaker at least partially contained within the first temple of the head-worn structure, a second speaker at least partially contained within the second temple of the head-worn structure; and a first optical sensor at least partially contained within the first extended end piece, a second optical sensor at least partially contained within the second extended endpiece.

**Regarding Claims 1, 2 and 72,** the prior art taken either singly or in combination fails to anticipate or fairly suggest a system or a head-worn personal electronic apparatus further comprising:

wherein the piezoelectric device being contained within the head-worn structure,

as claimed; recited together in combination with the totality of particular features/limitations recited therein.

Claims 7-27 are also allowed due to their dependence on claim 1.

Claims 3, 5-6 and 28-71 are also allowed due to their dependence on claim 2.

Claims 73-94 are also allowed due to their dependence on claim 72.

**Regarding Claims 95 and 100,** the prior art taken either singly or in combination fails to anticipate or fairly suggest a system or a head-worn personal electronic apparatus further comprising:

wherein a first speaker at least partially contained within the first temple of the head-worn structure, a second speaker at least partially contained within the second temple of the head-worn structure,

as claimed; recited together in combination with the totality of particular features/limitations recited therein.

Claims 96-99 are also allowed due to their dependence on claim 95.

Claims 101-107 are also allowed due to their dependence on claim 100.

**Regarding Claim 108,** the prior art taken either singly or in combination fails to anticipate or fairly suggest a system or a head-worn personal electronic apparatus further comprising:

wherein a first optical sensor at least partially contained within the first extended end piece, a second optical sensor at least partially contained within the second extended endpiece,

as claimed; recited together in combination with the totality of particular features/limitations recited therein.

Claims 109-120 are also allowed due to their dependence on claim 108.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

7. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Jie Lei whose telephone number is (571) 272 7231. The examiner can normally be reached on Mon.-Thurs. 8:00 am to 5:30 pm.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, Thomas Pham can be reached on (571) 272 3689.The Fax number for the organization where this application is assigned is (571) 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Services Representative or access to the automated information system, call 800-786-9199(In USA or Canada) or 571-272-1000.

/JIE LEI/
Primary Examiner, Art Unit 2872

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 18/597,874 | Howell et al. |
| | **Examiner** | **Art Unit** |
| | JIE LEI | 2872 |

| CPC - Searched* | | |
|---|---|---|
| **Symbol** | **Date** | **Examiner** |
| G02C 1/00, 11/10, 11/06, 5/00, 5/001, 5/02, 5/14, 5/22, 5/143, 5/146, 2200/08 | 05/15/2024 | JL |
| G02B 27/01, 27/017, 27/0176; HO2J 7/0045 | 05/15/2024 | JL |
| update search | 09/04/2024 | jl |
| update search | 12/16/2024 | |

| CPC Combination Sets - Searched* | | |
|---|---|---|
| **Symbol** | **Date** | **Examiner** |
| | | |

| US Classification - Searched* | | | |
|---|---|---|---|
| **Class** | **Subclass** | **Date** | **Examiner** |
| 351 | 158, 41, 111, 121, 123, 124 | 05/15/2024 | JL |
| 359 | 13, 629-633 | 05/15/2024 | JL |
| 381 | 381, 327, 328, 370, 380 | 05/15/2024 | JL |
| | update search | 09/04/2024 | JL |
| | update search | 12/16/2024 | JL |

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

| /JIE LEI/<br>Primary Examiner, Art Unit 2872 | |
|---|---|

| Search Notes | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 18/597,874 | Howell et al. |
| | **Examiner** | **Art Unit** |
| | JIE LEI | 2872 |

| Search Notes | | |
|---|---|---|
| **Search Notes** | **Date** | **Examiner** |
| G02C 1/00, 11/10, 11/06, 5/00, 5/001, 5/02, 5/14, 5/22, 5/143, 5/146, 2200/08 | 05/15/2024 | JL |
| G02B 27/01, 27/017, 27/0176; HO2J 7/0045 | 05/15/2024 | JL |
| 351/158, 41, 111, 121, 123, 124 | 05/15/2024 | JL |
| 359/13, 629-633 | 05/15/2024 | JL |
| 381/381, 327, 328, 370, 380 | 05/15/2024 | JL |
| Inventor name search | 05/15/2024 | JL |
| NPL and foreign search (google scholar, google patent, globaldossier and Dialog search) | 05/15/2024 | JL |
| PE2E text search | 05/15/2024 | JL |
| Similarity search | 05/15/2024 | JL |
| update search | 09/04/2024 | jl |
| update search | 12/16/2024 | |

| Interference Search | | | |
|---|---|---|---|
| **US Class/CPC Symbol** | **US Subclass/CPC Group** | **Date** | **Examiner** |
| | USPGPUB, USPAT | 05/15/2024 | JL |
| | update search | 09/04/2024 | JL |
| | update search | 12/16/2024 | JL |

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| /JIE LEI/<br>Primary Examiner, Art Unit 2872 | |

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 18/597,874 | Howell et al. |
| | **Examiner** | **Art Unit** |
| | JIE LEI | 2872 |

| CPC | | | | | | |
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| **Symbol** | | | | | **Type** | **Version** |
| G02C | / | 11 | / | 10 | F | 2013-01-01 |
| G02C | / | 5 | / | 143 | I | 2013-01-01 |
| G02C | / | 5 | / | 146 | I | 2013-01-01 |
| H02J | / | 7 | / | 0045 | I | 2013-01-01 |
| G02C | / | 11 | / | 06 | I | 2013-01-01 |
| G02C | / | 2200 | / | 08 | A | 2013-01-01 |

| CPC Combination Sets | | | | | | | | |
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| **Symbol** | | | | | **Type** | **Set** | **Ranking** | **Version** |
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| NONE<br>(Assistant Examiner) (Date) | | **Total Claims Allowed:**<br>119 | |
| /JIE LEI/<br>Primary Examiner, Art Unit 2872<br>(Primary Examiner) (Date) | 17 December 2024 | O.G. Print Claim(s)<br>1 | O.G. Print Figure<br>1 |

U.S. Patent and Trademark Office Part of Paper No.: 20241217

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 18/597,874 | Howell et al. |
| | **Examiner** | **Art Unit** |
| | JIE LEI | 2872 |

| INTERNATIONAL CLASSIFICATION | | | | |
|---|---|---|---|---|
| **CLAIMED** | | | | |
| G02C | / | 11 | / | 00 |
| G02C | / | 5 | / | 14 |
| G02C | / | 11 | / | 06 |
| H02J | / | 7 | / | 00 |

| NON-CLAIMED | | | | |
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| US ORIGINAL CLASSIFICATION | |
|---|---|
| **CLASS** | **SUBCLASS** |
| 351 | 158 |

| CROSS REFERENCES(S) | | | | | | |
|---|---|---|---|---|---|---|
| **CLASS** | **SUBCLASS (ONE SUBCLASS PER BLOCK)** | | | | | |
| | | | | | | |

| NONE<br><br>(Assistant Examiner) (Date) | | **Total Claims Allowed:**<br>119 | |
|---|---|---|---|
| /JIE LEI/<br>Primary Examiner, Art Unit 2872<br>(Primary Examiner) (Date) | 17 December 2024 | O.G. Print Claim(s)<br>1 | O.G. Print Figure<br>1 |

U.S. Patent and Trademark Office Part of Paper No.: 20241217

| Issue Classification | Application/Control No. | Applicant(s)/Patent Under Reexamination |
|---|---|---|
| | 18/597,874 | Howell et al. |
| | **Examiner** | **Art Unit** |
| | JIE LEI | 2872 |

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

**CLAIMS**

| Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 11 | 16 | 30 | 31 | 45 | 46 | 53 | 61 | 75 | 76 | 90 | 91 | 105 | 106 |
| 23 | 2 | 12 | 17 | 31 | 32 | 46 | 47 | 54 | 62 | 76 | 77 | 91 | 92 | 106 | 107 |
| 24 | 3 | 13 | 18 | 32 | 33 | 47 | 48 | 55 | 63 | 77 | 78 | 92 | 93 | 107 | 108 |
| - | 4 | 14 | 19 | 33 | 34 | 48 | 49 | 56 | 64 | 78 | 79 | 93 | 94 | 108 | 109 |
| 25 | 5 | 15 | 20 | 34 | 35 | 49 | 50 | 57 | 65 | 79 | 80 | 94 | 95 | 109 | 110 |
| 26 | 6 | 16 | 21 | 35 | 36 | 58 | 51 | 65 | 66 | 80 | 81 | 95 | 96 | 110 | 111 |
| 2 | 7 | 17 | 22 | 36 | 37 | 59 | 52 | 66 | 67 | 81 | 82 | 96 | 97 | 111 | 112 |
| 3 | 8 | 18 | 23 | 37 | 38 | 60 | 53 | 67 | 68 | 82 | 83 | 97 | 98 | 112 | 113 |
| 4 | 9 | 19 | 24 | 38 | 39 | 61 | 54 | 68 | 69 | 83 | 84 | 98 | 99 | 113 | 114 |
| 5 | 10 | 20 | 25 | 39 | 40 | 64 | 55 | 69 | 70 | 84 | 85 | 99 | 100 | 114 | 115 |
| 6 | 11 | 21 | 26 | 40 | 41 | 62 | 56 | 70 | 71 | 85 | 86 | 100 | 101 | 115 | 116 |
| 7 | 12 | 22 | 27 | 41 | 42 | 63 | 57 | 71 | 72 | 86 | 87 | 101 | 102 | 116 | 117 |
| 8 | 13 | 27 | 28 | 42 | 43 | 50 | 58 | 72 | 73 | 87 | 88 | 102 | 103 | 117 | 118 |
| 9 | 14 | 28 | 29 | 43 | 44 | 51 | 59 | 73 | 74 | 88 | 89 | 103 | 104 | 118 | 119 |
| 10 | 15 | 29 | 30 | 44 | 45 | 52 | 60 | 74 | 75 | 89 | 90 | 104 | 105 | 119 | 120 |

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|---|---|---|---|
| NONE<br>(Assistant Examiner) | (Date) | **Total Claims Allowed:**<br>119 | |
| /JIE LEI/<br>Primary Examiner, Art Unit 2872<br>(Primary Examiner) | 17 December 2024<br>(Date) | O.G. Print Claim(s)<br>1 | O.G. Print Figure<br>1 |

U.S. Patent and Trademark Office Part of Paper No.: 20241217

# Web Search History

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 4:32:27 PM | Google | Head mounted display glasses |
| 12/13/2024 4:32:31 PM | Google | types of head-mounted display |
| 12/13/2024 4:32:35 PM | Google | head-mounted display examples |
| 12/13/2024 4:32:42 PM | Google | head mount display |
| 12/13/2024 4:33:26 PM | Google | Best head mounted display reviews |
| 12/13/2024 4:33:51 PM | Google | head mount display reviews |
| 12/13/2024 4:34:14 PM | Google | Types of head mounted display in virtual reality |
| 12/13/2024 4:34:31 PM | Google | Head mounted device |
| 12/13/2024 4:37:02 PM | Google Scholar | head worn user electronic apparatus personal electronic |
| 12/13/2024 4:37:02 PM | Google Patents | **Search Term 1**<br>head<br>**Search Term 2**<br>worn<br>**Search Term 3**<br>user<br>**Search Term 4**<br>electronic apparatus<br>**Search Term 5**<br>personal electronic<br>**Before**<br>Priority Date: priority:20051011 |
| 12/13/2024 4:38:08 PM | Google Scholar | wristwatch magnetic annular frame tag antenna |

| date, time | web site | search string |
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| 12/13/2024 4:38:08 PM | Google Patents | Search Term 1<br>wristwatch<br>Search Term 2<br>magnetic<br>Search Term 3<br>annular frame<br>Search Term 4<br>tag<br>Search Term 5<br>antenna<br>Before<br>Priority Date: priority:20010515 |
| 12/13/2024 4:38:16 PM | Google Scholar | electro active lens active layer layer |
| 12/13/2024 4:38:16 PM | Google Patents | Search Term 1<br>electro<br>Search Term 2<br>active<br>Search Term 3<br>lens<br>Search Term 4<br>active layer<br>Search Term 5<br>layer<br>Before<br>Priority Date: priority:19990702 |
| 12/13/2024 4:38:25 PM | Google Scholar | eyeglasses coupled frame speaker microphone |
| 12/13/2024 4:38:25 PM | Google Patents | Search Term 1<br>eyeglasses<br>Search Term 2<br>coupled<br>Search Term 3<br>frame<br>Search Term 4<br>speaker<br>Search Term 5<br>microphone<br>Before<br>Priority Date: priority:20010621 |
| 12/13/2024 4:38:31 PM | Google Scholar | display eyeglasses display system optical element facing |

| date, time | web site | search string |
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| 12/13/2024 4:38:31 PM | Google Patents | Search Term 1<br>display<br>Search Term 2<br>eyeglasses<br>Search Term 3<br>display system<br>Search Term 4<br>optical element<br>Search Term 5<br>facing<br>Before<br>Priority Date: priority:20010626 |
| 12/13/2024 4:38:46 PM | Google Scholar | user exercise amount information recorder |
| 12/13/2024 4:38:46 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>exercise<br>Search Term 3<br>amount<br>Search Term 4<br>information<br>Search Term 5<br>recorder<br>Before<br>Priority Date: priority:20000511 |
| 12/13/2024 4:38:52 PM | Google Scholar | light heart rate receiving element emitting element change |
| 12/13/2024 4:38:52 PM | Google Patents | Search Term 1<br>light<br>Search Term 2<br>heart rate<br>Search Term 3<br>receiving element<br>Search Term 4<br>emitting element<br>Search Term 5<br>change<br>Before<br>Priority Date: priority:20010719 |
| 12/13/2024 4:38:58 PM | Google Scholar | telephone concealed microphone earpiece user |

| date, time | web site | search string |
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| 12/13/2024 4:38:58 PM | Google Patents | Search Term 1<br>telephone<br>Search Term 2<br>concealed<br>Search Term 3<br>microphone<br>Search Term 4<br>earpiece<br>Search Term 5<br>user<br>Before<br>Priority Date: priority:20010727 |
| 12/13/2024 4:39:09 PM | Google Scholar | subject activity operable consumption body activity |
| 12/13/2024 4:39:09 PM | Google Patents | Search Term 1<br>subject<br>Search Term 2<br>activity<br>Search Term 3<br>operable<br>Search Term 4<br>consumption<br>Search Term 5<br>body activity<br>Before<br>Priority Date: priority:20000119 |
| 12/13/2024 4:51:32 PM | Google Scholar | electro active lens change spectacle |
| 12/13/2024 4:51:32 PM | Google Patents | Search Term 1<br>electro<br>Search Term 2<br>active<br>Search Term 3<br>lens<br>Search Term 4<br>change<br>Search Term 5<br>spectacle<br>Before<br>Priority Date: priority:19990702 |
| 12/13/2024 4:51:39 PM | Google Scholar | integral attached optic eye close proximity |

| date, time | web site | search string |
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| 12/13/2024 4:51:39 PM | Google Patents | Search Term 1<br>integral<br>Search Term 2<br>attached<br>Search Term 3<br>optic<br>Search Term 4<br>eye<br>Search Term 5<br>close proximity<br>Before<br>Priority Date: priority:20010813 |
| 12/13/2024 4:51:46 PM | Google Scholar | wireless telephone hand microphone speaker |
| 12/13/2024 4:51:46 PM | Google Patents | Search Term 1<br>wireless<br>Search Term 2<br>telephone<br>Search Term 3<br>hand<br>Search Term 4<br>microphone<br>Search Term 5<br>speaker<br>Before<br>Priority Date: priority:20010813 |
| 12/13/2024 4:51:53 PM | Google Scholar | hearing aid mobile station call wireless bluetooth |
| 12/13/2024 4:51:53 PM | Google Patents | Search Term 1<br>hearing aid<br>Search Term 2<br>mobile station<br>Search Term 3<br>call<br>Search Term 4<br>wireless<br>Search Term 5<br>bluetooth<br>Before<br>Priority Date: priority:20010906 |
| 12/13/2024 4:52:05 PM | Google Scholar | data sensing unit power airtime speed |

| date, time | web site | search string |
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| 12/13/2024 4:52:05 PM | Google Patents | Search Term 1<br>data<br>Search Term 2<br>sensing unit<br>Search Term 3<br>power<br>Search Term 4<br>airtime<br>Search Term 5<br>speed<br>Before<br>Priority Date: priority:19961212 |
| 12/13/2024 4:52:20 PM | Google Scholar | scba sensor processor transmitter face mask |
| 12/13/2024 4:52:20 PM | Google Patents | Search Term 1<br>scba<br>Search Term 2<br>sensor<br>Search Term 3<br>processor<br>Search Term 4<br>transmitter<br>Search Term 5<br>face mask<br>Before<br>Priority Date: priority:19980814 |
| 12/13/2024 4:52:27 PM | Google Scholar | user hearing control circuitry profile mobile phone |
| 12/13/2024 4:52:27 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>hearing<br>Search Term 3<br>control circuitry<br>Search Term 4<br>profile<br>Search Term 5<br>mobile phone<br>Before<br>Priority Date: priority:20010920 |
| 12/13/2024 4:52:33 PM | Google Scholar | digital data response curve digital filters tolerance range |

| date, time | web site | search string |
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| 12/13/2024 4:52:33 PM | Google Patents | Search Term 1<br>digital data<br>Search Term 2<br>response curve<br>Search Term 3<br>digital<br>Search Term 4<br>filters<br>Search Term 5<br>tolerance range<br>Before<br>Priority Date: priority:20010928 |
| 12/13/2024 5:08:25 PM | Google Scholar | audio speaker mode radio cellular |
| 12/13/2024 5:08:25 PM | Google Patents | Search Term 1<br>audio<br>Search Term 2<br>speaker<br>Search Term 3<br>mode<br>Search Term 4<br>radio<br>Search Term 5<br>cellular<br>Before<br>Priority Date: priority:20000602 |
| 12/13/2024 5:08:31 PM | Google Scholar | speaker eyewear wearer microphone earstem |
| 12/13/2024 5:08:31 PM | Google Patents | Search Term 1<br>speaker<br>Search Term 2<br>eyewear<br>Search Term 3<br>wearer<br>Search Term 4<br>microphone<br>Search Term 5<br>earstem<br>Before<br>Priority Date: priority:20011006 |
| 12/13/2024 5:08:39 PM | Google Scholar | wearer eyewear speaker microphone unit |

| date, time | web site | search string |
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| 12/13/2024 5:08:39 PM | Google Patents | Search Term 1<br>wearer<br>Search Term 2<br>eyewear<br>Search Term 3<br>speaker<br>Search Term 4<br>microphone<br>Search Term 5<br>unit<br>Before<br>Priority Date: priority:20011006 |
| 12/13/2024 5:08:46 PM | Google Scholar | waveform value user indicator pulse wave |
| 12/13/2024 5:08:46 PM | Google Patents | Search Term 1<br>waveform<br>Search Term 2<br>value<br>Search Term 3<br>user<br>Search Term 4<br>indicator<br>Search Term 5<br>pulse wave<br>Before<br>Priority Date: priority:19960709 |
| 12/13/2024 5:08:56 PM | Google Scholar | stimulus interaction step amount test response |
| 12/13/2024 5:08:56 PM | Google Patents | Search Term 1<br>stimulus<br>Search Term 2<br>interaction<br>Search Term 3<br>step amount<br>Search Term 4<br>test<br>Search Term 5<br>response<br>Before<br>Priority Date: priority:20011012 |
| 12/13/2024 5:09:03 PM | Google Scholar | recording unit recording recorder visual data acquisition |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:09:03 PM | Google Patents | Search Term 1<br>recording unit<br>Search Term 2<br>recording<br>Search Term 3<br>recorder<br>Search Term 4<br>visual<br>Search Term 5<br>data acquisition<br>Before<br>Priority Date: priority:19990105 |
| 12/13/2024 5:09:09 PM | Google Scholar | layer transducer film layer electrode vibrator |
| 12/13/2024 5:09:09 PM | Google Patents | Search Term 1<br>layer<br>Search Term 2<br>transducer<br>Search Term 3<br>film layer<br>Search Term 4<br>electrode<br>Search Term 5<br>vibrator<br>Before<br>Priority Date: priority:20011009 |
| 12/13/2024 5:09:16 PM | Google Scholar | receiver lens frame eyeglasses temple piece electrical |
| 12/13/2024 5:09:16 PM | Google Patents | Search Term 1<br>receiver<br>Search Term 2<br>lens frame<br>Search Term 3<br>eyeglasses<br>Search Term 4<br>temple piece<br>Search Term 5<br>electrical<br>Before<br>Priority Date: priority:20011018 |
| 12/13/2024 5:13:34 PM | Google Scholar | eyeglasses eyeglasses according microphone connector connection |

| date, time | web site | search string |
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| 12/13/2024 5:13:34 PM | Google Patents | Search Term 1<br>eyeglasses<br>Search Term 2<br>eyeglasses according<br>Search Term 3<br>microphone<br>Search Term 4<br>connector<br>Search Term 5<br>connection<br>Before<br>Priority Date: priority:20020124 |
| 12/13/2024 5:13:40 PM | Google Scholar | solar cell integrated spectacles according integration glasses |
| 12/13/2024 5:13:40 PM | Google Patents | Search Term 1<br>solar cell<br>Search Term 2<br>integrated<br>Search Term 3<br>spectacles according<br>Search Term 4<br>integration<br>Search Term 5<br>glasses<br>Before<br>Priority Date: priority:20020211 |
| 12/13/2024 5:13:49 PM | Google Scholar | electro lens active focal length layer |
| 12/13/2024 5:13:49 PM | Google Patents | Search Term 1<br>electro<br>Search Term 2<br>lens<br>Search Term 3<br>active<br>Search Term 4<br>focal length<br>Search Term 5<br>layer<br>Before<br>Priority Date: priority:19990702 |
| 12/13/2024 5:13:57 PM | Google Scholar | values speaker listener location speech |

| date, time | web site | search string |
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| 12/13/2024 5:13:57 PM | Google Patents | Search Term 1<br>values<br>Search Term 2<br>speaker<br>Search Term 3<br>listener<br>Search Term 4<br>location<br>Search Term 5<br>speech<br>Before<br>Priority Date: priority:20001127 |
| 12/13/2024 5:16:29 PM | Google Scholar | patient treatment software prescription visual acuity |
| 12/13/2024 5:16:29 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>treatment<br>Search Term 3<br>software<br>Search Term 4<br>prescription<br>Search Term 5<br>visual acuity<br>Before<br>Priority Date: priority:20020517 |
| 12/13/2024 5:16:35 PM | Google Scholar | yoke vibrating plate bone conductive speaker conductive speaker |
| 12/13/2024 5:16:35 PM | Google Patents | Search Term 1<br>yoke<br>Search Term 2<br>vibrating plate<br>Search Term 3<br>bone conductive<br>Search Term 4<br>speaker<br>Search Term 5<br>conductive speaker<br>Before<br>Priority Date: priority:20020528 |
| 12/13/2024 5:16:42 PM | Google Scholar | array radiation filters absorptive transmission |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:16:42 PM | Google Patents | Search Term 1<br>array<br>Search Term 2<br>radiation<br>Search Term 3<br>filters<br>Search Term 4<br>absorptive<br>Search Term 5<br>transmission<br>Before<br>Priority Date: priority:19961230 |
| 12/13/2024 5:16:48 PM | Google Scholar | eyewear according eyewear front frame sidepiece display |
| 12/13/2024 5:16:48 PM | Google Patents | Search Term 1<br>eyewear according<br>Search Term 2<br>eyewear<br>Search Term 3<br>front frame<br>Search Term 4<br>sidepiece<br>Search Term 5<br>display<br>Before<br>Priority Date: priority:20020524 |
| 12/13/2024 5:16:55 PM | Google Scholar | exposure light color printed blue |
| 12/13/2024 5:16:55 PM | Google Patents | Search Term 1<br>exposure<br>Search Term 2<br>light<br>Search Term 3<br>color<br>Search Term 4<br>printed<br>Search Term 5<br>blue<br>Before<br>Priority Date: priority:19980130 |
| 12/13/2024 5:17:02 PM | Google Scholar | wearer media device visual media cndot lens |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:17:02 PM | Google Patents | Search Term 1<br>wearer<br>Search Term 2<br>media device<br>Search Term 3<br>visual media<br>Search Term 4<br>cndot<br>Search Term 5<br>lens<br>Before<br>Priority Date: priority:20020617 |
| 12/13/2024 5:24:36 PM | Google Scholar | electro active lens range finder optical |
| 12/13/2024 5:24:36 PM | Google Patents | Search Term 1<br>electro<br>Search Term 2<br>active<br>Search Term 3<br>lens<br>Search Term 4<br>range finder<br>Search Term 5<br>optical<br>Before<br>Priority Date: priority:20000623 |
| 12/13/2024 5:24:45 PM | Google Scholar | support structure sensor tunnel temperature skin |
| 12/13/2024 5:24:45 PM | Google Patents | Search Term 1<br>support structure<br>Search Term 2<br>sensor<br>Search Term 3<br>tunnel<br>Search Term 4<br>temperature<br>Search Term 5<br>skin<br>Before<br>Priority Date: priority:20020422 |
| 12/13/2024 5:25:04 PM | Google Scholar | ultrasonic khz ultra frequency waves |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:25:04 PM | Google Patents | Search Term 1<br>ultrasonic<br>Search Term 2<br>khz<br>Search Term 3<br>ultra<br>Search Term 4<br>frequency<br>Search Term 5<br>waves<br>Before<br>Priority Date: priority:19971125 |
| 12/13/2024 5:30:05 PM | Google Scholar | eyeglass support wearer frame audio |
| 12/13/2024 5:30:05 PM | Google Patents | Search Term 1<br>eyeglass<br>Search Term 2<br>support<br>Search Term 3<br>wearer<br>Search Term 4<br>frame<br>Search Term 5<br>audio<br>Before<br>Priority Date: priority:20020726 |
| 12/13/2024 5:30:12 PM | Google Scholar | rfid tag antenna structure antenna rfid module |
| 12/13/2024 5:30:12 PM | Google Patents | Search Term 1<br>rfid tag<br>Search Term 2<br>antenna structure<br>Search Term 3<br>antenna<br>Search Term 4<br>rfid<br>Search Term 5<br>module<br>Before<br>Priority Date: priority:20020912 |
| 12/13/2024 5:30:17 PM | Google Scholar | sensor sound generating generating assembly melody eyeglass frames |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:30:17 PM | Google Patents | Search Term 1<br>sensor<br>Search Term 2<br>sound generating<br>Search Term 3<br>generating assembly<br>Search Term 4<br>melody<br>Search Term 5<br>eyeglass frames<br>Before<br>Priority Date: priority:20021001 |
| 12/13/2024 5:30:24 PM | Google Scholar | recording device imaging system mobile imaging mobile user |
| 12/13/2024 5:30:24 PM | Google Patents | Search Term 1<br>recording device<br>Search Term 2<br>imaging system<br>Search Term 3<br>mobile imaging<br>Search Term 4<br>mobile<br>Search Term 5<br>user<br>Before<br>Priority Date: priority:20011221 |
| 12/13/2024 5:30:33 PM | Google Scholar | subject data monitoring system display unit blood oxygen |
| 12/13/2024 5:30:33 PM | Google Patents | Search Term 1<br>subject<br>Search Term 2<br>data<br>Search Term 3<br>monitoring system<br>Search Term 4<br>display unit<br>Search Term 5<br>blood oxygen<br>Before<br>Priority Date: priority:19991109 |
| 12/13/2024 5:30:40 PM | Google Scholar | display device information display spectacle frame speaker user |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:30:40 PM | Google Patents | Search Term 1<br>display device<br>Search Term 2<br>information display<br>Search Term 3<br>spectacle frame<br>Search Term 4<br>speaker<br>Search Term 5<br>user<br>Before<br>Priority Date: priority:20021115 |
| 12/13/2024 5:42:29 PM | Google Scholar | image user affective information scene |
| 12/13/2024 5:42:29 PM | Google Patents | Search Term 1<br>image<br>Search Term 2<br>user<br>Search Term 3<br>affective<br>Search Term 4<br>information<br>Search Term 5<br>scene<br>Before<br>Priority Date: priority:20021125 |
| 12/13/2024 5:42:36 PM | Google Scholar | equipment individual scanner smart tag smart |
| 12/13/2024 5:42:36 PM | Google Patents | Search Term 1<br>equipment<br>Search Term 2<br>individual<br>Search Term 3<br>scanner<br>Search Term 4<br>smart tag<br>Search Term 5<br>smart<br>Before<br>Priority Date: priority:20021121 |
| 12/13/2024 5:42:43 PM | Google Scholar | state type display glasses type communication terminal voice |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:42:43 PM | Google Patents | Search Term 1<br>state<br>Search Term 2<br>type display<br>Search Term 3<br>glasses type<br>Search Term 4<br>communication terminal<br>Search Term 5<br>voice<br>Before<br>Priority Date: priority:20021128 |
| 12/13/2024 5:42:52 PM | Google Scholar | audio modulated directional loudspeaker amplifier signal |
| 12/13/2024 5:42:52 PM | Google Patents | Search Term 1<br>audio<br>Search Term 2<br>modulated<br>Search Term 3<br>directional loudspeaker<br>Search Term 4<br>amplifier<br>Search Term 5<br>signal<br>Before<br>Priority Date: priority:20021030 |
| 12/13/2024 5:43:00 PM | Google Scholar | assembly recited hat audio section |
| 12/13/2024 5:43:00 PM | Google Patents | Search Term 1<br>assembly<br>Search Term 2<br>recited<br>Search Term 3<br>hat<br>Search Term 4<br>audio<br>Search Term 5<br>section<br>Before<br>Priority Date: priority:20030108 |
| 12/13/2024 5:43:08 PM | Google Scholar | light source clamp illumination socket light |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:43:08 PM | Google Patents | Search Term 1<br>light source<br>Search Term 2<br>clamp<br>Search Term 3<br>illumination<br>Search Term 4<br>socket<br>Search Term 5<br>light<br>Before<br>Priority Date: priority:20020809 |
| 12/13/2024 5:43:16 PM | Google Scholar | optic eye adjacent folding image source folding optic |
| 12/13/2024 5:43:16 PM | Google Patents | Search Term 1<br>optic<br>Search Term 2<br>eye<br>Search Term 3<br>adjacent folding<br>Search Term 4<br>image source<br>Search Term 5<br>folding optic<br>Before<br>Priority Date: priority:20010507 |
| 12/13/2024 5:43:32 PM | Google Scholar | user image user interface physical hand hand |
| 12/13/2024 5:43:32 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>image<br>Search Term 3<br>user interface<br>Search Term 4<br>physical hand<br>Search Term 5<br>hand<br>Before<br>Priority Date: priority:19991229 |
| 12/13/2024 5:54:14 PM | Google Scholar | glasses light assembly light housing pair |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:54:14 PM | Google Patents | Search Term 1<br>glasses<br>Search Term 2<br>light assembly<br>Search Term 3<br>light<br>Search Term 4<br>housing<br>Search Term 5<br>pair<br>Before<br>Priority Date: priority:20030130 |
| 12/13/2024 5:54:22 PM | Google Scholar | support wearer eyeglass frame audio |
| 12/13/2024 5:54:22 PM | Google Patents | Search Term 1<br>support<br>Search Term 2<br>wearer<br>Search Term 3<br>eyeglass<br>Search Term 4<br>frame<br>Search Term 5<br>audio<br>Before<br>Priority Date: priority:20000602 |
| 12/13/2024 5:54:28 PM | Google Scholar | video scaler overlay memory display |
| 12/13/2024 5:54:28 PM | Google Patents | Search Term 1<br>video<br>Search Term 2<br>scaler<br>Search Term 3<br>overlay<br>Search Term 4<br>memory<br>Search Term 5<br>display<br>Before<br>Priority Date: priority:20001003 |
| 12/13/2024 5:54:36 PM | Google Scholar | dimensional subject frame frames model |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:54:36 PM | Google Patents | Search Term 1<br>dimensional<br>Search Term 2<br>subject<br>Search Term 3<br>frame<br>Search Term 4<br>frames<br>Search Term 5<br>model<br>Before<br>Priority Date: priority:20001031 |
| 12/13/2024 5:54:46 PM | Google Scholar | bone conduction headset user band ear |
| 12/13/2024 5:54:46 PM | Google Patents | Search Term 1<br>bone conduction<br>Search Term 2<br>headset<br>Search Term 3<br>user<br>Search Term 4<br>band<br>Search Term 5<br>ear<br>Before<br>Priority Date: priority:20010705 |
| 12/13/2024 5:54:52 PM | Google Scholar | display apparatus image display holding member combiner lens |
| 12/13/2024 5:54:52 PM | Google Patents | Search Term 1<br>display apparatus<br>Search Term 2<br>image display<br>Search Term 3<br>holding member<br>Search Term 4<br>combiner<br>Search Term 5<br>lens<br>Before<br>Priority Date: priority:20000911 |
| 12/13/2024 5:54:59 PM | Google Scholar | glasses intelligent tag chip coil digital data |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:54:59 PM | Google Patents | Search Term 1<br>glasses<br>Search Term 2<br>intelligent tag<br>Search Term 3<br>chip<br>Search Term 4<br>coil<br>Search Term 5<br>digital data<br>Before<br>Priority Date: priority:20030513 |
| 12/13/2024 5:55:06 PM | Google Scholar | light emitting emitting diodes illumination electrical user |
| 12/13/2024 5:55:06 PM | Google Patents | Search Term 1<br>light emitting<br>Search Term 2<br>emitting diodes<br>Search Term 3<br>illumination<br>Search Term 4<br>electrical<br>Search Term 5<br>user<br>Before<br>Priority Date: priority:20030331 |
| 12/13/2024 5:55:15 PM | Google Scholar | display subsystem computer eye coupled |
| 12/13/2024 5:55:15 PM | Google Patents | Search Term 1<br>display<br>Search Term 2<br>subsystem<br>Search Term 3<br>computer<br>Search Term 4<br>eye<br>Search Term 5<br>coupled<br>Before<br>Priority Date: priority:19961002 |
| 12/13/2024 5:55:27 PM | Google Scholar | support latching temple receiver female |

| date, time | web site | search string |
|---|---|---|
| 12/13/2024 5:55:27 PM | Google Patents | Search Term 1<br>support<br>Search Term 2<br>latching<br>Search Term 3<br>temple<br>Search Term 4<br>receiver<br>Search Term 5<br>female<br>Before<br>Priority Date: priority:20030811 |

# Web Search History

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:07:04 PM | Google Scholar | audio wearable speakers communication device audio system |
| 12/16/2024 3:07:04 PM | Google Patents | Search Term 1<br>audio<br>Search Term 2<br>wearable<br>Search Term 3<br>speakers<br>Search Term 4<br>communication device<br>Search Term 5<br>audio system<br>Before<br>Priority Date: priority:20020826 |
| 12/16/2024 3:07:12 PM | Google Scholar | ear eyeglass audio speakers frame |
| 12/16/2024 3:07:12 PM | Google Patents | Search Term 1<br>ear<br>Search Term 2<br>eyeglass<br>Search Term 3<br>audio<br>Search Term 4<br>speakers<br>Search Term 5<br>frame<br>Before<br>Priority Date: priority:20020726 |
| 12/16/2024 3:07:22 PM | Google Scholar | eyewear temple frame radio frequency frequency transceiver |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:07:22 PM | Google Patents | Search Term 1<br>eyewear<br>Search Term 2<br>temple<br>Search Term 3<br>frame<br>Search Term 4<br>radio frequency<br>Search Term 5<br>frequency transceiver<br>Before<br>Priority Date: priority:20010430 |
| 12/16/2024 3:07:28 PM | Google Scholar | earphone wearer eyeglass support lens |
| 12/16/2024 3:07:28 PM | Google Patents | Search Term 1<br>earphone<br>Search Term 2<br>wearer<br>Search Term 3<br>eyeglass<br>Search Term 4<br>support<br>Search Term 5<br>lens<br>Before<br>Priority Date: priority:20000602 |
| 12/16/2024 3:07:35 PM | Google Scholar | earphone player voice player voice present |
| 12/16/2024 3:07:35 PM | Google Patents | Search Term 1<br>earphone<br>Search Term 2<br>player<br>Search Term 3<br>voice player<br>Search Term 4<br>voice<br>Search Term 5<br>present<br>Before<br>Priority Date: priority:20041021 |
| 12/16/2024 3:07:43 PM | Google Scholar | content protection audio configuring bluetooth communication |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:07:43 PM | Google Patents | Search Term 1<br>content protection<br>Search Term 2<br>audio<br>Search Term 3<br>configuring<br>Search Term 4<br>bluetooth<br>Search Term 5<br>communication<br>Before<br>Priority Date: priority:20050308 |
| 12/16/2024 3:07:59 PM | Google Scholar | band portion headphone device headphone wearer connecting members |
| 12/16/2024 3:07:59 PM | Google Patents | Search Term 1<br>band portion<br>Search Term 2<br>headphone device<br>Search Term 3<br>headphone<br>Search Term 4<br>wearer<br>Search Term 5<br>connecting members<br>Before<br>Priority Date: priority:20050704 |
| 12/16/2024 3:08:07 PM | Google Scholar | music glasses sounding device circuit board chamber |
| 12/16/2024 3:08:07 PM | Google Patents | Search Term 1<br>music<br>Search Term 2<br>glasses<br>Search Term 3<br>sounding device<br>Search Term 4<br>circuit board<br>Search Term 5<br>chamber<br>Before<br>Priority Date: priority:20060310 |
| 12/16/2024 3:08:51 PM | Google Scholar | eyeglass interface system camera audio integrated circuits |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:08:51 PM | Google Patents | Search Term 1<br>eyeglass<br>Search Term 2<br>interface system<br>Search Term 3<br>camera<br>Search Term 4<br>audio<br>Search Term 5<br>integrated circuits<br>Before<br>Priority Date: priority:19971030 |
| 12/16/2024 3:17:07 PM | Google Scholar | documentation information documentation data data real information |
| 12/16/2024 3:17:07 PM | Google Patents | Search Term 1<br>documentation<br>Search Term 2<br>information<br>Search Term 3<br>documentation data<br>Search Term 4<br>data<br>Search Term 5<br>real information<br>Before<br>Priority Date: priority:19990325 |
| 12/16/2024 3:17:13 PM | Google Scholar | data operating acquisition means designed observation |
| 12/16/2024 3:17:13 PM | Google Patents | Search Term 1<br>data<br>Search Term 2<br>operating<br>Search Term 3<br>acquisition means<br>Search Term 4<br>designed<br>Search Term 5<br>observation<br>Before<br>Priority Date: priority:19990302 |
| 12/16/2024 3:17:19 PM | Google Scholar | arm phone user image phone body |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:17:19 PM | Google Patents | Search Term 1<br>arm<br>Search Term 2<br>phone<br>Search Term 3<br>user<br>Search Term 4<br>image<br>Search Term 5<br>phone body<br>Before<br>Priority Date: priority:20001110 |
| 12/16/2024 3:17:27 PM | Google Scholar | language learning virtual world studying education |
| 12/16/2024 3:17:27 PM | Google Patents | Search Term 1<br>language<br>Search Term 2<br>learning<br>Search Term 3<br>virtual world<br>Search Term 4<br>studying<br>Search Term 5<br>education<br>Before<br>Priority Date: priority:20020511 |
| 12/16/2024 3:17:41 PM | Google Scholar | image capture remote device image data images user |
| 12/16/2024 3:17:41 PM | Google Patents | Search Term 1<br>image capture<br>Search Term 2<br>remote device<br>Search Term 3<br>image data<br>Search Term 4<br>images<br>Search Term 5<br>user<br>Before<br>Priority Date: priority:20010727 |
| 12/16/2024 3:17:47 PM | Google Scholar | multidimensional video receptors video data audio |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:17:47 PM | Google Patents | Search Term 1<br>multidimensional<br>Search Term 2<br>video<br>Search Term 3<br>receptors<br>Search Term 4<br>video data<br>Search Term 5<br>audio<br>Before<br>Priority Date: priority:19980127 |
| 12/16/2024 3:17:54 PM | Google Scholar | reader keyboard indicia monitor light |
| 12/16/2024 3:17:54 PM | Google Patents | Search Term 1<br>reader<br>Search Term 2<br>keyboard<br>Search Term 3<br>indicia<br>Search Term 4<br>monitor<br>Search Term 5<br>light<br>Before<br>Priority Date: priority:19981110 |
| 12/16/2024 3:18:02 PM | Google Scholar | wearer eyewear speaker microphone unit |
| 12/16/2024 3:18:02 PM | Google Patents | Search Term 1<br>wearer<br>Search Term 2<br>eyewear<br>Search Term 3<br>speaker<br>Search Term 4<br>microphone<br>Search Term 5<br>unit<br>Before<br>Priority Date: priority:20011006 |
| 12/16/2024 3:18:13 PM | Google Scholar | support display support member user ear |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:18:13 PM | Google Patents | Search Term 1<br>support<br>Search Term 2<br>display<br>Search Term 3<br>support member<br>Search Term 4<br>user<br>Search Term 5<br>ear<br>Before<br>Priority Date: priority:20010907 |
| 12/16/2024 3:39:49 PM | Google Scholar | values speaker listener location speech |
| 12/16/2024 3:39:49 PM | Google Patents | Search Term 1<br>values<br>Search Term 2<br>speaker<br>Search Term 3<br>listener<br>Search Term 4<br>location<br>Search Term 5<br>speech<br>Before<br>Priority Date: priority:20001127 |
| 12/16/2024 3:39:56 PM | Google Scholar | audio video wearer pick mounting means |
| 12/16/2024 3:39:56 PM | Google Patents | Search Term 1<br>audio<br>Search Term 2<br>video<br>Search Term 3<br>wearer<br>Search Term 4<br>pick<br>Search Term 5<br>mounting means<br>Before<br>Priority Date: priority:20020403 |
| 12/16/2024 3:40:03 PM | Google Scholar | eyewear according eyewear front frame sidepiece display |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:40:03 PM | Google Patents | Search Term 1<br>eyewear according<br>Search Term 2<br>eyewear<br>Search Term 3<br>front frame<br>Search Term 4<br>sidepiece<br>Search Term 5<br>display<br>Before<br>Priority Date: priority:20020524 |
| 12/16/2024 3:40:10 PM | Google Scholar | tracking augmented reality frame acquisition video computer |
| 12/16/2024 3:40:10 PM | Google Patents | Search Term 1<br>tracking<br>Search Term 2<br>augmented reality<br>Search Term 3<br>frame acquisition<br>Search Term 4<br>video<br>Search Term 5<br>computer<br>Before<br>Priority Date: priority:20011220 |
| 12/16/2024 3:40:20 PM | Google Scholar | speaker eyewear microphone wearer earstem |
| 12/16/2024 3:40:20 PM | Google Patents | Search Term 1<br>speaker<br>Search Term 2<br>eyewear<br>Search Term 3<br>microphone<br>Search Term 4<br>wearer<br>Search Term 5<br>earstem<br>Before<br>Priority Date: priority:20011006 |
| 12/16/2024 3:40:31 PM | Google Scholar | eyeglasses wire dep electronic temple |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:40:31 PM | Google Patents | Search Term 1<br>eyeglasses<br>Search Term 2<br>wire<br>Search Term 3<br>dep<br>Search Term 4<br>electronic<br>Search Term 5<br>temple<br>Before<br>Priority Date: priority:20051213 |
| 12/16/2024 3:40:39 PM | Google Scholar | user context wearable display processor information |
| 12/16/2024 3:40:39 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>context<br>Search Term 3<br>wearable display<br>Search Term 4<br>processor<br>Search Term 5<br>information<br>Before<br>Priority Date: priority:20060831 |
| 12/16/2024 3:40:50 PM | Google Scholar | touch headset user interface sensitive surface control output |
| 12/16/2024 3:40:50 PM | Google Patents | Search Term 1<br>touch<br>Search Term 2<br>headset<br>Search Term 3<br>user interface<br>Search Term 4<br>sensitive surface<br>Search Term 5<br>control output<br>Before<br>Priority Date: priority:20061130 |
| 12/16/2024 3:40:59 PM | Google Scholar | housing portion communications device wireless communications right ear housing |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:40:59 PM | Google Patents | Search Term 1<br>housing portion<br>Search Term 2<br>communications device<br>Search Term 3<br>wireless communications<br>Search Term 4<br>right ear<br>Search Term 5<br>housing<br>Before<br>Priority Date: priority:20061214 |
| 12/16/2024 3:53:50 PM | Google Patents | Search Term 1<br>eyeglasses<br>Search Term 2<br>wire<br>Search Term 3<br>dep<br>Search Term 4<br>electronic<br>Search Term 5<br>temple<br>Before<br>Priority Date: priority:20061213 |
| 12/16/2024 3:53:58 PM | Google Scholar | coil external frame external coil visor |
| 12/16/2024 3:53:58 PM | Google Patents | Search Term 1<br>coil<br>Search Term 2<br>external<br>Search Term 3<br>frame<br>Search Term 4<br>external coil<br>Search Term 5<br>visor<br>Before<br>Priority Date: priority:20061222 |
| 12/16/2024 3:54:05 PM | Google Scholar | headphone cradle transmitter audio signal |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:54:05 PM | Google Patents | Search Term 1<br>headphone<br>Search Term 2<br>cradle<br>Search Term 3<br>transmitter<br>Search Term 4<br>audio<br>Search Term 5<br>signal<br>Before<br>Priority Date: priority:20070130 |
| 12/16/2024 3:54:12 PM | Google Scholar | data selection processing device data processing output |
| 12/16/2024 3:54:12 PM | Google Patents | Search Term 1<br>data<br>Search Term 2<br>selection<br>Search Term 3<br>processing device<br>Search Term 4<br>data processing<br>Search Term 5<br>output<br>Before<br>Priority Date: priority:20070131 |
| 12/16/2024 3:54:40 PM | Google Scholar | glasses video media player type media memory card |
| 12/16/2024 3:54:40 PM | Google Patents | Search Term 1<br>glasses<br>Search Term 2<br>video<br>Search Term 3<br>media player<br>Search Term 4<br>type media<br>Search Term 5<br>memory card<br>Before<br>Priority Date: priority:20070319 |
| 12/16/2024 3:54:46 PM | Google Scholar | arrangement headphones housing ear piece seal |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:54:46 PM | Google Patents | Search Term 1<br>arrangement<br>Search Term 2<br>headphones<br>Search Term 3<br>housing<br>Search Term 4<br>ear piece<br>Search Term 5<br>seal<br>Before<br>Priority Date: priority:20070504 |
| 12/16/2024 3:54:53 PM | Google Scholar | headphone ear sound image image forward stereo sound |
| 12/16/2024 3:54:53 PM | Google Patents | Search Term 1<br>headphone<br>Search Term 2<br>ear<br>Search Term 3<br>sound image<br>Search Term 4<br>image forward<br>Search Term 5<br>stereo sound<br>Before<br>Priority Date: priority:20070605 |
| 12/16/2024 3:55:02 PM | Google Scholar | optical optical element adjustable adjustable connector wearer |
| 12/16/2024 3:55:02 PM | Google Patents | Search Term 1<br>optical<br>Search Term 2<br>optical element<br>Search Term 3<br>adjustable<br>Search Term 4<br>adjustable connector<br>Search Term 5<br>wearer<br>Before<br>Priority Date: priority:20061214 |
| 12/16/2024 3:55:18 PM | Google Scholar | communication device voice signal ambient noise adjusting polarization reversed |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 3:55:18 PM | Google Patents | Search Term 1<br>communication device<br>Search Term 2<br>voice signal<br>Search Term 3<br>ambient noise<br>Search Term 4<br>adjusting<br>Search Term 5<br>polarization reversed<br>Before<br>Priority Date: priority:20070921 |
| 12/16/2024 4:14:43 PM | Google Scholar | video video signal display display device compressed |
| 12/16/2024 4:14:43 PM | Google Patents | Search Term 1<br>video<br>Search Term 2<br>video signal<br>Search Term 3<br>display<br>Search Term 4<br>display device<br>Search Term 5<br>compressed<br>Before<br>Priority Date: priority:20080104 |
| 12/16/2024 4:14:50 PM | Google Scholar | host computing computing device external host display bluetooth |
| 12/16/2024 4:14:50 PM | Google Patents | Search Term 1<br>host computing<br>Search Term 2<br>computing device<br>Search Term 3<br>external host<br>Search Term 4<br>display<br>Search Term 5<br>bluetooth<br>Before<br>Priority Date: priority:20070514 |
| 12/16/2024 4:14:57 PM | Google Scholar | telephony profile phone psd network |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:14:57 PM | Google Patents | Search Term 1<br>telephony<br>Search Term 2<br>profile<br>Search Term 3<br>phone<br>Search Term 4<br>psd<br>Search Term 5<br>network<br>Before<br>Priority Date: priority:20080908 |
| 12/16/2024 4:15:04 PM | Google Scholar | smartcard contacts mobile memory memory card interface |
| 12/16/2024 4:15:04 PM | Google Patents | Search Term 1<br>smartcard<br>Search Term 2<br>contacts<br>Search Term 3<br>mobile memory<br>Search Term 4<br>memory card<br>Search Term 5<br>interface<br>Before<br>Priority Date: priority:20081006 |
| 12/16/2024 4:15:34 PM | Google Scholar | information user telescope electronic visual |
| 12/16/2024 4:15:34 PM | Google Patents | Search Term 1<br>information<br>Search Term 2<br>user<br>Search Term 3<br>telescope<br>Search Term 4<br>electronic<br>Search Term 5<br>visual<br>Before<br>Priority Date: priority:20021210 |
| 12/16/2024 4:15:40 PM | Google Scholar | mounting user chassis virtual images |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:15:40 PM | Google Patents | Search Term 1<br>mounting<br>Search Term 2<br>user<br>Search Term 3<br>chassis<br>Search Term 4<br>virtual<br>Search Term 5<br>images<br>Before<br>Priority Date: priority:20030103 |
| 12/16/2024 4:15:49 PM | Google Scholar | audio audio device signal transceiver user |
| 12/16/2024 4:15:49 PM | Google Patents | Search Term 1<br>audio<br>Search Term 2<br>audio device<br>Search Term 3<br>signal<br>Search Term 4<br>transceiver<br>Search Term 5<br>user<br>Before<br>Priority Date: priority:20020726 |
| 12/16/2024 4:15:57 PM | Google Scholar | support wearer eyeglass frame audio |
| 12/16/2024 4:15:57 PM | Google Patents | Search Term 1<br>support<br>Search Term 2<br>wearer<br>Search Term 3<br>eyeglass<br>Search Term 4<br>frame<br>Search Term 5<br>audio<br>Before<br>Priority Date: priority:20000602 |
| 12/16/2024 4:16:04 PM | Google Scholar | golfer image training aid golf training light |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:16:04 PM | Google Patents | Search Term 1<br>golfer<br>Search Term 2<br>image<br>Search Term 3<br>training aid<br>Search Term 4<br>golf training<br>Search Term 5<br>light<br>Before<br>Priority Date: priority:20010327 |
| 12/16/2024 4:16:17 PM | Google Scholar | user virtual image spectacles display mounting |
| 12/16/2024 4:16:17 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>virtual image<br>Search Term 3<br>spectacles<br>Search Term 4<br>display<br>Search Term 5<br>mounting<br>Before<br>Priority Date: priority:20021210 |
| 12/16/2024 4:21:00 PM | Google Scholar | mount temple temples hinge ophthalmic |
| 12/16/2024 4:21:00 PM | Google Patents | Search Term 1<br>mount<br>Search Term 2<br>temple<br>Search Term 3<br>temples<br>Search Term 4<br>hinge<br>Search Term 5<br>ophthalmic<br>Before<br>Priority Date: priority:19550804 |
| 12/16/2024 4:21:05 PM | Google Scholar | temple tube solid cavities injection |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:21:05 PM | Google Patents | Search Term 1<br>temple<br>Search Term 2<br>tube<br>Search Term 3<br>solid<br>Search Term 4<br>cavities<br>Search Term 5<br>injection<br>Before<br>Priority Date: priority:19720922 |
| 12/16/2024 4:21:10 PM | Google Scholar | mold rigid liquid resin resin system flexible |
| 12/16/2024 4:21:10 PM | Google Patents | Search Term 1<br>mold<br>Search Term 2<br>rigid<br>Search Term 3<br>liquid resin<br>Search Term 4<br>resin system<br>Search Term 5<br>flexible<br>Before<br>Priority Date: priority:19781027 |
| 12/16/2024 4:21:15 PM | Google Scholar | temple swimmer temple pieces eyepieces pieces |
| 12/16/2024 4:21:15 PM | Google Patents | Search Term 1<br>temple<br>Search Term 2<br>swimmer<br>Search Term 3<br>temple pieces<br>Search Term 4<br>eyepieces<br>Search Term 5<br>pieces<br>Before<br>Priority Date: priority:19930818 |
| 12/16/2024 4:30:20 PM | Google Scholar | eyeglass frame frame extension arm eyeglass speaker |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:30:20 PM | Google Patents | Search Term 1<br>eyeglass frame<br>Search Term 2<br>frame<br>Search Term 3<br>extension arm<br>Search Term 4<br>eyeglass<br>Search Term 5<br>speaker<br>Before<br>Priority Date: priority:20010621 |
| 12/16/2024 4:30:29 PM | Google Scholar | headset active noise parameters data handset |
| 12/16/2024 4:30:29 PM | Google Patents | Search Term 1<br>headset<br>Search Term 2<br>active noise<br>Search Term 3<br>parameters<br>Search Term 4<br>data<br>Search Term 5<br>handset<br>Before<br>Priority Date: priority:20090717 |
| 12/16/2024 4:30:37 PM | Google Scholar | host computing computing device display device handheld wireless content |
| 12/16/2024 4:30:37 PM | Google Patents | Search Term 1<br>host computing<br>Search Term 2<br>computing device<br>Search Term 3<br>display device<br>Search Term 4<br>handheld wireless<br>Search Term 5<br>content<br>Before<br>Priority Date: priority:20080328 |
| 12/16/2024 4:30:44 PM | Google Scholar | speaker support module coupling wearable support |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:30:44 PM | Google Patents | Search Term 1<br>speaker<br>Search Term 2<br>support<br>Search Term 3<br>module<br>Search Term 4<br>coupling<br>Search Term 5<br>wearable support<br>Before<br>Priority Date: priority:20000602 |
| 12/16/2024 4:30:52 PM | Google Scholar | generating user interface synthetic jet enclosure user |
| 12/16/2024 4:30:52 PM | Google Patents | Search Term 1<br>generating<br>Search Term 2<br>user interface<br>Search Term 3<br>synthetic jet<br>Search Term 4<br>enclosure<br>Search Term 5<br>user<br>Before<br>Priority Date: priority:20081219 |
| 12/16/2024 4:31:05 PM | Google Scholar | location audiovisual processor communication user |
| 12/16/2024 4:31:05 PM | Google Patents | Search Term 1<br>location<br>Search Term 2<br>audiovisual<br>Search Term 3<br>processor<br>Search Term 4<br>communication<br>Search Term 5<br>user<br>Before<br>Priority Date: priority:20021127 |
| 12/16/2024 4:31:12 PM | Google Scholar | viewing system binocular viewing optical assembly optical pipe |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:31:12 PM | Google Patents | Search Term 1<br>viewing system<br>Search Term 2<br>binocular viewing<br>Search Term 3<br>optical<br>Search Term 4<br>assembly<br>Search Term 5<br>optical pipe<br>Before<br>Priority Date: priority:20030425 |
| 12/16/2024 4:31:19 PM | Google Scholar | user arrangement according vehicle head information |
| 12/16/2024 4:31:19 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>arrangement according<br>Search Term 3<br>vehicle<br>Search Term 4<br>head<br>Search Term 5<br>information<br>Before<br>Priority Date: priority:20030829 |
| 12/16/2024 4:31:30 PM | Google Scholar | connectors frame body lens end portions section |
| 12/16/2024 4:31:30 PM | Google Patents | Search Term 1<br>connectors<br>Search Term 2<br>frame body<br>Search Term 3<br>lens<br>Search Term 4<br>end portions<br>Search Term 5<br>section<br>Before<br>Priority Date: priority:19951113 |
| 12/16/2024 4:40:47 PM | Google Scholar | patient network data wireless sensor |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:40:47 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>network<br>Search Term 3<br>data<br>Search Term 4<br>wireless<br>Search Term 5<br>sensor<br>Before<br>Priority Date: priority:20060516 |
| 12/16/2024 4:40:55 PM | Google Scholar | patient data network wireless appliance |
| 12/16/2024 4:40:55 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>data<br>Search Term 3<br>network<br>Search Term 4<br>wireless<br>Search Term 5<br>appliance<br>Before<br>Priority Date: priority:20060512 |
| 12/16/2024 4:41:04 PM | Google Scholar | patient appliance network data heart |
| 12/16/2024 4:41:04 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>appliance<br>Search Term 3<br>network<br>Search Term 4<br>data<br>Search Term 5<br>heart<br>Before<br>Priority Date: priority:20060512 |
| 12/16/2024 4:41:13 PM | Google Scholar | data motion user sensor band |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:41:13 PM | Google Patents | Search Term 1<br>data<br>Search Term 2<br>motion<br>Search Term 3<br>user<br>Search Term 4<br>sensor<br>Search Term 5<br>band<br>Before<br>Priority Date: priority:20110610 |
| 12/16/2024 4:41:21 PM | Google Scholar | data wearable device motion user activity |
| 12/16/2024 4:41:21 PM | Google Patents | Search Term 1<br>data<br>Search Term 2<br>wearable device<br>Search Term 3<br>motion<br>Search Term 4<br>user<br>Search Term 5<br>activity<br>Before<br>Priority Date: priority:20110610 |
| 12/16/2024 4:41:35 PM | Google Scholar | cord eyeglass tethered electrical recited |
| 12/16/2024 4:41:35 PM | Google Patents | Search Term 1<br>cord<br>Search Term 2<br>eyeglass<br>Search Term 3<br>tethered<br>Search Term 4<br>electrical<br>Search Term 5<br>recited<br>Before<br>Priority Date: priority:20030415 |
| 12/16/2024 4:41:41 PM | Google Scholar | video audio stream camera participant |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:41:41 PM | Google Patents | Search Term 1<br>video<br>Search Term 2<br>audio<br>Search Term 3<br>stream<br>Search Term 4<br>camera<br>Search Term 5<br>participant<br>Before<br>Priority Date: priority:20030724 |
| 12/16/2024 4:41:47 PM | Google Scholar | sunglasses frames band user pat |
| 12/16/2024 4:41:47 PM | Google Patents | Search Term 1<br>sunglasses<br>Search Term 2<br>frames<br>Search Term 3<br>band<br>Search Term 4<br>user<br>Search Term 5<br>pat<br>Before<br>Priority Date: priority:20031028 |
| 12/16/2024 4:41:53 PM | Google Scholar | location concentrate microemulsion information surfactant |
| 12/16/2024 4:41:53 PM | Google Patents | Search Term 1<br>location<br>Search Term 2<br>concentrate<br>Search Term 3<br>microemulsion<br>Search Term 4<br>information<br>Search Term 5<br>surfactant<br>Before<br>Priority Date: priority:20040223 |
| 12/16/2024 4:55:01 PM | Google Scholar | speaker audio device audio support wearable wireless |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:55:01 PM | Google Patents | Search Term 1<br>speaker<br>Search Term 2<br>audio device<br>Search Term 3<br>audio<br>Search Term 4<br>support<br>Search Term 5<br>wearable wireless<br>Before<br>Priority Date: priority:20000602 |
| 12/16/2024 4:55:08 PM | Google Scholar | radiation output electronic circuit recited monitoring |
| 12/16/2024 4:55:08 PM | Google Patents | Search Term 1<br>radiation<br>Search Term 2<br>output<br>Search Term 3<br>electronic circuit<br>Search Term 4<br>recited<br>Search Term 5<br>monitoring<br>Before<br>Priority Date: priority:20040415 |
| 12/16/2024 4:55:14 PM | Google Scholar | glasses pair information recited event |
| 12/16/2024 4:55:14 PM | Google Patents | Search Term 1<br>glasses<br>Search Term 2<br>pair<br>Search Term 3<br>information<br>Search Term 4<br>recited<br>Search Term 5<br>event<br>Before<br>Priority Date: priority:20031009 |
| 12/16/2024 4:55:22 PM | Google Scholar | image focus head mounted mounted display unit |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:55:22 PM | Google Patents | Search Term 1<br>image<br>Search Term 2<br>focus<br>Search Term 3<br>head mounted<br>Search Term 4<br>mounted display<br>Search Term 5<br>unit<br>Before<br>Priority Date: priority:20040511 |
| 12/16/2024 4:55:38 PM | Google Scholar | patient network wireless appliance data |
| 12/16/2024 4:55:38 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>network<br>Search Term 3<br>wireless<br>Search Term 4<br>appliance<br>Search Term 5<br>data<br>Before<br>Priority Date: priority:20060524 |
| 12/16/2024 4:55:47 PM | Google Scholar | user personal digital earpiece wearable personal data |
| 12/16/2024 4:55:47 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>personal digital<br>Search Term 3<br>earpiece<br>Search Term 4<br>wearable personal<br>Search Term 5<br>data<br>Before<br>Priority Date: priority:20110718 |
| 12/16/2024 4:56:01 PM | Google Scholar | patient sensor fall data motion |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 4:56:01 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>sensor<br>Search Term 3<br>fall<br>Search Term 4<br>data<br>Search Term 5<br>motion<br>Before<br>Priority Date: priority:20051016 |
| 12/16/2024 4:56:17 PM | Google Scholar | source audio wearer speaker interface |
| 12/16/2024 4:56:17 PM | Google Patents | Search Term 1<br>source<br>Search Term 2<br>audio<br>Search Term 3<br>wearer<br>Search Term 4<br>speaker<br>Search Term 5<br>interface<br>Before<br>Priority Date: priority:20041222 |
| 12/16/2024 4:56:31 PM | Google Scholar | wearer assembly speaker structured disposed |
| 12/16/2024 4:56:31 PM | Google Patents | Search Term 1<br>wearer<br>Search Term 2<br>assembly<br>Search Term 3<br>speaker<br>Search Term 4<br>structured<br>Search Term 5<br>disposed<br>Before<br>Priority Date: priority:19960906 |
| 12/16/2024 5:21:01 PM | Google Scholar | bone conduction helmet headset user crown |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 5:21:01 PM | Google Patents | Search Term 1<br>bone conduction<br>Search Term 2<br>helmet<br>Search Term 3<br>headset<br>Search Term 4<br>user<br>Search Term 5<br>crown<br>Before<br>Priority Date: priority:20100924 |
| 12/16/2024 5:21:09 PM | Google Scholar | patient appliance data network information |
| 12/16/2024 5:21:09 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>appliance<br>Search Term 3<br>data<br>Search Term 4<br>network<br>Search Term 5<br>information<br>Before<br>Priority Date: priority:20060512 |
| 12/16/2024 5:21:16 PM | Google Scholar | temple electrical components eyeglasses rearward electrical |
| 12/16/2024 5:21:16 PM | Google Patents | Search Term 1<br>temple<br>Search Term 2<br>electrical components<br>Search Term 3<br>eyeglasses<br>Search Term 4<br>rearward<br>Search Term 5<br>electrical<br>Before<br>Priority Date: priority:20030415 |
| 12/16/2024 5:21:22 PM | Google Scholar | user data augmented reality processor product |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 5:21:22 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>data<br>Search Term 3<br>augmented reality<br>Search Term 4<br>processor<br>Search Term 5<br>product<br>Before<br>Priority Date: priority:20110718 |
| 12/16/2024 5:21:31 PM | Google Scholar | ear bud wearer head elbow head band |
| 12/16/2024 5:21:31 PM | Google Patents | Search Term 1<br>ear bud<br>Search Term 2<br>wearer<br>Search Term 3<br>head<br>Search Term 4<br>elbow<br>Search Term 5<br>head band<br>Before<br>Priority Date: priority:20120703 |
| 12/16/2024 5:21:38 PM | Google Scholar | earphone eyeglass wearer carried support |
| 12/16/2024 5:21:38 PM | Google Patents | Search Term 1<br>earphone<br>Search Term 2<br>eyeglass<br>Search Term 3<br>wearer<br>Search Term 4<br>carried<br>Search Term 5<br>support<br>Before<br>Priority Date: priority:20000602 |
| 12/16/2024 5:21:44 PM | Google Scholar | eyeglasses wireless arms wireless communication frame |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 5:21:44 PM | Google Patents | Search Term 1<br>eyeglasses<br>Search Term 2<br>wireless<br>Search Term 3<br>arms<br>Search Term 4<br>wireless communication<br>Search Term 5<br>frame<br>Before<br>Priority Date: priority:20030415 |
| 12/16/2024 5:21:49 PM | Google Scholar | head mounted mounted display signals unit display device |
| 12/16/2024 5:21:49 PM | Google Patents | Search Term 1<br>head mounted<br>Search Term 2<br>mounted display<br>Search Term 3<br>signals<br>Search Term 4<br>unit<br>Search Term 5<br>display device<br>Before<br>Priority Date: priority:20040909 |
| 12/16/2024 5:21:57 PM | Google Scholar | coupled microphone speaker eyeglasses frame |
| 12/16/2024 5:21:57 PM | Google Patents | Search Term 1<br>coupled<br>Search Term 2<br>microphone<br>Search Term 3<br>speaker<br>Search Term 4<br>eyeglasses<br>Search Term 5<br>frame<br>Before<br>Priority Date: priority:20010621 |
| 12/16/2024 5:36:12 PM | Google Scholar | patient processor sensor data coupled |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 5:36:12 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>processor<br>Search Term 3<br>sensor<br>Search Term 4<br>data<br>Search Term 5<br>coupled<br>Before<br>Priority Date: priority:20060516 |
| 12/16/2024 5:36:22 PM | Google Scholar | patient client data network treatment |
| 12/16/2024 5:36:22 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>client<br>Search Term 3<br>data<br>Search Term 4<br>network<br>Search Term 5<br>treatment<br>Before<br>Priority Date: priority:20060512 |
| 12/16/2024 5:36:31 PM | Google Scholar | patient protocol data heart analyzer |
| 12/16/2024 5:36:31 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>protocol<br>Search Term 3<br>data<br>Search Term 4<br>heart<br>Search Term 5<br>analyzer<br>Before<br>Priority Date: priority:20070524 |
| 12/16/2024 5:36:41 PM | Google Scholar | glasses eyewear temple user recited |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 5:36:41 PM | Google Patents | Search Term 1<br>glasses<br>Search Term 2<br>eyewear<br>Search Term 3<br>temple<br>Search Term 4<br>user<br>Search Term 5<br>recited<br>Before<br>Priority Date: priority:20031009 |
| 12/16/2024 5:36:52 PM | Google Scholar | temple eyewear frame recited electrical components side section |
| 12/16/2024 5:36:52 PM | Google Patents | Search Term 1<br>temple<br>Search Term 2<br>eyewear frame<br>Search Term 3<br>recited<br>Search Term 4<br>electrical components<br>Search Term 5<br>side section<br>Before<br>Priority Date: priority:20031009 |
| 12/16/2024 5:37:02 PM | Google Scholar | display information user gaze control |
| 12/16/2024 5:37:02 PM | Google Patents | Search Term 1<br>display<br>Search Term 2<br>information<br>Search Term 3<br>user<br>Search Term 4<br>gaze<br>Search Term 5<br>control<br>Before<br>Priority Date: priority:20041001 |
| 12/16/2024 5:37:08 PM | Google Scholar | eye audio circuitry ear arm compartment |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 5:37:08 PM | Google Patents | Search Term 1<br>eye<br>Search Term 2<br>audio circuitry<br>Search Term 3<br>ear<br>Search Term 4<br>arm<br>Search Term 5<br>compartment<br>Before<br>Priority Date: priority:20041013 |
| 12/16/2024 5:37:22 PM | Google Scholar | module user visualisation eye images |
| 12/16/2024 5:37:22 PM | Google Patents | Search Term 1<br>module<br>Search Term 2<br>user<br>Search Term 3<br>visualisation<br>Search Term 4<br>eye<br>Search Term 5<br>images<br>Before<br>Priority Date: priority:20041029 |
| 12/16/2024 5:37:30 PM | Google Scholar | user data biometric authentication eyewear biometric |
| 12/16/2024 5:37:30 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>data<br>Search Term 3<br>biometric authentication<br>Search Term 4<br>eyewear<br>Search Term 5<br>biometric<br>Before<br>Priority Date: priority:20041129 |
| 12/16/2024 5:37:37 PM | Google Scholar | user signals accelerometer nose input |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 5:37:37 PM | Google Patents | Search Term 1<br>user<br>Search Term 2<br>signals<br>Search Term 3<br>accelerometer<br>Search Term 4<br>nose<br>Search Term 5<br>input<br>Before<br>Priority Date: priority:20041229 |
| 12/16/2024 5:46:27 PM | Google Scholar | patient data appliance heart rate wearable |
| 12/16/2024 5:46:27 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>data<br>Search Term 3<br>appliance<br>Search Term 4<br>heart rate<br>Search Term 5<br>wearable<br>Before<br>Priority Date: priority:20060512 |
| 12/16/2024 5:46:35 PM | Google Scholar | eyewear temple recited circuit board electrical components |
| 12/16/2024 5:46:35 PM | Google Patents | Search Term 1<br>eyewear<br>Search Term 2<br>temple<br>Search Term 3<br>recited<br>Search Term 4<br>circuit board<br>Search Term 5<br>electrical components<br>Before<br>Priority Date: priority:20031009 |
| 12/16/2024 5:46:43 PM | Google Scholar | patient data wearable appliance network |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 5:46:43 PM | Google Patents | Search Term 1<br>patient<br>Search Term 2<br>data<br>Search Term 3<br>wearable<br>Search Term 4<br>appliance<br>Search Term 5<br>network<br>Before<br>Priority Date: priority:20060512 |
| 12/16/2024 5:46:49 PM | Google Scholar | wireless wireless link quality link computer |
| 12/16/2024 5:46:49 PM | Google Patents | Search Term 1<br>wireless<br>Search Term 2<br>wireless link<br>Search Term 3<br>quality<br>Search Term 4<br>link<br>Search Term 5<br>computer<br>Before<br>Priority Date: priority:20131220 |
| 12/16/2024 5:47:00 PM | Google Scholar | image distance optical element display subject |
| 12/16/2024 5:47:00 PM | Google Patents | Search Term 1<br>image<br>Search Term 2<br>distance<br>Search Term 3<br>optical element<br>Search Term 4<br>display<br>Search Term 5<br>subject<br>Before<br>Priority Date: priority:20040206 |
| 12/16/2024 5:47:07 PM | Google Scholar | optical device substrate light waves reflecting surfaces optical |

| date, time | web site | search string |
|---|---|---|
| 12/16/2024 5:47:07 PM | Google Patents | Search Term 1<br>optical device<br>Search Term 2<br>substrate<br>Search Term 3<br>light waves<br>Search Term 4<br>reflecting surfaces<br>Search Term 5<br>optical<br>Before<br>Priority Date: priority:20050210 |
| 12/16/2024 5:47:13 PM | Google Scholar | optical system image optical substrate display |
| 12/16/2024 5:47:13 PM | Google Patents | Search Term 1<br>optical system<br>Search Term 2<br>image<br>Search Term 3<br>optical<br>Search Term 4<br>substrate<br>Search Term 5<br>display<br>Before<br>Priority Date: priority:20050210 |
| 12/16/2024 5:47:20 PM | Google Scholar | optical system light pipe light modes lens element |
| 12/16/2024 5:47:20 PM | Google Patents | Search Term 1<br>optical system<br>Search Term 2<br>light pipe<br>Search Term 3<br>light<br>Search Term 4<br>modes<br>Search Term 5<br>lens element<br>Before<br>Priority Date: priority:20050322 |
| 12/16/2024 5:47:32 PM | Google Scholar | information recipient user stress identifier |

| date, time | web site | search string |
|---|---|---|
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| | | JP 2004-297256A | Oct-04 | Japan | | | X | |
| | | JP 2006-209144A | Aug-06 | Japan | | | X | |
| | | WO 86/05891 | Oct-86 | WIPO | | | | |

## Other Documents (Including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|---|---|---|
| | A | Notice of Allowance for U.S. Patent Application No. 17/484,080, dated June 18, 2024. |
| | B | Office Action for U.S. Patent Application No. 18/594,662, dated May 21, 2024. |

| Examiner | Date Considered |
|---|---|
| /JIE LEI/ | 12/13/2024 |

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.L/

| Form 1449 (Modified) | Atty. Docket No. | IPVCP003X1C4X1C2 |
|---|---|---|
| | Application No.: | 18/597,874 |
| **Information Disclosure** | Applicant | HOWELL et al. |
| **Statement By Applicant** | Filing Date | March 6, 2024 |
| | Group | 2872 |
| (Use Several Sheets if Necessary) | | Page 2 of 2 |

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|---|---|---|
| | C | Office Action for U.S. Patent Application No. 18/594,662, dated July 3, 2024. |
| | D | Advisory Action for U.S Patent Application No. 18/594,662, dated July 31, 2024. |
| | E | Notice of Allowance for U.S. Patent Application No. 18/238,467, dated August 7, 2024. |
| | F | Notice of Allowance for U.S. Patent Application No. 18/237,467, dated November 18, 2024. |
| | G | Notice of Allowance for U.S. Patent Application No. 16/182,969, dated July 1, 2024. |
| | H | Office Action for U.S. Patent Application No.18/541,367, dated May 30, 2024. |
| | I | Office Action for U.S. Patent Application No. 18/541,367, dated August 6, 2024. |
| | J | Notice of Allowance for U.S. Patent Application No. 18/541,367, dated October 28, 2024. |
| | K | Office Action for U.S. Patent Application No. 18/680,434, dated August 14, 2024. |
| | L | Notice of Allowance for U.S. Patent Application No. 18/680,434, dated November 5, 2024. |
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| Examiner | Date Considered |
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| /JIE LEI/ | 12/13/2024 |

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.L/

## PE2E SEARCH - Search History (Prior Art)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
|---|---|---|---|---|---|---|---|
| L1 | 1 | "18597874" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/15 08:33 AM |
| L1 | 1 | "18594662" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 09:39 AM |
| L2 | 5 | "18375893" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/15 08:34 AM |
| L4 | 3 | "18144557" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, | OR | ON | ON | 2024/05/14 09:42 AM |

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| | | | CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L4 | 1 | "89665263".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/05/15 08:34 AM |
| L5 | 5 | "83901364".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/05/14 09:42 AM |
| L7 | 2 | "37803583".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/05/15 08:36 AM |
| L10 | 12 | "46332221".fmid. | (US-PGPUB; USPAT; | OR | ON | ON | 2024/05/15 |

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| | | | USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | | | | 08:37 AM |
| L10 | 6 | "46326291".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/05/14 09:50 AM |
| L13 | 10 | "48951410".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/05/14 10:06 AM |
| L14 | 4 | "17949029" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |

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| L16 | 5 | "16821810" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L18 | 17 | "46304853".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/02/05 01:07 PM |
| L19 | 1 | "27539742".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/05/14 10:07 AM |
| L20 | 8 | "17484080" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | | VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L22 | 11 | "16574254" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L23 | 103494 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L24 | 82071 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L25 | 77662 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 | EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L26 | 49408 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L27 | 46211 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND (communicat$4 near10 wireless$4) AND (audio OR speak$4) AND embed$4 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L28 | 20279 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L29 | 144 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 | | | | | |
| L30 | 129 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L31 | 125 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L32 | 125 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND (communicat$4 near10 wireless$4) AND (audio OR speak$4) AND embed$4 | | | | | |
| L33 | 103 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L34 | 84 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L35 | 84 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second | | | | | |
| L36 | 84 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L37 | 79 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 | | | | | |
| L43 | 4184 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND speaker$2 AND (sound WITH guid$4) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L44 | 1509 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND (speaker$2 SAME (sound WITH guid$4)) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L45 | 622 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND temple AND ((speaker$2 OR audio) SAME (sound WITH guid$4)) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | | JPO; DERWENT; IBM_TDB) | | | | |
| L46 | 296 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND ((temples SAME speakers) AND (sound WITH guid$4)) | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L47 | 13637 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND temple AND (speakers AND audio) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L48 | 1282 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND (temple SAME (speakers WITH audio)) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L49 | 316 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | WITH control$4) AND (memor$4 OR stor$4) AND (batter$4 near10 rechargeable) AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 AND impair$4 | | | | | |
| L50 | 302 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) AND (batter$4 near10 rechargeable) AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 AND impair$4 AND compensat$4 AND amplif$6 | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L51 | 302 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) AND (batter$4 near10 rechargeable) AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 AND impair$4 AND compensat$4 AND | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | amplif$6 AND customiz$4 | | | | | |
| L52 | 3 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) AND (batter$4 near10 rechargeable) AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 AND impair$4 AND compensat$4 AND (amplif$6 WITH customiz$4) | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L53 | 17 | "46304853".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/02/05 01:07 PM |
| L54 | 103494 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L55 | 82071 | (eyewear$4 OR | (US-PGPUB; USPAT; | OR | ON | ON | 2024/02/05 |

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|---|---|---|---|---|---|---|---|
| | | glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) | USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | 01:07 PM |
| L56 | 77662 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L57 | 49408 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |
| L58 | 46211 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND (communicat$4 near10 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | wireless$4) AND (audio OR speak$4) AND embed$4 | NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L59 | 17504 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L60 | 11615 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L61 | 3610 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L62 | 1920 | (eyewear$4 OR glasses$4 OR spetacl$4 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | eyegalss$4) AND frame AND (circuit near10 board) AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 | | | | | |
| L63 | 1402 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L64 | 722 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 AND rechargeable | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L65 | 710 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | WITH control$4) AND (memor$4 OR stor$4) AND (batter$4 near10 rechargeable) AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 | | | | | |
| L66 | 12657 | L1 AND ( (G02B27/017 OR G02B2027/0178 OR G02B27/0172 OR G02B2027/014 OR G02B2027/0138 OR G02B2027/0187 OR G02B27/0093 OR G02B27/0176 OR G02B2027/0118 OR G02B2027/0134 OR G02B27/0179 OR G02B2027/0141 OR G02B2027/0174 OR G02B27/0101 OR G02B27/01 OR G02B2027/0132 OR G02B2027/0127 OR G02B2027/0123 OR G02B30/24 OR G02B2027/0156 OR G02B2027/0112 OR G02B2027/0147 OR G02B27/0081 OR G02B3/14 OR G02B2027/011 OR G02B2027/0185 OR G02B6/005 OR G02B30/34 OR G02B2027/0154 OR G02B6/34 OR G02B26/101 OR G02B5/32 OR G02B2027/0125 OR G02B7/28 OR G02B2027/0181 OR G02B27/30 OR G02B27/646 OR G02B2027/015 OR G02B27/02 OR G02B6/0016 OR G02B26/0833 OR G02B30/00 OR G02B5/30 OR G02B27/4205 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02B6/0038 OR<br>G02B30/25 OR<br>G02B26/001 OR<br>G02B13/0045 OR<br>G02B26/10 OR<br>G02B5/208 OR<br>G02B2027/0159 OR<br>G02B6/0036 OR<br>G02B6/0076 OR<br>G02B27/0075 OR<br>G02B7/09 OR<br>G02B2027/0152 OR<br>G02B27/022 OR<br>G02B2027/0116 OR<br>G02B27/0149 OR<br>G02B3/0081 OR<br>G02B2027/0169 OR<br>G02B6/0035 OR<br>G02B27/283 OR<br>G02B7/285 OR<br>G02B13/06 OR<br>G02B6/0065 OR<br>G02B7/08 OR<br>G02B5/3025 OR<br>G02B2027/012 OR<br>G02B27/0103 OR<br>G02B5/1857 OR<br>G02B6/00 OR<br>G02B2027/013 OR<br>G02B6/0023 OR<br>G02B30/27 OR<br>G02B27/00 OR<br>G02B6/0068 OR<br>G02B6/0055 OR<br>G02B27/028 OR<br>G02B7/023 OR<br>G02B2027/0114 OR<br>G02B26/005 OR<br>G02B2027/0161 OR<br>G02B26/105 OR<br>G02B7/04 OR<br>G02B7/102 OR<br>G02B27/4272 OR<br>G02B6/0011 OR<br>G02B2027/0105 OR<br>G02B5/23 OR<br>G02B6/0088 OR<br>G02B7/12 OR<br>G02B7/02 OR<br>G02B6/003 OR<br>G02B3/0056 OR<br>G02B5/08 OR<br>G02B2027/0163 OR<br>G02B21/365 OR<br>G02B30/23 OR<br>G02B5/20 OR<br>G02B27/286 OR<br>G02B6/006 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B6/10 OR<br>G02B7/021 OR<br>G02B27/1086 OR<br>G02B6/0001 OR<br>G02B6/0018 OR<br>G02B3/0006 OR<br>G02B5/005 OR<br>G02B2027/0194 OR<br>G02B2027/0198 OR<br>G02B26/0816 OR<br>G02B27/42 OR<br>G02B6/0028 OR<br>G02B13/009 OR<br>G02B27/0018 OR<br>G02B30/40 OR<br>G02B6/0053 OR<br>G02B5/1866 OR<br>G02B9/64 OR<br>G02B13/004 OR<br>G02B19/0057 OR<br>G02B21/0012 OR<br>G02B26/004 OR<br>G02B27/4227 OR<br>G02B7/008 OR<br>G02B3/0062 OR<br>G02B5/1871 OR<br>G02B13/18 OR<br>G02B26/02 OR<br>G02B5/18 OR<br>G02B27/141 OR<br>G02B26/0875 OR<br>G02B27/0006 OR<br>G02B6/002 OR<br>G02B6/1226 OR<br>G02B9/60 OR<br>G02B2027/0158 OR<br>G02B3/12 OR<br>G02B5/223 OR<br>G02B6/0051 OR<br>G02B13/0035 OR<br>G02B2027/0107 OR<br>G02B21/06 OR<br>G02B5/1823 OR<br>G02B5/201 OR<br>G02B5/3083 OR<br>G02B6/29325 OR<br>G02B9/62 OR<br>G02B13/02 OR<br>G02B2027/0136 OR<br>G02B26/06 OR<br>G02B2027/0143 OR<br>G02B1/002 OR<br>G02B1/11 OR<br>G02B2027/0129 OR<br>G02B26/00 OR<br>G02B6/124 OR<br>G02B26/0841 OR<br>G02B30/36 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B3/0075 OR<br>G02B5/0252 OR<br>G02B6/4206 OR<br>G02B19/0014 OR<br>G02B27/0955 OR<br>G02B5/1842 OR<br>G02B27/1026 OR<br>G02B6/0031 OR<br>G02B1/041 OR<br>G02B6/0026 OR<br>G02B7/002 OR<br>G02B13/0065 OR<br>G02B26/0808 OR<br>G02B26/0825 OR<br>G02B27/0189 OR<br>G02B27/106 OR<br>G02B30/52 OR<br>G02B13/14 OR<br>G02B23/18 OR<br>G02B27/0905 OR<br>G02B30/33 OR<br>G02B5/3016 OR<br>G02B1/02 OR<br>G02B2006/12107 OR<br>G02B25/02 OR<br>G02B26/026 OR<br>G02B9/34 OR<br>G02B27/0977 OR<br>G02B27/145 OR<br>G02B3/0043 OR<br>G02B9/12 OR<br>G02B2027/0183 OR<br>G02B27/0988 OR<br>G02B27/1066 OR<br>G02B30/35 OR<br>G02B6/0056 OR<br>G02B6/4204 OR<br>G02B13/00 OR<br>G02B17/086 OR<br>G02B25/001 OR<br>G02B25/004 OR<br>G02B27/0025 OR<br>G02B27/48 OR<br>G02B30/56 OR<br>G02B6/0061 OR<br>G02B6/1221 OR<br>G02B27/102 OR<br>G02B6/1225 OR<br>G02B6/42 OR<br>G02B13/001 OR<br>G02B2006/12164 OR<br>G02B3/0037 OR<br>G02B6/0025 OR<br>G02B6/0045 OR<br>G02B6/0078 OR<br>G02B6/0083 OR<br>G02B6/12004 OR<br>G02B6/12007 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B7/06 OR<br>G02B27/44 OR<br>G02B30/30 OR<br>G02B6/0021 OR<br>G02B21/362 OR<br>G02B27/0994 OR<br>G02B27/10 OR<br>G02B6/0085 OR<br>G02B9/04 OR<br>G02B26/007 OR<br>G02B27/20 OR<br>G02B27/64 OR<br>G02B3/00 OR<br>G02B3/0031 OR<br>G02B3/02 OR<br>G02B3/08 OR<br>G02B30/31 OR<br>G02B7/003 OR<br>G02B2006/12147 OR<br>G02B21/025 OR<br>G02B23/125 OR<br>G02B6/13 OR<br>G02B6/32 OR<br>G02B13/0015 OR<br>G02B19/0042 OR<br>G02B27/0916 OR<br>G02B27/0972 OR<br>G02B30/26 OR<br>G02B5/1809 OR<br>G02B6/4214 OR<br>G02B1/045 OR<br>G02B2027/0109 OR<br>G02B2027/0196 OR<br>G02B27/0037 OR<br>G02B27/0068 OR<br>G02B27/1006 OR<br>G02B5/04 OR<br>G02B5/3058 OR<br>G02B6/0046 OR<br>G02B6/2848 OR<br>G02B7/34 OR<br>G02B13/007 OR<br>G02B2003/0093 OR<br>G02B26/08 OR<br>G02B27/18 OR<br>G02B3/04 OR<br>G02B5/1861 OR<br>G02B6/2706 OR<br>G02B19/0028 OR<br>G02B2027/0145 OR<br>G02B27/143 OR<br>G02B27/58 OR<br>G02B27/62 OR<br>G02B3/0068 OR<br>G02B3/0087 OR<br>G02B5/10 OR<br>G02B5/28 OR<br>G02B6/0015 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B6/0073 OR<br>G02B6/122 OR<br>G02B6/125 OR<br>G02B6/4215 OR<br>G02B7/022 OR<br>G02B7/36 OR<br>G02B1/10 OR<br>G02B13/0075 OR<br>G02B17/08 OR<br>G02B19/0066 OR<br>G02B21/36 OR<br>G02B23/00 OR<br>G02B27/0961 OR<br>G02B27/144 OR<br>G02B30/10 OR<br>G02B5/00 OR<br>G02B5/1847 OR<br>G02B5/1852 OR<br>G02B6/0006 OR<br>G02B7/10 OR<br>G02B13/008 OR<br>G02B15/00 OR<br>G02B19/0023 OR<br>G02B19/0076 OR<br>G02B21/22 OR<br>G02B2207/101 OR<br>G02B3/005 OR<br>G02B6/001 OR<br>G02B6/0033 OR<br>G02B6/0058 OR<br>G02B6/02 OR<br>G02B7/028).cpc.) | | | | | |
| L67 | 4141 | L1 AND ( (G02C11/10 OR G02C7/101 OR G02C7/083 OR G02C11/06 OR G02C7/04 OR G02C11/00 OR G02C11/04 OR G02C5/143 OR G02C7/02 OR G02C5/14 OR G02C7/06 OR G02C7/08 OR G02C7/102 OR G02C5/146 OR G02C2202/16 OR G02C2202/20 OR G02C7/049 OR G02C7/022 OR G02C5/22 OR G02C2202/18 OR G02C5/001 OR G02C2202/22 OR G02C7/081 OR G02C2200/08 OR G02C7/085 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | G02C7/061 OR<br>G02C7/16 OR<br>G02C2200/02 OR<br>G02C5/16 OR<br>G02C7/066 OR<br>G02C7/12 OR<br>G02C2202/12 OR<br>G02C3/003 OR<br>G02C7/086 OR<br>G02C2202/24 OR<br>G02C9/00 OR<br>G02C5/02 OR<br>G02C5/12 OR<br>G02C7/10 OR<br>G02C7/041 OR<br>G02C7/104 OR<br>G02C11/08 OR<br>G02C13/003 OR<br>G02C7/088 OR<br>G02C1/00 OR<br>G02C5/20 OR<br>G02C9/04 OR<br>G02C7/00 OR<br>G02C2202/10 OR<br>G02C5/008 OR<br>G02C1/06 OR<br>G02C5/2209 OR<br>G02C5/124 OR<br>G02C11/02 OR<br>G02C13/001 OR<br>G02C5/10 OR<br>G02C5/2227 OR<br>G02C7/105 OR<br>G02C13/005 OR<br>G02C2200/10 OR<br>G02C13/00 OR<br>G02C2200/06 OR<br>G02C5/2254 OR<br>G02C5/006 OR<br>G02C5/126 OR<br>G02C1/10 OR<br>G02C5/04 OR<br>G02C5/2218 OR<br>G02C5/2272 OR<br>G02C9/02 OR<br>G02C2200/18 OR<br>G02C5/122 OR<br>G02C7/108 OR<br>G02C3/04 OR<br>G02C5/00 OR<br>G02C7/021 OR<br>G02C5/08 OR<br>G02C7/027).cpc.) | | | | | |
| L68 | 9842 | L2 AND ( (G02B27/017 OR G02B2027/0178 OR G02B27/0172 OR G02B2027/014 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02B2027/0138 OR<br>G02B2027/0187 OR<br>G02B27/0093 OR<br>G02B27/0176 OR<br>G02B2027/0118 OR<br>G02B2027/0134 OR<br>G02B2027/0141 OR<br>G02B27/0179 OR<br>G02B27/0101 OR<br>G02B27/01 OR<br>G02B2027/0127 OR<br>G02B2027/0174 OR<br>G02B2027/0132 OR<br>G02B2027/0123 OR<br>G02B2027/0156 OR<br>G02B2027/0147 OR<br>G02B27/0081 OR<br>G02B2027/0185 OR<br>G02B2027/0112 OR<br>G02B2027/011 OR<br>G02B6/34 OR<br>G02B6/005 OR<br>G02B2027/0154 OR<br>G02B26/101 OR<br>G02B27/646 OR<br>G02B3/14 OR<br>G02B2027/0125 OR<br>G02B2027/0181 OR<br>G02B13/0045 OR<br>G02B26/001 OR<br>G02B6/0016 OR<br>G02B27/30 OR<br>G02B30/34 OR<br>G02B5/30 OR<br>G02B6/0038 OR<br>G02B6/0036 OR<br>G02B7/09 OR<br>G02B2027/015 OR<br>G02B27/0075 OR<br>G02B27/4205 OR<br>G02B5/208 OR<br>G02B27/022 OR<br>G02B7/08 OR<br>G02B6/0035 OR<br>G02B2027/012 OR<br>G02B5/1857 OR<br>G02B6/0076 OR<br>G02B2027/0169 OR<br>G02B2027/0152 OR<br>G02B27/283 OR<br>G02B2027/0159 OR<br>G02B26/0833 OR<br>G02B13/06 OR<br>G02B26/10 OR<br>G02B5/3025 OR<br>G02B27/02 OR<br>G02B27/028 OR<br>G02B30/24 OR | CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B27/4272 OR<br>G02B5/32 OR<br>G02B6/0065 OR<br>G02B27/0149 OR<br>G02B2027/0114 OR<br>G02B6/00 OR<br>G02B7/04 OR<br>G02B6/0068 OR<br>G02B27/286 OR<br>G02B6/10 OR<br>G02B2027/0116 OR<br>G02B26/105 OR<br>G02B6/0088 OR<br>G02B2027/0161 OR<br>G02B30/27 OR<br>G02B5/08 OR<br>G02B6/0001 OR<br>G02B2027/0105 OR<br>G02B21/365 OR<br>G02B6/0011 OR<br>G02B6/0023 OR<br>G02B5/1866 OR<br>G02B7/023 OR<br>G02B27/42 OR<br>G02B30/40 OR<br>G02B27/00 OR<br>G02B27/0018 OR<br>G02B7/021 OR<br>G02B7/102 OR<br>G02B7/12 OR<br>G02B9/64 OR<br>G02B2027/0198 OR<br>G02B27/4227 OR<br>G02B6/0053 OR<br>G02B6/0055 OR<br>G02B7/02 OR<br>G02B3/0006 OR<br>G02B5/1871 OR<br>G02B6/003 OR<br>G02B13/009 OR<br>G02B13/18 OR<br>G02B2027/0163 OR<br>G02B13/004 OR<br>G02B26/005 OR<br>G02B7/008 OR<br>G02B3/0062 OR<br>G02B9/60 OR<br>G02B3/0056 OR<br>G02B6/0028 OR<br>G02B27/1086 OR<br>G02B5/1823 OR<br>G02B6/29325 OR<br>G02B9/62 OR<br>G02B13/0035 OR<br>G02B13/02 OR<br>G02B21/06 OR<br>G02B26/0875 OR<br>G02B30/00 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B6/0018 OR<br>G02B6/006 OR<br>G02B2027/0136 OR<br>G02B5/18 OR<br>G02B5/3083 OR<br>G02B26/004 OR<br>G02B30/23 OR<br>G02B5/005 OR<br>G02B6/0051 OR<br>G02B7/28 OR<br>G02B3/0075 OR<br>G02B2027/0107 OR<br>G02B2027/013 OR<br>G02B2027/0194 OR<br>G02B5/1842 OR<br>G02B5/20 OR<br>G02B6/002 OR<br>G02B21/0012 OR<br>G02B26/06 OR<br>G02B27/0103 OR<br>G02B2027/0129 OR<br>G02B26/0841 OR<br>G02B3/12 OR<br>G02B1/002 OR<br>G02B1/11 OR<br>G02B30/25 OR<br>G02B5/201 OR<br>G02B2027/0143 OR<br>G02B27/0955 OR<br>G02B6/0026 OR<br>G02B9/34 OR<br>G02B1/041 OR<br>G02B13/14 OR<br>G02B26/026 OR<br>G02B26/0825 OR<br>G02B27/0977 OR<br>G02B3/0043 OR<br>G02B5/223 OR<br>G02B9/12 OR<br>G02B2027/0183 OR<br>G02B26/02 OR<br>G02B30/56 OR<br>G02B2027/0158 OR<br>G02B26/00 OR<br>G02B6/0031 OR<br>G02B6/0056 OR<br>G02B6/4204 OR<br>G02B13/00 OR<br>G02B27/0025 OR<br>G02B5/3016 OR<br>G02B6/0078 OR<br>G02B19/0057 OR<br>G02B6/0083 OR<br>G02B6/0085 OR<br>G02B9/04 OR<br>G02B13/0065 OR<br>G02B17/086 OR<br>G02B26/007 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B27/10 OR<br>G02B30/52 OR<br>G02B6/0021 OR<br>G02B21/025 OR<br>G02B3/0031 OR<br>G02B30/31 OR<br>G02B30/35 OR<br>G02B30/36 OR<br>G02B7/002 OR<br>G02B26/0816 OR<br>G02B27/0916 OR<br>G02B3/08 OR<br>G02B7/003 OR<br>G02B27/0037 OR<br>G02B27/44 OR<br>G02B3/0037 OR<br>G02B6/0025 OR<br>G02B6/0061 OR<br>G02B13/001 OR<br>G02B13/0015 OR<br>G02B13/007 OR<br>G02B27/0006 OR<br>G02B27/48 OR<br>G02B3/02 OR<br>G02B30/33 OR<br>G02B6/2706 OR<br>G02B6/32 OR<br>G02B2027/0145 OR<br>G02B26/08 OR<br>G02B27/64 OR<br>G02B5/04 OR<br>G02B6/0045 OR<br>G02B6/124 OR<br>G02B19/0066 OR<br>G02B21/36 OR<br>G02B21/362 OR<br>G02B27/102 OR<br>G02B3/00 OR<br>G02B3/0068 OR<br>G02B5/1847 OR<br>G02B5/1852 OR<br>G02B6/12007 OR<br>G02B6/122 OR<br>G02B13/008 OR<br>G02B19/0076 OR<br>G02B23/18 OR<br>G02B27/0189 OR<br>G02B27/20 OR<br>G02B27/62 OR<br>G02B3/04 OR<br>G02B30/10 OR<br>G02B5/1861 OR<br>G02B5/23 OR<br>G02B6/0033 OR<br>G02B6/0046 OR<br>G02B7/34 OR<br>G02B13/003 OR<br>G02B15/142 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B19/009 OR<br>G02B2003/0093 OR<br>G02B2027/0196 OR<br>G02B25/001 OR<br>G02B27/0972 OR<br>G02B27/1033 OR<br>G02B27/141 OR<br>G02B27/425 OR<br>G02B30/30 OR<br>G02B6/0006 OR<br>G02B6/0008 OR<br>G02B6/0073 OR<br>G02B6/009 OR<br>G02B6/02085 OR<br>G02B6/29316 OR<br>G02B6/29328 OR<br>G02B6/4206 OR<br>G02B6/443 OR<br>G02B6/4471 OR<br>G02B7/028 OR<br>G02B9/36 OR<br>G02B1/10 OR<br>G02B13/002 OR<br>G02B13/006 OR<br>G02B15/00 OR<br>G02B15/10 OR<br>G02B15/20 OR<br>G02B17/0605 OR<br>G02B19/0028 OR<br>G02B19/0047 OR<br>G02B2027/0109 OR<br>G02B27/04 OR<br>G02B27/144 OR<br>G02B3/0087 OR<br>G02B30/50 OR<br>G02B5/10 OR<br>G02B7/10 OR<br>G02B13/0055 OR<br>G02B13/04 OR<br>G02B17/06 OR<br>G02B17/08 OR<br>G02B27/0961 OR<br>G02B27/281 OR<br>G02B5/0252 OR<br>G02B5/12 OR<br>G02B5/1809 OR<br>G02B5/26 OR<br>G02B5/281 OR<br>G02B6/001 OR<br>G02B6/02 OR<br>G02B6/105 OR<br>G02B7/182 OR<br>G02B7/36).cpc.) | | | | | |
| L69 | 2404 | L2 AND ( (G02C11/10 OR G02C11/06 OR G02C7/04 OR G02C7/101 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02C11/00 OR G02C5/143 OR G02C5/14 OR G02C7/083 OR G02C11/04 OR G02C5/001 OR G02C5/146 OR G02C2200/02 OR G02C3/003 OR G02C5/16 OR G02C5/22 OR G02C7/086 OR G02C5/02 OR G02C7/06 OR G02C2200/08 OR G02C7/16 OR G02C7/02 OR G02C5/20 OR G02C9/00 OR G02C5/12 OR G02C7/00 OR G02C7/085 OR G02C13/003 OR G02C9/04 OR G02C7/08 OR G02C7/081 OR G02C2202/10 OR G02C7/12 OR G02C2200/10 OR G02C2202/24 OR G02C7/049 OR G02C5/124 OR G02C5/2227 OR G02C5/2254 OR G02C1/00 OR G02C1/06 OR G02C1/10 OR G02C2200/06 OR G02C2200/18 OR G02C7/102 OR G02C11/08 OR G02C7/104 OR G02C2202/22 OR G02C5/2209 OR G02C5/2218 OR G02C7/088 OR G02C7/105 OR G02C3/006 OR G02C7/021 OR G02C9/02 OR G02C11/02 OR G02C5/2263 OR G02C2200/26 OR G02C5/122 OR G02C7/10).cpc.) | CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L70 | 5079 | L4 AND ( (G02B27/017 OR G02B2027/0178 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | OR G02B27/0172 OR G02B2027/014 OR G02B2027/0138 OR G02B2027/0187 OR G02B27/0093 OR G02B27/0176 OR G02B2027/0134 OR G02B2027/0141 OR G02B27/01 OR G02B2027/0118 OR G02B27/0179 OR G02B27/0101 OR G02B2027/0127 OR G02B2027/0174 OR G02B2027/0132 OR G02B2027/0123 OR G02B2027/0156 OR G02B2027/0185 OR G02B2027/0147 OR G02B6/34 OR G02B26/001 OR G02B13/0045 OR G02B27/0081 OR G02B26/101 OR G02B27/646 OR G02B6/005 OR G02B2027/0112 OR G02B2027/0125 OR G02B27/022 OR G02B30/34 OR G02B27/0075 OR G02B2027/0169 OR G02B7/09 OR G02B2027/0181 OR G02B13/06 OR G02B27/028 OR G02B2027/0154 OR G02B5/208 OR G02B27/4205 OR G02B5/30 OR G02B6/0035 OR G02B26/0833 OR G02B5/3025 OR G02B27/283 OR G02B6/0036 OR G02B6/0038 OR G02B6/0076 OR G02B6/10 OR G02B6/0001 OR G02B2027/012 OR G02B2027/011 OR G02B27/286 OR G02B2027/0114 OR G02B27/42 OR G02B5/32 OR G02B7/023 OR G02B2027/0105 OR G02B27/4227 OR | AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B3/14 OR<br>G02B9/64 OR<br>G02B30/24 OR<br>G02B6/0016 OR<br>G02B6/0023 OR<br>G02B7/08 OR<br>G02B13/004 OR<br>G02B27/0018 OR<br>G02B27/30 OR<br>G02B7/021 OR<br>G02B5/08 OR<br>G02B6/0068 OR<br>G02B9/60 OR<br>G02B7/02 OR<br>G02B27/02 OR<br>G02B27/00 OR<br>G02B30/40 OR<br>G02B7/008 OR<br>G02B6/0053 OR<br>G02B26/10 OR<br>G02B26/105 OR<br>G02B27/1086 OR<br>G02B5/1823 OR<br>G02B5/1857 OR<br>G02B5/1866 OR<br>G02B5/1871 OR<br>G02B6/29325 OR<br>G02B9/62 OR<br>G02B2027/0161 OR<br>G02B5/005 OR<br>G02B13/02 OR<br>G02B13/009 OR<br>G02B7/102 OR<br>G02B2027/0159 OR<br>G02B30/00 OR<br>G02B2027/015 OR<br>G02B3/0006 OR<br>G02B6/0055 OR<br>G02B6/0088 OR<br>G02B2027/0136 OR<br>G02B21/365 OR<br>G02B6/003 OR<br>G02B2027/0194 OR<br>G02B2027/0198 OR<br>G02B6/0011 OR<br>G02B6/0065 OR<br>G02B7/04 OR<br>G02B2027/0163 OR<br>G02B21/06 OR<br>G02B5/3083 OR<br>G02B9/34 OR<br>G02B13/18 OR<br>G02B27/0977 OR<br>G02B6/00 OR<br>G02B2027/013 OR<br>G02B27/0149 OR<br>G02B27/4272 OR<br>G02B2027/0152 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B5/201 OR<br>G02B6/0051 OR<br>G02B1/002 OR<br>G02B5/20 OR<br>G02B7/12 OR<br>G02B26/0841 OR<br>G02B27/0025 OR<br>G02B27/0955 OR<br>G02B1/041 OR<br>G02B26/005 OR<br>G02B30/56 OR<br>G02B2027/0183 OR<br>G02B27/0103 OR<br>G02B13/0065 OR<br>G02B26/00 OR<br>G02B26/007 OR<br>G02B26/026 OR<br>G02B30/23 OR<br>G02B30/52 OR<br>G02B7/28 OR<br>G02B2027/0116 OR<br>G02B6/0018 OR<br>G02B6/002 OR<br>G02B6/0028 OR<br>G02B6/0078 OR<br>G02B9/04 OR<br>G02B19/0057 OR<br>G02B27/0916 OR<br>G02B5/3016 OR<br>G02B2027/0107 OR<br>G02B2027/0129 OR<br>G02B3/02 OR<br>G02B5/223 OR<br>G02B6/0056 OR<br>G02B6/2706 OR<br>G02B13/00 OR<br>G02B13/001 OR<br>G02B13/0035 OR<br>G02B26/004 OR<br>G02B30/27 OR<br>G02B6/0021 OR<br>G02B2027/0143 OR<br>G02B26/0825 OR<br>G02B3/00 OR<br>G02B3/08 OR<br>G02B6/32 OR<br>G02B7/002 OR<br>G02B13/0015 OR<br>G02B13/008 OR<br>G02B27/0037 OR<br>G02B30/35 OR<br>G02B6/0031 OR<br>G02B6/0033 OR<br>G02B1/11 OR<br>G02B13/003 OR<br>G02B13/14 OR<br>G02B19/009 OR<br>G02B26/0816 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B27/0006 OR<br>G02B27/10 OR<br>G02B27/102 OR<br>G02B3/0037 OR<br>G02B3/0056 OR<br>G02B30/36 OR<br>G02B5/04 OR<br>G02B5/18 OR<br>G02B6/0006 OR<br>G02B6/0008 OR<br>G02B6/0025 OR<br>G02B6/009 OR<br>G02B6/12007 OR<br>G02B6/29316 OR<br>G02B6/29328 OR<br>G02B6/4204 OR<br>G02B6/443 OR<br>G02B6/4471 OR<br>G02B9/36 OR<br>G02B13/002 OR<br>G02B13/006 OR<br>G02B15/142 OR<br>G02B17/0605 OR<br>G02B2027/0145 OR<br>G02B27/141 OR<br>G02B27/64 OR<br>G02B3/0068 OR<br>G02B6/0073 OR<br>G02B7/10 OR<br>G02B9/12 OR<br>G02B17/086 OR<br>G02B27/425 OR<br>G02B27/48 OR<br>G02B3/12 OR<br>G02B30/25 OR<br>G02B5/26 OR<br>G02B6/006 OR<br>G02B6/0083 OR<br>G02B6/105 OR<br>G02B6/124 OR<br>G02B7/003 OR<br>G02B7/182 OR<br>G02B27/0068 OR<br>G02B27/0972 OR<br>G02B27/144 OR<br>G02B5/23 OR<br>G02B6/001 OR<br>G02B6/0046 OR<br>G02B13/04 OR<br>G02B15/10 OR<br>G02B17/08 OR<br>G02B2027/0196 OR<br>G02B26/08 OR<br>G02B27/0961 OR<br>G02B27/1033 OR<br>G02B27/281 OR<br>G02B3/0087 OR<br>G02B30/10 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B5/124 OR<br>G02B6/0015 OR<br>G02B6/0086 OR<br>G02B6/02066 OR<br>G02B6/29356 OR<br>G02B6/325 OR<br>G02B6/4206 OR<br>G02B7/285 OR<br>G02B13/0005 OR<br>G02B13/0055 OR<br>G02B2003/0093 OR<br>G02B2027/0109 OR<br>G02B23/00 OR<br>G02B25/001 OR<br>G02B27/005 OR<br>G02B27/04 OR<br>G02B27/149 OR<br>G02B27/62 OR<br>G02B30/31 OR<br>G02B5/1809 OR<br>G02B5/1842 OR<br>G02B5/1847 OR<br>G02B5/206 OR<br>G02B6/0026 OR<br>G02B6/0045 OR<br>G02B6/122 OR<br>G02B6/1221 OR<br>G02B6/274 OR<br>G02B6/2766 OR<br>G02B6/42).cpc.) | | | | | |
| L71 | 1210 | L4 AND ( (G02C11/10 OR G02C11/06 OR G02C7/04 OR G02C11/00 OR G02C7/101 OR G02C5/14 OR G02C5/143 OR G02C5/001 OR G02C5/146 OR G02C2200/02 OR G02C3/003 OR G02C5/22 OR G02C11/04 OR G02C7/083 OR G02C5/16 OR G02C2200/08 OR G02C5/12 OR G02C7/00 OR G02C9/00 OR G02C7/081 OR G02C5/02 OR G02C7/02 OR G02C2200/10 OR G02C7/049 OR G02C7/086 OR G02C7/12 OR G02C7/08 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02C9/04 OR<br>G02C7/16 OR<br>G02C1/00 OR<br>G02C1/10 OR<br>G02C7/06 OR<br>G02C1/06 OR<br>G02C7/104 OR<br>G02C5/20 OR<br>G02C2202/10 OR<br>G02C7/021 OR<br>G02C7/085 OR<br>G02C9/02 OR<br>G02C7/105 OR<br>G02C5/006 OR<br>G02C5/045 OR<br>G02C7/022 OR<br>G02C7/041 OR<br>G02C7/10).cpc.) | | | | | |
| L72 | 9435 | L17 AND (<br>(G02B27/017 OR<br>G02B2027/0178 OR<br>G02B27/0172 OR<br>G02B2027/014 OR<br>G02B2027/0138 OR<br>G02B2027/0187 OR<br>G02B27/0093 OR<br>G02B27/0176 OR<br>G02B2027/0141 OR<br>G02B2027/0134 OR<br>G02B27/01 OR<br>G02B27/0179 OR<br>G02B27/0101 OR<br>G02B2027/0127 OR<br>G02B2027/0118 OR<br>G02B2027/0174 OR<br>G02B2027/0132 OR<br>G02B2027/0185 OR<br>G02B2027/0156 OR<br>G02B2027/0123 OR<br>G02B26/001 OR<br>G02B13/0045 OR<br>G02B6/34 OR<br>G02B27/0081 OR<br>G02B2027/0147 OR<br>G02B26/101 OR<br>G02B6/005 OR<br>G02B2027/0112 OR<br>G02B27/646 OR<br>G02B27/022 OR<br>G02B30/34 OR<br>G02B2027/0125 OR<br>G02B2027/0169 OR<br>G02B7/09 OR<br>G02B13/06 OR<br>G02B2027/0181 OR<br>G02B27/028 OR<br>G02B2027/0154 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05<br>01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02B27/0075 OR<br>G02B5/208 OR<br>G02B27/4205 OR<br>G02B6/0036 OR<br>G02B6/0038 OR<br>G02B27/283 OR<br>G02B6/0076 OR<br>G02B5/3025 OR<br>G02B6/10 OR<br>G02B6/0001 OR<br>G02B2027/012 OR<br>G02B2027/0114 OR<br>G02B27/42 OR<br>G02B5/32 OR<br>G02B7/023 OR<br>G02B26/0833 OR<br>G02B27/4227 OR<br>G02B2027/0105 OR<br>G02B6/0035 OR<br>G02B9/64 OR<br>G02B5/30 OR<br>G02B13/004 OR<br>G02B27/0018 OR<br>G02B27/30 OR<br>G02B30/24 OR<br>G02B5/08 OR<br>G02B6/0016 OR<br>G02B6/0023 OR<br>G02B6/0068 OR<br>G02B9/60 OR<br>G02B27/286 OR<br>G02B7/02 OR<br>G02B7/021 OR<br>G02B2027/011 OR<br>G02B27/02 OR<br>G02B30/40 OR<br>G02B7/008 OR<br>G02B26/10 OR<br>G02B26/105 OR<br>G02B27/1086 OR<br>G02B5/1823 OR<br>G02B5/1857 OR<br>G02B5/1866 OR<br>G02B5/1871 OR<br>G02B6/0053 OR<br>G02B6/29325 OR<br>G02B7/08 OR<br>G02B9/62 OR<br>G02B5/005 OR<br>G02B13/02 OR<br>G02B7/102 OR<br>G02B2027/0161 OR<br>G02B3/14 OR<br>G02B2027/0159 OR<br>G02B27/00 OR<br>G02B30/00 OR<br>G02B2027/015 OR<br>G02B21/365 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B6/0055 OR<br>G02B6/0088 OR<br>G02B13/009 OR<br>G02B2027/0198 OR<br>G02B7/04 OR<br>G02B2027/0136 OR<br>G02B2027/0163 OR<br>G02B2027/0194 OR<br>G02B21/06 OR<br>G02B6/0011 OR<br>G02B6/0065 OR<br>G02B9/34 OR<br>G02B13/18 OR<br>G02B2027/013 OR<br>G02B27/0149 OR<br>G02B27/0977 OR<br>G02B5/3083 OR<br>G02B5/201 OR<br>G02B6/0051 OR<br>G02B1/002 OR<br>G02B3/0006 OR<br>G02B5/20 OR<br>G02B26/0841 OR<br>G02B27/0955 OR<br>G02B7/12 OR<br>G02B1/041 OR<br>G02B2027/0152 OR<br>G02B27/0025 OR<br>G02B2027/0183 OR<br>G02B26/005 OR<br>G02B27/0103 OR<br>G02B27/4272 OR<br>G02B6/00 OR<br>G02B13/0065 OR<br>G02B26/00 OR<br>G02B26/007 OR<br>G02B26/026 OR<br>G02B30/23 OR<br>G02B30/52 OR<br>G02B2027/0116 OR<br>G02B30/56 OR<br>G02B6/0078 OR<br>G02B9/04 OR<br>G02B19/0057 OR<br>G02B27/0916 OR<br>G02B6/0028 OR<br>G02B6/003 OR<br>G02B2027/0107 OR<br>G02B6/0018 OR<br>G02B6/002 OR<br>G02B2027/0129 OR<br>G02B3/02 OR<br>G02B5/3016 OR<br>G02B6/0056 OR<br>G02B13/0035 OR<br>G02B6/0021 OR<br>G02B6/2706 OR<br>G02B13/00 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B26/004 OR<br>G02B3/08 OR<br>G02B13/0015 OR<br>G02B13/008 OR<br>G02B2027/0143 OR<br>G02B27/0037 OR<br>G02B6/0031 OR<br>G02B6/0033 OR<br>G02B7/002 OR<br>G02B7/28 OR<br>G02B13/003 OR<br>G02B13/14 OR<br>G02B19/009 OR<br>G02B27/0006 OR<br>G02B27/102 OR<br>G02B3/00 OR<br>G02B3/0037 OR<br>G02B3/0056 OR<br>G02B30/36 OR<br>G02B5/04 OR<br>G02B5/223 OR<br>G02B6/0025 OR<br>G02B6/009 OR<br>G02B6/12007 OR<br>G02B6/29316 OR<br>G02B6/29328 OR<br>G02B9/36 OR<br>G02B1/11 OR<br>G02B13/002 OR<br>G02B15/142 OR<br>G02B2027/0145 OR<br>G02B27/141 OR<br>G02B3/0068 OR<br>G02B6/0073 OR<br>G02B9/12 OR<br>G02B13/001 OR<br>G02B13/006 OR<br>G02B17/086 OR<br>G02B27/425 OR<br>G02B27/48 OR<br>G02B27/64 OR<br>G02B3/12 OR<br>G02B30/25 OR<br>G02B30/35 OR<br>G02B5/18 OR<br>G02B6/0083 OR<br>G02B6/124 OR<br>G02B6/32 OR<br>G02B7/10 OR<br>G02B7/182 OR<br>G02B26/0816 OR<br>G02B27/0068 OR<br>G02B27/0972 OR<br>G02B27/10 OR<br>G02B5/26 OR<br>G02B6/001 OR<br>G02B6/006 OR<br>G02B7/003 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B13/04 OR<br>G02B15/10 OR<br>G02B17/08 OR<br>G02B26/08 OR<br>G02B27/0961 OR<br>G02B27/281 OR<br>G02B3/0087 OR<br>G02B5/124 OR<br>G02B6/0015 OR<br>G02B6/0046 OR<br>G02B6/0086 OR<br>G02B6/29356 OR<br>G02B6/4206 OR<br>G02B13/0055 OR<br>G02B17/0605 OR<br>G02B2003/0093 OR<br>G02B2027/0109 OR<br>G02B23/00 OR<br>G02B25/001 OR<br>G02B27/005 OR<br>G02B27/62 OR<br>G02B30/27 OR<br>G02B30/31 OR<br>G02B5/1809 OR<br>G02B5/1842 OR<br>G02B5/1847 OR<br>G02B5/206 OR<br>G02B5/23 OR<br>G02B6/0026 OR<br>G02B6/0045 OR<br>G02B6/122 OR<br>G02B6/1221 OR<br>G02B6/42 OR<br>G02B7/285).cpc.) | | | | | |
| L73 | 2195 | L17 AND ( (G02C11/10 OR G02C11/06 OR G02C7/04 OR G02C11/00 OR G02C5/14 OR G02C7/101 OR G02C5/143 OR G02C5/001 OR G02C3/003 OR G02C5/146 OR G02C2200/02 OR G02C5/22 OR G02C11/04 OR G02C5/16 OR G02C7/083 OR G02C2200/08 OR G02C5/12 OR G02C9/00 OR G02C5/02 OR G02C2200/10 OR G02C7/081 OR G02C7/086 OR G02C7/00 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02C7/02 OR<br>G02C9/04 OR<br>G02C7/16 OR<br>G02C7/049 OR<br>G02C1/00 OR<br>G02C1/10 OR<br>G02C7/06 OR<br>G02C7/08 OR<br>G02C1/06 OR<br>G02C5/20 OR<br>G02C7/021 OR<br>G02C7/12 OR<br>G02C2202/10 OR<br>G02C7/085 OR<br>G02C5/006 OR<br>G02C9/02 OR<br>G02C5/045 OR<br>G02C7/10 OR<br>G02C7/104).cpc.) | | | | | |
| L74 | 2462 | L30 AND (<br>(G02B27/017 OR<br>G02B2027/0178 OR<br>G02B27/0172 OR<br>G02B2027/014 OR<br>G02B2027/0138 OR<br>G02B27/0093 OR<br>G02B2027/0187 OR<br>G02B27/0176 OR<br>G02B2027/0127 OR<br>G02B27/0101 OR<br>G02B2027/0118 OR<br>G02B2027/0134 OR<br>G02B2027/0141 OR<br>G02B27/0179 OR<br>G02B2027/0156 OR<br>G02B2027/0174 OR<br>G02B2027/0132 OR<br>G02B6/34 OR<br>G02B2027/0123 OR<br>G02B2027/0185 OR<br>G02B27/01 OR<br>G02B2027/0147 OR<br>G02B27/4205 OR<br>G02B26/101 OR<br>G02B27/4227 OR<br>G02B6/10 OR<br>G02B2027/0105 OR<br>G02B27/42 OR<br>G02B26/001 OR<br>G02B27/0081 OR<br>G02B2027/0112 OR<br>G02B13/0045 OR<br>G02B2027/0169 OR<br>G02B6/0001 OR<br>G02B27/0075 OR<br>G02B2027/0125 OR<br>G02B27/028 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02B27/646 OR<br>G02B6/0035 OR<br>G02B27/022 OR<br>G02B5/30 OR<br>G02B6/005 OR<br>G02B2027/0181 OR<br>G02B2027/012 OR<br>G02B26/0833 OR<br>G02B27/283 OR<br>G02B6/0038 OR<br>G02B13/06 OR<br>G02B6/0036 OR<br>G02B2027/011 OR<br>G02B3/14 OR<br>G02B5/3025 OR<br>G02B2027/0161 OR<br>G02B7/09 OR<br>G02B2027/0114 OR<br>G02B27/286 OR<br>G02B27/30 OR<br>G02B5/32 OR<br>G02B6/0016 OR<br>G02B2027/0154 OR<br>G02B27/0018 OR<br>G02B6/0023 OR<br>G02B6/0076 OR<br>G02B5/3083 OR<br>G02B6/003 OR<br>G02B26/105 OR<br>G02B5/208 OR<br>G02B7/008 OR<br>G02B2027/0194 OR<br>G02B6/0068 OR<br>G02B9/60 OR<br>G02B9/64 OR<br>G02B27/1086 OR<br>G02B30/34 OR<br>G02B5/005 OR<br>G02B5/1823 OR<br>G02B5/1857 OR<br>G02B5/1866 OR<br>G02B5/1871 OR<br>G02B6/0055 OR<br>G02B6/29325 OR<br>G02B7/08 OR<br>G02B13/004 OR<br>G02B13/009 OR<br>G02B2027/015 OR<br>G02B27/0977 OR<br>G02B5/08 OR<br>G02B19/0057 OR<br>G02B27/0916 OR<br>G02B6/00 OR<br>G02B6/0053 OR<br>G02B7/102 OR<br>G02B13/02 OR<br>G02B2027/013 OR<br>G02B2027/0136 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B26/10 OR<br>G02B27/0103 OR<br>G02B27/0149 OR<br>G02B30/56 OR<br>G02B27/0025 OR<br>G02B27/4272 OR<br>G02B30/27 OR<br>G02B30/52 OR<br>G02B6/0088 OR<br>G02B9/62 OR<br>G02B13/0065 OR<br>G02B30/00 OR<br>G02B6/0006 OR<br>G02B6/0008 OR<br>G02B6/4204 OR<br>G02B6/443 OR<br>G02B6/4471 OR<br>G02B7/023 OR<br>G02B2027/0145 OR<br>G02B2027/0159 OR<br>G02B2027/0163 OR<br>G02B3/0006 OR<br>G02B6/0065 OR<br>G02B7/02 OR<br>G02B7/04 OR<br>G02B7/12 OR<br>G02B1/002 OR<br>G02B17/086 OR<br>G02B2027/0152 OR<br>G02B21/365 OR<br>G02B26/0816 OR<br>G02B27/02 OR<br>G02B30/35 OR<br>G02B5/04 OR<br>G02B5/3016 OR<br>G02B6/0018 OR<br>G02B6/0031 OR<br>G02B6/0078 OR<br>G02B6/105 OR<br>G02B7/003 OR<br>G02B7/021 OR<br>G02B9/34 OR<br>G02B1/041 OR<br>G02B15/10 OR<br>G02B26/005 OR<br>G02B27/00 OR<br>G02B27/0955 OR<br>G02B27/10 OR<br>G02B27/1033 OR<br>G02B6/002 OR<br>G02B6/0051 OR<br>G02B6/124 OR<br>G02B13/001 OR<br>G02B13/0035 OR<br>G02B2027/0109 OR<br>G02B2027/0183 OR<br>G02B21/06 OR<br>G02B26/00 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B26/0841 OR<br>G02B27/141 OR<br>G02B27/425 OR<br>G02B3/0087 OR<br>G02B5/1809 OR<br>G02B5/1847 OR<br>G02B6/0026 OR<br>G02B6/02066 OR<br>G02B6/122 OR<br>G02B6/1221 OR<br>G02B6/274 OR<br>G02B6/2766 OR<br>G02B9/04 OR<br>G02B13/008 OR<br>G02B13/14 OR<br>G02B2027/0107 OR<br>G02B2027/0143 OR<br>G02B26/004 OR<br>G02B26/007 OR<br>G02B27/0037 OR<br>G02B5/18 OR<br>G02B5/20 OR<br>G02B5/201 OR<br>G02B6/0021 OR<br>G02B6/0056 OR<br>G02B6/32 OR<br>G02B7/002 OR<br>G02B9/36 OR<br>G02B13/00 OR<br>G02B13/0015 OR<br>G02B13/003 OR<br>G02B13/04 OR<br>G02B13/18 OR<br>G02B15/142 OR<br>G02B19/009 OR<br>G02B2027/0116 OR<br>G02B27/0972 OR<br>G02B27/281 OR<br>G02B27/64 OR<br>G02B3/00 OR<br>G02B30/10 OR<br>G02B30/24 OR<br>G02B30/26 OR<br>G02B5/26 OR<br>G02B6/0028 OR<br>G02B6/0045 OR<br>G02B6/0046 OR<br>G02B6/0073 OR<br>G02B6/0083 OR<br>G02B6/009 OR<br>G02B9/12 OR<br>G02B13/006 OR<br>G02B17/0605 OR<br>G02B2003/0093 OR<br>G02B2027/0198 OR<br>G02B2207/113 OR<br>G02B25/001 OR<br>G02B26/103 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B27/0944 OR<br>G02B27/1046 OR<br>G02B27/4294 OR<br>G02B27/58 OR<br>G02B3/0056 OR<br>G02B3/08 OR<br>G02B3/12 OR<br>G02B5/124 OR<br>G02B5/223 OR<br>G02B5/3058 OR<br>G02B6/0025 OR<br>G02B6/0033 OR<br>G02B6/0061 OR<br>G02B6/12009 OR<br>G02B6/29356 OR<br>G02B7/10 OR<br>G02B1/00 OR<br>G02B1/10 OR<br>G02B1/11 OR<br>G02B13/002 OR<br>G02B13/007 OR<br>G02B15/1421 OR<br>G02B15/143503 OR<br>G02B15/144105 OR<br>G02B15/144113 OR<br>G02B15/1451 OR<br>G02B15/26 OR<br>G02B19/0014 OR<br>G02B19/0076 OR<br>G02B2027/0129 OR<br>G02B2027/019 OR<br>G02B2027/0196 OR<br>G02B21/0012 OR<br>G02B2207/115 OR<br>G02B23/00 OR<br>G02B23/18 OR<br>G02B26/023 OR<br>G02B26/0808 OR<br>G02B26/085 OR<br>G02B26/0858 OR<br>G02B26/0875 OR<br>G02B27/0189 OR<br>G02B27/024 OR<br>G02B27/144 OR<br>G02B27/149 OR<br>G02B27/28 OR<br>G02B27/288 OR<br>G02B27/44 OR<br>G02B27/48 OR<br>G02B3/005 OR<br>G02B30/22 OR<br>G02B30/36 OR<br>G02B30/50 OR<br>G02B5/0284 OR<br>G02B5/1842 OR<br>G02B5/1876 OR<br>G02B5/22 OR<br>G02B5/23 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B6/0011 OR<br>G02B6/0015 OR<br>G02B6/0048 OR<br>G02B6/0058 OR<br>G02B6/006 OR<br>G02B6/0086 OR<br>G02B6/02 OR<br>G02B6/06 OR<br>G02B6/12019 OR<br>G02B6/27 OR<br>G02B6/4206 OR<br>G02B7/005 OR<br>G02B7/028 OR<br>G02B7/105 OR<br>G02B7/1821 OR<br>G02B7/1822 OR<br>G02B7/1824 OR<br>G02B7/28 OR<br>G02B7/285 OR<br>G02B7/346 OR<br>G02B7/38 OR<br>G02B9/18).cpc.) | | | | | |
| L75 | 622 | L30 AND ( (G02C11/10 OR G02C11/06 OR G02C7/04 OR G02C5/143 OR G02C11/00 OR G02C5/146 OR G02C5/001 OR G02C5/14 OR G02C7/101 OR G02C3/003 OR G02C2200/08 OR G02C2200/02 OR G02C7/083 OR G02C7/12 OR G02C5/16 OR G02C5/22 OR G02C7/16 OR G02C7/086 OR G02C9/04 OR G02C11/04 OR G02C2200/10 OR G02C5/12 OR G02C9/00 OR G02C7/06 OR G02C7/081 OR G02C7/104 OR G02C5/02 OR G02C7/105 OR G02C7/08 OR G02C5/006 OR G02C7/00 OR G02C1/10 OR G02C5/20 OR G02C5/045 OR G02C7/021 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02C1/06 OR<br>G02C2202/06 OR<br>G02C3/006 OR<br>G02C5/08 OR<br>G02C5/2209 OR<br>G02C5/2272 OR<br>G02C9/02 OR<br>G02C2200/26 OR<br>G02C3/04 OR<br>G02C5/2236 OR<br>G02C5/2254 OR<br>G02C5/2263 OR<br>G02C7/02).cpc.) | | | | | |
| L76 | 2091 | L31 AND (<br>(G02B27/017 OR<br>G02B2027/0178 OR<br>G02B27/0172 OR<br>G02B2027/014 OR<br>G02B2027/0138 OR<br>G02B27/0093 OR<br>G02B2027/0187 OR<br>G02B27/0176 OR<br>G02B2027/0127 OR<br>G02B2027/0118 OR<br>G02B2027/0134 OR<br>G02B27/0101 OR<br>G02B27/0179 OR<br>G02B2027/0141 OR<br>G02B2027/0156 OR<br>G02B6/34 OR<br>G02B2027/0132 OR<br>G02B2027/0174 OR<br>G02B2027/0185 OR<br>G02B2027/0123 OR<br>G02B2027/0147 OR<br>G02B27/01 OR<br>G02B27/4205 OR<br>G02B6/10 OR<br>G02B2027/0105 OR<br>G02B26/101 OR<br>G02B27/42 OR<br>G02B27/4227 OR<br>G02B26/001 OR<br>G02B2027/0169 OR<br>G02B27/0081 OR<br>G02B27/0075 OR<br>G02B27/028 OR<br>G02B2027/0112 OR<br>G02B2027/0125 OR<br>G02B6/0001 OR<br>G02B6/0035 OR<br>G02B27/022 OR<br>G02B6/005 OR<br>G02B2027/012 OR<br>G02B27/283 OR<br>G02B5/30 OR<br>G02B6/0038 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02B6/0036 OR<br>G02B13/0045 OR<br>G02B2027/0181 OR<br>G02B5/3025 OR<br>G02B2027/0161 OR<br>G02B2027/011 OR<br>G02B2027/0114 OR<br>G02B27/30 OR<br>G02B6/0016 OR<br>G02B2027/0154 OR<br>G02B27/286 OR<br>G02B3/14 OR<br>G02B6/0023 OR<br>G02B5/3083 OR<br>G02B6/003 OR<br>G02B6/0076 OR<br>G02B27/0018 OR<br>G02B7/008 OR<br>G02B26/0833 OR<br>G02B13/06 OR<br>G02B2027/0194 OR<br>G02B27/1086 OR<br>G02B5/1823 OR<br>G02B5/1857 OR<br>G02B5/1866 OR<br>G02B5/1871 OR<br>G02B6/0055 OR<br>G02B6/29325 OR<br>G02B2027/015 OR<br>G02B30/34 OR<br>G02B26/105 OR<br>G02B6/0053 OR<br>G02B26/10 OR<br>G02B27/0103 OR<br>G02B27/646 OR<br>G02B5/08 OR<br>G02B9/60 OR<br>G02B2027/0136 OR<br>G02B30/27 OR<br>G02B30/52 OR<br>G02B5/208 OR<br>G02B6/0068 OR<br>G02B6/0088 OR<br>G02B7/09 OR<br>G02B9/62 OR<br>G02B13/009 OR<br>G02B2027/013 OR<br>G02B30/56 OR<br>G02B5/32 OR<br>G02B6/0006 OR<br>G02B6/0008 OR<br>G02B6/4204 OR<br>G02B6/443 OR<br>G02B6/4471 OR<br>G02B9/64 OR<br>G02B2027/0163 OR<br>G02B27/0977 OR<br>G02B6/0065 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B13/004 OR<br>G02B2027/0159 OR<br>G02B30/00 OR<br>G02B6/00 OR<br>G02B7/023 OR<br>G02B7/12 OR<br>G02B1/002 OR<br>G02B17/086 OR<br>G02B2027/0145 OR<br>G02B21/365 OR<br>G02B27/0025 OR<br>G02B27/02 OR<br>G02B5/04 OR<br>G02B5/3016 OR<br>G02B6/0018 OR<br>G02B6/0031 OR<br>G02B6/105 OR<br>G02B7/003 OR<br>G02B13/02 OR<br>G02B2027/0152 OR<br>G02B27/00 OR<br>G02B27/0149 OR<br>G02B27/10 OR<br>G02B27/1033 OR<br>G02B27/4272 OR<br>G02B6/002 OR<br>G02B6/0051 OR<br>G02B6/124 OR<br>G02B13/001 OR<br>G02B13/0035 OR<br>G02B15/10 OR<br>G02B2027/0109 OR<br>G02B2027/0183 OR<br>G02B21/06 OR<br>G02B26/00 OR<br>G02B27/141 OR<br>G02B27/425 OR<br>G02B3/0006 OR<br>G02B30/35 OR<br>G02B5/005 OR<br>G02B5/1809 OR<br>G02B5/1847 OR<br>G02B6/0026 OR<br>G02B6/02066 OR<br>G02B6/122 OR<br>G02B6/1221 OR<br>G02B6/274 OR<br>G02B6/2766 OR<br>G02B7/021 OR<br>G02B7/04 OR<br>G02B7/08 OR<br>G02B1/041 OR<br>G02B13/0065 OR<br>G02B13/008 OR<br>G02B13/14 OR<br>G02B2027/0107 OR<br>G02B2027/0143 OR<br>G02B26/005 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B26/007 OR<br>G02B5/20 OR<br>G02B6/0056 OR<br>G02B6/32 OR<br>G02B7/002 OR<br>G02B9/36 OR<br>G02B13/003 OR<br>G02B13/18 OR<br>G02B15/142 OR<br>G02B19/009 OR<br>G02B2027/0116 OR<br>G02B26/0816 OR<br>G02B27/0972 OR<br>G02B27/281 OR<br>G02B27/64 OR<br>G02B3/00 OR<br>G02B30/10 OR<br>G02B30/24 OR<br>G02B30/26 OR<br>G02B5/18 OR<br>G02B5/26 OR<br>G02B6/0045 OR<br>G02B6/0046 OR<br>G02B6/0073 OR<br>G02B6/0083 OR<br>G02B6/009 OR<br>G02B7/02 OR<br>G02B7/102 OR<br>G02B9/04 OR<br>G02B9/12 OR<br>G02B9/34 OR<br>G02B17/0605 OR<br>G02B2027/0198 OR<br>G02B2207/113 OR<br>G02B25/001 OR<br>G02B26/0841 OR<br>G02B26/103 OR<br>G02B27/0037 OR<br>G02B27/0944 OR<br>G02B27/0955 OR<br>G02B27/1046 OR<br>G02B27/4294 OR<br>G02B27/58 OR<br>G02B5/124 OR<br>G02B5/201 OR<br>G02B5/223 OR<br>G02B6/0025 OR<br>G02B6/0028 OR<br>G02B6/0033 OR<br>G02B6/0061 OR<br>G02B6/0078 OR<br>G02B6/12009 OR<br>G02B6/29356 OR<br>G02B1/00 OR<br>G02B1/10 OR<br>G02B13/007 OR<br>G02B13/04 OR<br>G02B15/1421 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B2027/0129 OR<br>G02B2027/019 OR<br>G02B2027/0196 OR<br>G02B21/0012 OR<br>G02B2207/115 OR<br>G02B23/00 OR<br>G02B23/18 OR<br>G02B26/004 OR<br>G02B26/0808 OR<br>G02B26/085 OR<br>G02B26/0858 OR<br>G02B26/0875 OR<br>G02B27/0189 OR<br>G02B27/024 OR<br>G02B27/144 OR<br>G02B27/149 OR<br>G02B27/44 OR<br>G02B27/48 OR<br>G02B3/005 OR<br>G02B30/22 OR<br>G02B30/36 OR<br>G02B30/50 OR<br>G02B5/0284 OR<br>G02B5/1842 OR<br>G02B5/1876 OR<br>G02B5/22 OR<br>G02B5/23 OR<br>G02B5/3058 OR<br>G02B6/0011 OR<br>G02B6/0015 OR<br>G02B6/0048 OR<br>G02B6/0058 OR<br>G02B6/006 OR<br>G02B6/0086 OR<br>G02B6/02 OR<br>G02B6/06 OR<br>G02B6/12019 OR<br>G02B6/27 OR<br>G02B7/005 OR<br>G02B7/105 OR<br>G02B7/1824 OR<br>G02B7/28 OR<br>G02B7/285 OR<br>G02B7/346 OR<br>G02B1/007 OR<br>G02B1/04 OR<br>G02B1/115 OR<br>G02B1/118 OR<br>G02B13/0055 OR<br>G02B13/006 OR<br>G02B13/0075 OR<br>G02B15/06 OR<br>G02B17/08 OR<br>G02B19/0047 OR<br>G02B2003/0093 OR<br>G02B2027/0158 OR<br>G02B2027/0192 OR<br>G02B21/00 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B2207/101 OR<br>G02B2207/123 OR<br>G02B27/0068 OR<br>G02B27/0938 OR<br>G02B27/0961 OR<br>G02B27/108 OR<br>G02B27/142 OR<br>G02B27/28 OR<br>G02B27/285 OR<br>G02B27/62 OR<br>G02B3/0037 OR<br>G02B3/0056 OR<br>G02B3/0068 OR<br>G02B3/02 OR<br>G02B3/04 OR<br>G02B3/08 OR<br>G02B30/29 OR<br>G02B30/31 OR<br>G02B5/0252 OR<br>G02B5/045 OR<br>G02B5/0841 OR<br>G02B5/10 OR<br>G02B5/12 OR<br>G02B5/122 OR<br>G02B5/128 OR<br>G02B5/136 OR<br>G02B5/1861 OR<br>G02B5/28 OR<br>G02B6/0085 OR<br>G02B6/2706 OR<br>G02B6/276 OR<br>G02B6/29311 OR<br>G02B6/3512 OR<br>G02B6/3522 OR<br>G02B6/4214 OR<br>G02B7/10 OR<br>G02B7/287).cpc.) | | | | | |
| L77 | 580 | L31 AND ( (G02C11/10 OR G02C11/06 OR G02C7/04 OR G02C5/143 OR G02C5/146 OR G02C11/00 OR G02C5/14 OR G02C7/101 OR G02C5/001 OR G02C3/003 OR G02C2200/08 OR G02C7/083 OR G02C2200/02 OR G02C7/12 OR G02C5/16 OR G02C7/16 OR G02C7/086 OR G02C9/04 OR G02C2200/10 OR G02C5/22 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02C11/04 OR<br>G02C9/00 OR<br>G02C7/06 OR<br>G02C7/081 OR<br>G02C5/02 OR<br>G02C5/12 OR<br>G02C7/104 OR<br>G02C7/105 OR<br>G02C7/08 OR<br>G02C5/006 OR<br>G02C7/00 OR<br>G02C5/20 OR<br>G02C5/045 OR<br>G02C7/021 OR<br>G02C2202/06 OR<br>G02C3/006 OR<br>G02C5/08 OR<br>G02C5/2209 OR<br>G02C5/2272 OR<br>G02C9/02 OR<br>G02C1/10 OR<br>G02C2200/26 OR<br>G02C3/04 OR<br>G02C5/2236 OR<br>G02C5/2254 OR<br>G02C5/2263 OR<br>G02C7/02 OR<br>G02C11/08 OR<br>G02C13/005 OR<br>G02C2202/10 OR<br>G02C5/003 OR<br>G02C5/126 OR<br>G02C5/2227 OR<br>G02C5/2281 OR<br>G02C7/022 OR<br>G02C7/085).cpc.) | | | | | |
| L78 | 785 | L32 AND (<br>(G02B27/017 OR<br>G02B2027/0178 OR<br>G02B2027/014 OR<br>G02B27/0172 OR<br>G02B2027/0138 OR<br>G02B27/0093 OR<br>G02B2027/0187 OR<br>G02B2027/0118 OR<br>G02B27/0176 OR<br>G02B27/0101 OR<br>G02B2027/0134 OR<br>G02B2027/0127 OR<br>G02B6/34 OR<br>G02B2027/0123 OR<br>G02B2027/0147 OR<br>G02B5/30 OR<br>G02B27/0081 OR<br>G02B27/0179 OR<br>G02B2027/0185 OR<br>G02B27/4205 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02B6/005 OR<br>G02B2027/0105 OR<br>G02B27/01 OR<br>G02B27/42 OR<br>G02B27/4227 OR<br>G02B6/10 OR<br>G02B2027/0174 OR<br>G02B6/0038 OR<br>G02B6/0076 OR<br>G02B7/008 OR<br>G02B27/283 OR<br>G02B2027/0114 OR<br>G02B2027/012 OR<br>G02B2027/0125 OR<br>G02B2027/0132 OR<br>G02B27/0018 OR<br>G02B27/1086 OR<br>G02B27/30 OR<br>G02B5/1823 OR<br>G02B5/1857 OR<br>G02B5/1866 OR<br>G02B5/1871 OR<br>G02B5/3025 OR<br>G02B6/0016 OR<br>G02B6/0023 OR<br>G02B6/0035 OR<br>G02B6/0036 OR<br>G02B6/29325 OR<br>G02B2027/0156 OR<br>G02B2027/0141 OR<br>G02B27/0103 OR<br>G02B26/001 OR<br>G02B7/12 OR<br>G02B30/52 OR<br>G02B1/002 OR<br>G02B2027/0161 OR<br>G02B21/06 OR<br>G02B21/365 OR<br>G02B26/00 OR<br>G02B27/02 OR<br>G02B27/10 OR<br>G02B27/286 OR<br>G02B30/34 OR<br>G02B30/56 OR<br>G02B5/08 OR<br>G02B5/1809 OR<br>G02B5/1847 OR<br>G02B5/3083 OR<br>G02B6/0026 OR<br>G02B6/122 OR<br>G02B6/1221 OR<br>G02B6/124 OR<br>G02B7/04 OR<br>G02B2027/0109 OR<br>G02B2027/0136 OR<br>G02B26/101 OR<br>G02B6/0018 OR<br>G02B6/002 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B19/009 OR<br>G02B2027/0116 OR<br>G02B2027/013 OR<br>G02B2027/015 OR<br>G02B2027/0152 OR<br>G02B2027/0163 OR<br>G02B2027/0181 OR<br>G02B26/105 OR<br>G02B27/0075 OR<br>G02B27/0149 OR<br>G02B6/0053 OR<br>G02B2027/011 OR<br>G02B2027/0112 OR<br>G02B2027/0154 OR<br>G02B2027/0194 OR<br>G02B27/00 OR<br>G02B27/141 OR<br>G02B5/04 OR<br>G02B5/18 OR<br>G02B6/00 OR<br>G02B6/12009 OR<br>G02B2027/0159 OR<br>G02B2207/113 OR<br>G02B2207/115 OR<br>G02B26/0816 OR<br>G02B26/103 OR<br>G02B3/005 OR<br>G02B30/35 OR<br>G02B30/36 OR<br>G02B5/23 OR<br>G02B5/3058 OR<br>G02B6/0028 OR<br>G02B6/003 OR<br>G02B6/0045 OR<br>G02B6/0055 OR<br>G02B6/0056 OR<br>G02B6/006 OR<br>G02B6/0065 OR<br>G02B6/0068 OR<br>G02B6/0088 OR<br>G02B6/12019 OR<br>G02B1/041 OR<br>G02B19/0047 OR<br>G02B2003/0093 OR<br>G02B2027/019 OR<br>G02B2027/0192 OR<br>G02B21/0012 OR<br>G02B27/0025 OR<br>G02B27/0189 OR<br>G02B27/0961 OR<br>G02B27/0972 OR<br>G02B3/00 OR<br>G02B3/0068 OR<br>G02B3/08 OR<br>G02B3/14 OR<br>G02B30/26 OR<br>G02B5/045 OR<br>G02B5/1842 OR | | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B5/28 OR<br>G02B6/32 OR<br>G02B6/3512 OR<br>G02B7/287).cpc.) | | | | | |
| L79 | 397 | L32 AND ( (G02C11/10 OR G02C11/06 OR<br>G02C5/143 OR<br>G02C5/14 OR<br>G02C7/101 OR<br>G02C3/003 OR<br>G02C7/04 OR<br>G02C5/001 OR<br>G02C5/146 OR<br>G02C7/083 OR<br>G02C2200/08 OR<br>G02C11/00 OR<br>G02C5/16 OR<br>G02C2200/10 OR<br>G02C11/04 OR<br>G02C7/12 OR<br>G02C7/081 OR<br>G02C7/06 OR<br>G02C7/104 OR<br>G02C7/16 OR<br>G02C7/08 OR<br>G02C2200/02 OR<br>G02C7/00 OR<br>G02C7/105 OR<br>G02C9/00 OR<br>G02C7/086 OR<br>G02C9/04 OR<br>G02C5/20 OR<br>G02C7/021 OR<br>G02C2202/06 OR<br>G02C5/006 OR<br>G02C5/045 OR<br>G02C5/08 OR<br>G02C5/2209 OR<br>G02C5/2272 OR<br>G02C1/10 OR<br>G02C5/12 OR<br>G02C5/22 OR<br>G02C5/2236 OR<br>G02C5/2254 OR<br>G02C7/02 OR<br>G02C11/08 OR<br>G02C13/005 OR<br>G02C5/02 OR<br>G02C5/2227 OR<br>G02C5/2263 OR<br>G02C5/2281 OR<br>G02C7/022 OR<br>G02C9/02).cpc.) | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L80 | 152 | L34 AND ( (G02B2027/0178 OR<br>G02B27/017 OR<br>G02B2027/014 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02B27/0172 OR<br>G02B27/0093 OR<br>G02B2027/0138 OR<br>G02B2027/0187 OR<br>G02B6/34 OR<br>G02B27/0176 OR<br>G02B2027/0118 OR<br>G02B2027/0127 OR<br>G02B27/0101 OR<br>G02B27/0081 OR<br>G02B27/4205 OR<br>G02B2027/0105 OR<br>G02B2027/0185 OR<br>G02B27/0179 OR<br>G02B27/42 OR<br>G02B27/4227 OR<br>G02B6/10 OR<br>G02B6/0038 OR<br>G02B6/005 OR<br>G02B6/0076 OR<br>G02B7/008 OR<br>G02B27/283 OR<br>G02B2027/0114 OR<br>G02B2027/012 OR<br>G02B2027/0125 OR<br>G02B2027/0174 OR<br>G02B27/0018 OR<br>G02B27/1086 OR<br>G02B27/30 OR<br>G02B5/1823 OR<br>G02B5/1857 OR<br>G02B5/1866 OR<br>G02B5/1871 OR<br>G02B5/3025 OR<br>G02B6/0016 OR<br>G02B6/0023 OR<br>G02B6/0035 OR<br>G02B6/0036 OR<br>G02B6/29325 OR<br>G02B5/30 OR<br>G02B2027/0132 OR<br>G02B2027/0134 OR<br>G02B2027/0156 OR<br>G02B2027/0123 OR<br>G02B21/06 OR<br>G02B21/365 OR<br>G02B27/286 OR<br>G02B30/52 OR<br>G02B27/01 OR<br>G02B6/0018 OR<br>G02B6/002 OR<br>G02B2027/0147 OR<br>G02B2027/015 OR<br>G02B27/0149 OR<br>G02B6/0053 OR<br>G02B2027/0112 OR<br>G02B2027/0141 OR<br>G02B2027/0152 OR | | | | |

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|---|---|---|---|---|---|---|---|
| | | G02B2027/0161 OR<br>G02B5/18 OR<br>G02B6/00 OR<br>G02B6/12009 OR<br>G02B7/12 OR<br>G02B2027/011 OR<br>G02B2027/0154 OR<br>G02B2207/113 OR<br>G02B2207/115 OR<br>G02B27/0075 OR<br>G02B5/23 OR<br>G02B5/3058 OR<br>G02B6/0028 OR<br>G02B6/003 OR<br>G02B6/0045 OR<br>G02B6/0056 OR<br>G02B6/006 OR<br>G02B6/0065 OR<br>G02B6/0068 OR<br>G02B6/0088 OR<br>G02B6/12019 OR<br>G02B2027/013 OR<br>G02B2027/0163 OR<br>G02B2027/0181 OR<br>G02B2027/019 OR<br>G02B27/0189 OR<br>G02B30/26 OR<br>G02B5/04 OR<br>G02B5/1842 OR<br>G02B5/28 OR<br>G02B6/32 OR<br>G02B6/3512).cpc.) | | | | | |
| L81 | 151 | L34 AND ( (G02C11/10 OR G02C11/06 OR G02C5/143 OR G02C5/14 OR G02C3/003 OR G02C5/001 OR G02C5/146 OR G02C2200/08 OR G02C5/16 OR G02C11/00 OR G02C11/04 OR G02C7/08 OR G02C7/081 OR G02C7/086 OR G02C9/00 OR G02C9/04 OR G02C2200/02 OR G02C2202/06 OR G02C5/045 OR G02C5/2209 OR G02C7/083 OR G02C7/101 OR G02C5/12 OR G02C13/005 OR G02C5/22 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02C5/2254 OR<br>G02C5/2281 OR<br>G02C7/022 OR<br>G02C7/04 OR<br>G02C9/02).cpc.) | | | | | |
| L82 | 108 | L35 AND (<br>(G02B2027/0178 OR<br>G02B27/017 OR<br>G02B27/0093 OR<br>G02B2027/014 OR<br>G02B27/0172 OR<br>G02B2027/0138 OR<br>G02B2027/0187 OR<br>G02B2027/0118 OR<br>G02B5/30 OR<br>G02B27/0176 OR<br>G02B21/06 OR<br>G02B21/365 OR<br>G02B27/286 OR<br>G02B2027/0134 OR<br>G02B2027/0132 OR<br>G02B2027/0147 OR<br>G02B6/0053 OR<br>G02B2027/0112 OR<br>G02B2027/0127 OR<br>G02B27/0149 OR<br>G02B5/18 OR<br>G02B6/12009 OR<br>G02B2027/011 OR<br>G02B2027/0123 OR<br>G02B2027/0141 OR<br>G02B2027/0156 OR<br>G02B2207/113 OR<br>G02B2207/115 OR<br>G02B27/0075 OR<br>G02B27/01 OR<br>G02B27/0101 OR<br>G02B5/23 OR<br>G02B5/3058 OR<br>G02B6/0018 OR<br>G02B6/002 OR<br>G02B6/0028 OR<br>G02B6/003 OR<br>G02B6/0038 OR<br>G02B6/0045 OR<br>G02B6/005 OR<br>G02B6/0056 OR<br>G02B6/006 OR<br>G02B6/0065 OR<br>G02B6/0068 OR<br>G02B6/0076 OR<br>G02B6/0088 OR<br>G02B6/12019 OR<br>G02B7/008 OR<br>G02B27/0081 OR<br>G02B5/04 OR<br>G02B5/1842 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05<br>01:07 PM |

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|---|---|---|---|---|---|---|---|
| | | G02B5/28).cpc.) | | | | | |
| L83 | 95 | L35 AND ( (G02C11/10 OR G02C11/06 OR G02C5/143 OR G02C5/14 OR G02C3/003 OR G02C5/146 OR G02C5/001 OR G02C2200/08 OR G02C11/04 OR G02C11/00 OR G02C7/081 OR G02C7/08 OR G02C7/086 OR G02C9/00 OR G02C2202/06 OR G02C5/2209 OR G02C7/083 OR G02C7/101 OR G02C9/04 OR G02C5/12 OR G02C5/22 OR G02C5/2254 OR G02C5/2281).cpc.) | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L84 | 10 | L37 AND ( (G02B2027/0178 OR G02B27/017 OR G02B27/0093 OR G02B2027/014 OR G02B27/0172 OR G02B2027/0138 OR G02B2027/0187 OR G02B2027/0118 OR G02B5/30 OR G02B27/0176 OR G02B2027/0134 OR G02B2027/0147 OR G02B2027/0112 OR G02B2027/0127 OR G02B2027/0132 OR G02B27/0149 OR G02B5/18 OR G02B6/12009 OR G02B2027/011 OR G02B2027/0123 OR G02B2207/113 OR G02B2207/115 OR G02B5/23 OR G02B5/3058 OR G02B6/0038 OR G02B6/0045 OR G02B6/0053 OR G02B6/0056 OR G02B6/12019 OR G02B7/008 OR G02B5/04 OR G02B5/1842 OR | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |

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| | | G02B5/28).cpc.) | | | | | |
| L85 | 7 | L37 AND ( (G02C11/10 OR G02C11/06 OR G02C5/146 OR G02C5/143 OR G02C2200/08 OR G02C5/001 OR G02C11/04 OR G02C5/14 OR G02C7/081 OR G02C7/08 OR G02C7/086 OR G02C9/00 OR G02C2202/06 OR G02C5/2209 OR G02C7/083 OR G02C7/101).cpc.) | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L86 | 6 | L37 AND ( (351/158 OR 351/121 OR 351/41 OR 351/116 OR 351/119 OR 359/630 OR 359/13 OR 359/554 OR 359/567 OR 381/327 OR 381/381).ccls.) | (US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT) | OR | ON | ON | 2024/02/05 01:07 PM |
| L87 | 1 | "25484714".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/02/05 02:24 PM |
| L88 | 6 | "34435134".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/02/05 02:26 PM |
| L89 | 22 | "27496316".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, | OR | ON | ON | 2024/02/05 02:27 PM |

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| | | | CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | | | | |
| L90 | 34 | (Artificial Intelligence) More like doc: US-11243416-B2<br>Text: (US-10061144-B2 OR US-9547184-B2 OR US-8905542-B2 OR US-11204512-B2 OR US-20220011603-A1 OR US-8500271-B2 OR US-20050264752-A1 OR US-11536988-B2 OR US-9690121-B2 OR US-7922321-B2 OR US-11086147-B2 OR US-8109629-B2 OR US-20180335650-A1 OR US-11762224-B2 OR US-20110187990-A1 OR US-20200218094-A1 OR US-20170090219-A1 OR US-20150085245-A1 OR US-20230017635-A1 OR US-20130308089-A1).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/27 12:02 PM |
| L91 | 29 | (Artificial Intelligence) More like doc: US-6349001-B1<br>Text: (CA-2307877-C OR EP-1027627-A1 OR WO-9923524-A1 OR EP-1027627-A4 OR US-6091546-A OR JP-2001522063-A OR EP-1027627-B1 OR WO-9923524-A8 OR CA-2307877-A1 OR US-6204974-B1 OR US-6384982-B1 OR EP-1169663-A1 OR US-6356392-B1 OR WO-0055676-A1 OR EP-1169663-A4 OR JP-2002539498-A OR EP- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/27 12:02 PM |

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| | | 1027626-A1 OR CA-2307869-C OR EP-1547434-B8 OR EP-1547434-A2).did. | | | | | |
| L92 | 33 | (Artificial Intelligence) More like doc: US-7278734-B2<br>Text: (US-20050201585-A1 OR US-8020989-B2 OR US-20080089545-A1 OR AU-2005306412-B2 OR EP-1828833-B1 OR WO-2006055884-A2 OR EP-1828833-A2 OR AU-2005306412-A2 OR AU-2005306412-A1 OR CA-2932965-C OR CA-2932965-A1 OR AU-2013263854-A1 OR EP-1547434-A2 OR AU-2003254210-A1 OR CA-2494661-A1 OR US-20060203183-A1 OR US-20040160573-A1 OR US-7150526-B2 OR AU-2013263854-B2 OR CN-1720763-A).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/27 12:02 PM |
| L93 | 28 | (Artificial Intelligence) More like doc: US-6911172-B2<br>Text: (US-20040000733-A1 OR US-20040239874-A1 OR US-20020159023-A1 OR EP-1485748-A2 OR WO-02089496-A2 OR US-9244292-B2 OR US-6929365-B2 OR US-20040029582-A1 OR CA-2445952-A1 OR US-20050239502-A1 OR US-7331666-B2 OR US-6769767-B2 OR US-20160109729-A1 OR JP-2005502902-A OR JP-4246500-B2 OR TW-I252005-B OR EP-1485748-B1 OR WO-02089496-A3 OR TH-61710-A OR US-20200064654-A1).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/27 12:03 PM |
| L94 | 7432 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, | OR | ON | ON | 2024/02/27 04:12 PM |

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| | | AND circuit AND speaker$2 AND (battery WITH (charge$4 OR recharge$4) WITH external) | CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L95 | 60 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND speaker$2 AND (battery WITH (charge$4 OR recharge$4) WITH external WITH cord) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/27 04:12 PM |
| L96 | 6529 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND speaker$2 AND (battery near10 (charge$4 OR recharge$4) near20 external) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/02/27 04:14 PM |
| L97 | 6529 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND speaker$2 AND ((battery near10 (charge$4 OR recharge$4)) near20 external) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, | OR | ON | ON | 2024/02/27 04:14 PM |

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| | | | VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L115 | 3482 | (351/158,121).ccls. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:00 PM |
| L116 | 2573 | (351/41,111).ccls. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:00 PM |
| L117 | 1000 | (351/123,124).ccls. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:01 PM |
| L118 | 3412 | (359/13,629).ccls. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, | OR | ON | ON | 2024/05/14 12:01 PM |

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| | | | EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L119 | 5523 | (359/630-633).ccls. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:01 PM |
| L120 | 3403 | (381/381,327,328).ccls. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:01 PM |
| L121 | 4068 | (381/380,370,381).ccls. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; | OR | ON | ON | 2024/05/14 12:01 PM |

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| | | | JPO; DERWENT; IBM_TDB) | | | | |
| L131 | 806 | g02c1/00.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:08 PM |
| L132 | 17282 | g02c11/10.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:08 PM |
| L133 | 3090 | g02c11/06.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:09 PM |
| L134 | 3174 | g02c5/001.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, | OR | ON | ON | 2024/05/14 12:09 PM |

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| | | | HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L135 | 4012 | g02c5/02.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:09 PM |
| L136 | 4853 | g02c5/14.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:09 PM |
| L137 | 5010 | g02c5/146.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; | OR | ON | ON | 2024/05/14 12:10 PM |

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| | | | IBM_TDB) | | | | |
| L138 | 5174 | g02c5/22.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:10 PM |
| L139 | 35428 | g02b27/01.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:10 PM |
| L140 | 71042 | g02b27/017.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/14 12:10 PM |
| L141 | 27914 | g02b27/0176.cpc. | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, | OR | ON | ON | 2024/05/14 12:10 PM |

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| | | | IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L184 | 4 | "27569502".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/05/14 01:18 PM |
| L2686 | 0 | 98 AND (button near5 piezo$6) | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/05/15 09:02 AM |
| L2687 | 7 | 98 AND ((button OR switch) near5 piezo$6) | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/05/15 09:02 AM |
| L2689 | 11 | "49715056".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, | OR | ON | ON | 2024/05/15 09:04 AM |

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| | | | EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | | | | |
| L2691 | 147 | 142 AND ((button OR switch) near5 piezo$6) | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/05/15 09:08 AM |
| L2692 | 9 | 122 AND ((button OR switch) near5 piezo$6) | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/05/15 09:11 AM |
| L2693 | 174 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND ((button OR switch) near5 piezo$6) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/15 09:19 AM |
| L2695 | 174 | (eyewear$4 OR glasses$4 OR spetacl$4 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, | OR | ON | ON | 2024/05/15 09:22 AM |

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|---|---|---|---|---|---|---|---|
| | | eyegalss$4) AND frame AND circuit AND control$4 AND batter$4 AND connect$4 AND (audio OR speak$4) AND ((button OR switch) near5 piezo$6) | CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2696 | 195 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND batter$4 AND ((button OR switch) near5 piezo$6) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/15 09:22 AM |
| L2697 | 280 | (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND control$4 AND batter$4 AND ((button OR switch) near5 piezo$6) | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/05/15 09:23 AM |
| L2699 | 3 | "34225259".fmid. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, | OR | ON | ON | 2024/05/15 09:27 AM |

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| | | | TH, TN, TR, TW, UA, VN); FPRS; JPO) | | | | |
| L2784 | 50 | (Artificial Intelligence)<br>Similar to:<br>18/597,874 with 0 CPC Selections and 0 Text Selections<br>Text:<br>(US-20170131575-A1 OR US-20210364827-A9 OR US-20190187492-A1 OR US-20170146829-A1 OR US-20230273464-A1 OR US-20240036361-A1 OR US-11921355-B2 OR US-20230359266-A1 OR US-20130201440-A1 OR US-20110187990-A1 OR US-9690121-B2 OR US-8500271-B2 OR US-20120133885-A1 OR US-20150253590-A1 OR US-20170090219-A1 OR US-8905542-B2 OR US-20180335650-A1 OR US-20210364828-A1 OR US-11243416-B2 OR US-10061144-B2 OR US-20130308089-A1 OR US-20150085245-A1 OR US-20220357599-A1 OR US-20230017635-A1 OR US-20070046887-A1 OR US-7922321-B2 OR US-20230408850-A1 OR US-20200012127-A1 OR US-9547184-B2 OR US-7581833-B2 OR US-8465151-B2 OR US-11829518-B1 OR US-11733549-B2 OR US-20220260859-A1 OR US-9033493-B2 OR US-11086147-B2 OR US-8109629-B2 OR US-10330956-B2 OR US-20050264752-A1 OR US-11762224-B2 OR US-11513371-B2 OR US-20240094800-A1 OR EP-3134825-B1 | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/09/04 01:05 PM |

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| | | OR US-20050078274-A1 OR US-20190278110-A1 OR US-20200218094-A1 OR US-20190285913-A1 OR US-20220011603-A1 OR US-11536988-B2 OR US-20230236444-A1).did. | | | | | |
| L2785 | 44 | (Artificial Intelligence) Similar to: 18/597,874 with 0 CPC Selections and 3 Text Selections<br>Text: (US-11921355-B2 OR US-20240036361-A1 OR US-20230273464-A1 OR US-20210314698-A1 OR JP-20220108194-A5 OR US-20180239413-A1 OR US-20170045928-A1 OR CN-108472686-B OR EP-3566468-B1 OR US-20170180863-A1 OR US-10146262-B1 OR US-10495885-B2 OR US-11829518-B1 OR US-20190064750-A1 OR US-20170322416-A1 OR EP-3345142-A1 OR WO-2017040397-A1 OR US-20170131575-A1 OR CA-2997538-A1 OR EP-3320832-A1 OR US-20160282628-A1 OR US-20180132031-A1 OR WO-2023194827-A1 OR US-20180113524-A1 OR US-20220361787-A1 OR AU-2016316932-B2 OR US-20180253159-A1 OR US-20180113504-A1 OR US-20180113590-A1 OR US-20220313089-A1 OR EP-3242153-A1 OR US-20210096372-A1 OR US-9690121-B2 OR US-10338394-B2 OR EP-3998946-A1 OR | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/09/04 01:05 PM |

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| | | WO-2021016094-A1 OR US-9977483-B2 OR US-20210364827-A9 OR US-20190187492-A1 OR EP-3625976-A1 OR WO-2018210974-A1 OR EP-2929405-A2 OR WO-2014089074-A2 OR US-10694299-B2 OR US-11778428-B2 OR US-20230127100-A1 OR JP-2020184692-A OR US-11144125-B2 OR US-20180185665-A1 OR WO-2021224497-A1).did. | | | | | |
| L2786 | 49 | (Artificial Intelligence) Similar to: 18/597,874 with 2 CPC Selections and 3 Text Selections<br>Text: (US-20240036361-A1 OR US-11921355-B2 OR US-20230273464-A1 OR US-20210314698-A1 OR US-11829518-B1 OR US-20170131575-A1 OR US-9690121-B2 OR US-20190187492-A1 OR US-20210364827-A9 OR US-20230359266-A1 OR US-20170146829-A1 OR US-20230412967-A1 OR US-20220167077-A1 OR WO-2022109190-A1 OR US-11653140-B2 OR US-20220011603-A1 OR JP-2023538681-A OR WO-2021222214-A1 OR EP-4144099-A1 OR US-20150253590-A1 OR US-10330956-B2 OR US-20210341762-A1 OR US-11086147-B2 OR US-11762224-B2 OR US-9033493-B2 OR US-20210364828-A1 OR US-20220260859-A1 OR US-8109629-B2 OR US-11733549-B2 OR US-8465151-B2 OR | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/09/04 01:05 PM |

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| | | US-20230408850-A1 OR US-11500227-B2 OR US-20120133885-A1 OR US-20150085245-A1 OR US-20130201440-A1 OR US-20130308089-A1 OR US-20110187990-A1 OR US-20170090219-A1 OR US-20180335650-A1 OR US-20050264752-A1 OR US-7581833-B2 OR US-20070046887-A1 OR CN-108472686-B OR US-7922321-B2 OR EP-3242153-A1 OR US-20190364352-A1 OR US-10531173-B2 OR US-10338394-B2 OR EP-3320832-A1 OR US-11204512-B2).did. | | | | | |
| L2787 | 49 | (Artificial Intelligence) Similar to: 18/597,874 with 2 CPC Selections and 3 Text Selections<br>Text: (US-20240036361-A1 OR US-11921355-B2 OR US-20230273464-A1 OR US-20170131575-A1 OR US-9690121-B2 OR US-20210364827-A9 OR US-20190187492-A1 OR US-20170146829-A1 OR US-11829518-B1 OR US-20210314698-A1 OR US-20230359266-A1 OR US-20150253590-A1 OR US-20160370606-A1 OR CN-113330355-A OR US-8465151-B2 OR US-20220260859-A1 OR US-11733549-B2 OR US-10025119-B2 OR US-10330956-B2 OR US-20120133885-A1 OR US-20180143451-A1 OR US-11086147-B2 OR US-20230408850-A1 OR US-9033493-B2 OR | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/09/04 01:05 PM |

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| | | US-20130201440-A1 OR US-20210364828-A1 OR US-11762224-B2 OR US-8109629-B2 OR US-9897822-B2 OR US-20150346511-A1 OR US-20070046887-A1 OR US-7581833-B2 OR US-9158116-B1 OR US-20150309317-A1 OR WO-2016205601-A1 OR CN-113454521-A OR US-9423842-B2 OR WO-2021222214-A1 OR EP-4144099-A1 OR US-20210341762-A1 OR US-20230412967-A1 OR US-11500227-B2 OR US-20160085278-A1 OR US-20200249733-A1 OR US-20220167077-A1 OR CN-114222941-A OR WO-2022109190-A1 OR US-20170031395-A1 OR US-20150309534-A1 OR WO-2015031107-A1).did. | | | | | |
| L2788 | 48 | (Artificial Intelligence) Similar to: 18/597,874 with 4 CPC Selections and 3 Text Selections<br>Text: (US-20240036361-A1 OR US-11921355-B2 OR US-20230273464-A1 OR US-20170131575-A1 OR US-9690121-B2 OR US-20190187492-A1 OR US-20210364827-A9 OR US-20170146829-A1 OR US-11829518-B1 OR US-20210314698-A1 OR US-20230359266-A1 OR US-20150253590-A1 OR US-10330956-B2 OR US-11086147-B2 OR US-11762224-B2 OR US-9033493-B2 OR US-20220260859-A1 OR US-11733549-B2 | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/09/04 01:05 PM |

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| | | OR US-8109629-B2 OR US-20210364828-A1 OR US-20230408850-A1 OR US-8465151-B2 OR US-20120133885-A1 OR US-20130201440-A1 OR US-7581833-B2 OR US-20070046887-A1 OR US-20230412967-A1 OR US-20220167077-A1 OR WO-2022109190-A1 OR US-11653140-B2 OR WO-2021222214-A1 OR US-20160370606-A1 OR EP-4144099-A1 OR US-20180143451-A1 OR CN-113330355-A OR US-20220011603-A1 OR US-9897822-B2 OR US-10025119-B2 OR US-20210341762-A1 OR US-9158116-B1 OR US-20150346511-A1 OR DE-202022101915-U1 OR US-20150309317-A1 OR US-11500227-B2 OR US-20240094800-A1 OR US-20110187990-A1 OR US-7806525-B2 OR WO-2021254359-A1 OR US-11668958-B2 OR JP-2023538681-A).did. | | | | | |
| L2789 | 47 | (Artificial Intelligence) Similar to: 18/597,874 with 6 CPC Selections and 3 Text Selections<br>Text: (US-20240036361-A1 OR US-11921355-B2 OR US-20170131575-A1 OR US-20230273464-A1 OR US-9690121-B2 OR US-20210364827-A9 OR US-20190187492-A1 OR US-20170146829-A1 OR US-20150253590-A1 OR US-10330956-B2 OR US-11762224-B2 | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/09/04 01:05 PM |

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| | | OR US-11086147-B2 OR US-8109629-B2 OR US-20210364828-A1 OR US-9033493-B2 OR US-20120133885-A1 OR US-20230408850-A1 OR US-11733549-B2 OR US-20220260859-A1 OR US-20130201440-A1 OR US-8465151-B2 OR CN-113330355-A OR US-11829518-B1 OR US-7581833-B2 OR US-20070046887-A1 OR US-20210314698-A1 OR US-20230359266-A1 OR WO-2021222214-A1 OR EP-4144099-A1 OR DE-202022101915-U1 OR US-20210341762-A1 OR US-20190204617-A1 OR US-11500227-B2 OR FR-3126050-A3 OR ES-1289195-U OR CA-3149165-A1 OR US-11849273-B2 OR GB-2609686-A OR NL-2031025-A OR NL-2031025-B1 OR US-20230040338-A1 OR CH-718869-A2 OR US-20210191159-A1 OR JP-3237752-U OR US-11668958-B2 OR KR-20210080253-A OR AT-525342-B1 OR US-20220113562-A1 OR DE-102020102281-A1 OR CA-3103299-A1).did. | | | | | |
| L2862 | 42 | (Artificial Intelligence) More like doc: US-20030045283-A1 Text: (WO-2023130105-A1 OR DK-2153693-T3 OR AU-2008261403-A1 OR AU-2008261403-B2 OR CA-2689257-A1 OR EP-2153693-A1 OR DE-102006049213-B4 OR US-8300864-B2 OR US-20090296967-A1 OR US-20080123865- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; | OR | ON | ON | 2024/09/04 02:03 PM |

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| | | A1 OR EP-1643802-A2 OR CN-101682824-A OR DE-102004047759-B3 OR EP-1643801-A2 OR AU-2009231433-A1 OR EP-2107825-A1 OR EP-1915031-A2 OR DE-102006049213-A1 OR CN-101175342-B OR CN-101175342-A).did. | JPO; DERWENT; IBM_TDB) | | | | |
| L2863 | 39 | (Artificial Intelligence) More like doc: US-20050090295-A1 Text: (WO-2005036922-A1 OR EP-1673960-A4 OR EP-1673960-A1 OR CA-2542622-A1 OR EP-1949370-A1 OR WO-2007019702-A1 OR US-20070041589-A1 OR CA-2619268-A1 OR EP-1251715-B1 OR EP-1251715-B2 OR US-8121323-B2 OR US-7647077-B2 OR US-20030012392-A1 OR EP-1251715-A2 OR US-20070127752-A1 OR US-7181034-B2 OR CA-2382362-C OR US-20110136537-A1 OR CA-2420989-C OR WO-2010006707-A1).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/09/04 02:03 PM |
| L2864 | 22 | (Artificial Intelligence) More like doc: US-20170289323-A1 Text: (US-8140658-B1 OR US-10757000-B2 OR US-20100201516-A1 OR US-20100148940-A1 OR US-20110035491-A1 OR US-20150046582-A1 OR US-8836503-B2 OR US-9628365-B2 OR US-7844687-B1 OR US-7797367-B1 OR US-8832244-B2 OR US-8812654-B2 OR US-7484008-B1 OR US-7891004-B1 OR US-8079118-B2 OR US-20110029644-A1 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/09/04 02:03 PM |

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| | | OR US-7904569-B1 OR US-8601595-B2 OR US-20120079149-A1 OR US-6859831-B1).did. | | | | | |
| L2865 | 39 | (Artificial Intelligence) More like doc: JP-2005167902-A<br>Text: (JP-2007318476-A OR JP-4887907-B2 OR JP-2009157290-A OR US-8174569-B2 OR JP-2004120154-A OR US-20070291966-A1 OR US-20030090439-A1 OR WO-03023756-A1 OR EP-1433160-A1 OR JP-2006209144-A OR WO-2018186062-A1 OR US-20200053449-A1 OR JP-2002539498-A OR US-20120268433-A1 OR US-6356392-B1 OR US-6204974-B1 OR JP-4411547-B2 OR EP-1169663-A4 OR WO-0055676-A1 OR EP-1169663-A1).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/09/04 02:03 PM |
| L2884 | 169086 | (G02C11/10 OR G02C5/143 OR G02C5/146 OR G02C11/06 OR H02J7/0045 OR G02C2200/08 OR G02C5/14 OR G02C11/00 OR H02J7/00).cpc. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 04:53 PM |
| L2892 | 3872 | 2884 AND 54 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, | OR | ON | ON | 2024/12/13 04:55 PM |

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| | | | RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | | | | |
| L2893 | 2627 | 2884 AND 56 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/12/13 04:55 PM |
| L2894 | 1411 | 2884 AND 59 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/12/13 04:55 PM |
| L2895 | 649 | 2884 AND 61 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/12/13 04:55 PM |
| L2896 | 137 | 2884 AND 65 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, | OR | ON | ON | 2024/12/13 04:55 PM |

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| | | | RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | | | | |
| L2897 | 20 | 2884 AND 49 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/12/13 04:55 PM |
| L2898 | 3 | 2884 AND 52 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/12/13 04:56 PM |
| L2901 | 50 | (Artificial Intelligence) Similar to: 18/597,874 with 0 CPC Selections and 7 Text Selections<br>Text: (US-12044901-B2 OR US-20240036361-A1 OR US-12140819-B1 OR US-20230273464-A1 OR US-20170131575-A1 OR DE-102013222202-A1 OR US-20190187492-A1 OR US-20210364827-A9 OR US-12078870-B2 OR US-20170146829-A1 OR US-9690121-B2 OR US-20220011603-A1 OR US-20240019718-A1 OR US-20200092663-A1 OR US-10575106-B1 OR US-20190033621-A1 OR CN-110024416-B | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN)) | OR | ON | ON | 2024/12/13 05:08 PM |

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| | | OR US-3665121-A OR WO-2011083425-A2 OR US-20200081247-A1 OR US-20220099966-A1 OR US-20100177918-A1 OR US-20140003644-A1 OR US-10045133-B2 OR CN-213602833-U OR US-7729774-B1 OR US-8554350-B2 OR US-3883701-A OR CN-102804813-A OR EP-3629600-B1 OR WO-2007142520-A1 OR EP-4387275-A2 OR US-20230398354-A1 OR CN-212381404-U OR US-20110170722-A1 OR US-5553152-A OR DK-2412174-T3 OR CA-2537165-C OR EP-2408221-B1 OR EP-3439329-B1 OR US-5048090-A OR US-11638109-B2 OR US-11700495-B2 OR US-20230082717-A1 OR US-10979831-B2 OR US-20200367001-A1 OR US-20210168543-A1 OR US-11223918-B2 OR US-10897678-B2 OR US-20210099811-A1).did. | | | | | |
| L2902 | 50 | (Artificial Intelligence) Similar to: 18/597,874 with 2 CPC Selections and 7 Text Selections<br>Text: (US-12044901-B2 OR US-20240036361-A1 OR US-20230273464-A1 OR US-12140819-B1 OR US-20170131575-A1 OR US-20190187492-A1 OR US-20210364827-A9 OR US-12078870-B2 OR US-20170146829-A1 OR US-9690121-B2 OR DE-102013222202-A1 OR US-20220011603-A1 OR US-20240019718-A1 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN)) | OR | ON | ON | 2024/12/13 05:09 PM |

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| | | US-20190033621-A1 OR CN-212381404-U OR US-9033493-B2 OR US-20090296044-A1 OR US-11474375-B1 OR US-20150253590-A1 OR US-20130201440-A1 OR US-8465151-B2 OR US-20100309426-A1 OR US-20120133885-A1 OR US-10330956-B2 OR US-8109629-B2 OR US-11733549-B2 OR US-20200092663-A1 OR US-10575106-B1 OR US-11086147-B2 OR US-20230408850-A1 OR US-3665121-A OR US-20070046887-A1 OR US-7581833-B2 OR US-20190033623-A1 OR US-20220260859-A1 OR US-11762224-B2 OR US-20210364828-A1 OR US-20210247625-A1 OR WO-2013188805-A2 OR CN-110024416-B OR EP-2862021-B1 OR US-3883701-A OR WO-2007142520-A1 OR US-20120176579-A1 OR US-20220099966-A1 OR US-20200081247-A1 OR US-9039169-B2 OR US-20100177918-A1 OR JP-2022057677-A OR US-20140003644-A1).did. | | | | | |
| L2903 | 50 | (Artificial Intelligence) Similar to: 18/597,874 with 4 CPC Selections and 7 Text Selections<br>Text: (US-12044901-B2 OR US-20240036361-A1 OR US-20230273464-A1 OR US-12140819-B1 OR US-20170131575-A1 OR US-20190187492-A1 OR US-20210364827-A9 OR US-12078870- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN)) | OR | ON | ON | 2024/12/13 05:10 PM |

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|---|---|---|---|---|---|---|---|
| | | B2 OR US-20170146829-A1 OR US-9690121-B2 OR US-20220011603-A1 OR US-20240019718-A1 OR US-9033493-B2 OR US-20090296044-A1 OR US-20150253590-A1 OR US-20130201440-A1 OR US-8465151-B2 OR US-20100309426-A1 OR US-20120133885-A1 OR US-10330956-B2 OR US-8109629-B2 OR US-11733549-B2 OR US-11086147-B2 OR US-20230408850-A1 OR US-20070046887-A1 OR US-7581833-B2 OR US-20220260859-A1 OR US-20190033623-A1 OR US-11762224-B2 OR US-20210364828-A1 OR US-11131865-B2 OR US-20210011307-A1 OR DE-102013222202-A1 OR US-20210082011-A1 OR WO-2019181150-A1 OR WO-2024182389-A1 OR US-11867981-B1 OR US-20240288710-A1 OR US-12025855-B2 OR US-20230017635-A1 OR CN-111684340-A OR US-3665121-A OR US-20220357599-A1 OR US-11644693-B2 OR US-20110102734-A1 OR WO-2013188805-A2 OR EP-2862021-B1 OR US-3883701-A OR US-20200012127-A1 OR US-8905542-B2).did. | | | | | |
| L2904 | 50 | (Artificial Intelligence) Similar to: 18/597,874 with 6 CPC Selections and 7 Text Selections<br>Text: (US-12044901-B2 OR US-20240036361-A1 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, | OR | ON | ON | 2024/12/13 05:10 PM |

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| | | OR US-20230273464-A1 OR US-12140819-B1 OR US-20170131575-A1 OR US-20190187492-A1 OR US-20210364827-A9 OR US-12078870-B2 OR US-20170146829-A1 OR US-9690121-B2 OR US-9033493-B2 OR US-20150253590-A1 OR US-20130201440-A1 OR US-20120133885-A1 OR US-10330956-B2 OR US-20090296044-A1 OR US-20100309426-A1 OR US-8465151-B2 OR US-11086147-B2 OR US-8109629-B2 OR US-11733549-B2 OR US-20190033623-A1 OR US-20210364828-A1 OR US-11762224-B2 OR US-20220260859-A1 OR US-20230408850-A1 OR US-20220011603-A1 OR US-20070046887-A1 OR US-7581833-B2 OR US-20240019718-A1 OR WO-2024182389-A1 OR US-20210082011-A1 OR US-11867981-B1 OR US-20240288710-A1 OR CN-113009715-A OR KR-20210080253-A OR WO-2013188805-A2 OR EP-2862021-B1 OR CA-3103299-A1 OR US-11131865-B2 OR US-20200233238-A1 OR US-20210011307-A1 OR US-20170108713-A1 OR US-10423011-B2 OR DE-102020102281-A1 OR US-20210191159-A1 OR JP-6475289-B2 OR US-10168551-B2 OR US-20170075141-A1 OR KR-20210110726-A).did. | MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN)) | | | | |
| L2911 | 15759 | 115 116 117 118 118 | (US-PGPUB; USPAT; | OR | ON | ON | 2024/12/13 |

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| | | 120 121 | USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | 05:15 PM |
| L2912 | 287 | 2911 AND 54 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:15 PM |
| L2913 | 195 | 2911 AND 56 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:15 PM |
| L2914 | 102 | 2911 AND 60 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, | OR | ON | ON | 2024/12/13 05:15 PM |

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| | | | NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2915 | 46 | 2911 AND 63 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:15 PM |
| L2916 | 7 | 2911 AND 49 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:16 PM |
| L2917 | 164903 | 131 132 133 134 135 136 137 138 139 140 141 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:26 PM |
| L2925 | 10784 | 2917 AND 54 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, | OR | ON | ON | 2024/12/13 05:26 PM |

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| | | | AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2926 | 8397 | 2917 AND 56 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:26 PM |
| L2927 | 3854 | 2917 AND 60 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:27 PM |
| L2928 | 1548 | 2917 AND 61 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, | OR | ON | ON | 2024/12/13 05:27 PM |

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| | | | RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2929 | 392 | 2917 AND 63 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:27 PM |
| L2930 | 99 | 2917 AND 49 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:27 PM |
| L2931 | 3 | 2917 AND 52 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:27 PM |
| L2932 | 390 | (US-0000347-$ \| US-0000733-$ \| US-0001827-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, | OR | ON | ON | 2024/12/13 05:39 PM |

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| | | 0003803-$ \| US-<br>0004325-$ \| US-<br>0005069-$ \| US-<br>0005230-$ \| US-<br>0008763-$ \| US-<br>0011603-$ \| US-<br>0012127-$ \| US-<br>0017635-$ \| US-<br>0017997-$ \| US-<br>0018274-$ \| US-<br>0021407-$ \| US-<br>0022690-$ \| US-<br>0023158-$ \| US-<br>0026146-$ \| US-<br>0028309-$ \| US-<br>0029582-$ \| US-<br>0030442-$ \| US-<br>0032449-$ \| US-<br>0033061-$ \| US-<br>0033622-$ \| US-<br>0033623-$ \| US-<br>0033660-$ \| US-<br>0034478-$ \| US-<br>0034542-$ \| US-<br>0035830-$ \| US-<br>0036103-$ \| US-<br>0045283-$ \| US-<br>0045928-$ \| US-<br>0046887-$ \| US-<br>0050668-$ \| US-<br>0050754-$ \| US-<br>0054092-$ \| US-<br>0055888-$ \| US-<br>0057654-$ \| US-<br>0059159-$ \| US-<br>0059212-$ \| US-<br>0059381-$ \| US-<br>0061579-$ \| US-<br>0062046-$ \| US-<br>0062338-$ \| US-<br>0062357-$ \| US-<br>0063378-$ \| US-<br>0063763-$ \| US-<br>0064746-$ \| US-<br>0065257-$ \| US-<br>0067580-$ \| US-<br>0067585-$ \| US-<br>0068057-$ \| US-<br>0068559-$ \| US-<br>0072828-$ \| US-<br>0073375-$ \| US-<br>0074721-$ \| US-<br>0077175-$ \| US-<br>0078274-$ \| US-<br>0079356-$ \| US-<br>0081982-$ \| US-<br>0083591-$ \| US-<br>0084990-$ \| US- | CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |

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| | | 0085245-$ \| US-<br>0088365-$ \| US-<br>0089545-$ \| US-<br>0089639-$ \| US-<br>0090103-$ \| US-<br>0090219-$ \| US-<br>0090295-$ \| US-<br>0091200-$ \| US-<br>0096078-$ \| US-<br>0098192-$ \| US-<br>0098874-$ \| US-<br>0098877-$ \| US-<br>0100384-$ \| US-<br>0100792-$ \| US-<br>0101178-$ \| US-<br>0101411-$ \| US-<br>0101568-$ \| US-<br>0102734-$ \| US-<br>0104864-$ \| US-<br>0105445-$ \| US-<br>0107822-$ \| US-<br>0109491-$ \| US-<br>0109600-$ \| US-<br>0110368-$ \| US-<br>0114770-$ \| US-<br>0117121-$ \| US-<br>0122208-$ \| US-<br>0128737-$ \| US-<br>0131575-$ \| US-<br>0132382-$ \| US-<br>0132913-$ \| US-<br>0133885-$ \| US-<br>0136414-$ \| US-<br>0140899-$ \| US-<br>0141233-$ \| US-<br>0143519-$ \| US-<br>0144854-$ \| US-<br>0146097-$ \| US-<br>0146829-$ \| US-<br>0147215-$ \| US-<br>0150986-$ \| US-<br>0151175-$ \| US-<br>0151179-$ \| US-<br>0156012-$ \| US-<br>0156128-$ \| US-<br>0157649-$ \| US-<br>0158506-$ \| US-<br>0159023-$ \| US-<br>0160571-$ \| US-<br>0160572-$ \| US-<br>0160573-$ \| US-<br>0164122-$ \| US-<br>0172691-$ \| US-<br>0176580-$ \| US-<br>0176902-$ \| US-<br>0178743-$ \| US-<br>0186330-$ \| US-<br>0187492-$ \| US- | | | | | |

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| | | 0187990-$ \| US-<br>0189548-$ \| US-<br>0197002-$ \| US-<br>0197961-$ \| US-<br>0198293-$ \| US-<br>0200927-$ \| US-<br>0201440-$ \| US-<br>0201585-$ \| US-<br>0208531-$ \| US-<br>0211574-$ \| US-<br>0211921-$ \| US-<br>0213026-$ \| US-<br>0214630-$ \| US-<br>0218094-$ \| US-<br>0218684-$ \| US-<br>0226838-$ \| US-<br>0226978-$ \| US-<br>0227219-$ \| US-<br>0230596-$ \| US-<br>0230988-$ \| US-<br>0231293-$ \| US-<br>0236444-$ \| US-<br>0238194-$ \| US-<br>0239502-$ \| US-<br>0241976-$ \| US-<br>0245754-$ \| US-<br>0246075-$ \| US-<br>0248238-$ \| US-<br>0248717-$ \| US-<br>0248718-$ \| US-<br>0248719-$ \| US-<br>0251660-$ \| US-<br>0251661-$ \| US-<br>0253590-$ \| US-<br>0260859-$ \| US-<br>0262392-$ \| US-<br>0264752-$ \| US-<br>0268008-$ \| US-<br>0268013-$ \| US-<br>0268017-$ \| US-<br>0270663-$ \| US-<br>0271065-$ \| US-<br>0271116-$ \| US-<br>0271387-$ \| US-<br>0272800-$ \| US-<br>0273365-$ \| US-<br>0273464-$ \| US-<br>0277123-$ \| US-<br>0278110-$ \| US-<br>0278446-$ \| US-<br>0278678-$ \| US-<br>0279584-$ \| US-<br>0283894-$ \| US-<br>0285913-$ \| US-<br>0289323-$ \| US-<br>0291667-$ \| US-<br>0292333-$ \| US-<br>0296044-$ \| US- | | | | | |

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| | | 0296045-$ \| US-<br>0302992-$ \| US-<br>0303187-$ \| US-<br>0308089-$ \| US-<br>0309426-$ \| US-<br>0310132-$ \| US-<br>0314079-$ \| US-<br>0318589-$ \| US-<br>0335650-$ \| US-<br>0335792-$ \| US-<br>0338677-$ \| US-<br>0348050-$ \| US-<br>0357599-$ \| US-<br>0359266-$ \| US-<br>0361185-$ \| US-<br>0364827-$ \| US-<br>0364828-$ \| US-<br>0364992-$ \| US-<br>0369402-$).DID. | | | | | |
| L2933 | 318 | (US-0378493-$ \| US-<br>0379425-$ \| US-<br>0387351-$ \| US-<br>0399691-$ \| US-<br>0408850-$ \| US-<br>0415338-$ \| US-<br>1255265-$ \| US-<br>1917745-$ \| US-<br>10042186-$ \| US-<br>10060790-$ \| US-<br>10061144-$ \| US-<br>10310296-$ \| US-<br>10345625-$ \| US-<br>10359311-$ \| US-<br>10515623-$ \| US-<br>10539459-$ \| US-<br>10571715-$ \| US-<br>10624790-$ \| US-<br>10777048-$ \| US-<br>10802582-$ \| US-<br>10964190-$ \| US-<br>11042045-$ \| US-<br>11069358-$ \| US-<br>11086147-$ \| US-<br>11204512-$ \| US-<br>11243416-$ \| US-<br>11326941-$ \| US-<br>11513371-$ \| US-<br>11536988-$ \| US-<br>11630331-$ \| US-<br>11644361-$ \| US-<br>11644693-$ \| US-<br>11721183-$ \| US-<br>11733549-$ \| US-<br>11762224-$ \| US-<br>11803069-$ \| US-<br>11829518-$ \| US-<br>2249572-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:39 PM |

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| | | 2638532-$ \| US-<br>2725462-$ \| US-<br>2794085-$ \| US-<br>2818511-$ \| US-<br>2830132-$ \| US-<br>2874230-$ \| US-<br>2904670-$ \| US-<br>20010005230-$ \| US-<br>20010028309-$ \| US-<br>20010050754-$ \| US-<br>20020017997-$ \| US-<br>20020021407-$ \| US-<br>20020081982-$ \| US-<br>20020084990-$ \| US-<br>20020089639-$ \| US-<br>20020090103-$ \| US-<br>20020098877-$ \| US-<br>20020101568-$ \| US-<br>20020109600-$ \| US-<br>20020136414-$ \| US-<br>20020140899-$ \| US-<br>20020146097-$ \| US-<br>20020159023-$ \| US-<br>20020197961-$ \| US-<br>20030018274-$ \| US-<br>20030022690-$ \| US-<br>20030032449-$ \| US-<br>20030045283-$ \| US-<br>20030062046-$ \| US-<br>20030063763-$ \| US-<br>20030064746-$ \| US-<br>20030065257-$ \| US-<br>20030067585-$ \| US-<br>20030068057-$ \| US-<br>20030083591-$ \| US-<br>20030091200-$ \| US-<br>20030214630-$ \| US-<br>20030226978-$ \| US-<br>20030231293-$ \| US-<br>20040000733-$ \| US-<br>20040005069-$ \| US-<br>20040029582-$ \| US-<br>20040059212-$ \| US-<br>20040063378-$ \| US-<br>20040096078-$ \| US-<br>20040100384-$ \| US-<br>20040101178-$ \| US-<br>20040104864-$ \| US-<br>20040114770-$ \| US-<br>20040128737-$ \| US-<br>20040150986-$ \| US-<br>20040156012-$ \| US-<br>20040157649-$ \| US-<br>20040160571-$ \| US-<br>20040160572-$ \| US-<br>20040160573-$ \| US-<br>20040197002-$ \| US-<br>20040227219-$ \| US- | | | | | |

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| | | 20050036103-$ \| US-<br>20050067580-$ \| US-<br>20050078274-$ \| US-<br>20050088365-$ \| US-<br>20050090295-$ \| US-<br>20050201585-$ \| US-<br>20050213026-$ \| US-<br>20050230596-$ \| US-<br>20050238194-$ \| US-<br>20050239502-$ \| US-<br>20050248717-$ \| US-<br>20050248718-$ \| US-<br>20050248719-$ \| US-<br>20050264752-$ \| US-<br>20050278446-$ \| US-<br>20060001827-$ \| US-<br>20060003803-$ \| US-<br>20060023158-$ \| US-<br>20060034478-$ \| US-<br>20060107822-$ \| US-<br>20060132382-$ \| US-<br>20060291667-$ \| US-<br>20070030442-$ \| US-<br>20070035830-$ \| US-<br>20070046887-$ \| US-<br>20070055888-$ \| US-<br>20070098192-$ \| US-<br>20070109491-$ \| US-<br>20070186330-$ \| US-<br>20070189548-$ \| US-<br>20070200927-$ \| US-<br>20070208531-$ \| US-<br>20070211574-$ \| US-<br>20070248238-$ \| US-<br>20070270663-$ \| US-<br>20070271065-$ \| US-<br>20070271116-$ \| US-<br>20070271387-$ \| US-<br>20070279584-$ \| US-<br>20080062338-$ \| US-<br>20080068559-$ \| US-<br>20080089545-$ \| US-<br>20080100792-$ \| US-<br>20080144854-$ \| US-<br>20080151175-$ \| US-<br>20080151179-$ \| US-<br>20080158506-$ \| US-<br>20080211921-$ \| US-<br>20080218684-$ \| US-<br>20080262392-$ \| US-<br>20080278678-$ \| US-<br>20090059159-$ \| US-<br>20090059381-$ \| US-<br>20090073375-$ \| US-<br>20090141233-$ \| US-<br>20090147215-$ \| US-<br>20090156128-$ \| US-<br>20090251660-$ \| US- | | | | |

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| | | 20090251661-$ \| US-20090296044-$ \| US-20100045928-$ \| US-20100061579-$ \| US-20100079356-$ \| US-20100105445-$ \| US-20100110368-$ \| US-20100245754-$).DID. | | | | | |
| L2934 | 342 | (US-20100296045-$ \| US-20100309426-$ \| US-20110102734-$ \| US-20110164122-$ \| US-20110187990-$ \| US-20110241976-$ \| US-20110273365-$ \| US-20110292333-$ \| US-20120033061-$ \| US-20120050668-$ \| US-20120062357-$ \| US-20120101411-$ \| US-20120133885-$ \| US-20120176580-$ \| US-20120283894-$ \| US-20130072828-$ \| US-20130077175-$ \| US-20130143519-$ \| US-20130172691-$ \| US-20130201440-$ \| US-20130308089-$ \| US-20140132913-$ \| US-20140176902-$ \| US-20140198293-$ \| US-20140226838-$ \| US-20140268008-$ \| US-20140268013-$ \| US-20140268017-$ \| US-20140361185-$ \| US-20150085245-$ \| US-20150230988-$ \| US-20150253590-$ \| US-20150277123-$ \| US-20150338677-$ \| US-20160098874-$ \| US-20160246075-$ \| US-20160302992-$ \| US-20170074721-$ \| US-20170090219-$ \| US-20170131575-$ \| US-20170146829-$ \| US-20170289323-$ \| US-20170303187-$ \| US-20180122208-$ \| US-20180314079-$ \| US-20180335650-$ \| US-20180348050-$ \| US-20190004325-$ \| US-20190033622-$ \| | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:39 PM |

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| | | US-20190033623-$ \| US-20190117121-$ \| US-20190187492-$ \| US-20190272800-$ \| US-20190278110-$ \| US-20190285913-$ \| US-20190310132-$ \| US-20190318589-$ \| US-20190369402-$ \| US-20190378493-$ \| US-20190387351-$ \| US-20200012127-$ \| US-20200218094-$ \| US-20200364992-$ \| US-20210000347-$ \| US-20210026146-$ \| US-20210271116-$ \| US-20210364827-$ \| US-20210364828-$ \| US-20210379425-$ \| US-20210399691-$ \| US-20220008763-$ \| US-20220011603-$ \| US-20220034542-$ \| US-20220054092-$ \| US-20220178743-$ \| US-20220260859-$ \| US-20220335792-$ \| US-20220357599-$ \| US-20220415338-$ \| US-20230017635-$ \| US-20230033660-$ \| US-20230057654-$ \| US-20230236444-$ \| US-20230273464-$ \| US-20230359266-$ \| US-20230408850-$ \| US-3060308-$ \| US-3104290-$ \| US-3119903-$ \| US-3597054-$ \| US-3710115-$ \| US-3858001-$ \| US-3883701-$ \| US-4165487-$ \| US-4254451-$ \| US-4283127-$ \| US-4322585-$ \| US-4348664-$ \| US-4389217-$ \| US-4526473-$ \| US-4535244-$ \| US-4608492-$ \| US-4683587-$ \| US-4751691-$ \| US-4757714-$ \| US-4773095-$ \| US-4806011-$ \| US- | | | | | |

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| | | 4822160-$ \| US-<br>4822161-$ \| US-<br>4851686-$ \| US-<br>4856086-$ \| US-<br>4859047-$ \| US-<br>4882769-$ \| US-<br>4904078-$ \| US-<br>4942629-$ \| US-<br>4962469-$ \| US-<br>4967268-$ \| US-<br>4985632-$ \| US-<br>5008548-$ \| US-<br>5015086-$ \| US-<br>5020150-$ \| US-<br>5026151-$ \| US-<br>5036311-$ \| US-<br>5050150-$ \| US-<br>5064410-$ \| US-<br>5093576-$ \| US-<br>5106179-$ \| US-<br>5144344-$ \| US-<br>5148023-$ \| US-<br>5151600-$ \| US-<br>5161250-$ \| US-<br>5172256-$ \| US-<br>5264877-$ \| US-<br>5306917-$ \| US-<br>5353378-$ \| US-<br>5359370-$ \| US-<br>5359444-$ \| US-<br>5367345-$ \| US-<br>5379464-$ \| US-<br>5382986-$ \| US-<br>5394005-$ \| US-<br>5452026-$ \| US-<br>5452480-$ \| US-<br>5455637-$ \| US-<br>5455640-$ \| US-<br>5457751-$ \| US-<br>5463428-$ \| US-<br>5475798-$ \| US-<br>5500532-$ \| US-<br>5510961-$ \| US-<br>5513384-$ \| US-<br>5519781-$ \| US-<br>5533130-$ \| US-<br>5541641-$ \| US-<br>5581090-$ \| US-<br>5585871-$ \| US-<br>5589398-$ \| US-<br>5590417-$ \| US-<br>5606743-$ \| US-<br>5608808-$ \| US-<br>5634201-$ \| US-<br>5671035-$ \| US-<br>5686727-$ \| US-<br>5694475-$ \| US-<br>5715323-$ \| US- | | | | | |

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| | | 5737436-$ \| US-<br>5777715-$ \| US-<br>5790311-$ \| US-<br>5818381-$ \| US-<br>5819183-$ \| US-<br>5835185-$ \| US-<br>5900720-$ \| US-<br>5903395-$).DID. | | | | | |
| L2935 | 293 | (US-5923398-$ \| US-<br>5941837-$ \| US-<br>5946071-$ \| US-<br>5949516-$ \| US-<br>5966746-$ \| US-<br>5980037-$ \| US-<br>5988812-$ \| US-<br>5991085-$ \| US-<br>5992996-$ \| US-<br>5995592-$ \| US-<br>6010216-$ \| US-<br>6013919-$ \| US-<br>6028627-$ \| US-<br>6046455-$ \| US-<br>6060321-$ \| US-<br>6061580-$ \| US-<br>6091546-$ \| US-<br>6091832-$ \| US-<br>6115177-$ \| US-<br>6132681-$ \| US-<br>6145983-$ \| US-<br>6154552-$ \| US-<br>6176576-$ \| US-<br>6225897-$ \| US-<br>6231181-$ \| US-<br>6236969-$ \| US-<br>6243578-$ \| US-<br>6259367-$ \| US-<br>6270466-$ \| US-<br>6292213-$ \| US-<br>6292685-$ \| US-<br>6301050-$ \| US-<br>6301367-$ \| US-<br>6307526-$ \| US-<br>6311155-$ \| US-<br>6343858-$ \| US-<br>6346929-$ \| US-<br>6349001-$ \| US-<br>6349422-$ \| US-<br>6409335-$ \| US-<br>6409338-$ \| US-<br>6426719-$ \| US-<br>6431705-$ \| US-<br>6474816-$ \| US-<br>6478736-$ \| US-<br>6506142-$ \| US-<br>6511175-$ \| US-<br>6513532-$ \| US-<br>6517203-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:39 PM |

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| | | 6539336-$ \| US-<br>6542081-$ \| US-<br>6546101-$ \| US-<br>6554763-$ \| US-<br>6582075-$ \| US-<br>6619799-$ \| US-<br>6629076-$ \| US-<br>6678381-$ \| US-<br>6717737-$ \| US-<br>6729726-$ \| US-<br>6736759-$ \| US-<br>6764194-$ \| US-<br>6769767-$ \| US-<br>6771423-$ \| US-<br>6788309-$ \| US-<br>6792401-$ \| US-<br>6816314-$ \| US-<br>6824265-$ \| US-<br>6857741-$ \| US-<br>6871951-$ \| US-<br>6879930-$ \| US-<br>6912386-$ \| US-<br>6929365-$ \| US-<br>6932090-$ \| US-<br>6947219-$ \| US-<br>7004582-$ \| US-<br>7013009-$ \| US-<br>7023594-$ \| US-<br>7030902-$ \| US-<br>7031667-$ \| US-<br>7033025-$ \| US-<br>7059717-$ \| US-<br>7073905-$ \| US-<br>7079876-$ \| US-<br>7123215-$ \| US-<br>7192136-$ \| US-<br>7255437-$ \| US-<br>7265358-$ \| US-<br>7274292-$ \| US-<br>7289767-$ \| US-<br>7312699-$ \| US-<br>7331666-$ \| US-<br>7376238-$ \| US-<br>7380936-$ \| US-<br>7401918-$ \| US-<br>7405801-$ \| US-<br>7429965-$ \| US-<br>7430299-$ \| US-<br>7438409-$ \| US-<br>7438410-$ \| US-<br>7445332-$ \| US-<br>7481531-$ \| US-<br>7500746-$ \| US-<br>7500747-$ \| US-<br>7512414-$ \| US-<br>7517083-$ \| US-<br>7527374-$ \| US-<br>7543934-$ \| US- | | | | | |

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| | | 7581833-$ \| US-<br>7621634-$ \| US-<br>7648236-$ \| US-<br>7677723-$ \| US-<br>7760898-$ \| US-<br>7771046-$ \| US-<br>7787647-$ \| US-<br>7792552-$ \| US-<br>7801570-$ \| US-<br>7806525-$ \| US-<br>7922321-$ \| US-<br>7976159-$ \| US-<br>8009849-$ \| US-<br>8109629-$ \| US-<br>8142015-$ \| US-<br>8174569-$ \| US-<br>8175886-$ \| US-<br>8251875-$ \| US-<br>8337013-$ \| US-<br>8430507-$ \| US-<br>8434863-$ \| US-<br>8465151-$ \| US-<br>8485661-$ \| US-<br>8500271-$ \| US-<br>8571241-$ \| US-<br>8582789-$ \| US-<br>8620208-$ \| US-<br>8626246-$ \| US-<br>8770742-$ \| US-<br>8849185-$ \| US-<br>8905542-$ \| US-<br>9033493-$ \| US-<br>9183351-$ \| US-<br>9244292-$ \| US-<br>9369814-$ \| US-<br>9400390-$ \| US-<br>9405135-$ \| US-<br>9488520-$ \| US-<br>9547184-$ \| US-<br>9690121-$ \| US-<br>9922236-$).DID. | | | | | |
| L2936 | 73 | (11/183256 \| 11/183269 \| 11/546685 \| 11/580222 \| 12/462286 \| 12/803732 \| 12/806312 \| 13/085402 \| 13/291020 \| 13/367346 \| 13/831419 \| 13/831445 \| 13/831512 \| 13/955336 \| 14/557409 \| 14/594662 \| 14/715501 \| 15/375423 \| 15/396428 \| 15/409723 \| 16/049120 \| 16/127957 \| 16/182969 \| 16/424018 \| | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:39 PM |

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|---|---|---|---|---|---|---|---|
| | | 16/429181 \| 16/574254 \| 16/821810 \| 17/395509 \| 17/484080 \| 17/737866 \| 17/873104 \| 17/942347 \| 17/949029 \| 17/964853 \| 18/129660 \| 18/144557 \| 18/224793 \| 19/594662).APP. | | | | | |
| L2937 | 83 | (CA-2487391-$ \| CN-88203065-$ \| CN-89214222-$ \| CN-90208199-$ \| DE-10123226-$ \| EP-1027626-$ \| EP-1134491-$ \| EP-2290433-$ \| FR-2530039-$ \| GB-1467982-$ \| JP-58113914-$ \| JP-02181722-$ \| JP-09017204-$ \| JP-10161072-$ \| JP-2000039595-$ \| JP-2002341059-$ \| JP-2005151292-$ \| JP-2005167902-$ \| JP-58113912-$ \| KR-20020044416-$ \| TW-484711-$ \| WO-0106298-$ \| WO-0124576-$ \| WO-0206881-$ \| WO-03069394-$ \| WO-03100368-$ \| WO-03100503-$ \| WO-04012477-$ \| WO-04025554-$ \| WO-9712205-$ \| WO-9950706-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:39 PM |
| L2938 | 73 | (US-0024594-$ \| US-0030597-$ \| US-0182812-$ \| US-0203183-$ \| US-0281440-$ \| US-0363835-$ \| US-20030030597-$ \| US-20050281440-$ \| US-20060203183-$ \| US-20070182812-$ \| US-20080024594-$ \| US-20200363835-$ \| US-4852988-$ \| US-4882598-$ \| US-4975584-$ \| US-5184156-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:39 PM |

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| | | 5495576-$ \| US-5583795-$ \| US-5841507-$ \| US-5966680-$ \| US-6099124-$ \| US-6163281-$ \| US-6244703-$ \| US-6433760-$ \| US-6491391-$ \| US-6563532-$ \| US-6771294-$ \| US-6847336-$ \| US-6943754-$ \| US-6977776-$ \| US-7148489-$ \| US-7150526-$ \| US-7278734-$ \| US-7347551-$ \| US-7488294-$ \| US-7651220-$ \| US-8408699-$ \| US-8931896-$).DID. | | | | | |
| L2939 | 36 | (AT-036110-$ \| AL-316473-$ \| AT-362895-$ \| AL-388766-$ \| CA-2233047-$ \| CA-2316473-$ \| CA-2362895-$ \| CA-2388766-$ \| CA-2435873-$ \| EP-0441791-$ \| HO-2102521-$ \| HO-2159272-$ \| JP-6275987-$ \| JP-63153218-$ \| WO-0184095-$ \| WO-02086599-$ \| WO-03062906-$ \| WO-04001373-$ \| WO-05036110-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:39 PM |
| L2946 | 1469 | 2932 2933 2934 2935 2936 2937 2938 2939 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:40 PM |
| L2947 | 229 | 2946 AND 54 | (US-PGPUB; USPAT; | OR | ON | ON | 2024/12/13 |

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| | | | USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | 05:41 PM |
| L2948 | 132 | 2946 AND 59 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:41 PM |
| L2949 | 61 | 2946 AND 63 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:41 PM |
| L2950 | 13 | 2946 AND 49 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, | OR | ON | ON | 2024/12/13 05:41 PM |

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| | | | NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2951 | 2 | 2946 AND 52 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:42 PM |
| L2952 | 663 | ( "197708" \| "198608" \| "198805" \| "198909" \| "99411" \| "199511" \| "199609" \| "199709" \| "199807" \| "200011" \| "200101" \| "200102" \| "200205" \| "200208" \| "200210" \| "200302" \| "200512" \| "200907" \| "1129988" \| "6081194" \| "681194" \| "7312791" \| "8237349" \| "2107638" ).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:50 PM |
| L2953 | 383 | (US-10042186-$ \| US-10060790-$ \| US-10061144-$ \| US-10310296-$ \| US-10345625-$ \| US-10359311-$ \| US-10359459-$ \| US-10624790-$ \| US-10777048-$ \| US-11042045-$ \| US-1255265-$ \| US-1917745-$ \| US-2249572-$ \| US-2638532-$ \| US-2794085-$ \| US-2818511-$ \| US-2830132-$ \| US-2874230-$ \| US-2904670-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:50 PM |

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| | | 3060308-$ \| US-<br>3597054-$ \| US-<br>3710115-$ \| US-<br>3858001-$ \| US-<br>3883701-$ \| US-<br>4165487-$ \| US-<br>4254451-$ \| US-<br>4283127-$ \| US-<br>4322585-$ \| US-<br>4348664-$ \| US-<br>4389217-$ \| US-<br>4526473-$ \| US-<br>4535244-$ \| US-<br>4608492-$ \| US-<br>4683587-$ \| US-<br>4751691-$ \| US-<br>4757714-$ \| US-<br>4773095-$ \| US-<br>4806011-$ \| US-<br>4822160-$ \| US-<br>4822161-$ \| US-<br>4851686-$ \| US-<br>4856086-$ \| US-<br>4859047-$ \| US-<br>4882769-$ \| US-<br>4904078-$ \| US-<br>4942629-$ \| US-<br>4962469-$ \| US-<br>4967268-$ \| US-<br>4985632-$ \| US-<br>5008548-$ \| US-<br>5015086-$ \| US-<br>5020150-$ \| US-<br>5026151-$ \| US-<br>5036311-$ \| US-<br>5050150-$ \| US-<br>5064410-$ \| US-<br>5093576-$ \| US-<br>5106179-$ \| US-<br>5148023-$ \| US-<br>5151600-$ \| US-<br>5161250-$ \| US-<br>5172256-$ \| US-<br>5264877-$ \| US-<br>5306917-$ \| US-<br>5353378-$ \| US-<br>5359370-$ \| US-<br>5359444-$ \| US-<br>5367345-$ \| US-<br>5379464-$ \| US-<br>5382986-$ \| US-<br>5394005-$ \| US-<br>5452026-$ \| US-<br>5452480-$ \| US-<br>5455637-$ \| US-<br>5455640-$ \| US-<br>5457751-$ \| US-<br>5463428-$ \| US- | | | | | |

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| | | 5500532-$ \| US-<br>5510961-$ \| US-<br>5513384-$ \| US-<br>5533130-$ \| US-<br>5541641-$ \| US-<br>5581090-$ \| US-<br>5585871-$ \| US-<br>5589398-$ \| US-<br>5590417-$ \| US-<br>5606743-$ \| US-<br>5608808-$ \| US-<br>5634201-$ \| US-<br>5671035-$ \| US-<br>5686727-$ \| US-<br>5694475-$ \| US-<br>5715323-$ \| US-<br>5737436-$ \| US-<br>5818381-$ \| US-<br>5835185-$ \| US-<br>5900720-$ \| US-<br>5903395-$ \| US-<br>5923398-$ \| US-<br>5941837-$ \| US-<br>5946071-$ \| US-<br>5949516-$ \| US-<br>5966746-$ \| US-<br>5980037-$ \| US-<br>5988812-$ \| US-<br>5991085-$ \| US-<br>5992996-$ \| US-<br>5995592-$ \| US-<br>6010216-$ \| US-<br>6013919-$ \| US-<br>6028627-$ \| US-<br>6046455-$ \| US-<br>6060321-$ \| US-<br>6061580-$ \| US-<br>6091546-$ \| US-<br>6091832-$ \| US-<br>6115177-$ \| US-<br>6132681-$ \| US-<br>6145983-$ \| US-<br>6154552-$ \| US-<br>6176576-$ \| US-<br>6225897-$ \| US-<br>6231181-$ \| US-<br>6236969-$ \| US-<br>6243578-$ \| US-<br>6259367-$ \| US-<br>6270466-$ \| US-<br>6292213-$ \| US-<br>6292685-$ \| US-<br>6301367-$ \| US-<br>6307526-$ \| US-<br>6343858-$ \| US-<br>6349001-$ \| US-<br>6349422-$ \| US-<br>6409335-$ \| US- | | | | | |

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| | | 6409338-$ \| US-<br>6426719-$ \| US-<br>6431705-$ \| US-<br>6474816-$ \| US-<br>6478736-$ \| US-<br>6506142-$ \| US-<br>6511175-$ \| US-<br>6513532-$ \| US-<br>6517203-$ \| US-<br>6539336-$ \| US-<br>6542081-$ \| US-<br>6546101-$ \| US-<br>6554763-$ \| US-<br>6582075-$ \| US-<br>6619799-$ \| US-<br>6629076-$ \| US-<br>6729726-$ \| US-<br>6736759-$ \| US-<br>6764194-$ \| US-<br>6769767-$ \| US-<br>6788309-$ \| US-<br>6792401-$ \| US-<br>6816314-$ \| US-<br>6824265-$ \| US-<br>6857741-$ \| US-<br>6871951-$ \| US-<br>6879930-$ \| US-<br>6912386-$ \| US-<br>6929365-$ \| US-<br>6932090-$ \| US-<br>6947219-$ \| US-<br>7004582-$ \| US-<br>7013009-$ \| US-<br>7023594-$ \| US-<br>7030902-$ \| US-<br>7031667-$ \| US-<br>7033025-$ \| US-<br>7059717-$ \| US-<br>7073905-$ \| US-<br>7079876-$ \| US-<br>7123215-$ \| US-<br>7192136-$ \| US-<br>7255437-$ \| US-<br>7265358-$ \| US-<br>7274292-$ \| US-<br>7289767-$ \| US-<br>7312699-$ \| US-<br>7331666-$ \| US-<br>7376238-$ \| US-<br>7380936-$ \| US-<br>7401918-$ \| US-<br>7405801-$ \| US-<br>7429965-$ \| US-<br>7438409-$ \| US-<br>7438410-$ \| US-<br>7445332-$ \| US-<br>7481531-$ \| US-<br>7500746-$ \| US- | | | | | |

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| | | 7500747-$ \| US-7512414-$).DID. | | | | | |
| L2954 | 381 | (US-20190310132-$ \| US-20190318589-$ \| US-20190387351-$ \| US-20200012127-$ \| US-20200218094-$ \| US-20200364992-$ \| US-3060308-$ \| US-3597054-$ \| US-3710115-$ \| US-3858001-$ \| US-3883701-$ \| US-4165487-$ \| US-4254451-$ \| US-4283127-$ \| US-4322585-$ \| US-4348664-$ \| US-4389217-$ \| US-4526473-$ \| US-4535244-$ \| US-4608492-$ \| US-4683587-$ \| US-4751691-$ \| US-4757714-$ \| US-4773095-$ \| US-4806011-$ \| US-4822160-$ \| US-4822161-$ \| US-4851686-$ \| US-4856086-$ \| US-4859047-$ \| US-4882769-$ \| US-4904078-$ \| US-4942629-$ \| US-4962469-$ \| US-4967268-$ \| US-4985632-$ \| US-5008548-$ \| US-5015086-$ \| US-5020150-$ \| US-5026151-$ \| US-5036311-$ \| US-5050150-$ \| US-5064410-$ \| US-5093576-$ \| US-5106179-$ \| US-5148023-$ \| US-5151600-$ \| US-5161250-$ \| US-5172256-$ \| US-5264877-$ \| US-5306917-$ \| US-5353378-$ \| US-5359370-$ \| US-5359444-$ \| US-5367345-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:50 PM |

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| | | 5379464-$ \| US-<br>5382986-$ \| US-<br>5394005-$ \| US-<br>5452026-$ \| US-<br>5452480-$ \| US-<br>5455637-$ \| US-<br>5455640-$ \| US-<br>5457751-$ \| US-<br>5463428-$ \| US-<br>5500532-$ \| US-<br>5510961-$ \| US-<br>5513384-$ \| US-<br>5533130-$ \| US-<br>5541641-$ \| US-<br>5581090-$ \| US-<br>5585871-$ \| US-<br>5589398-$ \| US-<br>5590417-$ \| US-<br>5606743-$ \| US-<br>5608808-$ \| US-<br>5634201-$ \| US-<br>5671035-$ \| US-<br>5686727-$ \| US-<br>5694475-$ \| US-<br>5715323-$ \| US-<br>5737436-$ \| US-<br>5818381-$ \| US-<br>5835185-$ \| US-<br>5900720-$ \| US-<br>5903395-$ \| US-<br>5923398-$ \| US-<br>5941837-$ \| US-<br>5946071-$ \| US-<br>5949516-$ \| US-<br>5966746-$ \| US-<br>5980037-$ \| US-<br>5988812-$ \| US-<br>5991085-$ \| US-<br>5992996-$ \| US-<br>5995592-$ \| US-<br>6010216-$ \| US-<br>6013919-$ \| US-<br>6028627-$ \| US-<br>6046455-$ \| US-<br>6060321-$ \| US-<br>6061580-$ \| US-<br>6091546-$ \| US-<br>6091832-$ \| US-<br>6115177-$ \| US-<br>6132681-$ \| US-<br>6145983-$ \| US-<br>6154552-$ \| US-<br>6176576-$ \| US-<br>6225897-$ \| US-<br>6231181-$ \| US-<br>6236969-$ \| US-<br>6243578-$ \| US-<br>6259367-$ \| US- | | | | |

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| | | 6270466-$ \| US-<br>6292213-$ \| US-<br>6292685-$ \| US-<br>6301367-$ \| US-<br>6307526-$ \| US-<br>6343858-$ \| US-<br>6349001-$ \| US-<br>6349422-$ \| US-<br>6409335-$ \| US-<br>6409338-$ \| US-<br>6426719-$ \| US-<br>6431705-$ \| US-<br>6474816-$ \| US-<br>6478736-$ \| US-<br>6506142-$ \| US-<br>6511175-$ \| US-<br>6513532-$ \| US-<br>6517203-$ \| US-<br>6539336-$ \| US-<br>6542081-$ \| US-<br>6546101-$ \| US-<br>6554763-$ \| US-<br>6582075-$ \| US-<br>6619799-$ \| US-<br>6629076-$ \| US-<br>6729726-$ \| US-<br>6736759-$ \| US-<br>6764194-$ \| US-<br>6769767-$ \| US-<br>6788309-$ \| US-<br>6792401-$ \| US-<br>6816314-$ \| US-<br>6824265-$ \| US-<br>6857741-$ \| US-<br>6871951-$ \| US-<br>6879930-$ \| US-<br>6912386-$ \| US-<br>6929365-$ \| US-<br>6932090-$ \| US-<br>6947219-$ \| US-<br>7004582-$ \| US-<br>7013009-$ \| US-<br>7023594-$ \| US-<br>7030902-$ \| US-<br>7031667-$ \| US-<br>7033025-$ \| US-<br>7059717-$ \| US-<br>7073905-$ \| US-<br>7079876-$ \| US-<br>7123215-$ \| US-<br>7192136-$ \| US-<br>7255437-$ \| US-<br>7265358-$ \| US-<br>7274292-$ \| US-<br>7289767-$ \| US-<br>7312699-$ \| US-<br>7331666-$ \| US-<br>7376238-$ \| US- | | | | |

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| | | 7380936-$ \| US-<br>7401918-$ \| US-<br>7405801-$ \| US-<br>7429965-$ \| US-<br>7438409-$ \| US-<br>7438410-$ \| US-<br>7445332-$ \| US-<br>7481531-$ \| US-<br>7500746-$ \| US-<br>7500747-$ \| US-<br>7512414-$ \| US-<br>7517083-$ \| US-<br>7527374-$ \| US-<br>7543934-$ \| US-<br>7581833-$ \| US-<br>7621634-$ \| US-<br>7648236-$ \| US-<br>7677723-$ \| US-<br>7760898-$ \| US-<br>7771046-$ \| US-<br>7792552-$ \| US-<br>7806525-$ \| US-<br>7922321-$).DID. | | | | | |
| L2955 | 376 | (US-0000733-$ \| US-<br>0001827-$ \| US-<br>0003803-$ \| US-<br>0005230-$ \| US-<br>0012127-$ \| US-<br>0017997-$ \| US-<br>0018274-$ \| US-<br>0021407-$ \| US-<br>0022690-$ \| US-<br>0023158-$ \| US-<br>0028309-$ \| US-<br>0029582-$ \| US-<br>0030442-$ \| US-<br>0032449-$ \| US-<br>0033061-$ \| US-<br>0033623-$ \| US-<br>0034478-$ \| US-<br>0035830-$ \| US-<br>0046887-$ \| US-<br>0050668-$ \| US-<br>0050754-$ \| US-<br>0055888-$ \| US-<br>0059159-$ \| US-<br>0059212-$ \| US-<br>0059381-$ \| US-<br>0061579-$ \| US-<br>0062046-$ \| US-<br>0062338-$ \| US-<br>0062357-$ \| US-<br>0063378-$ \| US-<br>0065257-$ \| US-<br>0067580-$ \| US-<br>0067585-$ \| US-<br>0068057-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:50 PM |

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| | | 0068117-$ \| US-<br>0068559-$ \| US-<br>0072828-$ \| US-<br>0073375-$ \| US-<br>0074721-$ \| US-<br>0077175-$ \| US-<br>0078274-$ \| US-<br>0079356-$ \| US-<br>0081982-$ \| US-<br>0083591-$ \| US-<br>0084990-$ \| US-<br>0085245-$ \| US-<br>0088365-$ \| US-<br>0089639-$ \| US-<br>0090103-$ \| US-<br>0090219-$ \| US-<br>0096078-$ \| US-<br>0098192-$ \| US-<br>0098877-$ \| US-<br>0100384-$ \| US-<br>0100792-$ \| US-<br>0101178-$ \| US-<br>0101568-$ \| US-<br>0102734-$ \| US-<br>0107822-$ \| US-<br>0109491-$ \| US-<br>0109600-$ \| US-<br>0110368-$ \| US-<br>0128737-$ \| US-<br>0131575-$ \| US-<br>0132382-$ \| US-<br>0132913-$ \| US-<br>0133885-$ \| US-<br>0140899-$ \| US-<br>0141233-$ \| US-<br>0143519-$ \| US-<br>0144854-$ \| US-<br>0146829-$ \| US-<br>0147215-$ \| US-<br>0150986-$ \| US-<br>0151175-$ \| US-<br>0151179-$ \| US-<br>0156012-$ \| US-<br>0156128-$ \| US-<br>0157649-$ \| US-<br>0158506-$ \| US-<br>0159023-$ \| US-<br>0160571-$ \| US-<br>0160572-$ \| US-<br>0160573-$ \| US-<br>0164122-$ \| US-<br>0176580-$ \| US-<br>0176902-$ \| US-<br>0186330-$ \| US-<br>0187492-$ \| US-<br>0187990-$ \| US-<br>0197002-$ \| US-<br>0197961-$ \| US- | | | | | |

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| | | 0198293-$ \| US-<br>0200927-$ \| US-<br>0201440-$ \| US-<br>0201585-$ \| US-<br>0208531-$ \| US-<br>0211921-$ \| US-<br>0213026-$ \| US-<br>0214630-$ \| US-<br>0218094-$ \| US-<br>0218684-$ \| US-<br>0226978-$ \| US-<br>0227219-$ \| US-<br>0230596-$ \| US-<br>0230988-$ \| US-<br>0231293-$ \| US-<br>0238194-$ \| US-<br>0239502-$ \| US-<br>0241796-$ \| US-<br>0245754-$ \| US-<br>0246075-$ \| US-<br>0248238-$ \| US-<br>0248717-$ \| US-<br>0248718-$ \| US-<br>0248719-$ \| US-<br>0251660-$ \| US-<br>0251661-$ \| US-<br>0253590-$ \| US-<br>0262392-$ \| US-<br>0264752-$ \| US-<br>0268008-$ \| US-<br>0268013-$ \| US-<br>0268017-$ \| US-<br>0270663-$ \| US-<br>0271065-$ \| US-<br>0271116-$ \| US-<br>0271387-$ \| US-<br>0272800-$ \| US-<br>0273365-$ \| US-<br>0278110-$ \| US-<br>0278446-$ \| US-<br>0278678-$ \| US-<br>0279584-$ \| US-<br>0285913-$ \| US-<br>0296044-$ \| US-<br>0296045-$ \| US-<br>0302992-$ \| US-<br>0303187-$ \| US-<br>0308089-$ \| US-<br>0309426-$ \| US-<br>0310132-$ \| US-<br>0314079-$ \| US-<br>0318589-$ \| US-<br>0348050-$ \| US-<br>0361185-$ \| US-<br>0364992-$ \| US-<br>0387351-$ \| US-<br>10042186-$ \| US-<br>10060790-$ \| US- | | | | | |

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| | | 10061144-$ \| US-<br>10310296-$ \| US-<br>10345625-$ \| US-<br>10359311-$ \| US-<br>10359459-$ \| US-<br>10624790-$ \| US-<br>10777048-$ \| US-<br>11042045-$ \| US-<br>11086147-$ \| US-<br>1255265-$ \| US-<br>1917745-$ \| US-<br>20010005230-$ \| US-<br>20010028309-$ \| US-<br>20010050754-$ \| US-<br>20020017997-$ \| US-<br>20020021407-$ \| US-<br>20020081982-$ \| US-<br>20020084990-$ \| US-<br>20020089639-$ \| US-<br>20020090103-$ \| US-<br>20020098877-$ \| US-<br>20020101568-$ \| US-<br>20020109600-$ \| US-<br>20020140899-$ \| US-<br>20020159023-$ \| US-<br>20020197961-$ \| US-<br>20030018274-$ \| US-<br>20030022690-$ \| US-<br>20030032449-$ \| US-<br>20030062046-$ \| US-<br>20030065257-$ \| US-<br>20030067585-$ \| US-<br>20030068057-$ \| US-<br>20030083591-$ \| US-<br>20030214630-$ \| US-<br>20030226978-$ \| US-<br>20030231293-$ \| US-<br>20040000733-$).DID. | | | | | |
| L2956 | 369 | (US-6060321-$ \| US-<br>6061580-$ \| US-<br>6091832-$ \| US-<br>6115177-$ \| US-<br>6132681-$ \| US-<br>6154552-$ \| US-<br>6176576-$ \| US-<br>61810704-$ \| US-<br>6199550-$ \| US-<br>62023804-$ \| US-<br>6225897-$ \| US-<br>6231181-$ \| US-<br>6236969-$ \| US-<br>6259367-$ \| US-<br>6270466-$ \| US-<br>6292213-$ \| US-<br>6292685-$ \| US-<br>6301367-$ \| US-<br>6343858-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:50 PM |

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| | | 6409335-$ \| US-<br>6409338-$ \| US-<br>6431705-$ \| US-<br>6474816-$ \| US-<br>64782605-$ \| US-<br>64783605-$ \| US-<br>6511175-$ \| US-<br>6513532-$ \| US-<br>6517203-$ \| US-<br>6539336-$ \| US-<br>6542081-$ \| US-<br>6546101-$ \| US-<br>6554444-$ \| US-<br>6582075-$ \| US-<br>6619799-$ \| US-<br>6629076-$ \| US-<br>6686843-$ \| US-<br>6729726-$ \| US-<br>6736759-$ \| US-<br>6764194-$ \| US-<br>6769767-$ \| US-<br>6788309-$ \| US-<br>6792401-$ \| US-<br>6798391-$ \| US-<br>6824265-$ \| US-<br>6840908-$ \| US-<br>6853303-$ \| US-<br>6857741-$ \| US-<br>6871951-$ \| US-<br>6879930-$ \| US-<br>6898550-$ \| US-<br>6899585-$ \| US-<br>6912386-$ \| US-<br>6932090-$ \| US-<br>6947219-$ \| US-<br>6974226-$ \| US-<br>7013009-$ \| US-<br>7023594-$ \| US-<br>7030902-$ \| US-<br>7031667-$ \| US-<br>7033025-$ \| US-<br>7044615-$ \| US-<br>7048370-$ \| US-<br>7059717-$ \| US-<br>7079876-$ \| US-<br>7148879-$ \| US-<br>7150526-$ \| US-<br>7192136-$ \| US-<br>7255437-$ \| US-<br>7265358-$ \| US-<br>7274292-$ \| US-<br>7278734-$ \| US-<br>7289767-$ \| US-<br>7312699-$ \| US-<br>7313246-$ \| US-<br>7319780-$ \| US-<br>7376238-$ \| US-<br>7380936-$ \| US- | | | | | |

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| | | 7405801-$ \| US-<br>7438409-$ \| US-<br>7438410-$ \| US-<br>7452067-$ \| US-<br>7500746-$ \| US-<br>7500747-$ \| US-<br>7512414-$ \| US-<br>7521623-$ \| US-<br>7543934-$ \| US-<br>7543938-$ \| US-<br>7547101-$ \| US-<br>7581833-$ \| US-<br>7604348-$ \| US-<br>7643895-$ \| US-<br>7648236-$ \| US-<br>7677723-$ \| US-<br>7740353-$ \| US-<br>7760898-$ \| US-<br>7792552-$ \| US-<br>7798638-$ \| US-<br>7806525-$ \| US-<br>7818142-$ \| US-<br>7834759-$ \| US-<br>7922321-$ \| US-<br>8073984-$ \| US-<br>8095799-$ \| US-<br>8109629-$ \| US-<br>8142015-$ \| US-<br>8182267-$ \| US-<br>8184067-$ \| US-<br>8243973-$ \| US-<br>8328420-$ \| US-<br>8337013-$ \| US-<br>8421851-$ \| US-<br>8430507-$ \| US-<br>8465151-$ \| US-<br>8482488-$ \| US-<br>8485661-$ \| US-<br>8508851-$ \| US-<br>8558759-$ \| US-<br>8593795-$ \| US-<br>8668334-$ \| US-<br>8766747-$ \| US-<br>8767306-$ \| US-<br>8778022-$ \| US-<br>8801174-$ \| US-<br>8823740-$ \| US-<br>8832233-$ \| US-<br>8838708-$ \| US-<br>8884845-$ \| US-<br>8905541-$ \| US-<br>8907867-$ \| US-<br>8908894-$ \| US-<br>8931896-$ \| US-<br>8941560-$ \| US-<br>8944590-$ \| US-<br>8952869-$ \| US-<br>8957835-$ \| US- | | | | | |

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| | | 8979259-$ \| US-<br>9024843-$ \| US-<br>9081212-$ \| US-<br>9091851-$ \| US-<br>9097890-$ \| US-<br>9097891-$ \| US-<br>9116545-$ \| US-<br>9128281-$ \| US-<br>9128522-$ \| US-<br>9129295-$ \| US-<br>9134534-$ \| US-<br>9137309-$ \| US-<br>9141194-$ \| US-<br>9143848-$ \| US-<br>9158116-$ \| US-<br>9182596-$ \| US-<br>9201512-$ \| US-<br>9223134-$ \| US-<br>9229227-$ \| US-<br>9230501-$ \| US-<br>9256071-$ \| US-<br>9277334-$ \| US-<br>9285589-$ \| US-<br>9298007-$ \| US-<br>9299194-$ \| US-<br>9341843-$ \| US-<br>9349280-$ \| US-<br>9366862-$ \| US-<br>9400390-$ \| US-<br>9401540-$ \| US-<br>9405135-$ \| US-<br>9405892-$ \| US-<br>9423842-$ \| US-<br>9423870-$ \| US-<br>9494800-$ \| US-<br>9529197-$ \| US-<br>9529199-$ \| US-<br>9568746-$ \| US-<br>9582071-$ \| US-<br>9589482-$ \| US-<br>9594433-$ \| US-<br>9600079-$ \| US-<br>9651787-$ \| US-<br>9672210-$ \| US-<br>9684172-$ \| US-<br>9684374-$ \| US-<br>9690121-$ \| US-<br>9715112-$ \| US-<br>9715774-$ \| US-<br>9730647-$ \| US-<br>9740280-$ \| US-<br>9753288-$ \| US-<br>9759917-$ \| US-<br>9766463-$ \| US-<br>9781408-$ \| US-<br>9800990-$ \| US-<br>9829707-$ \| US-<br>9836122-$ \| US- | | | | | |

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| | | 9841599-$ \| US-9857590-$).DID. | | | | | |
| L2957 | 345 | (US-5036311-$ \| US-5050150-$ \| US-5064410-$ \| US-5093576-$ \| US-5106179-$ \| US-5148023-$ \| US-5151600-$ \| US-5161250-$ \| US-5172256-$ \| US-5264877-$ \| US-5306917-$ \| US-5353378-$ \| US-5359370-$ \| US-5359444-$ \| US-5367345-$ \| US-5379464-$ \| US-5382986-$ \| US-5394005-$ \| US-5452026-$ \| US-5452480-$ \| US-5455637-$ \| US-5455640-$ \| US-5457751-$ \| US-5463428-$ \| US-5500532-$ \| US-5510961-$ \| US-5513384-$ \| US-5533130-$ \| US-5541641-$ \| US-5581090-$ \| US-5585871-$ \| US-5589398-$ \| US-5590417-$ \| US-5606743-$ \| US-5608808-$ \| US-5634201-$ \| US-5671035-$ \| US-5686727-$ \| US-5694475-$ \| US-5715323-$ \| US-5737436-$ \| US-5818381-$ \| US-5835185-$ \| US-5900720-$ \| US-5903395-$ \| US-5923398-$ \| US-5941837-$ \| US-5946071-$ \| US-5949516-$ \| US-5966746-$ \| US-5980037-$ \| US-5988812-$ \| US-5991085-$ \| US-5992996-$ \| US-5995592-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:50 PM |

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| | | 6010216-$ \| US-<br>6013919-$ \| US-<br>6028627-$ \| US-<br>6046455-$ \| US-<br>6060321-$ \| US-<br>6061580-$ \| US-<br>6091546-$ \| US-<br>6091832-$ \| US-<br>6115177-$ \| US-<br>6132681-$ \| US-<br>6145983-$ \| US-<br>6154552-$ \| US-<br>6176576-$ \| US-<br>6225897-$ \| US-<br>6231181-$ \| US-<br>6236969-$ \| US-<br>6243578-$ \| US-<br>6259367-$ \| US-<br>6270466-$ \| US-<br>6292213-$ \| US-<br>6292685-$ \| US-<br>6301367-$ \| US-<br>6307526-$ \| US-<br>6343858-$ \| US-<br>6349001-$ \| US-<br>6349422-$ \| US-<br>6409335-$ \| US-<br>6409338-$ \| US-<br>6426719-$ \| US-<br>6431705-$ \| US-<br>6474816-$ \| US-<br>6478736-$ \| US-<br>6506142-$ \| US-<br>6511175-$ \| US-<br>6513532-$ \| US-<br>6517203-$ \| US-<br>6539336-$ \| US-<br>6542081-$ \| US-<br>6546101-$ \| US-<br>6554763-$ \| US-<br>6582075-$ \| US-<br>6619799-$ \| US-<br>6629076-$ \| US-<br>6729726-$ \| US-<br>6736759-$ \| US-<br>6764194-$ \| US-<br>6769767-$ \| US-<br>6788309-$ \| US-<br>6792401-$ \| US-<br>6816314-$ \| US-<br>6824265-$ \| US-<br>6857741-$ \| US-<br>6871951-$ \| US-<br>6879930-$ \| US-<br>6912386-$ \| US-<br>6929365-$ \| US-<br>6932090-$ \| US-<br>6947219-$ \| US- | | | | | |

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| | | 7004582-$ \| US-<br>7013009-$ \| US-<br>7023594-$ \| US-<br>7030902-$ \| US-<br>7031667-$ \| US-<br>7033025-$ \| US-<br>7059717-$ \| US-<br>7073905-$ \| US-<br>7079876-$ \| US-<br>7123215-$ \| US-<br>7192136-$ \| US-<br>7255437-$ \| US-<br>7265358-$ \| US-<br>7274292-$ \| US-<br>7289767-$ \| US-<br>7312699-$ \| US-<br>7331666-$ \| US-<br>7376238-$ \| US-<br>7380936-$ \| US-<br>7401918-$ \| US-<br>7405801-$ \| US-<br>7429965-$ \| US-<br>7438409-$ \| US-<br>7438410-$ \| US-<br>7445332-$ \| US-<br>7481531-$ \| US-<br>7500746-$ \| US-<br>7500747-$ \| US-<br>7512414-$ \| US-<br>7517083-$ \| US-<br>7527374-$ \| US-<br>7543934-$ \| US-<br>7581833-$ \| US-<br>7621634-$ \| US-<br>7648236-$ \| US-<br>7677723-$ \| US-<br>7760898-$ \| US-<br>7771046-$ \| US-<br>7792552-$ \| US-<br>7806525-$ \| US-<br>7922321-$ \| US-<br>7976159-$ \| US-<br>8109629-$ \| US-<br>8142015-$ \| US-<br>8174569-$ \| US-<br>8337013-$ \| US-<br>8430507-$ \| US-<br>8434863-$ \| US-<br>8465151-$ \| US-<br>8485661-$ \| US-<br>8500271-$ \| US-<br>8770742-$ \| US-<br>8905542-$ \| US-<br>9033493-$ \| US-<br>9244292-$ \| US-<br>9400390-$ \| US-<br>9405135-$ \| US-<br>9488520-$ \| US- | | | | | |

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|---|---|---|---|---|---|---|---|
| | | 9547184-$ \| US-9690121-$ \| US-9922236-$ \| US-D369167-$).DID. | | | | | |
| L2958 | 342 | (US-10042186-$ \| US-10045732-$ \| US-10108984-$ \| US-10123732-$ \| US-10180572-$ \| US-10215568-$ \| US-10227063-$ \| US-10254856-$ \| US-10276028-$ \| US-10310296-$ \| US-10310597-$ \| US-10345625-$ \| US-10359459-$ \| US-10448867-$ \| US-10463300-$ \| US-10466491-$ \| US-10466510-$ \| US-10469916-$ \| US-10473950-$ \| US-10561376-$ \| US-10613355-$ \| US-10617342-$ \| US-10624790-$ \| US-10649220-$ \| US-10663740-$ \| US-10678322-$ \| US-10684478-$ \| US-10684687-$ \| US-10686972-$ \| US-10690936-$ \| US-10722128-$ \| US-10742965-$ \| US-10777048-$ \| US-10824253-$ \| US-10831316-$ \| US-10853589-$ \| US-10908421-$ \| US-10997943-$ \| US-11042045-$ \| US-11061252-$ \| US-11086147-$ \| US-11115074-$ \| US-11137626-$ \| US-11138301-$ \| US-11156856-$ \| US-11204512-$ \| US-1255265-$ \| US-1917745-$ \| US-20020021407-$ \| US-20020081982-$ \| US-20020090103-$ \| US-20020098877-$ \| US-20030022690-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:50 PM |

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| | | 20030032449-$ \| US-<br>20030226978-$ \| US-<br>20040096078-$ \| US-<br>20050230596-$ \| US-<br>20050248719-$ \| US-<br>20050278446-$ \| US-<br>20060034478-$ \| US-<br>20060269079-$ \| US-<br>20070186330-$ \| US-<br>20070258040-$ \| US-<br>20070270663-$ \| US-<br>20070271116-$ \| US-<br>20080062338-$ \| US-<br>20080144854-$ \| US-<br>20080273166-$ \| US-<br>20090156128-$ \| US-<br>20090201460-$ \| US-<br>20120002160-$ \| US-<br>20120105740-$ \| US-<br>20120108215-$ \| US-<br>20120176580-$ \| US-<br>20120194550-$ \| US-<br>20120249797-$ \| US-<br>20130072828-$ \| US-<br>20130143519-$ \| US-<br>20130169513-$ \| US-<br>20140176902-$ \| US-<br>20140198293-$ \| US-<br>20150309316-$ \| US-<br>20150309534-$ \| US-<br>20160187651-$ \| US-<br>20160223832-$ \| US-<br>20160239985-$ \| US-<br>20190278110-$ \| US-<br>20190285913-$ \| US-<br>20200029140-$ \| US-<br>20220011603-$ \| US-<br>2249572-$ \| US-<br>2638532-$ \| US-<br>2794085-$ \| US-<br>2818511-$ \| US-<br>2830132-$ \| US-<br>2874230-$ \| US-<br>2904670-$ \| US-<br>3060308-$ \| US-<br>3597054-$ \| US-<br>3710115-$ \| US-<br>3858001-$ \| US-<br>3883701-$ \| US-<br>4165487-$ \| US-<br>4254451-$ \| US-<br>4283127-$ \| US-<br>4322585-$ \| US-<br>4348664-$ \| US-<br>4389217-$ \| US-<br>4526473-$ \| US-<br>4535244-$ \| US-<br>4608492-$ \| US- | | | | | |

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| | | 4683587-$ \| US-<br>4751691-$ \| US-<br>4757714-$ \| US-<br>4806011-$ \| US-<br>4822160-$ \| US-<br>4822161-$ \| US-<br>4851666-$ \| US-<br>4851686-$ \| US-<br>4856086-$ \| US-<br>4859047-$ \| US-<br>4882769-$ \| US-<br>4962469-$ \| US-<br>4967268-$ \| US-<br>4985632-$ \| US-<br>5008548-$ \| US-<br>5015086-$ \| US-<br>5020150-$ \| US-<br>5026151-$ \| US-<br>5064410-$ \| US-<br>5093576-$ \| US-<br>50963103-$ \| US-<br>5151600-$ \| US-<br>5161250-$ \| US-<br>5172256-$ \| US-<br>5264877-$ \| US-<br>52756503-$ \| US-<br>5306917-$ \| US-<br>5353378-$ \| US-<br>5359444-$ \| US-<br>5367345-$ \| US-<br>5379464-$ \| US-<br>5382986-$ \| US-<br>5394005-$ \| US-<br>5452026-$ \| US-<br>5452480-$ \| US-<br>5455637-$ \| US-<br>5455640-$ \| US-<br>5457751-$ \| US-<br>5463428-$ \| US-<br>5500532-$ \| US-<br>5510961-$ \| US-<br>5513384-$ \| US-<br>5533130-$ \| US-<br>5581090-$ \| US-<br>5585871-$ \| US-<br>56279804-$ \| US-<br>5634201-$ \| US-<br>5671035-$ \| US-<br>5673692-$ \| US-<br>5694475-$ \| US-<br>5715323-$ \| US-<br>58316904-$ \| US-<br>5835185-$ \| US-<br>5900720-$ \| US-<br>5903395-$ \| US-<br>59204504-$ \| US-<br>5923398-$ \| US-<br>5941837-$ \| US- | | | | | |

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| | | 5946071-$ \| US-5949516-$ \| US-5963294-$ \| US-5966746-$ \| US-5988812-$ \| US-5991085-$ \| US-5992996-$ \| US-6010216-$ \| US-6013919-$ \| US-6028627-$ \| US-6046455-$ \| US-60519104-$).DID. | | | | | |
| L2965 | 1808 | 2952 2953 2954 2955 2956 2957 2958 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:52 PM |
| L2966 | 156 | 2965 AND 54 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:52 PM |
| L2967 | 118 | 2965 AND 56 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, | OR | ON | ON | 2024/12/13 05:52 PM |

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| | | | VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2968 | 57 | 2965 AND 61 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:53 PM |
| L2969 | 31 | 2965 AND 65 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:53 PM |
| L2970 | 18 | 2965 AND 49 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/13 05:53 PM |
| L2971 | 97 | (US-0005069-$ \| US-0017634-$ \| US-0033660-$ \| US-0044416-$ \| US-0045928-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, | OR | ON | ON | 2024/12/16 02:58 PM |

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| | | 0057654-$ \| US-0064746-$ \| US-0091200-$ \| US-0114770-$ \| US-0136414-$ \| US-0189548-$ \| US-02511706-$ \| US-0283894-$ \| US-0291667-$ \| US-0292333-$ \| US-0357599-$ \| US-0379425-$ \| US-0415388-$ \| US-10802582-$ \| US-11513371-$ \| US-11536988-$ \| US-11630331-$ \| US-11644361-$ \| US-11644693-$ \| US-2725462-$ \| US-20020136414-$ \| US-20030064746-$ \| US-20030091200-$ \| US-20040005069-$ \| US-20040114770-$ \| US-20060291667-$ \| US-20070189548-$ \| US-20100045928-$ \| US-20110292333-$ \| US-20120283894-$ \| US-20210379425-$ \| US-20220357599-$ \| US-20220415388-$ \| US-20230017634-$ \| US-20230033660-$ \| US-20230057654-$ \| US-3104290-$ \| US-3119903-$ \| US-5519781-$ \| US-5819183-$ \| US-6311155-$ \| US-6678381-$ \| US-7801570-$ \| US-8582789-$ \| US-8849185-$).DID. | EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2972 | 78 | (US-10359459-$ \| US-10624790-$ \| US-10777048-$ \| US-20030231293-$ \| US-20040059212-$ \| US-20040101178-$ \| US-20060034478-$ \| US-20070035830-$ \| US-20080100792-$ \| US-20090073375-$ \| US-20090141233-$ \| US-20120033061-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, | OR | ON | ON | 2024/12/16 02:58 PM |

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| | | 20130072828-$ \| US-20130148519-$ \| US-20140132913-$ \| US-20160302992-$ \| US-20170074721-$ \| US-20170090219-$ \| US-20170131575-$ \| US-20170146829-$ \| US-20170303187-$ \| US-20190272800-$ \| US-20190278110-$ \| US-20190285913-$ \| US-20190310132-$ \| US-20190318589-$ \| US-20190387351-$ \| US-20200012127-$ \| US-20200364992-$ \| US-3858001-$ \| US-4904078-$ \| US-5455637-$ \| US-5541641-$ \| US-5923398-$ \| US-6091546-$ \| US-6788309-$ \| US-6816314-$ \| US-6857741-$ \| US-7023594-$ \| US-7517083-$).DID. | TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2973 | 76 | (AU-2005259090-$ \| CA-2388872-$ \| CN-1110465-$ \| CN-214896080-$ \| DE-69800345-$ \| EP-1156572-$ \| EP-2082281-$ \| EP-3306380-$ \| JP-2001183620-$ \| JP-2002027680-$ \| JP-2002218669-$ \| JP-2003017020-$ \| JP-2020027271-$ \| JP-6742059-$ \| KR-100238065-$ \| KR-100720019-$ \| KR-20010078034-$ \| KR-200165484-$ \| KR-200250874-$ \| KR-200262295-$ \| NZ-527050-$ \| WO-2001035159-$ \| WO-2002054135-$ \| WO-2009062381-$ \| WO-2010010204-$ \| WO-2019011925-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 02:59 PM |
| L2974 | 65 | (US-7517083-$ \| US-7527374-$ \| US-7543934-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, | OR | ON | ON | 2024/12/16 02:59 PM |

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| | | 7581833-$ \| US-7621634-$ \| US-7648236-$ \| US-7677723-$ \| US-7760898-$ \| US-7771046-$ \| US-7792552-$ \| US-7806525-$ \| US-7922321-$ \| US-7976159-$ \| US-8109629-$ \| US-8142015-$ \| US-8174569-$ \| US-8337013-$ \| US-8430507-$ \| US-8434863-$ \| US-8465151-$ \| US-8485661-$ \| US-8500271-$ \| US-8770742-$ \| US-8905542-$ \| US-9033493-$ \| US-9244292-$ \| US-9400390-$ \| US-9405135-$ \| US-9488520-$ \| US-9547184-$ \| US-9690121-$ \| US-D369167-$).DID. | CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2975 | 43 | (US-0045283-$ \| US-0090295-$ \| US-0359266-$ \| US-0408850-$ \| US-11480802-$ \| US-11803069-$ \| US-11829518-$ \| US-20030045283-$ \| US-20050090295-$ \| US-20230359266-$ \| US-20230408850-$ \| US-5790311-$ \| US-7430299-$ \| US-7787647-$ \| US-8009849-$ \| US-8175886-$ \| US-8251875-$ \| US-8571241-$ \| US-8620208-$ \| US-8626246-$ \| US-9183351-$ \| US-9369814-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 02:59 PM |
| L2976 | 40 | (US-7976159-$ \| US-8109629-$ \| US-8142015-$ \| US-8174569-$ \| US-8337013-$ \| US-8430507-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, | OR | ON | ON | 2024/12/16 02:59 PM |

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| | | 8434863-$ \| US-8465151-$ \| US-8485661-$ \| US-8500271-$ \| US-8770742-$ \| US-8905542-$ \| US-9033493-$ \| US-9244292-$ \| US-9400390-$ \| US-9405135-$ \| US-9488520-$ \| US-9547184-$ \| US-9690121-$).DID. | HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2977 | 33 | (US-0063763-$ \| US-0117121-$ \| US-0146097-$ \| US-0260859-$ \| US-0273464-$ \| US-0399691-$ \| US-0415338-$ \| US-11721183-$ \| US-11733549-$ \| US-11762224-$ \| US-20020146097-$ \| US-20030063763-$ \| US-20190117121-$ \| US-20210399691-$ \| US-20220260859-$ \| US-20220415338-$ \| US-20230273464-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 02:59 PM |
| L2978 | 24 | (US-0026146-$ \| US-0036103-$ \| US-0089545-$ \| US-0122208-$ \| US-0178743-$ \| US-10571715-$ \| US-11326941-$ \| US-20050036103-$ \| US-20080089545-$ \| US-20180122208-$ \| US-20210026146-$ \| US-20220178743-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 02:59 PM |
| L2979 | 20 | (US-11086147-$ \| US-11204512-$ \| US-20050278446-$ \| US-20080211921-$ \| US-20120062357-$ \| US-20190033622-$ \| US-20210271116-$ \| US-20210364827-$ \| US-20210364828-$ \| US-9922236-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, | OR | ON | ON | 2024/12/16 02:59 PM |

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| | | | RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2980 | 40 | (US-0011603-$ \| US-0054092-$ \| US-0104864-$ \| US-0172691-$ \| US-0226838-$ \| US-0369402-$ \| US-11243416-$ \| US-20040104864-$ \| US-20130172691-$ \| US-20140226838-$ \| US-20190369402-$ \| US-20220011603-$ \| US-20220054092-$ \| US-5144344-$ \| US-5475798-$ \| US-5777715-$ \| US-6301050-$ \| US-6346929-$ \| US-6717737-$ \| US-6771423-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 02:59 PM |
| L2981 | 16 | (US-11042045-$ \| US-11086147-$ \| US-20050278446-$ \| US-20070248238-$ \| US-20080211921-$ \| US-20120062357-$ \| US-20210271116-$ \| US-9922236-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 02:59 PM |
| L2982 | 13 | (US-9880441-$ \| US-9882992-$ \| US-9910298-$ \| US-9922236-$ \| US-9939934-$ \| US-9952883-$ \| US-9965681-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 02:59 PM |

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| L2983 | 10 | (EP-1027626-$ \| EP-2290433-$).DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 02:59 PM |
| L2984 | 9 | ("20070211574" \| "20190378493" \| "20020044416" \| "200124576").DID. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 02:59 PM |
| L2997 | 499 | 2971 2972 2973 2974 2975 2976 2977 2978 2979 2980 2981 2982 2983 2984 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:03 PM |
| L2998 | 96 | 2997 AND 54 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, | OR | ON | ON | 2024/12/16 03:03 PM |

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| | | | MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L2999 | 63 | 2997 AND 59 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:03 PM |
| L3000 | 28 | 2997 AND 65 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:04 PM |
| L3001 | 7 | 2997 AND 49 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:04 PM |
| L3002 | 1 | 2997 AND 52 | (US-PGPUB; USPAT; | OR | ON | ON | 2024/12/16 |

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| | | | USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | 03:04 PM |
| L3003 | 317 | (US-20040029582-$ \| US-20040059212-$ \| US-20040063378-$ \| US-20040096078-$ \| US-20040100384-$ \| US-20040101178-$ \| US-20040128737-$ \| US-20040150986-$ \| US-20040156012-$ \| US-20040157649-$ \| US-20040160571-$ \| US-20040160572-$ \| US-20040160573-$ \| US-20040197002-$ \| US-20040227219-$ \| US-20050067580-$ \| US-20050078274-$ \| US-20050088365-$ \| US-20050201585-$ \| US-20050213026-$ \| US-20050230596-$ \| US-20050238194-$ \| US-20050239502-$ \| US-20050248717-$ \| US-20050248718-$ \| US-20050248719-$ \| US-20050264752-$ \| US-20050278446-$ \| US-20060001827-$ \| US-20060003803-$ \| US-20060023158-$ \| US-20060034478-$ \| US-20060107822-$ \| US-20060132382-$ \| US-20070030442-$ \| US-20070035830-$ \| US-20070046887-$ \| US-20070055888-$ \| US-20070098192-$ \| US-20070109491-$ \| US-20070186330-$ \| US-20070200927-$ \| | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:20 PM |

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| | | US-20070208531-$ \|<br>US-20070248238-$ \|<br>US-20070270663-$ \|<br>US-20070271065-$ \|<br>US-20070271116-$ \|<br>US-20070271387-$ \|<br>US-20070279584-$ \|<br>US-20080062338-$ \|<br>US-20080068559-$ \|<br>US-20080100792-$ \|<br>US-20080144854-$ \|<br>US-20080151175-$ \|<br>US-20080151179-$ \|<br>US-20080158506-$ \|<br>US-20080211921-$ \|<br>US-20080218684-$ \|<br>US-20080262392-$ \|<br>US-20080278678-$ \|<br>US-20090059159-$ \|<br>US-20090059381-$ \|<br>US-20090073375-$ \|<br>US-20090141233-$ \|<br>US-20090147215-$ \|<br>US-20090156128-$ \|<br>US-20090251660-$ \|<br>US-20090251661-$ \|<br>US-20090296044-$ \|<br>US-20100061579-$ \|<br>US-20100079356-$ \|<br>US-20100110368-$ \|<br>US-20100245754-$ \|<br>US-20100296045-$ \|<br>US-20100309426-$ \|<br>US-20110102734-$ \|<br>US-20110164122-$ \|<br>US-20110187990-$ \|<br>US-20110241796-$ \|<br>US-20110273365-$ \|<br>US-20120033061-$ \|<br>US-20120050668-$ \|<br>US-20120062357-$ \|<br>US-20120133885-$ \|<br>US-20120176580-$ \|<br>US-20130072828-$ \|<br>US-20130077175-$ \|<br>US-20130143519-$ \|<br>US-20130201440-$ \|<br>US-20130308089-$ \|<br>US-20140132913-$ \|<br>US-20140176902-$ \|<br>US-20140198293-$ \|<br>US-20140268008-$ \|<br>US-20140268013-$ \|<br>US-20140268017-$ \|<br>US-20140361185-$ \|<br>US-20150085245-$ \|<br>US-20150230988-$ \|<br>US-20150253590-$ \| | | | | | |

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| | | US-20160246075-$ \| US-20160302992-$ \| US-20170068117-$ \| US-20170074721-$ \| US-20170090219-$ \| US-20170131575-$ \| US-20170146829-$ \| US-20170303187-$ \| US-20180314079-$ \| US-20180348050-$ \| US-20190033623-$ \| US-20190187492-$ \| US-20190272800-$ \| US-20190278110-$ \| US-20190285913-$ \| US-20190310132-$ \| US-20190318589-$ \| US-20190387351-$ \| US-20200012127-$ \| US-20200218094-$ \| US-20200364992-$ \| US-20210271116-$ \| US-2249572-$ \| US-2638532-$ \| US-2794085-$ \| US-2818511-$ \| US-2830132-$ \| US-2874230-$ \| US-2904670-$ \| US-3060308-$ \| US-3597054-$ \| US-3710115-$ \| US-3858001-$ \| US-3883701-$ \| US-4165487-$ \| US-4254451-$ \| US-4283127-$ \| US-4322585-$ \| US-4348664-$ \| US-4389217-$ \| US-4526473-$ \| US-4535244-$ \| US-4608492-$ \| US-4683587-$ \| US-4751691-$ \| US-4757714-$ \| US-4773095-$ \| US-4806011-$ \| US-4822160-$ \| US-4822161-$ \| US-4851686-$ \| US-4856086-$ \| US-4859047-$ \| US-4882769-$ \| US-4904078-$ \| US-4942629-$ \| US-4962469-$ \| US-4967268-$ \| US- | | | | | |

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| | | 4985632-$ \| US-5008548-$ \| US-5015086-$ \| US-5020150-$ \| US-5026151-$).DID. | | | | | |
| L3004 | 301 | (US-1255265-$ \| US-1917745-$ \| US-10042186-$ \| US-10060790-$ \| US-10061144-$ \| US-10310296-$ \| US-10345625-$ \| US-10359311-$ \| US-10539459-$ \| US-10624790-$ \| US-10777048-$ \| US-11042045-$ \| US-2249572-$ \| US-2638532-$ \| US-2794085-$ \| US-2818511-$ \| US-2830132-$ \| US-2874230-$ \| US-2904670-$ \| US-20010005230-$ \| US-20010028309-$ \| US-20010050754-$ \| US-20020017997-$ \| US-20020021407-$ \| US-20020081982-$ \| US-20020084990-$ \| US-20020090103-$ \| US-20020098877-$ \| US-20020101568-$ \| US-20020109600-$ \| US-20020140899-$ \| US-20020159023-$ \| US-20020197961-$ \| US-20030018274-$ \| US-20030022690-$ \| US-20030032449-$ \| US-20030062046-$ \| US-20030065257-$ \| US-20030067585-$ \| US-20030068057-$ \| US-20030083591-$ \| US-20030214630-$ \| US-20030226978-$ \| US-20030231293-$ \| US-20040000733-$ \| US-20040029582-$ \| US-20040059212-$ \| US-20040063378-$ \| US-20040096078-$ \| US-20040100384-$ \| US-20040101178-$ \| US-20040128737-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:20 PM |

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| | | 20040150986-$ \| US-<br>20040156012-$ \| US-<br>20040157649-$ \| US-<br>20040160571-$ \| US-<br>20040160572-$ \| US-<br>20040160573-$ \| US-<br>20040197002-$ \| US-<br>20040227219-$ \| US-<br>20050067580-$ \| US-<br>20050078274-$ \| US-<br>20050088365-$ \| US-<br>20050201585-$ \| US-<br>20050213026-$ \| US-<br>20050230596-$ \| US-<br>20050238194-$ \| US-<br>20050239502-$ \| US-<br>20050248717-$ \| US-<br>20050248718-$ \| US-<br>20050248719-$ \| US-<br>20050264752-$ \| US-<br>20060001827-$ \| US-<br>20060003803-$ \| US-<br>20060023158-$ \| US-<br>20060034478-$ \| US-<br>20060107822-$ \| US-<br>20060132382-$ \| US-<br>20070030442-$ \| US-<br>20070035830-$ \| US-<br>20070046887-$ \| US-<br>20070055888-$ \| US-<br>20070098192-$ \| US-<br>20070109491-$ \| US-<br>20070186330-$ \| US-<br>20070200927-$ \| US-<br>20070208531-$ \| US-<br>20070248238-$ \| US-<br>20070270663-$ \| US-<br>20070271065-$ \| US-<br>20070271116-$ \| US-<br>20070271387-$ \| US-<br>20070279584-$ \| US-<br>20080062338-$ \| US-<br>20080068559-$ \| US-<br>20080100792-$ \| US-<br>20080144854-$ \| US-<br>20080151175-$ \| US-<br>20080151179-$ \| US-<br>20080158506-$ \| US-<br>20080218684-$ \| US-<br>20080262392-$ \| US-<br>20080278678-$ \| US-<br>20090059159-$ \| US-<br>20090059381-$ \| US-<br>20090073375-$ \| US-<br>20090141233-$ \| US-<br>20090147215-$ \| US-<br>20090156128-$ \| US-<br>20090251660-$ \| US- | | | | |

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| | | 20090251661-$ \| US-<br>20090296044-$ \| US-<br>20100061579-$ \| US-<br>20100079356-$ \| US-<br>20100110368-$ \| US-<br>20100245754-$ \| US-<br>20100296045-$ \| US-<br>20100309426-$ \| US-<br>20110102734-$ \| US-<br>20110164122-$ \| US-<br>20110187990-$ \| US-<br>20110241976-$ \| US-<br>20110273365-$ \| US-<br>20120033061-$ \| US-<br>20120050668-$ \| US-<br>20120133885-$ \| US-<br>20120176580-$ \| US-<br>20130072828-$ \| US-<br>20130077175-$ \| US-<br>20130143519-$ \| US-<br>20130201440-$ \| US-<br>20130308089-$ \| US-<br>20140132913-$ \| US-<br>20140176902-$ \| US-<br>20140198293-$ \| US-<br>20140268008-$ \| US-<br>20140268013-$ \| US-<br>20140268017-$ \| US-<br>20140361185-$ \| US-<br>20150085245-$ \| US-<br>20150230988-$ \| US-<br>20150253590-$ \| US-<br>20160246075-$ \| US-<br>20160302992-$ \| US-<br>20170068117-$ \| US-<br>20170074721-$ \| US-<br>20170090219-$ \| US-<br>20170131575-$ \| US-<br>20170146829-$ \| US-<br>20170303187-$ \| US-<br>20180314079-$ \| US-<br>20180335650-$ \| US-<br>20180348050-$ \| US-<br>20190033623-$ \| US-<br>20190187492-$ \| US-<br>20190272800-$ \| US-<br>20190278110-$ \| US-<br>20190285913-$).DID. | | | | | |
| L3005 | 283 | (US-20010005230-$ \|<br>US-20010028309-$ \|<br>US-20010050754-$ \|<br>US-20020017997-$ \|<br>US-20020021407-$ \|<br>US-20020081982-$ \|<br>US-20020084990-$ \|<br>US-20020089639-$ \|<br>US-20020090103-$ \| | (US-PGPUB; USPAT;<br>USOCR; FIT (AU, AP,<br>AT, BE, BG, BR, BY,<br>CA, CH, CN, CS, CU,<br>CZ, DD, DE, DK, EA,<br>EE, EP, ES, FI, FR, GB,<br>HR, HU, ID, IE, IL, IS,<br>IT, JP, KR, LT, LU, LV,<br>MA, OA, RU, SU, WO, | OR | ON | ON | 2024/12/16<br>03:20 PM |

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| | | US-20020098877-$ \|<br>US-20020101568-$ \|<br>US-20020109600-$ \|<br>US-20020140899-$ \|<br>US-20020159023-$ \|<br>US-20020197961-$ \|<br>US-20030018274-$ \|<br>US-20030022690-$ \|<br>US-20030032449-$ \|<br>US-20030062046-$ \|<br>US-20030065257-$ \|<br>US-20030067585-$ \|<br>US-20030068057-$ \|<br>US-20030083591-$ \|<br>US-20030214630-$ \|<br>US-20030226978-$ \|<br>US-20030231293-$ \|<br>US-20040000733-$ \|<br>US-20040029582-$ \|<br>US-20040059212-$ \|<br>US-20040063378-$ \|<br>US-20040096078-$ \|<br>US-20040100384-$ \|<br>US-20040101178-$ \|<br>US-20040128737-$ \|<br>US-20040150986-$ \|<br>US-20040156012-$ \|<br>US-20040157649-$ \|<br>US-20040160571-$ \|<br>US-20040160572-$ \|<br>US-20040160573-$ \|<br>US-20040197002-$ \|<br>US-20040227219-$ \|<br>US-20050067580-$ \|<br>US-20050078274-$ \|<br>US-20050088365-$ \|<br>US-20050201585-$ \|<br>US-20050213026-$ \|<br>US-20050230596-$ \|<br>US-20050238194-$ \|<br>US-20050239502-$ \|<br>US-20050248717-$ \|<br>US-20050248718-$ \|<br>US-20050248719-$ \|<br>US-20050264752-$ \|<br>US-20060001827-$ \|<br>US-20060003803-$ \|<br>US-20060023158-$ \|<br>US-20060034478-$ \|<br>US-20060107822-$ \|<br>US-20060132382-$ \|<br>US-20070030442-$ \|<br>US-20070035830-$ \|<br>US-20070046887-$ \|<br>US-20070055888-$ \|<br>US-20070098192-$ \|<br>US-20070109491-$ \|<br>US-20070186330-$ \| | MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |

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|---|---|---|---|---|---|---|---|
| | | US-20070200927-$ |<br>US-20070208531-$ |<br>US-20070248238-$ |<br>US-20070270663-$ |<br>US-20070271065-$ |<br>US-20070271116-$ |<br>US-20070271387-$ |<br>US-20070279584-$ |<br>US-20080062338-$ |<br>US-20080068559-$ |<br>US-20080100792-$ |<br>US-20080144854-$ |<br>US-20080151175-$ |<br>US-20080151179-$ |<br>US-20080158506-$ |<br>US-20080218684-$ |<br>US-20080262392-$ |<br>US-20080278678-$ |<br>US-20090059159-$ |<br>US-20090059381-$ |<br>US-20090073375-$ |<br>US-20090141233-$ |<br>US-20090147215-$ |<br>US-20090156128-$ |<br>US-20090251660-$ |<br>US-20090251661-$ |<br>US-20090296044-$ |<br>US-20100061579-$ |<br>US-20100079356-$ |<br>US-20100110368-$ |<br>US-20100245754-$ |<br>US-20100296045-$ |<br>US-20100309426-$ |<br>US-20110102734-$ |<br>US-20110164122-$ |<br>US-20110187990-$ |<br>US-20110241976-$ |<br>US-20110273365-$ |<br>US-20120033061-$ |<br>US-20120050668-$ |<br>US-20120133885-$ |<br>US-20120176580-$ |<br>US-20130072828-$ |<br>US-20130077175-$ |<br>US-20130143519-$ |<br>US-20130201440-$ |<br>US-20130308089-$ |<br>US-20140132913-$ |<br>US-20140176902-$ |<br>US-20140198293-$ |<br>US-20140268008-$ |<br>US-20140268013-$ |<br>US-20140268017-$ |<br>US-20140361185-$ |<br>US-20150085245-$ |<br>US-20150230988-$ |<br>US-20150253590-$ |<br>US-20160246075-$ | | | | | |

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| | | US-20160302992-$ \| US-20170068117-$ \| US-20170074721-$ \| US-20170090219-$ \| US-20170131575-$ \| US-20170146829-$ \| US-20170303187-$ \| US-20180314079-$ \| US-20180335650-$ \| US-20180348050-$ \| US-20190033623-$ \| US-20190187492-$ \| US-20190272800-$ \| US-20190278110-$ \| US-20190285913-$ \| US-20190310132-$ \| US-20190318589-$ \| US-20190387351-$ \| US-20200218094-$ \| US-20200364992-$).DID. | | | | | |
| L3006 | 211 | (US-3192826-$ \| US-3216308-$ \| US-3229580-$ \| US-3524710-$ \| US-3610825-$ \| US-3787109-$ \| US-3885095-$ \| US-3915548-$ \| US-3923370-$ \| US-3936605-$ \| US-3940204-$ \| US-4052073-$ \| US-4082432-$ \| US-4195915-$ \| US-4218111-$ \| US-4447128-$ \| US-4550984-$ \| US-4649434-$ \| US-4664475-$ \| US-4665385-$ \| US-4722601-$ \| US-4751691-$ \| US-4753514-$ \| US-4799765-$ \| US-4806001-$ \| US-4806011-$ \| US-4818048-$ \| US-4826287-$ \| US-4852988-$ \| US-4853306-$ \| US-4867551-$ \| US-4869575-$ \| US-4884137-$ \| US-4961626-$ \| US-4968117-$ \| US-4973132-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:20 PM |

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|---|---|---|---|---|---|---|---|
| | | 4973139-$ \| US-<br>4988183-$ \| US-<br>5003300-$ \| US-<br>5013134-$ \| US-<br>5028119-$ \| US-<br>5044709-$ \| US-<br>5050962-$ \| US-<br>5053755-$ \| US-<br>5129716-$ \| US-<br>5138470-$ \| US-<br>5162828-$ \| US-<br>5212471-$ \| US-<br>5214425-$ \| US-<br>5231379-$ \| US-<br>5281957-$ \| US-<br>5281960-$ \| US-<br>5309169-$ \| US-<br>5320538-$ \| US-<br>5325386-$ \| US-<br>5334991-$ \| US-<br>5348477-$ \| US-<br>5359669-$ \| US-<br>5367345-$ \| US-<br>5369415-$ \| US-<br>5381267-$ \| US-<br>5384654-$ \| US-<br>5392158-$ \| US-<br>5416876-$ \| US-<br>5446507-$ \| US-<br>5455591-$ \| US-<br>5459612-$ \| US-<br>5469185-$ \| US-<br>5491510-$ \| US-<br>5506728-$ \| US-<br>5519410-$ \| US-<br>5537253-$ \| US-<br>5539578-$ \| US-<br>5576887-$ \| US-<br>5579148-$ \| US-<br>5583590-$ \| US-<br>5585871-$ \| US-<br>5589846-$ \| US-<br>5596451-$ \| US-<br>5606743-$ \| US-<br>5610765-$ \| US-<br>5626410-$ \| US-<br>5629790-$ \| US-<br>5648789-$ \| US-<br>5653751-$ \| US-<br>5654827-$ \| US-<br>5654828-$ \| US-<br>5671037-$ \| US-<br>5673139-$ \| US-<br>5682173-$ \| US-<br>5699194-$ \| US-<br>5712649-$ \| US-<br>5717479-$ \| US-<br>5719588-$ \| US- | | | | | |

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|---|---|---|---|---|---|---|---|
| | | 5744788-$ \| US-5751493-$ \| US-5808589-$ \| US-5815326-$ \| US-5886822-$ \| US-5943171-$ \| US-5973845-$ \| US-5991103-$ \| US-6005720-$ \| US-6023372-$ \| US-6081304-$ \| US-6091546-$ \| US-D195365-$ \| US-RE28847-$).DID. | | | | | |
| L3007 | 125 | (US-10042186-$ \| US-10222617-$ \| US-10345625-$ \| US-10613355-$ \| US-10624790-$ \| US-10777048-$ \| US-11061252-$ \| US-12003393-$ \| US-20040160572-$ \| US-20090097688-$ \| US-20090296044-$ \| US-20100177277-$ \| US-20100265456-$ \| US-20110080556-$ \| US-20110102734-$ \| US-20110109873-$ \| US-20120002159-$ \| US-20130010256-$ \| US-20160109729-$ \| US-20170068117-$ \| US-20190126060-$ \| US-20200004050-$ \| US-3042548-$ \| US-3683168-$ \| US-3923384-$ \| US-4447504-$ \| US-4449799-$ \| US-4618226-$ \| US-4675259-$ \| US-4756605-$ \| US-4770954-$ \| US-4883728-$ \| US-4977899-$ \| US-5007726-$ \| US-5142406-$ \| US-5455637-$ \| US-5455638-$ \| US-5835185-$ \| US-5900720-$ \| US-5933496-$ \| US-6099117-$ \| US-6325507-$ \| US-64764696-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:20 PM |

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| | | 6552511-$ \| US-7150526-$ \| US-7339353-$ \| US-7461936-$ \| US-8337013-$ \| US-8465151-$ \| US-8500271-$ \| US-8770742-$ \| US-8787970-$ \| US-8801174-$ \| US-8876285-$ \| US-8905541-$ \| US-8944590-$ \| US-9192772-$ \| US-9207515-$ \| US-9274395-$ \| US-9405135-$ \| US-9470909-$ \| US-9482880-$ \| US-9619201-$ \| US-9632059-$ \| US-9720258-$ \| US-9720260-$).DID. | | | | | |
| L3008 | 156 | (US-20020098877-$ \| US-20020118825-$ \| US-20020176330-$ \| US-20030003969-$ \| US-20030022690-$ \| US-20030067585-$ \| US-20030068057-$ \| US-20040000733-$ \| US-20040132509-$ \| US-20040156012-$ \| US-20040157649-$ \| US-20040160572-$ \| US-20040160573-$ \| US-20040239874-$ \| US-20050046789-$ \| US-20050046790-$ \| US-20050128431-$ \| US-20050185815-$ \| US-20060183427-$ \| US-2424935-$ \| US-2856466-$ \| US-2882348-$ \| US-2999136-$ \| US-3104290-$ \| US-3119903-$ \| US-3495898-$ \| US-3588384-$ \| US-3665122-$ \| US-3769663-$ \| US-3883701-$ \| US-4636048-$ \| US-4683587-$ \| US-4856086-$ \| US-4882769-$ \| US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:20 PM |

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|---|---|---|---|---|---|---|---|
| | | 4902120-$ \| US-<br>4904078-$ \| US-<br>5020150-$ \| US-<br>5159639-$ \| US-<br>5327178-$ \| US-<br>5335285-$ \| US-<br>5367345-$ \| US-<br>5533130-$ \| US-<br>5579400-$ \| US-<br>5606743-$ \| US-<br>5608808-$ \| US-<br>5634201-$ \| US-<br>5694475-$ \| US-<br>5715323-$ \| US-<br>5717479-$ \| US-<br>5737436-$ \| US-<br>5781272-$ \| US-<br>5892564-$ \| US-<br>5988812-$ \| US-<br>6010216-$ \| US-<br>6012812-$ \| US-<br>6176576-$ \| US-<br>6218958-$ \| US-<br>6233344-$ \| US-<br>6233345-$ \| US-<br>6252970-$ \| US-<br>6301050-$ \| US-<br>6301367-$ \| US-<br>6311155-$ \| US-<br>6325507-$ \| US-<br>6349001-$ \| US-<br>6356392-$ \| US-<br>6384982-$ \| US-<br>6392798-$ \| US-<br>6409338-$ \| US-<br>6421031-$ \| US-<br>6456721-$ \| US-<br>6490362-$ \| US-<br>6690807-$ \| US-<br>6729726-$ \| US-<br>6769767-$ \| US-<br>6929365-$ \| US-<br>6966647-$ \| US-<br>7004582-$ \| US-<br>7013009-$ \| US-<br>D207919-$ \| US-<br>D212863-$ \| US-<br>D418153-$ \| US-<br>D426845-$ \| US-<br>D435058-$ \| US-<br>D445416-$ \| US-<br>D462708-$ \| US-<br>RE35051-$).DID. | | | | | |
| L3009 | 93 | (US-20010035242-$ \|<br>US-20020072387-$ \|<br>US-20020193151-$ \|<br>US-20030036414-$ \| | (US-PGPUB; USPAT;<br>USOCR; FIT (AU, AP,<br>AT, BE, BG, BR, BY,<br>CA, CH, CN, CS, CU, | OR | ON | ON | 2024/12/16<br>03:20 PM |

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| | | US-20030040285-$ \| US-20030042348-$ \| US-20030108217-$ \| US-20030182003-$ \| US-20040077382-$ \| US-20040204165-$ \| US-20050078274-$ \| US-20050128431-$ \| US-20050201585-$ \| US-20050220316-$ \| US-20050248717-$ \| US-20050255883-$ \| US-20050255898-$ \| US-20060013410-$ \| US-20060023158-$ \| US-20060093178-$ \| US-20060153409-$ \| US-20060177086-$ \| US-20060185062-$ \| US-20060251283-$ \| US-20070064969-$ \| US-20090175482-$ \| US-2249572-$ \| US-3528734-$ \| US-4456797-$ \| US-4902120-$ \| US-4942617-$ \| US-5034995-$ \| US-5164987-$ \| US-5422957-$ \| US-5608808-$ \| US-5715323-$ \| US-5737436-$ \| US-5881160-$ \| US-6095820-$ \| US-6097822-$ \| US-6176576-$ \| US-6633770-$ \| US-6643528-$ \| US-6690808-$ \| US-6920228-$ \| US-7519192-$ \| US-7702122-$ \| US-D533539-$).DID. | CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3016 | 887 | 3003 3004 3005 3006 3007 3008 3009 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, | OR | ON | ON | 2024/12/16 03:22 PM |

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| | | | VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3017 | 140 | 3016 AND 54 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:22 PM |
| L3018 | 80 | 3016 AND 58 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:22 PM |
| L3019 | 44 | 3016 AND 61 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:23 PM |
| L3020 | 19 | 3016 AND 65 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, | OR | ON | ON | 2024/12/16 03:23 PM |

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| | | | EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3021 | 1 | 3016 AND 49 | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:23 PM |
| L3022 | 31 | "20090296044" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:52 PM |
| L3023 | 33 | "20070046887" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; | OR | ON | ON | 2024/12/16 03:52 PM |

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| | | | JPO; DERWENT; IBM_TDB) | | | | |
| L3024 | 27 | "20070248238" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:53 PM |
| L3025 | 22 | "20040160573" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:53 PM |
| L3026 | 32 | "20040000733" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:53 PM |
| L3027 | 25 | "20030063763" | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, | OR | ON | ON | 2024/12/16 03:53 PM |

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| | | | HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3028 | 20 | "20030045283" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:53 PM |
| L3029 | 157 | "20030030597" | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:53 PM |
| L3030 | 24 | "20020146097" | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; | OR | ON | ON | 2024/12/16 03:53 PM |

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| | | | IBM_TDB) | | | | |
| L3031 | 27 | "20020140899" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 03:53 PM |
| L3032 | 58 | "11204512" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:18 PM |
| L3033 | 43 | "11243416" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:18 PM |
| L3034 | 74 | "11183269" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, | OR | ON | ON | 2024/12/16 04:18 PM |

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| | | | IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3035 | 29 | "10628831" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:18 PM |
| L3036 | 74 | "10310296" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:18 PM |
| L3037 | 37 | "9122082" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:18 PM |

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| L3038 | 84 | "9124796" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:20 PM |
| L3039 | 44 | (Artificial Intelligence) More like doc: US-20070046887-A1 Text: (NL-8700968-A OR US-6542081-B2 OR US-6898550-B1 OR US-7376238-B1 OR US-6409333-B1 OR US-6871951-B2 OR US-6769767-B2 OR US-7013009-B2 OR JP-2003033328-A OR DE-10249705-A1 OR US-6853303-B2 OR US-7312699-B2 OR US-7760898-B2 OR US-7922321-B2 OR US-20050230596-A1 OR US-20050248719-A1 OR US-7792552-B2 OR US-7192136-B2 OR US-7265358-B2 OR US-7059717-B2).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:32 PM |
| L3040 | 44 | (Artificial Intelligence) More like doc: US-20090296044-A1 Text: (US-4882769-A OR JP-3000621-B2 OR CA-2059597-A1 OR US-5359444-A OR US-6132881-A OR US-7023594-B2 OR DE-10103922-A1 OR KR-100420024-B1 OR DE-10222375-A1 OR US-20040096078-A1 OR US-8142015-B2 OR JP-4496354-B2 OR US-9137309-B2 OR US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:32 PM |

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| | | 7648236-B1 OR EP-2082281-A4 OR US-20090296044-A1 OR US-20220011603-A1 OR US-20110187990-A1 OR US-20070046887-A1 OR US-20170131575-A1).did. | | | | | |
| L3041 | 35 | (Artificial Intelligence)<br>More like doc:<br>US-20120050668-A1<br>Text:<br>(US-5835185-A OR US-7059717-B2 OR TW-200804887-A OR US-8430507-B2 OR US-20170068117-A9 OR US-20140268013-A1 OR US-20120050668-A1 OR US-20230236444-A1 OR US-20190278110-A1 OR US-20070030442-A1 OR US-20160246075-A9 OR US-20230359266-A1 OR US-8434863-B2 OR US-11630331-B2 OR US-20060023158-A1 OR US-11829518-B1 OR US-11513371-B2 OR US-20110187990-A1 OR US-20230033660-A1 OR US-7806525-B2).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:32 PM |
| L3042 | 36 | (Artificial Intelligence)<br>More like doc:<br>US-20020140899-A1<br>Text:<br>(US-2576581-A OR US-2437642-A OR US-3161718-A OR US-3245315-A OR US-3614215-A OR US-3738734-A OR FR-2369583-A1 OR US-4181408-A OR US-4190330-A OR US-4300818-A OR US-4264154-A OR US-4279474-A OR FR-2487566-A1 OR US-4373218-A OR US-4418990-A OR US-4457585-A OR JP-S58118618-A OR US- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:33 PM |

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| | | 4466706-A OR US-4572616-A OR US-4529268-A).did. | | | | | |
| L3043 | 39 | (Artificial Intelligence) More like doc: US-20130329183-A1<br>Text: (JP-S49114285-A OR JP-S5466098-A OR US-5471658-A OR US-6115482-A OR US-20120105740-A1 OR US-7661818-B2 OR US-7806525-B2 OR WO-2007005938-A2 OR US-7810750-B2 OR US-20080144854-A1 OR US-7631968-B1 OR US-20080207275-A1 OR SG-172914-A1 OR JP-2010226660-A OR JP-5389493-B2 OR JP-2010231119-A OR GB-0912608-D0 OR US-20110213664-A1 OR KR-200459922-Y1 OR WO-2013188343-A1).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:33 PM |
| L3044 | 33 | "20050201585" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:43 PM |
| L3045 | 52 | "20050264752" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, | OR | ON | ON | 2024/12/16 04:43 PM |

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| | | | VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3046 | 13 | "2005167902" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:43 PM |
| L3047 | 21 | "20050278446" | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:43 PM |
| L3048 | 8 | "20050052537" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; JPO) | OR | ON | ON | 2024/12/16 04:43 PM |
| L3049 | 23 | "2005086522" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, | OR | ON | ON | 2024/12/16 04:43 PM |

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|---|---|---|---|---|---|---|---|
| | | | IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3050 | 17 | "20050090295" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:43 PM |
| L3051 | 174 | "7278734" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:57 PM |
| L3052 | 243 | "7192136" | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 04:57 PM |
| L3054 | 146 | "7150526" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, | OR | ON | ON | 2024/12/16 04:57 PM |

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| | | | VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3055 | 190 | "7760898" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:58 PM |
| L3056 | 182 | "7922321" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:59 PM |
| L3057 | 307 | "7380936" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 04:59 PM |
| L3058 | 40 | (Artificial Intelligence) More like doc: US-20050052537-A1 Text: (US-5610678-A OR JP- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, | OR | ON | ON | 2024/12/16 05:22 PM |

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|---|---|---|---|---|---|---|---|
| | | H10304234-A OR JP-H11164186-A OR US-7046279-B2 OR US-7474335-B2 OR US-6717737-B1 OR US-20050052537-A1 OR JP-3159530-U OR US-7991275-B2 OR KR-970028786-A OR JP-WO2005091620-A1 OR JP-4551475-B2 OR JP-2007097199-A OR JP-2005086522-A OR US-20110141295-A1 OR WO-2005091620-A1 OR US-8131142-B2 OR US-20100214449-A1 OR US-20220303465-A1 OR JP-2009124761-A).did. | EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3059 | 35 | (Artificial Intelligence) More like doc: US-20030030597-A1<br>Text: (US-5539422-A OR TW-422965-B OR US-20030030597-A1 OR US-6771423-B2 OR US-20030184868-A1 OR US-20050078378-A1 OR US-7145726-B2 OR WO-9619746-A2 OR EP-0799435-A2 OR US-6094181-A OR US-5684497-A OR US-6356392-B1 OR US-5625372-A OR US-20180003985-A1 OR JP-5059272-B2 OR US-5905478-A OR US-20010050817-A1 OR WO-2014116615-A1 OR US-5991084-A OR US-8873149-B2).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:22 PM |
| L3060 | 50 | (Artificial Intelligence) More like doc: US-20140049831-A1<br>Text: (DE-10103922-A1 OR JP-4022921-B2 OR JP-2005107038-A OR AT-E398296-T1 OR JP-2007178939-A OR JP-4929878-B2 OR JP-5235341-B2 OR JP-5201015-B2 OR US-8547618-B2 OR JP- | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, | OR | ON | ON | 2024/12/16 05:22 PM |

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|---|---|---|---|---|---|---|---|
| | | 5195707-B2 OR US-9239462-B2 OR US-20140049831-A1 OR EP-2698662-A1 OR JP-2014038239-A OR JP-6069946-B2 OR JP-2014191007-A OR JP-6065694-B2 OR JP-4006179-B2 OR CN-110954018-A OR JP-2002311361-A).did. | VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3061 | 36 | (Artificial Intelligence) More like doc: US-20240036361-A1<br>Text: (US-12044901-B2 OR US-12140819-B1 OR US-20240377657-A1 OR US-11644693-B2 OR US-20230273464-A1 OR US-20220011603-A1 OR US-11921355-B2 OR US-20110187990-A1 OR US-20240036361-A1 OR US-20230359266-A1 OR US-7581833-B2 OR US-20170131575-A1 OR US-20220357599-A1 OR US-20180335650-A1 OR US-20170090219-A1 OR US-20130201440-A1 OR US-20200218094-A1 OR US-20120133885-A1 OR US-20150085245-A1 OR US-20190187492-A1).did. | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:22 PM |
| L3062 | 36 | (Artificial Intelligence) More like doc: US-20230273464-A1<br>Text: (US-20230273464-A1 OR US-11644693-B2 OR US-11921355-B2 OR US-7760898-B2 OR US-20070147630-A1 OR US-20220011603-A1 OR US-20200218094-A1 OR US-20110187990-A1 OR US-7590233-B2 OR US-20220357599-A1 OR US-12025855-B2 OR US-9967682-B2 OR | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:22 PM |

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| | | US-12140819-B1 OR US-20040160572-A1 OR US-10284972-B2 OR US-20040160573-A1 OR US-7216973-B2 OR US-20060034478-A1 OR EP-1547434-B1 OR US-20130308089-A1).did. | | | | | |
| L3063 | 7 | "20240036361" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:38 PM |
| L3064 | 12 | "20230017635" | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:38 PM |
| L3065 | 27 | "20200012127" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:38 PM |

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| L3066 | 79 | "20170289323" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:38 PM |
| L3067 | 18 | "20140049831" | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:38 PM |
| L3068 | 20 | "20130329183" | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) | OR | ON | ON | 2024/12/16 05:38 PM |
| L3069 | 54 | "20120050668" | (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, | OR | ON | ON | 2024/12/16 05:38 PM |

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| | | | SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3070 | 58 | "6911172" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:44 PM |
| L3071 | 627 | "6349001" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:44 PM |
| L3072 | 116 | "6771423" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:44 PM |
| L3073 | 125 | "5835185" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, | OR | ON | ON | 2024/12/16 05:44 PM |

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| | | | CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | | | | |
| L3074 | 130 | "5671037" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:44 PM |
| L3075 | 165 | "5020150" | (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) | OR | ON | ON | 2024/12/16 05:45 PM |

## PE2E SEARCH - Search History (Interference)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | British Equivalents | Time Stamp |
|---|---|---|---|---|---|---|---|
| N1 | 13414 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") | (US-PGPUB; USPAT) | OR | ON | ON | 2024/02/05 01:06 PM |

| | | | | | | | |
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| | | near3 ("Peter"))).INV. | | | | | |
| N2 | 143 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 | (US-PGPUB; USPAT) | OR | ON | ON | 2024/02/05 01:06 PM |
| N3 | 129 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) | (US-PGPUB; USPAT) | OR | ON | ON | 2024/02/05 01:06 PM |
| N4 | 125 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND (communicat$4 near10 wireless$4) AND (audio OR speak$4) AND embed$4 | (US-PGPUB; USPAT) | OR | ON | ON | 2024/02/05 01:06 PM |
| N5 | 103 | ((("HOWELL") near3 | (US-PGPUB; USPAT) | OR | ON | ON | 2024/02/05 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone | | | | | 01:06 PM |
| N379 | 91 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge | (US-PGPUB; USPAT) | OR | ON | ON | 2024/09/04 11:10 AM |
| N406 | 97 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 04:44 PM |

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|---|---|---|---|---|---|---|---|
| | | (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second | | | | | |
| N407 | 91 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 04:44 PM |
| N408 | 87 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 04:45 PM |

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|---|---|---|---|---|---|---|---|
| | | (motion near3 sensor) | | | | | |
| N409 | 81 | ((("HOWELL") near3 ("Thomas")) OR (("CHAO") near3 ("David")) OR (("THOMAS") near3 ("C")) OR (("TONG") near3 ("Peter"))).INV. AND (eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 AND (motion near3 sensor) | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 04:51 PM |
| N410 | 875 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND control$4 AND (memor$4 OR stor$4)).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 05:01 PM |
| N411 | 170 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) ).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 05:01 PM |
| N412 | 132 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND connect$4).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 05:01 PM |
| N413 | 44 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 05:38 PM |

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| | | (memor$4 OR stor$4) AND batter$4 AND connect$4).clm. | | | | | |
| N414 | 44 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND (temple SAME (speakers WITH audio))).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 05:38 PM |
| N415 | 15 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4)).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/13 05:38 PM |
| N416 | 10 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 02:57 PM |
| N417 | 6 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND temple AND ((speaker$2 OR audio) SAME (sound WITH guid$4))).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 02:57 PM |
| N418 | 6 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 02:57 PM |
| N419 | 5 | ((eyewear$4 OR | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 |

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|---|---|---|---|---|---|---|---|
| | | glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND (communicat$4 near10 wireless$4) AND (audio OR speak$4) AND embed$4).clm. | | | | | 03:41 PM |
| N420 | 5 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 03:41 PM |
| N421 | 4 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 03:41 PM |
| N422 | 1 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND circuit AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 04:17 PM |

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| | | AND second AND bridge AND partial$4).clm. | | | | | |
| N423 | 1 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND control$4 AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 04:17 PM |
| N424 | 1 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) AND batter$4 AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 04:17 PM |
| N425 | 1 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) AND (batter$4 near10 rechargeable) AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 05:00 PM |

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| | | AND second AND bridge AND partial$4).clm. | | | | | |
| N426 | 0 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) AND (batter$4 near10 rechargeable) AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 AND impair$4 AND compensat$4 AND amplif$6 AND customiz$4).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 05:00 PM |
| N429 | 0 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) AND (batter$4 near10 rechargeable) AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 AND impair$4 AND compensat$4 AND (amplif$6 WITH customiz$4)).clm. | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 05:23 PM |
| N430 | 0 | ((eyewear$4 OR glasses$4 OR spetacl$4 OR eyegalss$4) AND frame AND (circuit near10 board) AND (electric$4 WITH control$4) AND (memor$4 OR stor$4) | (US-PGPUB; USPAT) | OR | ON | ON | 2024/12/16 05:23 PM |

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| | | AND (batter$4 near10 rechargeable) AND connect$4 AND communicat$4 AND (audio OR speak$4) AND wireless$4 AND embed$4 AND microphone AND left AND right AND first AND second AND bridge AND partial$4 AND impair$4 AND compensat$4 AND (amplif$6 WITH customiz$4) AND (detect$3 WITH infrared)).clm. | | | | | |

## PE2E SEARCH - Search History (Similarity Search)

| Ref # | Sort and Retrieval Information | Text Selections | CPC Selections |
|---|---|---|---|
| L2784 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | No selections | No selections |
| L2785 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | (Abstract) Techniques for providing eyewear or other head-worn personal electronic apparatus with electrical components are disclosed. The electrical components can provide electrical technology to eyewear or other head-worn personal electronic apparatus without having to substantially compromise aesthetic design principles. The electrical components can be partially or completely internal to eyewear or other head-worn personal electronic apparatus. The electrical components can operate independently or together with other electrical components provided elsewhere. Apparatus for presenting after-market electrical components are also disclosed.<br><br>(Claims) 1. A system, comprising: | No selections |

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| | | a head-worn personal electronic apparatus, including at least:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the | |

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| | | rechargeable battery;<br><br>wireless communication circuitry at least partially contained within the head-worn structure, the wireless communication circuitry being electrically connected to at least the rechargeable battery; and<br><br>at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a charging apparatus having at least a charging connector,<br><br>wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results at least from the at least one conductive element connecting with the charging connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus.<br><br>(Claims) 2. A head-worn personal electronic apparatus, comprising:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn | |

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| | | structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure. | |
| L2786 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | (Abstract) Techniques for providing eyewear or other head-worn personal electronic apparatus with electrical components are disclosed. The electrical components can provide electrical technology | (G02C11/10) Electronic devices other than hearing aids<br><br>(G02C11/06) Hearing aids |

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| | | to eyewear or other head-worn personal electronic apparatus without having to substantially compromise aesthetic design principles. The electrical components can be partially or completely internal to eyewear or other head-worn personal electronic apparatus. The electrical components can operate independently or together with other electrical components provided elsewhere. Apparatus for presenting after-market electrical components are also disclosed.<br><br>(Claims) 1. A system, comprising:<br><br>a head-worn personal electronic apparatus, including at least:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure; | |

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| | | a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery;<br><br>wireless communication circuitry at least partially contained within the head-worn structure, the wireless communication circuitry being electrically connected to at least the rechargeable battery; and<br><br>at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a charging apparatus having at least a charging connector,<br><br>wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results at least from the at least one conductive element connecting with the charging | |

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| | | connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus.<br><br>(Claims) 2. A head-worn personal electronic apparatus, comprising:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus; | |

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| | | a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure. | |
| L2787 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | (Abstract) Techniques for providing eyewear or other head-worn personal electronic apparatus with electrical components are disclosed. The electrical components can provide electrical technology to eyewear or other head-worn personal electronic apparatus without having to substantially compromise aesthetic design principles. The electrical components can be partially or completely internal to eyewear or other head-worn personal electronic apparatus. The electrical components can operate independently or together with other electrical components provided elsewhere. Apparatus for presenting after-market electrical components are also disclosed.<br><br>(Claims) 1. A system, comprising:<br><br>a head-worn personal electronic apparatus, including at least:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn | (G02C5/143) Side-members having special ear pieces<br><br>(G02C5/146) Side-members having special front end |

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| | | proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery;<br><br>wireless communication circuitry at least partially contained within the head-worn structure, the wireless communication circuitry being electrically connected to at least the rechargeable battery; and<br><br>at least one conductive | |

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| | | element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a charging apparatus having at least a charging connector,<br><br>wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results at least from the at least one conductive element connecting with the charging connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus.<br><br>(Claims) 2. A head-worn personal electronic apparatus, comprising:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least | |

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| | | partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure. | |
| L2788 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | (Abstract) Techniques for providing eyewear or other head-worn personal electronic apparatus with electrical components are disclosed. The electrical components can provide electrical technology to eyewear or other head-worn personal electronic apparatus without having to substantially compromise aesthetic design principles. The electrical components can be partially or completely internal to eyewear or other head-worn personal electronic apparatus. The electrical components can operate independently or together with | (G02C5/143) Side-members having special ear pieces<br><br>(G02C5/146) Side-members having special front end<br><br>(G02C11/06) Hearing aids<br><br>(G02C11/10) Electronic devices other than hearing aids |

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| | | other electrical components provided elsewhere. Apparatus for presenting after-market electrical components are also disclosed.<br><br>(Claims) 1. A system, comprising:<br><br>a head-worn personal electronic apparatus, including at least:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic | |

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| | | personal audio apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery;<br><br>wireless communication circuitry at least partially contained within the head-worn structure, the wireless communication circuitry being electrically connected to at least the rechargeable battery; and<br><br>at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a charging apparatus having at least a charging connector,<br><br>wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results at least from the at least one conductive element connecting with the charging connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus.<br><br>(Claims) 2. A head-worn personal electronic apparatus, comprising: | |

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| | | a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication | |

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| | | circuitry at least partially contained within the head-worn structure. | |
| L2789 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | (Abstract) Techniques for providing eyewear or other head-worn personal electronic apparatus with electrical components are disclosed. The electrical components can provide electrical technology to eyewear or other head-worn personal electronic apparatus without having to substantially compromise aesthetic design principles. The electrical components can be partially or completely internal to eyewear or other head-worn personal electronic apparatus. The electrical components can operate independently or together with other electrical components provided elsewhere. Apparatus for presenting after-market electrical components are also disclosed.<br><br>(Claims) 1. A system, comprising:<br><br>a head-worn personal electronic apparatus, including at least:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus; | (G02C5/143) Side-members having special ear pieces<br><br>(G02C5/146) Side-members having special front end<br><br>(G02C11/06) Hearing aids<br><br>(G02C11/10) Electronic devices other than hearing aids<br><br>(G02C2200/08) Modular frames, easily exchangeable frame parts and lenses<br><br>(H02J7/0045) Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries characterised by the mechanical construction concerning the insertion or the connection of the batteries |

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| | | a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery;<br><br>wireless communication circuitry at least partially contained within the head-worn structure, the wireless communication circuitry being electrically connected to at least the rechargeable battery; and<br><br>at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and | |

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| | | a charging apparatus having at least a charging connector,<br><br>wherein on placement of the head-worn personal electronic apparatus in the charging apparatus, electrical connection results at least from the at least one conductive element connecting with the charging connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed in the charging apparatus.<br><br>(Claims) 2. A head-worn personal electronic apparatus, comprising:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user | |

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| | | input based on a force induced on the piezoelectric device, the piezoelectric device being at least partially contained within the head-worn structure, wherein the received user input operating to at least alter operation of the head-worn electronic personal audio apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure. | |
| L2901 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | (Abstract) Techniques for providing eyewear or other head-worn personal electronic apparatus with electrical components are disclosed. The electrical components can provide electrical technology to eyewear or other head-worn personal electronic apparatus without having to substantially compromise aesthetic design principles. The electrical components can be partially or completely internal to eyewear or other head-worn personal electronic apparatus. The electrical components can operate independently or together with other electrical components provided elsewhere. Apparatus for presenting after-market electrical components are also disclosed.<br><br>(Claims) a head-worn personal electronic apparatus, including at least:<br><br>a head-worn structure configured to be worn by a | No selections |

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| | | user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being contained within the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery;<br><br>1. (Previously Presented) A system, comprising:<br><br>wireless communication circuitry at least partially | |

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| | | contained within the head-worn structure, the wireless communication circuitry being electrically connected to at least the rechargeable battery; and<br><br>(Claims) at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a charging apparatus having at least a charging connector,<br><br>wherein on placement of the head-worn personal electronic apparatus at least partially in the charging apparatus, electrical connection is configured to result at least from the at least one conductive element connecting with the charging connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed at least partially in the charging apparatus.<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and | |

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| | | configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>2. (Previously Presented) A head-worn personal electronic apparatus, comprising:<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being contained within the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>(Claims) 72. (New) A head-worn personal electronic apparatus, comprising:<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn | |

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| | | structure, the electronic circuitry being electrically connected to at least the rechargeable battery;<br><br>wireless communication circuitry at least partially contained within the head-worn structure;<br><br>at least one conductive element at least partially included within the head- worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a radiation detector contained within the head-worn structure and configured to capture radiation data,<br><br>wherein the head-worn personal electronic apparatus is configured to determine whether the head-worn personal electronic apparatus is being worn by the user based on the radiation data captured by the radiation detector, and<br><br>wherein the second microphone is configured to at least pick-up an environmental audio input.<br><br>the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>(Claims) 95. (New) A head-worn personal electronic apparatus, comprising:<br><br>a motion sensor at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head- | |

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| | | worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a display at least partially contained within the head-worn structure, the display configured to present information to the user of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>(Claims) a head-worn structure configured to be worn by a user, the head-worn structure including a front section and first and second temples;<br><br>a first speaker at least partially contained within the first temple of the head- worn structure;<br><br>a second speaker at least partially contained within the second temple of the head-worn structure;<br><br>a motion sensor at least partially contained within the head-worn structure and | |

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| | | configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a microphone at least partially contained within the head-worn structure, the microphone being positioned to pick up at least audio input from at least the user;<br><br>a display at least partially contained within the head-worn structure, the display configured to present information to the user of the head-worn personal electronic apparatus;<br><br>electronic circuitry contained within the head-worn structure and configured to control the display to present the information to the user of the head-worn personal electronic apparatus; and<br><br>data communication circuitry at least partially contained within the head-worn structure.<br><br>100. (New) A head-worn personal electronic apparatus, comprising:<br><br>(Claims) 08. (New) A head-worn personal electronic apparatus, comprising:<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a first optical sensor at least partially contained within the first extended endpiece;<br><br>a second optical sensor at least partially contained within | |

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| | | the second extended endpiece;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>a processor at least partially contained within the head-worn structure and configured to control operation of the head-worn personal electronic apparatus; | |
| L2902 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | (Abstract) Techniques for providing eyewear or other head-worn personal electronic apparatus with electrical components are disclosed. The electrical components can provide electrical technology to eyewear or other head-worn personal electronic apparatus without having to substantially compromise aesthetic design principles. The electrical components can be partially or completely internal to eyewear or other head-worn personal electronic apparatus. The electrical components can operate independently or together with other electrical components provided elsewhere. Apparatus for presenting after-market electrical components are also disclosed.<br><br>(Claims) a head-worn personal electronic apparatus, including at least:<br><br>a head-worn structure configured to be worn by a user; | (G02C5/146) Side-members having special front end<br><br>(G02C5/143) Side-members having special ear pieces |

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| | | a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being contained within the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery;<br><br>1. (Previously Presented) A system, comprising:<br><br>wireless communication circuitry at least partially contained within the head- | |

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| | | worn structure, the wireless communication circuitry being electrically connected to at least the rechargeable battery; and<br><br>(Claims) at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a charging apparatus having at least a charging connector,<br><br>wherein on placement of the head-worn personal electronic apparatus at least partially in the charging apparatus, electrical connection is configured to result at least from the at least one conductive element connecting with the charging connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed at least partially in the charging apparatus.<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion | |

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| | | data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>2. (Previously Presented) A head-worn personal electronic apparatus, comprising:<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being contained within the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>(Claims) 72. (New) A head-worn personal electronic apparatus, comprising:<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic | |

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| | | circuitry being electrically connected to at least the rechargeable battery;<br><br>wireless communication circuitry at least partially contained within the head-worn structure;<br><br>at least one conductive element at least partially included within the head- worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a radiation detector contained within the head-worn structure and configured to capture radiation data,<br><br>wherein the head-worn personal electronic apparatus is configured to determine whether the head-worn personal electronic apparatus is being worn by the user based on the radiation data captured by the radiation detector, and<br><br>wherein the second microphone is configured to at least pick-up an environmental audio input.<br><br>the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>(Claims) 95. (New) A head-worn personal electronic apparatus, comprising:<br><br>a motion sensor at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic | |

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| | | apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a display at least partially contained within the head-worn structure, the display configured to present information to the user of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>(Claims) a head-worn structure configured to be worn by a user, the head-worn structure including a front section and first and second temples;<br><br>a first speaker at least partially contained within the first temple of the head- worn structure;<br><br>a second speaker at least partially contained within the second temple of the head-worn structure;<br><br>a motion sensor at least partially contained within the head-worn structure and configured to provide motion | |

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| | | data pertaining to the head-worn personal electronic apparatus;<br><br>a microphone at least partially contained within the head-worn structure, the microphone being positioned to pick up at least audio input from at least the user;<br><br>a display at least partially contained within the head-worn structure, the display configured to present information to the user of the head-worn personal electronic apparatus;<br><br>electronic circuitry contained within the head-worn structure and configured to control the display to present the information to the user of the head-worn personal electronic apparatus; and<br><br>data communication circuitry at least partially contained within the head-worn structure.<br><br>100. (New) A head-worn personal electronic apparatus, comprising:<br><br>(Claims) 08. (New) A head-worn personal electronic apparatus, comprising:<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a first optical sensor at least partially contained within the first extended endpiece;<br><br>a second optical sensor at least partially contained within the second extended | |

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| | | endpiece;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>a processor at least partially contained within the head-worn structure and configured to control operation of the head-worn personal electronic apparatus; | |
| L2903 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | (Abstract) Techniques for providing eyewear or other head-worn personal electronic apparatus with electrical components are disclosed. The electrical components can provide electrical technology to eyewear or other head-worn personal electronic apparatus without having to substantially compromise aesthetic design principles. The electrical components can be partially or completely internal to eyewear or other head-worn personal electronic apparatus. The electrical components can operate independently or together with other electrical components provided elsewhere. Apparatus for presenting after-market electrical components are also disclosed.<br><br>(Claims) a head-worn personal electronic apparatus, including at least:<br><br>a head-worn structure configured to be worn by a user; | (G02C5/146) Side-members having special front end<br><br>(G02C5/143) Side-members having special ear pieces<br><br>(G02C11/06) Hearing aids<br><br>(G02C11/10) Electronic devices other than hearing aids |

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| | | a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being contained within the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery;<br><br>1. (Previously Presented) A system, comprising:<br><br>wireless communication circuitry at least partially contained within the head-worn structure, the wireless | |

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| | | communication circuitry being electrically connected to at least the rechargeable battery; and<br><br>(Claims) at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a charging apparatus having at least a charging connector,<br><br>wherein on placement of the head-worn personal electronic apparatus at least partially in the charging apparatus, electrical connection is configured to result at least from the at least one conductive element connecting with the charging connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed at least partially in the charging apparatus.<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head- | |

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| | | worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>2. (Previously Presented) A head-worn personal electronic apparatus, comprising:<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being contained within the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>(Claims) 72. (New) A head-worn personal electronic apparatus, comprising:<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically | |

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| | | connected to at least the rechargeable battery;<br><br>wireless communication circuitry at least partially contained within the head-worn structure;<br><br>at least one conductive element at least partially included within the head- worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a radiation detector contained within the head-worn structure and configured to capture radiation data,<br><br>wherein the head-worn personal electronic apparatus is configured to determine whether the head-worn personal electronic apparatus is being worn by the user based on the radiation data captured by the radiation detector, and<br><br>wherein the second microphone is configured to at least pick-up an environmental audio input.<br><br>the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>(Claims) 95. (New) A head-worn personal electronic apparatus, comprising:<br><br>a motion sensor at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus; | |

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| | | a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a display at least partially contained within the head-worn structure, the display configured to present information to the user of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>(Claims) a head-worn structure configured to be worn by a user, the head-worn structure including a front section and first and second temples;<br><br>a first speaker at least partially contained within the first temple of the head- worn structure;<br><br>a second speaker at least partially contained within the second temple of the head-worn structure;<br><br>a motion sensor at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head- | |

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| | | worn personal electronic apparatus;<br><br>a microphone at least partially contained within the head-worn structure, the microphone being positioned to pick up at least audio input from at least the user;<br><br>a display at least partially contained within the head-worn structure, the display configured to present information to the user of the head-worn personal electronic apparatus;<br><br>electronic circuitry contained within the head-worn structure and configured to control the display to present the information to the user of the head-worn personal electronic apparatus; and<br><br>data communication circuitry at least partially contained within the head-worn structure.<br><br>100. (New) A head-worn personal electronic apparatus, comprising:<br><br>(Claims) 08. (New) A head-worn personal electronic apparatus, comprising:<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a first optical sensor at least partially contained within the first extended endpiece;<br><br>a second optical sensor at least partially contained within the second extended endpiece; | |

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| | | a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>a processor at least partially contained within the head-worn structure and configured to control operation of the head-worn personal electronic apparatus; | |
| L2904 | Sort results by: Similarity to Application # 18/597,874<br><br>Retrieve results by: Application # 18/597,874 | (Abstract) Techniques for providing eyewear or other head-worn personal electronic apparatus with electrical components are disclosed. The electrical components can provide electrical technology to eyewear or other head-worn personal electronic apparatus without having to substantially compromise aesthetic design principles. The electrical components can be partially or completely internal to eyewear or other head-worn personal electronic apparatus. The electrical components can operate independently or together with other electrical components provided elsewhere. Apparatus for presenting after-market electrical components are also disclosed.<br><br>(Claims) a head-worn personal electronic apparatus, including at least:<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially | (G02C5/146) Side-members having special front end<br><br>(G02C5/143) Side-members having special ear pieces<br><br>(G02C11/06) Hearing aids<br><br>(G02C11/10) Electronic devices other than hearing aids<br><br>(G02C2200/08) Modular frames, easily exchangeable frame parts and lenses<br><br>(H02J7/0045) Circuit arrangements for charging or depolarising batteries or for supplying loads from batteries characterised by the mechanical construction concerning the insertion or the connection of the batteries |

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| | | contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being contained within the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery;<br><br>1. (Previously Presented) A system, comprising:<br><br>wireless communication circuitry at least partially contained within the head-worn structure, the wireless communication circuitry being | |

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| | | electrically connected to at least the rechargeable battery; and<br><br>(Claims) at least one conductive element at least partially included within the head-worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a charging apparatus having at least a charging connector,<br><br>wherein on placement of the head-worn personal electronic apparatus at least partially in the charging apparatus, electrical connection is configured to result at least from the at least one conductive element connecting with the charging connector, and thereby the rechargeable battery of the head-worn personal electronic apparatus is able to be recharged while the head-worn personal electronic apparatus is placed at least partially in the charging apparatus.<br><br>a head-worn structure configured to be worn by a user;<br><br>a speaker at least partially contained within the head-worn structure, the speaker being configured to be worn proximate to an ear of the user when the head-worn structure is being worn by the user;<br><br>a motion detector at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic | |

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| | | apparatus;<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>2. (Previously Presented) A head-worn personal electronic apparatus, comprising:<br><br>a piezoelectric device configured to receive a user input based on a force induced on the piezoelectric device, the piezoelectric device being contained within the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>(Claims) 72. (New) A head-worn personal electronic apparatus, comprising:<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the | |

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| | | rechargeable battery;<br><br>wireless communication circuitry at least partially contained within the head-worn structure;<br><br>at least one conductive element at least partially included within the head- worn structure, the at least one conductive element being at least partially exposed to enable interconnection therewith, the at least one conductive element being electrically connected to at least the rechargeable battery; and<br><br>a radiation detector contained within the head-worn structure and configured to capture radiation data,<br><br>wherein the head-worn personal electronic apparatus is configured to determine whether the head-worn personal electronic apparatus is being worn by the user based on the radiation data captured by the radiation detector, and<br><br>wherein the second microphone is configured to at least pick-up an environmental audio input.<br><br>the head-worn structure, wherein the received user input operating to at least alter an operation of the head-worn personal electronic apparatus;<br><br>(Claims) 95. (New) A head-worn personal electronic apparatus, comprising:<br><br>a motion sensor at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic apparatus; | |

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|---|---|---|---|
| | | a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a display at least partially contained within the head-worn structure, the display configured to present information to the user of the head-worn personal electronic apparatus;<br><br>a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>(Claims) a head-worn structure configured to be worn by a user, the head-worn structure including a front section and first and second temples;<br><br>a first speaker at least partially contained within the first temple of the head- worn structure;<br><br>a second speaker at least partially contained within the second temple of the head-worn structure;<br><br>a motion sensor at least partially contained within the head-worn structure and configured to provide motion data pertaining to the head-worn personal electronic | |

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|---|---|---|---|
| | | apparatus;<br><br>a microphone at least partially contained within the head-worn structure, the microphone being positioned to pick up at least audio input from at least the user;<br><br>a display at least partially contained within the head-worn structure, the display configured to present information to the user of the head-worn personal electronic apparatus;<br><br>electronic circuitry contained within the head-worn structure and configured to control the display to present the information to the user of the head-worn personal electronic apparatus; and<br><br>data communication circuitry at least partially contained within the head-worn structure.<br><br>100. (New) A head-worn personal electronic apparatus, comprising:<br><br>(Claims) 08. (New) A head-worn personal electronic apparatus, comprising:<br><br>a first microphone at least partially contained within the head-worn structure, the first microphone being positioned to pick up at least audio input from at least the user;<br><br>a second microphone at least partially contained within the head-worn structure;<br><br>a first optical sensor at least partially contained within the first extended endpiece;<br><br>a second optical sensor at least partially contained within the second extended endpiece; | |

| | | | |
|---|---|---|---|
| | | a rechargeable battery contained within the head-worn structure;<br><br>electronic circuitry contained within the head-worn structure, the electronic circuitry being electrically connected to at least the rechargeable battery; and<br><br>wireless communication circuitry at least partially contained within the head-worn structure.<br><br>a processor at least partially contained within the head-worn structure and configured to control operation of the head-worn personal electronic apparatus; | |

# Bibliographic Data

Application No: 18/597,874

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No | ☐ Met After Allowance

Verified and Acknowledged: /JIE LEI/ (Examiner's Signature) | (Initials)

Title: SYSTEM FOR CHARGING EMBEDDED BATTERY IN WIRELESS HEAD-WORN PERSONAL ELECTRONIC APPARATUS

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| FILING or 371(c) DATE | CLASS | GROUP ART UNIT | ATTORNEY DOCKET NO. |
|---|---|---|---|
| 03/06/2024<br>RULE | 351 | 2872 | IPVCP003X1C4X1C2 |

**APPLICANTS**

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David Chao, Saratoga, CA, UNITED STATES

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Peter P. Tong, Mountain View, CA, UNITED STATES

**CONTINUING DATA**

This application is a CON of 18375893 10/02/2023 PAT 12044901

18375893 is a CON of 16182969 11/07/2018 PAT 12078870

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**FOREIGN APPLICATIONS**

**IF REQUIRED, FOREIGN LICENSE GRANTED****

03/18/2024

**STATE OR COUNTRY**

UNITED STATES

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4010 Moorpark Avenue
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UNITED STATES

**FILING FEE RECEIVED**

$1,820

## *IN THE UNITED STATES PATENT AND TRADEMARK OFFICE*

| | |
|---|---|
| In re application of: HOWELL et al. | Attorney Docket No.: IPVCP003X1C4X1C2 |
| Application No.: 18/597,874 | Examiner: LEI, JIE |
| Filed: March 6, 2024 | Group: 2872 |
| Title: SYSTEM FOR CHARGING EMBEDDED BATTERY IN WIRELESS HEAD-WORN PERSONAL ELECTRONIC APPARATUS | |

## INFORMATION DISCLOSURE STATEMENT
## 37 CFR §§1.56 AND 1.97(b)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The references listed in the attached PTO Form 1449, copies of which are attached, may be material to examination of the above-identified patent application. Applicant submits these references in compliance with their duty of disclosure pursuant to 37 CFR §§1.56 and 1.97. The Examiner is requested to make these references of official record in this application.

Under their duty of disclosure, Applicant hereby submits copies of the cited references, other than the U.S. patent publications of the U.S. Patent and Trademark Office.

Applicants would also like to inform the Patent Office of a potentially related case, as follows: United States International Trade Commission Investigation No. 337-TA-1423, filed on October 10, 2024 pertaining to U.S. Patent Nos. 10,310,296; 11,762,224, and 12,078,870.

This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that these references indeed constitute prior art.

This Information Disclosure Statement is: (i) filed within three (3) months of the filing date of the above-referenced application, (ii) believed to be filed before the mailing date of a first Office Action on the merits, or (iii) believed to be filed before the mailing of a first Office Action after the filing of a Request for Continued Examination under §1.114.

Accordingly, it is believed that no fees are due in connection with the filing of this Information Disclosure Statement. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 50-3874 (Order No. IPVCP003X1C4X1C2).

Respectfully submitted,

/C. Douglass Thomas/

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# ELECTRONIC ACKNOWLEDGEMENT RECEIPT

| APPLICATION # | RECEIPT DATE / TIME | ATTORNEY DOCKET # |
|---|---|---|
| **18/597,874** | **01/10/2025 06:24:36 PM Z ET** | **IPVCP003X1C4X1C2** |

## Title of Invention

SYSTEM FOR CHARGING EMBEDDED BATTERY IN WIRELESS HEAD-WORN PERSONAL ELECTRONIC APPARATUS

## Application Information

| | | | |
|---|---|---|---|
| APPLICATION TYPE | Utility - Nonprovisional Application under 35 USC 111(a) | PATENT # | - |
| CONFIRMATION # | 7223 | FILED BY | Angela Nijim |
| PATENT CENTER # | 68650948 | FILING DATE | 03/06/2024 |
| CUSTOMER # | 34071 | FIRST NAMED INVENTOR | Thomas A. Howell |
| CORRESPONDENCE ADDRESS | - | AUTHORIZED BY | Peter Tong |

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**TOTAL DOCUMENTS: 15**

| DOCUMENT | PAGES | DESCRIPTION | SIZE (KB) |
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| CN_2365848_Y_wAbstract.pdf | 15 | Foreign Reference | 722 KB |
| EP_0403701_A1.pdf | 8 | Foreign Reference | 906 KB |
| GB_2343263_A.pdf | 93 | Foreign Reference | 7245 KB |
| GB_2405049_A.pdf | 19 | Foreign Reference | 1078 KB |
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| Tse-TheEffectOfVisualStimulation.pdf | 11 | Non Patent Literature | 481 KB |
| Falahee_Safety_And_Comfort.pdf | 12 | Non Patent Literature | 409 KB |
| Spitzer_Eyewear-based_Displays.pdf | 6 | Non Patent Literature | 3533 KB |
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| CN_2145478_Y_wAbstract.pdf | 1762EBB49CC929E361DF36210DF8E71AD534817295CD3AE9CCAFFC526FF841C5E84D8D37190B56FF5FF42F6C06846D063C2112279B098589B4DF5781699DE25F |
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

| Form 1449 (Modified) | Atty. Docket No. | IPVCP003X1C4X1C2 |
|---|---|---|
| | Application No.: | 18/597,874 |
| **Information Disclosure** | Applicant | HOWELL et al. |
| **Statement By Applicant** | Filing Date | March 6, 2024 |
| | Group | 2872 |
| (Use Several Sheets if Necessary) | | Page 1 of 2 |

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| Examiner | Date Considered |
|---|---|
| | |

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

| Form 1449 (Modified) | Atty. Docket No. | IPVCP003X1C4X1C2 |
|---|---|---|
| | Application No.: | 18/597,874 |
| **Information Disclosure** | Applicant | HOWELL et al. |
| **Statement By Applicant** | Filing Date | March 6, 2024 |
| | Group | 2872 |
| (Use Several Sheets if Necessary) | | Page 2 of 2 |

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| Examiner | Date Considered |
|---|---|
| | |

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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PATENT AND TRADEMARK OFFICE

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Alexandria, VA 22313 - 1450
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# ELECTRONIC PAYMENT RECEIPT

| APPLICATION # | RECEIPT DATE / TIME | ATTORNEY DOCKET # |
|---|---|---|
| **18/597,874** | **12/04/2024 03:39:41 PM Z ET** | **IPVCP003X1C4X1C2** |

## Title of Invention

SYSTEM FOR CHARGING EMBEDDED BATTERY IN WIRELESS HEAD-WORN PERSONAL ELECTRONIC APPARATUS

## Application Information

| | | | |
|---|---|---|---|
| APPLICATION TYPE | Utility - Nonprovisional Application under 35 USC 111(a) | PATENT # | - |
| CONFIRMATION # | 7223 | FILED BY | Angela Nijim |
| PATENT CENTER # | 68206554 | AUTHORIZED BY | Peter Tong |
| CUSTOMER # | 34071 | FILING DATE | 03/06/2024 |
| CORRESPONDENCE ADDRESS | - | FIRST NAMED INVENTOR | Thomas A. Howell |

## Payment Information

| PAYMENT METHOD | PAYMENT TRANSACTION ID | PAYMENT AUTHORIZED BY |
|---|---|---|
| **CARD / 6752** | **E2024B4F41105000** | **Angela Nijim** |

| PRE-AUTHORIZED ACCOUNT | PRE-AUTHORIZED CATEGORY |
|---|---|
| **503874** | **37 CFR 1.21 (Miscellaneous fees and charges)** |

| FEE CODE | DESCRIPTION | ITEM PRICE($) | QUANTITY | ITEM TOTAL($) |
|---|---|---|---|---|
| 1801 | REQUEST FOR CONTINUED EXAMINATION (RCE) - 1ST REQUEST (SEE 37 CFR 1.114) | 1360.00 | 1 | 1360.00 |
| 1202 | EACH CLAIM IN EXCESS OF 20 | 100.00 | 99 | 9900.00 |
| 1201 | EACH INDEPENDENT CLAIM IN EXCESS OF THREE | 480.00 | 3 | 1440.00 |
| | | | **TOTAL AMOUNT:** | **$12,700.00** |

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as

described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

| Form 1449 (Modified) | Atty. Docket No. | IPVCP003X1C4X1C2 |
|---|---|---|
| | Application No.: | 18/597,874 |
| **Information Disclosure** | Applicant | HOWELL et al. |
| **Statement By Applicant** | Filing Date | March 6, 2024 |
| | Group | 2872 |
| (Use Several Sheets if Necessary) | | Page 1 of 2 |

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| | | JP 2006-209144A | Aug-06 | Japan | | | X | |
| | | WO 86/05891 | Oct-86 | WIPO | | | | |

## Other Documents (Including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|---|---|---|
| | A | Notice of Allowance for U.S. Patent Application No. 17/484,080, dated June 18, 2024. |
| | B | Office Action for U.S. Patent Application No. 18/594,662, dated May 21, 2024. |

| Examiner | Date Considered |
|---|---|
| | |

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

| Form 1449 (Modified) | Atty. Docket No. | IPVCP003X1C4X1C2 |
|---|---|---|
| | Application No.: | 18/597,874 |
| **Information Disclosure** | Applicant | HOWELL et al. |
| **Statement By Applicant** | Filing Date | March 6, 2024 |
| | Group | 2872 |
| (Use Several Sheets if Necessary) | | Page 2 of 2 |

| | | |
|---|---|---|
| | C | Office Action for U.S. Patent Application No. 18/594,662, dated July 3, 2024. |
| | D | Advisory Action for U.S Patent Application No. 18/594,662, dated July 31, 2024. |
| | E | Notice of Allowance for U.S. Patent Application No. 18/238,467, dated August 7, 2024. |
| | F | Notice of Allowance for U.S. Patent Application No. 18/237,467, dated November 18, 2024. |
| | G | Notice of Allowance for U.S. Patent Application No. 16/182,969, dated July 1, 2024. |
| | H | Office Action for U.S. Patent Application No.18/541,367, dated May 30, 2024. |
| | I | Office Action for U.S. Patent Application No. 18/541,367, dated August 6, 2024. |
| | J | Notice of Allowance for U.S. Patent Application No. 18/541,367, dated October 28, 2024. |
| | K | Office Action for U.S. Patent Application No. 18/680,434, dated August 14, 2024. |
| | L | Notice of Allowance for U.S. Patent Application No. 18/680,434, dated November 5, 2024. |
| | | |

| Examiner | Date Considered |
|---|---|
| | |

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

## *IN THE UNITED STATES PATENT AND TRADEMARK OFFICE*

In re application of: HOWELL et al.

Attorney Docket No.: IPVCP003X1C4X1C2

Application No.: 18/597,874

Examiner: LEI, JIE

Filed: March 6, 2024

Group: 2872

Title: SYSTEM FOR CHARGING EMBEDDED BATTERY IN WIRELESS HEAD-WORN PERSONAL ELECTRONIC APPARATUS

# AMENDMENT B TRANSMITTAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is an Amendment in the above-identified application.

The fee has been calculated as shown below.

| | Claims After Amendment | | Highest Previously Paid For | Present Extra | Small Entity Rate Fee | Large Entity Rate Fee |
|---|---|---|---|---|---|---|
| Total Claims | 119 | MINUS | 20 | 99 | x 40 = | x 100 = 9,900 |
| Independent Claims | 6 | MINUS | 3 | 03 | x 192 = | x 480 = 1440 |
| Multiple Dependent Claim Present and Fee Not Previously Paid | | | | | $ | $ |
| | | | | Total | $0.00 | $11,340.00 |

☐ Applicant(s) hereby petition for a _____- month extension(s) of time to respond to the aforementioned Office Action.

☒ Applicant(s) believe that no (additional) Extension of Time is required; however, if it is determined that such an extension is required, Applicant(s) hereby petition that such an extension be granted and authorize the Commissioner to charge the required fees for an Extension of Time under 37 CFR 1.136 to Deposit Account No. 50-3874 (Order No. IPVCP003X1C4X1C2).

☒ Any fees due are being paid electronically herewith.

☒ Please charge any additional fees required to facilitate filing the enclosed response, to Deposit Account No. 50-3874 (Order No. IPVCP003X1C4X1C2).

Respectfully submitted,

/C. Douglass Thomas/

C. Douglass Thomas
Reg. No. 32,947

PTO/SB/30EFS (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

# REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
## (Submitted Only via EFS-Web)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Application Number | 18597874 | Filing Date | 2024-03-06 | Docket Number (if applicable) | IPVCP003X1C4X1C2 | Art Unit | 2872 |
| First Named Inventor | HOWELL et al. | | | Examiner Name | LEI, JIE | | |

**This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.**
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

### SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☒ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

### MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

### FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 503874

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature
☐ Applicant Signature

PTO/SB/30EFS (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

| Signature of Registered U.S. Patent Practitioner | | | |
|---|---|---|---|
| Signature | /C. Douglass Thomas/ | Date (YYYY-MM-DD) | 2024-12-03 |
| Name | C. Douglass Thomas | Registration Number | 32947 |

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

# Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

## *IN THE UNITED STATES PATENT AND TRADEMARK OFFICE*

***PATENT***

| | |
|---|---|
| In re application of: HOWELL et al. | Attorney Docket No.: IPVCP003X1C4X1C2 |
| Application No.: 18/597,874 | Examiner: LEI, JIE |
| Filed: March 6, 2024 | Group: 2872 |
| Title: SYSTEM FOR CHARGING EMBEDDED BATTERY IN WIRELESS HEAD-WORN PERSONAL ELECTRONIC APPARATUS | |

**INFORMATION DISCLOSURE STATEMENT**
**37 CFR §§1.56 AND 1.97(b)**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The references listed in the attached PTO Form 1449, copies of which are attached, may be material to examination of the above-identified patent application. Applicants submit these references in compliance with their duty of disclosure pursuant to 37 CFR §§1.56 and 1.97. The Examiner is requested to make these references of official record in this application.

This Information Disclosure Statement is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that these references indeed constitute prior art.

This Information Disclosure Statement is: (i) filed within three (3) months of the filing date of the above-referenced application, (ii) believed to be filed before the mailing date of a first Office Action on the merits, or (iii) believed to be filed before the mailing of a first Office Action after the filing of a Request for Continued Examination under §1.114.

Accordingly, it is believed that no fees are due in connection with the filing of this Information Disclosure Statement. However, if it is determined that any fees are due, the Commissioner is hereby authorized to charge such fees to Deposit Account 50-3874 (Order No. IPVCP003X1C4X1C2).

Respectfully submitted,

/C. Douglass Thomas/

C. Douglass Thomas
Registration No: 32,947

4010 Moorpark Avenue
Suite 211
San Jose, CA 95117

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

# ELECTRONIC ACKNOWLEDGEMENT RECEIPT

| APPLICATION # | RECEIPT DATE / TIME | ATTORNEY DOCKET # |
|---|---|---|
| **18/597,874** | **12/04/2024 03:39:41 PM Z ET** | **IPVCP003X1C4X1C2** |

## Title of Invention

SYSTEM FOR CHARGING EMBEDDED BATTERY IN WIRELESS HEAD-WORN PERSONAL ELECTRONIC APPARATUS

## Application Information

| | | | |
|---|---|---|---|
| APPLICATION TYPE | Utility - Nonprovisional Application under 35 USC 111(a) | PATENT # | - |
| CONFIRMATION # | 7223 | FILED BY | Angela Nijim |
| PATENT CENTER # | 68206554 | FILING DATE | 03/06/2024 |
| CUSTOMER # | 34071 | FIRST NAMED INVENTOR | Thomas A. Howell |
| CORRESPONDENCE ADDRESS | - | AUTHORIZED BY | Peter Tong |

## Documents

**TOTAL DOCUMENTS: 9**

| DOCUMENT | PAGES | DESCRIPTION | SIZE (KB) |
|---|---|---|---|
| IPVCP003X1C4X1C2_RCE_12-24.pdf | 3 | Request for Continued Examination (RCE) | 1628 KB |
| IPVCP003X1C4X1C2_IDSTrans_12-24.pdf | 2 | Letter specifying the conditions for filing under 37 CFR 1.97 | 19 KB |
| IPVCP003X1C4X1C2_1449_12-24.pdf | 2 | Information Disclosure Statement (IDS) Form (SB08) | 27 KB |

Warning: This is not a USPTO supplied IDS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.

| | | | |
|---|---|---|---|
| IPVCP003X1C4X1C2_AmdBTrans_12-24.pdf | 1 | Transmittal Letter | 17 KB |
| IPVCP003X1C4X1C2_AmdB_AsFiled_12-24.pdf | 36 | Amendment Submitted/Entered with Filing | 140 KB |

| | | | |
|---|---|---|---|
| | | of Continued Prosecution Application (CPA)/Request for Continued Examination(RCE) | |
| CN1234895A.pdf | 104 | Foreign Reference | 9803 KB |
| JP2004297256A_Kazunori_wTranslation.pdf | 30 | Foreign Reference | 1011 KB |
| JP-2006209144A-Takegawa.pdf | 29 | Foreign Reference | 3115 KB |
| WO8605891A1.pdf | 15 | Foreign Reference | 1080 KB |

## Digest

| DOCUMENT | MESSAGE DIGEST(SHA-512) |
|---|---|
| IPVCP003X1C4X1C2_RCE_12-24.pdf | A368AF5F77E91B83A29C85336F8A3153E675F84D13909C65F61757ABC435C107A2C891DB245DCF588BA4FAEF394BB55EC73E2D844A7CC8C5C21ED4996187DC2F |
| IPVCP003X1C4X1C2_IDSTrans_12-24.pdf | 3DFDAA98A6A3CB5DD7C429EA24C14ACBEAF0738C168DA18D76FD757E378CB57713BF7C28847B693C66BBC617A14D5CB01075DA5AE1205A520C947FE9A71A510E |
| IPVCP003X1C4X1C2_1449_12-24.pdf | 5D6DE0EC0E2DF0129C884B1BEEDAC6BE479020F5F8B62957D89E4640AF88DED17CC285302105D0CAF56F4869DD521B35FD6674C41B92BAB10F93C0E27071D24D |
| IPVCP003X1C4X1C2_AmdBTrans_12-24.pdf | DFF81D7C193D0A54ED5B29DBFE7D26385C12BA23157CCDEF4818D19255450F68AD76EFA70920C18EAF0F172816252D34FB2B0E66B0F184AFC06B2C9A57967B27 |
| IPVCP003X1C4X1C2_AmdB_AsFiled_12-24.pdf | 4310D47F3C66DB93B94AE8383B33221472D7D8BD8B9A2E1FBB42872DFCFC010A91721FAEE16086E6E17D05826F23AC8C253AC0C20428937A04B0F978A9A6ECC1 |
| CN1234895A.pdf | 083D27883291348D597AD702DED53150ECA9F65B46D542B5BB3C42419A060D9209E2C375F4446D3BB0C1C43A06E6B6246A1E9B4D208B05061FBDD4036775067F |
| JP2004297256A_Kazunori_wTranslation.pdf | C7F34042A80D38C0F07ABED1C859F6BF5FB2DB90401199862A259F8BCF94144708470606B905C227C3CB851553DE6520B68DD58BDDAAD37E9D2E2C6F171D1CE7 |
| JP-2006209144A-Takegawa.pdf | 006541C64EE0637E7CF4E4407C491B9E12C779D10D720C36B316F486D356423E70C34FB10B43724B0AA7EE3CD868B29F53D4384623259A8327A45A10516923ED |
| WO8605891A1.pdf | 7B07D8B0ABE59F281D67FA52B97C61D80E16C95B69D02A666EDB5A9B8DEF1770668B942157692331BA8DB23DB2243D2F27 |

6952F18C9EAC4F525D365CA78C320D

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

**New Applications Under 35 U.S.C. 111**

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

**National Stage of an International Application under 35 U.S.C. 371**

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

**New International Application Filed with the USPTO as a Receiving Office**

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

## *IN THE UNITED STATES PATENT AND TRADEMARK OFFICE*

| | |
|---|---|
| In re application of: HOWELL et al. | Attorney Docket No.: IPVCP003X1C4X1C2 |
| Application No.: 18/597,874 | Examiner: LEI, JIE |
| Filed: March 6, 2024 | Group: 2872 |
| Title: SYSTEM FOR POWERING ~~CHARGING EMBEDDED BATTERY IN WIRELESS~~ HEAD-WORN PERSONAL ELECTRONIC APPARATUS [As Amended] | |

## ***AMENDMENT B***

Mail Stop _____
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Notice of Allowance dated September 11, 2024, please amend the above-identified patent application as follows:

**Amendments to the Specification** are reflected on page 2 of this paper.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 3 of this paper.

**Remarks/Arguments** begin on page 36 of this paper.