

AO 120 (Rev. 08/10)

|                                                                                                                                                         |                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>TO:</b><br><b>Mail Stop 8</b><br><b>Director of the U.S. Patent and Trademark Office</b><br><b>P.O. Box 1450</b><br><b>Alexandria, VA 22313-1450</b> | <b>REPORT ON THE</b><br><b>FILING OR DETERMINATION OF AN</b><br><b>ACTION REGARDING A PATENT OR</b><br><b>TRADEMARK</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Eastern District of Texas on the following

☐ Trademarks or ☒ Patents. ( ☐ the patent action involves 35 U.S.C. § 292.):

|                                                                 |                                |                                                                                                                                        |
|-----------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| DOCKET NO.<br><b>2:22-cv-00320</b>                              | DATE FILED<br><b>8/19/2022</b> | U.S. DISTRICT COURT<br><b>Eastern District of Texas</b>                                                                                |
| PLAINTIFF<br><b>Manufacturing Resources International, Inc.</b> |                                | DEFENDANT<br><b>Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., Samsung SDS Co., Ltd., Samsung SDS America, Inc.</b> |
| PATENT OR TRADEMARK NO.                                         | DATE OF PATENT OR TRADEMARK    | HOLDER OF PATENT OR TRADEMARK                                                                                                          |
| 1 <b>8,854,595</b>                                              | <b>10/7/2014</b>               | <b>Manufacturing Resources International, Inc.</b>                                                                                     |
| 2 <b>9,173,322</b>                                              | <b>10/27/2015</b>              | <b>Manufacturing Resources International, Inc.</b>                                                                                     |
| 3 <b>9,629,287</b>                                              | <b>12/10/2019</b>              | <b>Manufacturing Resources International, Inc.</b>                                                                                     |
| 4 <b>10,506,740</b>                                             | <b>4/18/2017</b>               | <b>Manufacturing Resources International, Inc.</b>                                                                                     |
| 5 <b>11,013,142</b>                                             | <b>5/18/2021</b>               | <b>Manufacturing Resources International, Inc.</b>                                                                                     |

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

|                         |                                                                                                                                                               |                               |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| DATE INCLUDED           | INCLUDED BY<br><input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading |                               |
| PATENT OR TRADEMARK NO. | DATE OF PATENT OR TRADEMARK                                                                                                                                   | HOLDER OF PATENT OR TRADEMARK |
| 1                       |                                                                                                                                                               |                               |
| 2                       |                                                                                                                                                               |                               |
| 3                       |                                                                                                                                                               |                               |
| 4                       |                                                                                                                                                               |                               |
| 5                       |                                                                                                                                                               |                               |

In the above—entitled case, the following decision has been rendered or judgement issued:

|                    |                   |      |
|--------------------|-------------------|------|
| DECISION/JUDGEMENT |                   |      |
| CLERK              | (BY) DEPUTY CLERK | DATE |

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

SEC et al. v. MRI  
 SEC Exhibit 1022.0001  
 IPR2023-00221

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 11,013,142 B2  
APPLICATION NO. : 16/933932  
DATED : May 18, 2021  
INVENTOR(S) : William Dunn et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page

Page 3, item (56) References Cited, U.S. Patent Documents, Reference No. 7,212,403, please delete "Rockenfell" and insert --Rockefeller--.

Page 3, item (56) References Cited, U.S. Patent Documents, Reference No. 7,480,140, please delete "Nara et al." and insert --Hara et al.--.

Signed and Sealed this  
Twenty-second Day of June, 2021



Drew Hirshfeld  
*Performing the Functions and Duties of the  
Under Secretary of Commerce for Intellectual Property and  
Director of the United States Patent and Trademark Office*

SEC et al. v. MRI  
SEC Exhibit 1022.0002  
IPR2023-00221

**IN THE UNITED STATES DEPARTMENT OF COMMERCE,  
PATENT AND TRADEMARK OFFICE**

U.S. Patent No: 11,013,142  
Inventor: William Dunn  
Issued: May 18, 2021  
Application No.: 16/933,932  
Examiner: Michael A. Matey  
Group Art Unit: 2835  
Confirmation No.: 5816  
Title: ELECTRONIC DISPLAY WITH COOLING  
Docket No.: MAN2241-045R

CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. §1.8 (A)

Date of Transmission: May 27, 2021

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office by EFS-Web.

/Brianna J. Lacy/

Brianna J. Lacy, Paralegal

**REQUEST FOR CERTIFICATE OF CORRECTION PURSUANT TO 37 C.F.R. 1.322**

Transmitted herewith is a Certificate of Correction for the above-identified patent. Upon reviewing the patent, the patentee noted typographical errors made by the Patent Office in the printing of the patent, which should be corrected as indicated on the attached form PTO/SB/44. A review of the application as submitted and thereafter amended confirms that the errors were a result of Patent Office mistake and, therefore, no fee is due.

Approval of the Certificate of Correction is respectfully solicited.

Respectfully submitted,

Date: May 27, 2021

By: /Adam J. Smith/  
Adam J. Smith  
Registration No. 72,962  
Standley Law Group LLP  
6300 Riverside Drive  
Dublin, Ohio 43017  
Telephone: (614) 792-5555  
Facsimile: (614) 792-5536

UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION

Page 2 of 2

PATENT NO. : 11,013,142  
APPLICATION NO.: 16/933,932  
ISSUE DATE : May 18, 2021  
INVENTOR(S) : William Dunn

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Page 3, References Cited, U.S. Patent Documents, Reference No. 7,212,403, please delete "Rockenfell" and insert --Rockenfeller--.

Page 3, References Cited, U.S. Patent Documents, Reference No. 7,480,140, please delete "Nara et al." and insert --Hara et al.--.

MAILING ADDRESS OF SENDER (Please do not use Customer Number below):

Standley Law Group LLP  
ATTN: Adam J. Smith  
6300 Riverside Drive, Dublin, OH 43017

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. 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 1.0 hour 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. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Attention Certificate of Corrections Branch, Commissioner for Patents, 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.*

SEC et al. v. MRI  
SEC Exhibit 1022.0004  
IPR2023-00221

## 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 disclosure of these records is required by the Freedom of Information Act.
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 inspection 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.

| Electronic Acknowledgement Receipt          |                                 |
|---------------------------------------------|---------------------------------|
| <b>EFS ID:</b>                              | 42834040                        |
| <b>Application Number:</b>                  | 16933932                        |
| <b>International Application Number:</b>    |                                 |
| <b>Confirmation Number:</b>                 | 5816                            |
| <b>Title of Invention:</b>                  | ELECTRONIC DISPLAY WITH COOLING |
| <b>First Named Inventor/Applicant Name:</b> | William Dunn                    |
| <b>Customer Number:</b>                     | 8698                            |
| <b>Filer:</b>                               | Adam Jeffery Smith/Brianna Lacy |
| <b>Filer Authorized By:</b>                 | Adam Jeffery Smith              |
| <b>Attorney Docket Number:</b>              | MAN2241-045R                    |
| <b>Receipt Date:</b>                        | 27-MAY-2021                     |
| <b>Filing Date:</b>                         | 20-JUL-2020                     |
| <b>Time Stamp:</b>                          | 10:18:54                        |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)     |

**Payment information:**

|                        |    |
|------------------------|----|
| Submitted with Payment | no |
|------------------------|----|

**File Listing:**

| Document Number | Document Description                  | File Name                    | File Size(Bytes)/<br>Message Digest      | Multi Part /.zip | Pages (if appl.) |
|-----------------|---------------------------------------|------------------------------|------------------------------------------|------------------|------------------|
| 1               | Request for Certificate of Correction | COC_MAN2241-045R_5-27-21.pdf | 116017                                   | no               | 3                |
|                 |                                       |                              | 0e02842b7675b7fcd1faabee48ea5e77d1a4dfca |                  |                  |

**Warnings:**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 116017 |
| <p>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.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a 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.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> 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.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> 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.</p> |        |



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|------------|------------|---------------------|------------------|
| 16/933,932      | 05/18/2021 | 11013142   | MAN2241-045R        | 5816             |

8698 7590 04/28/2021  
STANDLEY LAW GROUP LLP  
6300 Riverside Drive  
Dublin, OH 43017

## ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

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 Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Manufacturing Resources International, Inc., Alpharetta, GA;  
William Dunn, Alpharetta, GA;  
Tim Hubbard, Alpharetta, GA;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit [SelectUSA.gov](http://SelectUSA.gov).

IR103 (Rev. 10/09)

SEC et al. v. MRI  
SEC Exhibit 1022.0008  
IPR2023-00221

Receipt date: 12/18/2020

16/933,932 -- GAU: 2835

Doc code: IDS

PTO/SB/08a (01-10)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2012. 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.

|                                                                                                     |                        |                  |
|-----------------------------------------------------------------------------------------------------|------------------------|------------------|
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 16933932         |
|                                                                                                     | Filing Date            | 2020-07-20       |
|                                                                                                     | First Named Inventor   | William Dunn     |
|                                                                                                     | Art Unit               | 2835             |
|                                                                                                     | Examiner Name          | Michael A. Matey |
|                                                                                                     | Attorney Docket Number | MAN2241-045R     |

| U.S.PATENTS       |         |               |                        |                    |                                                 | Remove                                                                   |
|-------------------|---------|---------------|------------------------|--------------------|-------------------------------------------------|--------------------------------------------------------------------------|
| Examiner Initial* | Cite No | Patent Number | Kind Code <sup>1</sup> | Issue Date         | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear |
|                   | 1       | 7466546       | B2                     | 2008-12-16         | Park                                            |                                                                          |
|                   | 2       | 7492589       | B2                     | 2009-02-17         | Park                                            |                                                                          |
|                   | 3       | 6392727       | B1                     | 2002<br>2020-05-21 | Larson et al.                                   |                                                                          |
|                   | 4       | 10757844      | B2                     | 2020-08-25         | Dunn                                            |                                                                          |

Change(s) applied to document.  
/D.M./  
3/19/2021

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

| U.S.PATENT APPLICATION PUBLICATIONS |         |                    |                        |                  |                                                 | Remove                                                                   |
|-------------------------------------|---------|--------------------|------------------------|------------------|-------------------------------------------------|--------------------------------------------------------------------------|
| Examiner Initial*                   | Cite No | Publication Number | Kind Code <sup>1</sup> | Publication Date | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear |
|                                     | 1       | 20200275585        | A1                     | 2020-08-27       | Dunn                                            |                                                                          |
|                                     | 2       | 20170231112        | A1                     | 2017-08-10       | Dunn                                            |                                                                          |

If you wish to add additional U.S. Published Application citation information please click the Add button.

Add

| FOREIGN PATENT DOCUMENTS |  |  |  |  |  | Remove |
|--------------------------|--|--|--|--|--|--------|
|--------------------------|--|--|--|--|--|--------|

EFS Web 2.1.17

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.M/

SEC et al. v. MRI  
SEC Exhibit 1022.0009  
IPR2023-00221

Document Description: Issue Fee Payment (PTO-85B)

**Issue Fee Transmittal Form**

| Application Number | Filing Date | First Named Inventor | Atty. Docket No. | Confirmation No. |
|--------------------|-------------|----------------------|------------------|------------------|
| 16933932           | 20-Jul-2020 | William Dunn         | MAN2241-045R     | 5816             |

**TITLE OF INVENTION :**

ELECTRONIC DISPLAY WITH COOLING

| Entity Status        | Application Type            | Art Unit         | Class - Subclass | EXAMINER       |
|----------------------|-----------------------------|------------------|------------------|----------------|
| Regular Undiscounted | Utility under 35 USC 111(a) | 2835             | 690000           | MICHAEL MATEY  |
| Issue Fee Due        | Publication Due             | Total Fee(s) Due | Date Due         | Prev. Paid Fee |
| \$1200               | \$0                         | \$1200           | 03-Jun-2021      | \$0            |

**1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)**

| Current Correspondence Address:                                                                                                                       | Current Indicated Fee Address :                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| 8698<br>STANDLEY LAW GROUP LLP<br><br>6300 Riverside Drive<br><br>Dublin OH 43017<br>UNITED STATES<br>6147925555<br>standleydocketing@standleyllp.com |                                                                                                     |
| <input type="checkbox"/> Change of correspondence address requested, system generated AIA/122-EFS form attached                                       | <input type="checkbox"/> Fee Address indication requested, system generated SB/47-EFS form attached |

**2.Entity Status****Change in Entity Status**

Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.

Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.



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.

Document Description: Issue Fee Payment (PTO-85B)

**3.The Following Fee(s) Are Submitted:**☒ Issue Fee

I authorize USPTO to apply my previously paid issue fee to the current fees due

☐ Publication Fee

The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number \_\_\_\_\_

☐ Advance Order - # of copies \_\_\_\_\_

If in addition to the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency or credit any overpayment, to Deposit Account Number 194076.

**The issue fee must be submitted with this form. If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

**4.Firm and/or Attorney Names To Be Printed****NOTE: If no name is listed, no name will be printed**

For printing on the patent front page, list to be displayed as entered

1. STANDLEY LAW GROUP LLP

2. JEFFREY S. STANDLEY

3. ADAM J. SMITH

**5.Assignee Name(s) and Residence Data To Be Printed**

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

| Name                                        | City       | State   | Country       | Category    |
|---------------------------------------------|------------|---------|---------------|-------------|
| Manufacturing Resources International, Inc. | Alpharetta | GEORGIA | united states | corporation |

**6.Signature**

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

|           |                    |                     |            |
|-----------|--------------------|---------------------|------------|
| Signature | /Adam J. Smith/    | Date                | 04-19-2021 |
| Name      | Adam Jeffery Smith | Registration Number | 72962      |

| Electronic Patent Application Fee Transmittal      |                 |                                         |               |                             |
|----------------------------------------------------|-----------------|-----------------------------------------|---------------|-----------------------------|
| <b>Application Number:</b>                         |                 | 16933932                                |               |                             |
| <b>Filing Date:</b>                                |                 | 20-Jul-2020                             |               |                             |
| <b>Title of Invention:</b>                         |                 | ELECTRONIC DISPLAY WITH COOLING         |               |                             |
| <b>First Named Inventor/Applicant Name:</b>        |                 | William Dunn                            |               |                             |
| <b>Filer:</b>                                      |                 | Adam Jeffery Smith/Trisha Beachy-Bryant |               |                             |
| <b>Attorney Docket Number:</b>                     |                 | MAN2241-045R                            |               |                             |
| Filed as Large Entity                              |                 |                                         |               |                             |
| <b>Filing Fees for Utility under 35 USC 111(a)</b> |                 |                                         |               |                             |
| <b>Description</b>                                 | <b>Fee Code</b> | <b>Quantity</b>                         | <b>Amount</b> | <b>Sub-Total in USD(\$)</b> |
| <b>Basic Filing:</b>                               |                 |                                         |               |                             |
| UTILITY APPL ISSUE FEE                             | 1501            | 1                                       | 1200          | 1200                        |
| PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL             | 1504            | 1                                       | 0             | 0                           |
| <b>Pages:</b>                                      |                 |                                         |               |                             |
| <b>Claims:</b>                                     |                 |                                         |               |                             |
| <b>Miscellaneous-Filing:</b>                       |                 |                                         |               |                             |
| <b>Petition:</b>                                   |                 |                                         |               |                             |
| <b>Patent-Appeals-and-Interference:</b>            |                 |                                         |               |                             |

| Description                              | Fee Code | Quantity | Amount | Sub-Total in USD(\$) |
|------------------------------------------|----------|----------|--------|----------------------|
| <b>Post-Allowance-and-Post-Issuance:</b> |          |          |        |                      |
| <b>Extension-of-Time:</b>                |          |          |        |                      |
| <b>Miscellaneous:</b>                    |          |          |        |                      |
| <b>Total in USD (\$)</b>                 |          |          |        | <b>1200</b>          |

| Electronic Acknowledgement Receipt          |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 42491159                                |
| <b>Application Number:</b>                  | 16933932                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 5816                                    |
| <b>Title of Invention:</b>                  | ELECTRONIC DISPLAY WITH COOLING         |
| <b>First Named Inventor/Applicant Name:</b> | William Dunn                            |
| <b>Customer Number:</b>                     | 8698                                    |
| <b>Filer:</b>                               | Adam Jeffery Smith/Trisha Beachy-Bryant |
| <b>Filer Authorized By:</b>                 | Adam Jeffery Smith                      |
| <b>Attorney Docket Number:</b>              | MAN2241-045R                            |
| <b>Receipt Date:</b>                        | 19-APR-2021                             |
| <b>Filing Date:</b>                         | 20-JUL-2020                             |
| <b>Time Stamp:</b>                          | 16:54:58                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

### Payment information:

|                                                                                                                                                                                                                   |                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| Submitted with Payment                                                                                                                                                                                            | yes                  |
| Payment Type                                                                                                                                                                                                      | DA                   |
| Payment was successfully received in RAM                                                                                                                                                                          | \$1200               |
| RAM confirmation Number                                                                                                                                                                                           | E20214IG54553358     |
| Deposit Account                                                                                                                                                                                                   | 194076               |
| Authorized User                                                                                                                                                                                                   | Trisha Beachy-Bryant |
| <p>The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:</p> <p>37 CFR 1.20 (Post Issuance fees)</p> <p>37 CFR 1.21 (Miscellaneous fees and charges)</p> |                      |

| <b>File Listing:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                             |              |                                          |                  |                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------------|------------------------------------------|------------------|------------------|
| Document Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Document Description        | File Name    | File Size(Bytes)/ Message Digest         | Multi Part /.zip | Pages (if appl.) |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Issue Fee Payment (PTO-85B) | Web85b.pdf   | 46212                                    | no               | 2                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |              | bfb5a9cb1178bbe1bdff7d92f48cb65dcec16b33 |                  |                  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             |              |                                          |                  |                  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |              |                                          |                  |                  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Fee Worksheet (SB06)        | fee-info.pdf | 32023                                    | no               | 2                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                             |              | d1c2f2e9036bba7091da263bf37050855e93bf90 |                  |                  |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             |              |                                          |                  |                  |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |              |                                          |                  |                  |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                             |              | 78235                                    |                  |                  |
| <p>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.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a 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.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> 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.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> 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.</p> |                             |              |                                          |                  |                  |



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
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## NOTICE OF ALLOWANCE AND FEE(S) DUE

8698 7590 03/03/2021  
STANDLEY LAW GROUP LLP  
6300 Riverside Drive  
Dublin, OH 43017

EXAMINER

MATEY, MICHAEL A

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 03/03/2021

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 16/933,932      | 07/20/2020  | William Dunn         | MAN2241-045R        | 5816             |

TITLE OF INVENTION: ELECTRONIC DISPLAY WITH COOLING

| 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           | 06/03/2021 |

**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 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity 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 and an extra copy of the form should be submitted. 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](http://www.uspto.gov/PatentMaintenanceFees).**

**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

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 including the Patent, advance orders and notification of maintenance fees 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.

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

8698 7590 03/03/2021  
STANDLEY LAW GROUP LLP  
6300 Riverside Drive  
Dublin, OH 43017

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 EFS-Web 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. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 16/933,932      | 07/20/2020  | William Dunn         | MAN2241-045R        | 5816             |

TITLE OF INVENTION: ELECTRONIC DISPLAY WITH COOLING

| 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           | 06/03/2021 |

| EXAMINER         | ART UNIT | CLASS-SUBCLASS |
|------------------|----------|----------------|
| MATEY, MICHAEL A | 2835     | 361-690000     |

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/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 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, 1 \_\_\_\_\_
- (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. 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) ☐ Advance Order - # of Copies \_\_\_\_\_

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

- ☐ Electronic Payment via EFS-Web ☐ 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
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

**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.

**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.

**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. \_\_\_\_\_



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|                         |             |                      |                     |                  |
|-------------------------|-------------|----------------------|---------------------|------------------|
| APPLICATION NO.         | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 16/933,932              | 07/20/2020  | William Dunn         | MAN2241-045R        | 5816             |
| 8698                    | 7590        | 03/03/2021           | EXAMINER            |                  |
| STANDLEY LAW GROUP LLP  |             |                      | MATEY, MICHAEL A    |                  |
| 6300 Riverside Drive    |             |                      | ART UNIT            |                  |
| Dublin, OH 43017        |             |                      | PAPER NUMBER        |                  |
|                         |             |                      | 2835                |                  |
| DATE MAILED: 03/03/2021 |             |                      |                     |                  |

## 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. 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 disclosure of these records is required by the Freedom of Information Act.
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 inspection 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.

|                               |                                      |                                    |                                |
|-------------------------------|--------------------------------------|------------------------------------|--------------------------------|
| <b>Notice of Allowability</b> | <b>Application No.</b><br>16/933,932 | <b>Applicant(s)</b><br>Dunn et al. |                                |
|                               | <b>Examiner</b><br>MICHAEL A MATEY   | <b>Art Unit</b><br>2835            | <b>AIA (FITF) Status</b><br>No |

**-- 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 02/19/21.  
☐ 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 1,3,6-7 and 10-20. 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](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto: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. <input type="checkbox"/> Notice of References Cited (PTO-892)<br>2. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.<br>3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.<br>4. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. | 5. <input type="checkbox"/> Examiner's Amendment/Comment<br>6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance<br>7. <input type="checkbox"/> Other _____. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                              |                                                  |
|----------------------------------------------|--------------------------------------------------|
| /MICHAEL A MATEY/<br>Examiner, Art Unit 2835 | /BINH B TRAN/<br>Primary Examiner, Art Unit 2848 |
|----------------------------------------------|--------------------------------------------------|

***Notice of Pre-AIA or AIA Status***

The present application is being examined under the pre-AIA first to invent provisions.

***Allowable Subject Matter***

1. **Claims 1, 3, 6-7, and 10-20 are allowable.**

**The following is an examiners statement of reasons for allowance:**

The allowability resides in the overall structure and functionality of the device as respectively recited in independent claim 1, and at least in part, because independent claim 1, recites the limitations: "... a closed loop airflow pathway passing through the housing, wherein said closed loop airflow pathway passes around said electronic image assembly and is configured to accommodate circulating gas, and wherein at least a portion of said closed loop airflow pathway extends between said electronic image assembly and said cover panel; an open loop airflow pathway for ambient air passing through said housing and behind said electronic image assembly",

Independent claims 11 recites the limitations: "...an open loop airflow pathway passing through the housing behind the electronic image assembly; a closed loop gas circulation pathway contained within the housing,

Independent claim 17 recites the limitations: "...forcing circulating air through a closed loop airflow pathway within said housing, wherein at least a portion of said closed loop airflow pathway extends between an electronic image assembly and a cover panel... forcing ambient air through a second airflow pathway within said housing wherein said second airflow pathway extends behind said electronic image assembly".

The aforementioned limitations in combination with all remaining limitations of respective claim(s) 1, 11 & 17 are believed to render said claims and all claims depending therefrom (claims 3, 6-7, 10, 12-16, & 18-20) allowable over the prior art references of record, taken alone or in combination.

2. Any comment 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***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A MATEY whose telephone number is (571) 270-5648. The examiner can normally be reached on Monday-Friday 9AM-6PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAYPRAKASH GANDHI can be reached on 5712723740. The fax phone number for the organization where this application or proceeding 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 applications 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 Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL A MATEY/  
Examiner, Art Unit 2835  
/BINH B TRAN/  
Primary Examiner, Art Unit 2848

|                                                                                                                  |                                              |                                                               |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|
| <b>Issue Classification</b><br> | <b>Application/Control No.</b><br>16/933,932 | <b>Applicant(s)/Patent Under Reexamination</b><br>Dunn et al. |
|                                                                                                                  | <b>Examiner</b><br>MICHAEL A MATEY           | <b>Art Unit</b><br>2835                                       |

| CPC    |   |   |   |        |      |            |
|--------|---|---|---|--------|------|------------|
| Symbol |   |   |   |        | Type | Version    |
| H05K   | / | 7 | / | 202    | F    | 2013-01-01 |
| G02F   | / | 1 | / | 133385 | I    | 2013-01-01 |
| H05K   | / | 7 | / | 20972  | I    | 2013-01-01 |
| H05K   | / | 7 | / | 20136  | I    | 2013-01-01 |
| H05K   | / | 7 | / | 20163  | I    | 2013-01-01 |
| F28D   | / | 9 | / | 00     | A    | 2013-01-01 |
| F28F   | / | 3 | / | 02     | A    | 2013-01-01 |

| CPC Combination Sets |   |  |   |      |     |         |
|----------------------|---|--|---|------|-----|---------|
| Symbol               |   |  |   | Type | Set | Ranking |
|                      | / |  | / |      |     |         |

|                                                                        |                            |                                    |                        |
|------------------------------------------------------------------------|----------------------------|------------------------------------|------------------------|
| /MICHAEL A MATEY/<br>Examiner, Art Unit 2835<br>(Assistant Examiner)   | 23 February 2021<br>(Date) | <b>Total Claims Allowed:</b><br>15 |                        |
| /BINH B TRAN/<br>Primary Examiner, Art Unit 2848<br>(Primary Examiner) | 25 February 2021<br>(Date) | O.G. Print Claim(s)<br>1           | O.G. Print Figure<br>4 |

U.S. Patent and Trademark Office

Part of Paper No.: 20210223

|                                                                                                                  |                                              |                                                               |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|
| <b>Issue Classification</b><br> | <b>Application/Control No.</b><br>16/933,932 | <b>Applicant(s)/Patent Under Reexamination</b><br>Dunn et al. |
|                                                                                                                  | <b>Examiner</b><br>MICHAEL A MATEY           | <b>Art Unit</b><br>2835                                       |

|                                     |   |   |        |
|-------------------------------------|---|---|--------|
| <b>INTERNATIONAL CLASSIFICATION</b> |   |   |        |
| <b>CLAIMED</b>                      |   |   |        |
| H05K                                | / | 7 | / 20   |
| G02F                                | / | 1 | / 1333 |

|                    |  |   |  |
|--------------------|--|---|--|
| <b>NON-CLAIMED</b> |  |   |  |
| /                  |  | / |  |

|                                   |                 |
|-----------------------------------|-----------------|
| <b>US ORIGINAL CLASSIFICATION</b> |                 |
| <b>CLASS</b>                      | <b>SUBCLASS</b> |
|                                   |                 |

|                            |                                          |  |  |  |  |  |
|----------------------------|------------------------------------------|--|--|--|--|--|
| <b>CROSS REFERENCES(S)</b> |                                          |  |  |  |  |  |
| <b>CLASS</b>               | <b>SUBCLASS (ONE SUBCLASS PER BLOCK)</b> |  |  |  |  |  |
|                            |                                          |  |  |  |  |  |

|                                                                        |                            |                                    |                        |
|------------------------------------------------------------------------|----------------------------|------------------------------------|------------------------|
| /MICHAEL A MATEY/<br>Examiner, Art Unit 2835<br>(Assistant Examiner)   | 23 February 2021<br>(Date) | <b>Total Claims Allowed:</b><br>15 |                        |
| /BINH B TRAN/<br>Primary Examiner, Art Unit 2848<br>(Primary Examiner) | 25 February 2021<br>(Date) | O.G. Print Claim(s)<br>1           | O.G. Print Figure<br>4 |

|                                                                                                                  |                                              |                                                               |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|
| <b>Issue Classification</b><br> | <b>Application/Control No.</b><br>16/933,932 | <b>Applicant(s)/Patent Under Reexamination</b><br>Dunn et al. |
|                                                                                                                  | <b>Examiner</b><br>MICHAEL A MATEY           | <b>Art Unit</b><br>2835                                       |

|                                                                                                                                                                                   |                 |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |
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| <input type="checkbox"/> Claims renumbered in the same order as presented by applicant <input type="checkbox"/> CPA <input type="checkbox"/> T.D. <input type="checkbox"/> R.1.47 |                 |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |
| <b>CLAIMS</b>                                                                                                                                                                     |                 |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |
| <b>Final</b>                                                                                                                                                                      | <b>Original</b> | <b>Final</b> | <b>Original</b> | <b>Final</b> | <b>Original</b> | <b>Final</b> | <b>Original</b> | <b>Final</b> | <b>Original</b> | <b>Final</b> | <b>Original</b> | <b>Final</b> | <b>Original</b> | <b>Final</b> | <b>Original</b> |
| 1                                                                                                                                                                                 | 1               | 5            | 10              | 14           | 19              |              |                 |              |                 |              |                 |              |                 |              |                 |
|                                                                                                                                                                                   | 2               | 6            | 11              | 15           | 20              |              |                 |              |                 |              |                 |              |                 |              |                 |
| 2                                                                                                                                                                                 | 3               | 7            | 12              |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |
|                                                                                                                                                                                   | 4               | 8            | 13              |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |
|                                                                                                                                                                                   | 5               | 9            | 14              |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |
| 3                                                                                                                                                                                 | 6               | 10           | 15              |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |
| 4                                                                                                                                                                                 | 7               | 11           | 16              |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |
|                                                                                                                                                                                   | 8               | 12           | 17              |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |
|                                                                                                                                                                                   | 9               | 13           | 18              |              |                 |              |                 |              |                 |              |                 |              |                 |              |                 |

|                                                                        |                            |                                    |                        |
|------------------------------------------------------------------------|----------------------------|------------------------------------|------------------------|
| /MICHAEL A MATEY/<br>Examiner, Art Unit 2835<br>(Assistant Examiner)   | 23 February 2021<br>(Date) | <b>Total Claims Allowed:</b><br>15 |                        |
| /BINH B TRAN/<br>Primary Examiner, Art Unit 2848<br>(Primary Examiner) | 25 February 2021<br>(Date) | O.G. Print Claim(s)<br>1           | O.G. Print Figure<br>4 |

|                                                                                                          |                                              |                                                               |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|
| <b>Search Notes</b><br> | <b>Application/Control No.</b><br>16/933,932 | <b>Applicant(s)/Patent Under Reexamination</b><br>Dunn et al. |
|                                                                                                          | <b>Examiner</b><br>MICHAEL A MATEY           | <b>Art Unit</b><br>2835                                       |

| CPC - Searched*                                                                                                                                         |            |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|
| Symbol                                                                                                                                                  | Date       | Examiner |
| G02B5/30 OR G02B6/0055 OR G02F1/133528 OR G02F2001/133388 OR G02F1/133308 OR G02F1/133385 OR G07F17/3211 OR G09F13/0413 OR G09F13/12 OR G02F1/0311 OR   | 09/17/2020 | MM       |
| H05K7/202,206,20972.cpc.                                                                                                                                | 09/17/2020 | MM       |
| H05K7/20136 H05K7/20163 H05K7/20972                                                                                                                     | 09/17/2020 | MM       |
| G02F1/133308 OR G02F2001/133334 OR G02F1/133385 OR G02F2201/08 OR G02F2201/36 OR G02F1/133528 OR H01L51/5234 OR H05K9/0081 OR H05K7/20972 OR Y02P20/133 | 09/17/2020 | MM       |

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

| US Classification - Searched* |          |      |          |
|-------------------------------|----------|------|----------|
| Class                         | Subclass | Date | Examiner |
|                               |          |      |          |

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

| Search Notes                                              |            |          |
|-----------------------------------------------------------|------------|----------|
| Search Notes                                              | Date       | Examiner |
| Please see attached Inventor Assignee East search history | 09/17/2020 | MM       |
| conducted an IP.com search (Claims)                       | 09/17/2020 | MM       |
| Please see attached PGPub text search                     | 09/17/2020 | MM       |
| Please see attached East search history                   | 09/17/2020 | MM       |
| Please see attached East search history                   | 12/27/2020 | MM       |
| Please see attached interference East search history      | 02/23/2021 | MM       |

|                                              |                                                  |
|----------------------------------------------|--------------------------------------------------|
| /MICHAEL A MATEY/<br>Examiner, Art Unit 2835 | /BINH B TRAN/<br>Primary Examiner, Art Unit 2848 |
|----------------------------------------------|--------------------------------------------------|

|                                                                                                                 |                                              |                                                               |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|
| <b><i>Search Notes</i></b><br> | <b>Application/Control No.</b><br>16/933,932 | <b>Applicant(s)/Patent Under Reexamination</b><br>Dunn et al. |
|                                                                                                                 | <b>Examiner</b><br>MICHAEL A MATEY           | <b>Art Unit</b><br>2835                                       |

| Interference Search |                                         |            |          |
|---------------------|-----------------------------------------|------------|----------|
| US Class/CPC Symbol | US Subclass/CPC Group                   | Date       | Examiner |
|                     | Please see attached East search history | 02/23/2021 | MM       |

|                                              |                                                  |
|----------------------------------------------|--------------------------------------------------|
| /MICHAEL A MATEY/<br>Examiner, Art Unit 2835 | /BINH B TRAN/<br>Primary Examiner, Art Unit 2848 |
|----------------------------------------------|--------------------------------------------------|

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|                   |                                 |   |                                            |
|-------------------|---------------------------------|---|--------------------------------------------|
| App. No.:         | 16/933,932                      | : |                                            |
| Confirmation No.: | 5816                            | : |                                            |
| Inventor:         | Dunn, William et. al.           | : | <b>RESPONSE TO FINAL<br/>OFFICE ACTION</b> |
| Filed:            | July 20, 2020                   | : |                                            |
| Examiner:         | Matey, Michael A.               | : |                                            |
| Art Unit:         | 2835                            | : |                                            |
| Docket No.:       | MAN2241-045R                    | : |                                            |
| Title:            | ELECTRONIC DISPLAY WITH COOLING | : |                                            |

|                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>CERTIFICATE OF TRANSMISSION UNDER 37 CFR § 1.8 (a)<br/>Date of Transmission: February 19, 2021<br/>I hereby certify that this correspondence is being electronically filed<br/>via EFS-Web.<br/><br/><u>/Trisha M. Beachy-Bryant/</u><br/>Trisha M. Beachy-Bryant, Paralegal</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The following papers are filed in response to the Final Office Action mailed December 31, 2020. A **LISTING OF CLAIMS** begins at page 2 and **REMARKS** begin at page 8.

As this response is filed within two months of the mailing date of the Final Office Action, no additional fees are believed to be due and Applicant believes it is entitled to Advisory Practice. Please charge any fee deficiency to Deposit Account 19-4076.

## EAST Search History

### EAST Search History (Prior Art)

| Ref # | Hits | Search Query                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | DBs             | Default Operator | Plurals | Time Stamp       |
|-------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|---------|------------------|
| S1    | 24   | ("20020009978"   "20020065046"   "20020084891"   "20020164962"   "20030043091"   "20040223299"   "20050073639"   "20070103863"   "20090059518"   "20110122162"   "6701143"   "6714410"   "6812851"   "6825828"   "6850209"   "7157838"   "7161803"   "7259964"   "7269023"   "7452121"   "7591508"   "7903416"   "8758144"   "9894800").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB; USPAT | ADJ              | OFF     | 2018/09/28 14:32 |
| S2    | 225  | ("20010001459"   "20010019454"   "20020033919"   "20020101553"   "20020126248"   "20020148600"   "20020149714"   "20020154255"   "20020164944"   "20020167637"   "20030007109"   "20030020884"   "20030104210"   "20030128511"   "20030214785"   "20040012722"   "20040035558"   "20040036834"   "20040103570"   "20040105159"   "20040165139"   "20050012039"   "20050012722"   "20050062373"   "20050073632"   "20050134525"   "20050134526"   "20050213950"   "20050229630"   "20050237714"   "20050276053"   "20050286131"   "20060012958"   "20060018093"   "20060034051"   "20060056994"   "20060082271"   "20060092348"   "20060125998"   "20060132699"   "20060177587"   "20060199514"   "20060209266"   "20060260790"   "20060262079"   "20060266499"   "20060283579"   "20070019419"   "20070030879"   "20070047239"   "20070065091"   "20070076431"   "20070103866"   "20070115686"   "20070139929"   "20070140671"   "20070151274"   "20070151664"   "20070171353"   "20070206158"   "20070211205"   "20070212211"   "20070217221"   "20070237636"   "20070267174"   "20080055534"   "20080076342"   "20080099193"   "20080148609"   "20080209934") | US-PGPUB; USPAT | ADJ              | OFF     | 2018/09/28 14:32 |

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|    |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                       |     |     |                     |
|----|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----|-----|---------------------|
| S3 | 106   | ((("MANUFACTURING") near3 ("RESOURCES") near3 ("INTERNATIONAL") near3 ("INC"))).AS,AANM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | USPAT                                                 | ADJ | OFF | 2018/09/28<br>14:32 |
| S4 | 1,117 | ((("DUNN") near3 ("William")) OR ((("HUBBARD") near3 ("Tim")))).INV.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | ADJ | OFF | 2018/09/28<br>14:32 |
| S5 | 24    | ("20020009978"   "20020065046"   "20020084891"   "20020164962"   "20030043091"   "20040223299"   "20050073639"   "20070103863"   "20090059518"   "20110122162"   "6701143"   "6714410"   "6812851"   "6825828"   "6850209"   "7157838"   "7161803"   "7259964"   "7269023"   "7452121"   "7591508"   "7903416"   "8758144"   "9894800").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT                                    | ADJ | OFF | 2018/09/28<br>16:02 |
| S6 | 225   | ("20010001459"   "20010019454"   "20020033919"   "20020101553"   "20020126248"   "20020148600"   "20020149714"   "20020154255"   "20020164944"   "20020167637"   "20030007109"   "20030020884"   "20030104210"   "20030128511"   "20030214785"   "20040012722"   "20040035558"   "20040036834"   "20040103570"   "20040105159"   "20040165139"   "20050012039"   "20050012722"   "20050062373"   "20050073632"   "20050134525"   "20050134526"   "20050213950"   "20050229630"   "20050237714"   "20050276053"   "20050286131"   "20060012958"   "20060018093"   "20060034051"   "20060056994"   "20060082271"   "20060092348"   "20060125998"   "20060132699"   "20060177587"   "20060199514"   "20060209266"   "20060260790"   "20060262079"   "20060266499"   "20060283579"   "20070019419"   "20070030879"   "20070047239"   "20070065091"   "20070076431"   "20070103866"   "20070115686"   "20070139929"   "20070140671"   "20070151274"   "20070151664"   "20070171353"   "20070206158"   "20070211205"   "20070212211"   "20070217221"   "20070237636" | US-PGPUB;<br>USPAT                                    | ADJ | OFF | 2018/09/28<br>16:02 |

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|  | "5991153"   "6003015"   "6007205" |  |  |  |
|  | "6089751"   "6104451"   "6157432" |  |  |  |
|  | "6181070"   "6191839"   "6198222" |  |  |  |
|  | "6211934"   "6215655"   "6351381" |  |  |  |
|  | "6392727"   "6417900"   "6428198" |  |  |  |
|  | "6473150"   "6493440"   "6504713" |  |  |  |
|  | "6535266"   "6628355"   "6727468" |  |  |  |
|  | "6839104"   "6885412"   "6886942" |  |  |  |
|  | "6891135"   "6909486"   "6943768" |  |  |  |
|  | "6961108"   "7015470"   "7059757" |  |  |  |
|  | "7083285"   "7190587"   "7209349" |  |  |  |
|  | "7212403"   "7284874"   "7457113" |  |  |  |
|  | "7480140"   "7535543"   "7602469" |  |  |  |
|  | "7667964"   "7752858"   "7753567" |  |  |  |
|  | "7800706"   "7813124"   "7995342" |  |  |  |
|  | "8004648"   "8035968"   "8081465" |  |  |  |
|  | "8102173"   "8142027"   "8208115" |  |  |  |
|  | "8223311"   "8241573"   "8248784" |  |  |  |
|  | "8254121"   "8269916"   "8270163" |  |  |  |
|  | "8274622"   "8274789"   "8300203" |  |  |  |
|  | "8320119"   "8351014"   "8358397" |  |  |  |
|  | "8369083"   "8373841"   "8379182" |  |  |  |
|  | "8400608"   "8472174"   "8472191" |  |  |  |
|  | "8482695"   "8497972"   "8649170" |  |  |  |
|  | "8649176"   "8654302"   "8678603" |  |  |  |
|  | "8693185"   "8700226"   "8711321" |  |  |  |
|  | "8749749"   "8755021"   "8760613" |  |  |  |
|  | "8767165"   "8773633"   "8804091" |  |  |  |
|  | "8823916"   "8827472"   "8854572" |  |  |  |
|  | "8854595"   "8879042"   "8988647" |  |  |  |
|  | "9030641"   "9089079"   "9119325" |  |  |  |
|  | "9119330"   "9173322"   "9173325" |  |  |  |
|  | "9282676"   "9285108"   "9313917" |  |  |  |
|  | "9370127"   "9448569"   "9451060" |  |  |  |
|  | "9451733"   "9456525"   "9470924" |  |  |  |
|  | "9500896"   "9516485"   "9549490" |  |  |  |
|  | "9594271"   "9613548"   "9622392" |  |  |  |

|     |     |                                                                                                                                                                                                                                                                                 |                          |     |     |                  |
|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----|-----|------------------|
|     |     | "9629287"   "9648790"   "9655289"   "9723765"   "9797588"   "9801305"   "9835893"   "D608775").PN.                                                                                                                                                                              |                          |     |     |                  |
| S7  | 106 | ((("MANUFACTURING") near3 ("RESOURCES") near3 ("INTERNATIONAL") near3 ("INC"))).AS,AANM.                                                                                                                                                                                        | USPAT                    | ADJ | OFF | 2018/09/28 16:02 |
| S8  | 0   | S5 S6 S7                                                                                                                                                                                                                                                                        | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2018/09/28 16:02 |
| S9  | 304 | S5 S6 S7                                                                                                                                                                                                                                                                        | US-PGPUB; USPAT; IBM_TDB | OR  | OFF | 2018/09/28 16:02 |
| S10 | 2   | ((("6493440") or ("20090154096"))).PN.                                                                                                                                                                                                                                          | US-PGPUB; USPAT          | OR  | OFF | 2018/09/28 16:17 |
| S11 | 1   | ("5991153").PN.                                                                                                                                                                                                                                                                 | US-PGPUB; USPAT          | OR  | OFF | 2018/09/30 13:03 |
| S12 | 1   | ("20060082271").PN.                                                                                                                                                                                                                                                             | US-PGPUB; USPAT          | OR  | OFF | 2018/09/30 13:06 |
| S13 | 1   | ("5869919").PN.                                                                                                                                                                                                                                                                 | US-PGPUB; USPAT          | OR  | OFF | 2018/09/30 13:09 |
| S14 | 1   | ("5748269").PN.                                                                                                                                                                                                                                                                 | US-PGPUB; USPAT          | OR  | OFF | 2018/09/30 13:11 |
| S15 | 2   | ((("20050073632") or ("20070206158"))).PN.                                                                                                                                                                                                                                      | US-PGPUB; USPAT          | OR  | OFF | 2018/09/30 13:15 |
| S16 | 16  | ("20150366101"   "20110167845"   "20160198589"   "20120236499"   "20100177479"   "20110058326"   "20090086430"   "20160198589"   "7486517"   "20080285290"   "20150075758"   "20110162831"   "20070081344"   "20110310315"   "20140334100"   "20170172016"   "20130194782").PN. | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2018/09/30 14:04 |
| S17 | 1   | "15719374"                                                                                                                                                                                                                                                                      | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2018/09/30 14:05 |
| S18 | 86  | electronic display and (closed near2 cool\$3)                                                                                                                                                                                                                                   | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2018/09/30 14:25 |
| S19 | 8   | S18 and @ad<="20080320"                                                                                                                                                                                                                                                         | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2018/09/30 14:25 |
| S22 | 422 | display and (closed near2 loop near3 gas)                                                                                                                                                                                                                                       | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2018/09/30 14:33 |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |     |     |                     |
|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S23 | 166 | S22 and @ad<="20071116"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/30<br>14:33 |
| S24 | 42  | S23 and heat exchanger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/30<br>14:33 |
| S25 | 717 | H05K7/202 G02F1/133385<br>H05K7/20136 H05K7/20163<br>H05K7/20972                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT;<br>IBM_TDB | OR  | OFF | 2018/09/30<br>16:35 |
| S26 | 243 | ("20070081344"   "20090009047"  <br>"20090122218"   "20090302727"  <br>"20110085302"   "20120188481"  <br>"6043979"   "6742583"   "8590602"  <br>"20020009978"   "20020065046"  <br>"20020084891"   "20020164962"  <br>"20030043091"   "20040223299"  <br>"20050073639"   "20070103863"  <br>"20090059518"   "20110122162"  <br>"6701143"   "6714410"   "6812851"  <br>"6825828"   "6850209"   "7157838"  <br>"7161803"   "7259964"   "7269023"  <br>"7452121"   "7591508"   "7903416"  <br>"8758144"   "9894800"  <br>"20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035558"   "20040036834"  <br>"20040103570"   "20040105159"  <br>"20040165139"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050134525"  <br>"20050134526"   "20050213950"  <br>"20050229630"   "20050237714"  <br>"20050276053"   "20050286131"  <br>"20060012958"   "20060018093"  <br>"20060034051"   "20060056994"  <br>"20060082271"   "20060092348"  <br>"20060125998"   "20060132699"  <br>"20060177587"   "20060199514"  <br>"20060209266"   "20060260790"  <br>"20060262079"   "20060266499"  <br>"20060283579"   "20070019419"  <br>"20070030879"   "20070047239"  <br>"20070065091"   "20070076431"  <br>"20070103866"   "20070115686"  <br>"20070139929"   "20070140671" | US-PGPUB;<br>USPAT             | ADJ | OFF | 2019/04/27<br>18:49 |

|               |               |           |  |  |
|---------------|---------------|-----------|--|--|
| "20070151274" | "20070151664" |           |  |  |
| "20070171353" | "20070206158" |           |  |  |
| "20070211205" | "20070212211" |           |  |  |
| "20070217221" | "20070237636" |           |  |  |
| "20070267174" | "20080055534" |           |  |  |
| "20080076342" | "20080099193" |           |  |  |
| "20080148609" | "20080209934" |           |  |  |
| "20080218446" | "20080236005" |           |  |  |
| "20080267790" | "20080283234" |           |  |  |
| "20080285290" | "4093355"     |           |  |  |
| "4593978"     | "4634225"     | "4748765" |  |  |
| "4763993"     | "4921041"     | "4952783" |  |  |
| "4952925"     | "5029982"     | "5088806" |  |  |
| "5132666"     | "5247374"     | "5282114" |  |  |
| "5293930"     | "5351176"     | "5432526" |  |  |
| "5535816"     | "5559614"     | "5621614" |  |  |
| "5657641"     | "5748269"     | "5765743" |  |  |
| "5767489"     | "5808418"     | "5818010" |  |  |
| "5818694"     | "5835179"     | "5864465" |  |  |
| "5869818"     | "5869919"     | "5903433" |  |  |
| "5991153"     | "6003015"     | "6007205" |  |  |
| "6089751"     | "6104451"     | "6157432" |  |  |
| "6181070"     | "6191839"     | "6198222" |  |  |
| "6211934"     | "6215655"     | "6351381" |  |  |
| "6392727"     | "6417900"     | "6428198" |  |  |
| "6473150"     | "6493440"     | "6504713" |  |  |
| "6535266"     | "6628355"     | "6727468" |  |  |
| "6839104"     | "6885412"     | "6886942" |  |  |
| "6891135"     | "6909486"     | "6943768" |  |  |
| "6961108"     | "7015470"     | "7059757" |  |  |
| "7083285"     | "7190587"     | "7209349" |  |  |
| "7212403"     | "7284874"     | "7457113" |  |  |
| "7480140"     | "7535543"     | "7602469" |  |  |
| "7667964"     | "7752858"     | "7753567" |  |  |
| "7800706"     | "7813124"     | "7995342" |  |  |
| "8004648"     | "8035968"     | "8081465" |  |  |
| "8102173"     | "8142027"     | "8208115" |  |  |
| "8223311"     | "8241573"     | "8248784" |  |  |
| "8254121"     | "8269916"     | "8270163" |  |  |
| "8274622"     | "8274789"     | "8300203" |  |  |
| "8320119"     | "8351014"     | "8358397" |  |  |
| "8369083"     | "8373841"     | "8379182" |  |  |
| "8400608"     | "8472174"     | "8472191" |  |  |
| "8482695"     | "8497972"     | "8649170" |  |  |
| "8649176"     | "8654302"     | "8678603" |  |  |
| "8693185"     | "8700226"     | "8711321" |  |  |
| "8749749"     | "8755021"     | "8760613" |  |  |
| "8767165"     | "8773633"     | "8804091" |  |  |
| "8823916"     | "8827472"     | "8854572" |  |  |
| "8854595"     | "8879042"     | "8988647" |  |  |
| "9030641"     | "9089079"     | "9119325" |  |  |
| "9119330"     | "9173322"     | "9173325" |  |  |
| "9282676"     | "9285108"     | "9313917" |  |  |

|     |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |     |     |                  |
|-----|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----|-----|------------------|
|     |        | "9370127"   "9448569"   "9451060"   "9451733"   "9456525").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |     |     |                  |
| S27 | 15     | ("9470924"   "9500896"   "9516485"   "9549490"   "9594271"   "9613548"   "9622392"   "9629287"   "9648790"   "9655289"   "9723765"   "9797588"   "9801305"   "9835893"   "D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB; USPAT          | ADJ | OFF | 2019/04/27 18:49 |
| S28 | 5      | ("20040042174"   "20050127796"   "20090231807"   "6476883"   "7762707").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB; USPAT          | ADJ | OFF | 2019/05/23 14:44 |
| S29 | 884    | ((closed loop and open loop) with (gas or cool\$3 or dissipation)) and (display or panel or screen)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2019/05/25 12:58 |
| S30 | 25,828 | ((closed and open) with (gas or cool\$3 or dissipation)) and (display or panel or screen)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2019/05/25 12:59 |
| S31 | 1,499  | S30 and ("361".clas. or H05K\$.cpc. or G06F\$.cpc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2019/05/25 13:00 |
| S32 | 106    | ("20020050793"   "20050073639"   "20170175411"   "6125565"   "6850209"   "7525633"   "7535547"   "8827472"   "9655289"   "20020148600"   "20030128511"   "20040012722"   "20040035558"   "20050073632"   "20050134526"   "20060034051"   "20060177587"   "20060199514"   "20060209266"   "20070076431"   "20070139929"   "20070267174"   "20080055534"   "20080267790"   "20080283234"   "20090154096"   "20100182562"   "20100220249"   "20110051071"   "20110261523"   "20140085564"   "20150264826"   "20160192536"   "20160242329"   "20170074453"   "20170111521"   "4593978"   "5293930"   "5835179"   "5864465"   "6157432"   "6181070"   "6198222"   "6428198"   "6943768"   "7015470"   "7190587"   "8142027"   "8223311"   "8241573"   "8270163"   "8274789"   "8472191"   "8700226"   "9089079"   "9119330"   "D608775"   "20020112026"   "20090059518"   "20170163519"   "20170332523"   "6701143"   "7682047"   "9801305"   "D657422"   "D669938"   "20020126248"   "20020154255" | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2019/05/25 13:06 |

|     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                |     |     |                     |
|-----|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|     |   | "20030020884"   "20040036834"  <br>"20040165139"   "20050012722"  <br>"20050229630"   "20050237714"  <br>"20060132699"   "20070103866"  <br>"20070212211"   "20090279240"  <br>"20100162747"   "20100171889"  <br>"20100232107"   "20120006523"  <br>"20120012300"   "20120106081"  <br>"20120249402"   "20130201685"  <br>"20150319882"   "20160302331"  <br>"20170111520"   "5748269"  <br>"5869919"   "5991153"   "6089751"  <br>"6886942"   "7059757"   "7212403"  <br>"8274622"   "8482695"   "8854595"  <br>"9173322"   "9282676"   "9622392"  <br>"20020009978"   "20020164962"  <br>"20070103863"   "20120188481").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |     |     |                     |
| S33 | 0 | ("20020050793"   "20050073639"  <br>"20170175411"   "6125565"  <br>"6850209"   "7525633"   "7535547"  <br>"8827472"   "9655289"  <br>"20020148600"   "20030128511"  <br>"20040012722"   "20040035558"  <br>"20050073632"   "20050134526"  <br>"20060034051"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20070076431"   "20070139929"  <br>"20070267174"   "20080055534"  <br>"20080267790"   "20080283234"  <br>"20090154096"   "20100182562"  <br>"20100220249"   "20110051071"  <br>"20110261523"   "20140085564"  <br>"20150264826"   "20160192536"  <br>"20160242329"   "20170074453"  <br>"20170111521"   "4593978"  <br>"5293930"   "5835179"   "5864465"  <br>"6157432"   "6181070"   "6198222"  <br>"6428198"   "6943768"   "7015470"  <br>"7190587"   "8142027"   "8223311"  <br>"8241573"   "8270163"   "8274789"  <br>"8472191"   "8700226"   "9089079"  <br>"9119330"   "D608775"  <br>"20020112026"   "20090059518"  <br>"20170163519"   "20170332523"  <br>"6701143"   "7682047"   "9801305"  <br>"D657422"   "D669938"  <br>"20020126248"   "20020154255"  <br>"20030020884"   "20040036834"  <br>"20040165139"   "20050012722"  <br>"20050229630"   "20050237714"  <br>"20060132699"   "20070103866"  <br>"20070212211"   "20090279240" | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2019/05/25<br>13:08 |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |     |     |                     |
|-----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|     |     | "20100162747"   "20100171889"  <br>"20100232107"   "20120006523"  <br>"20120012300"   "20120106081"  <br>"20120249402"   "20130201685"  <br>"20150319882"   "20160302331"  <br>"20170111520"   "5748269"  <br>"5869919"   "5991153"   "6089751"  <br>"6886942"   "7059757"   "7212403"  <br>"8274622"   "8482695"   "8854595"  <br>"9173322"   "9282676"   "9622392"  <br>"20020009978"   "20020164962"  <br>"20070103863"  <br>"20120188481").PN.and"<br>@ad<="20080909"                                                                                                                                                                                                                                                                                                |                              |     |     |                     |
| S34 | 67  | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20030007109"  <br>"20030104210"   "20040036834"  <br>"20040105159"   "20040165139"  <br>"20050012722"   "20050073632"  <br>"20060082271"   "20060092348"  <br>"20060132699"   "20060177587"  <br>"20060209266"   "20070103866"  <br>"20070151664"   "20070206158"  <br>"20070212211"   "4093355"  <br>"4593978"   "4634225"   "5029982"  <br>"5088806"   "5247374"   "5559614"  <br>"5748269"   "5767489"   "5818010"  <br>"5869919"   "5991153"   "6089751"  <br>"6157432"   "6191839"   "6392727"  <br>"6417900"   "6493440"   "6535266"  <br>"6628355"   "6839104"   "6885412"  <br>"6909486"   "6943768"   "6961108"  <br>"7059757"   "7083285").PN. OR<br>("8274622").URPN. | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2019/05/25<br>13:19 |
| S35 | 289 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030043091"   "20030104210"  <br>"20030128511"   "20030214785"  <br>"20040012722"   "20040035558"  <br>"20040036834"   "20040103570"  <br>"20040105159"   "20040165139"  <br>"20040223299"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050073639"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050276053"                                                                                                                                                           | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2019/05/25<br>13:23 |

|                                   |               |  |  |  |  |
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|  | "6886942"                    | "6891135" | "6909486" |  |  |  |  |
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|  | "8270163"                    | "8274622" | "8274789" |  |  |  |  |
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|  | "8472191"                    | "8482695" | "8497972" |  |  |  |  |
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|  | "8678603"                    | "8693185" | "8700226" |  |  |  |  |
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|  | "9119330"                    | "9173322" | "9173325" |  |  |  |  |
|  | "9282676"                    | "9285108" | "9313917" |  |  |  |  |
|  | "9370127"                    | "9448569" | "9451060" |  |  |  |  |
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|  | "9500896"                    | "9516485" | "9549490" |  |  |  |  |
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|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |     |     |                     |
|-----|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
| S36 | 58  | ("20010001459"   "20020126248"  <br>"20020149714"   "20060199514"  <br>"20070212211"   "6157432"  <br>"6535266"   "6943768"   "7059757"  <br>"20070206158"   "20020033919"  <br>"20040105159"   "20050012722"  <br>"20070103866"   "20100182562"  <br>"4593978"   "5748269"   "6191839"  <br>"6885412"   "20050286131"  <br>"20060177587"   "20070206158"  <br>"4093355"   "5559614"   "6089751"  <br>"6392727"   "6417900"   "5869919"  <br>"20030007109"   "20050073632"  <br>"20060092348"   "4634225"  <br>"5029982"   "5088806"   "6839104"  <br>"7083285"   "20010019454"  <br>"20020101553"   "20030104210"  <br>"20070140671"   "6493440"  <br>"5991153"   "20040165139"  <br>"20050213950"   "5767489"  <br>"20060132699"   "20060209266"  <br>"7284874"   "20050127796"  <br>"20060082271"   "5247374"  <br>"5818010"   "6628355"   "6909486"  <br>"6961108"   "20070151664"  <br>"20060082271"   "20060132699"  <br>"20020033919"   "20040036834"  <br>"20070019419"   "20110013114").PN. | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2019/05/25<br>13:24 |
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|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |     |     |                     |
|-----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
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| S38 | 5   | ("20040042174"   "20050127796"  <br>"20090231807"   "6476883"  <br>"7762707").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | US-PGPUB;<br>USPAT           | ADJ | OFF | 2019/05/29<br>10:12 |
| S39 | 1   | "15789331"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2019/09/02<br>02:58 |
| S40 | 8   | electronic display image assembly front<br>portion rear portion open loop ambient<br>air flow path closed loop gas circulation<br>path heat exchanger pathway gas<br>circulation device force circulating gas<br>air circulation device                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT;<br>USOCR | AND | OFF | 2019/09/02<br>03:02 |
| S49 | 202 | ("10080316"   "10088702"  <br>"10194564"   "10212845"  <br>"10278311"   "10314212"  <br>"10359659"   "10398066"  <br>"10420257"   "10485113"  <br>"10499516"   "10506738"  <br>"10506740"   "20010001459"  <br>"20010019454"   "20020009978"  <br>"20020033919"   "20020050793"  <br>"20020065046"   "20020084891"  <br>"20020101553"   "20020112026"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020164962"  <br>"20020167637"   "20030007109"  <br>"20030020884"   "20030043091"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"                                                                                                                                                                                                         | US-PGPUB;<br>USPAT           | ADJ | OFF | 2020/02/27<br>05:40 |

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| "20100162747" | "20100171889" |  |  |  |  |
| "20100182562" | "20100220249" |  |  |  |  |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |     |     |                     |
|-----|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
|     |     | "20100226091"   "20100232107"  <br>"20100238394"   "20100321887"  <br>"20110001898"   "20110013114"  <br>"20110019363"   "20110032489"  <br>"20110051071"   "20110058326"  <br>"20110072697"   "20110075361"  <br>"20110083460"   "20110083824"  <br>"20110085301"   "20110085302"  <br>"20110090630"   "20110114384"  <br>"20110116000"   "20110116231"  <br>"20110122162"   "20110141672"  <br>"20110141724"   "20110261523"  <br>"20110297810"   "20120006523"  <br>"20120012295"   "20120012300"  <br>"20120014063"   "20120020114"  <br>"20120038849"   "20120044217"  <br>"20120105790"   "20120106081"  <br>"20120188481"   "20120206687"  <br>"20120249402"   "20120255704"  <br>"20120274876"   "20120284547"  <br>"20120327600"   "20130170140"  <br>"20130173358"   "20130176517"  <br>"20130201685"   "20130258659"  <br>"20130279154"   "20130294039"  <br>"20130344794"   "20140044147"  <br>"20140085564"   "20140111758"  <br>"20140113540"   "20140134767"  <br>"20140190240"   "20140268657"  <br>"20140313698"   "20140314395"  <br>"20140361138"   "20150009627").PN. |                    |     |     |                     |
| S50 | 230 | ("20150192371"   "20150253611"  <br>"20150264826"   "20150319882"  <br>"20150366101"   "20160041423"  <br>"20160044829"   "20160162297"  <br>"20160192536"   "20160195254"  <br>"20160198588"   "20160238876"  <br>"20160242329"   "20160242330"  <br>"20160249493"   "20160302331"  <br>"20170023823"   "20170068042"  <br>"20170074453"   "20170083043"  <br>"20170083062"   "20170111486"  <br>"20170111520"   "20170111521"  <br>"20170127579"   "20170140344"  <br>"20170147992"   "20170163519"  <br>"20170175411"   "20170188490"  <br>"20170245400"   "20170257978"  <br>"20170332523"   "20180042134"  <br>"20180116073"   "20180314103"  <br>"20180315356"   "20180317330"  <br>"20180317350"   "20180364519"  <br>"20190037738"   "20190089176"  <br>"20190133002"   "20190208674"                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/02/27<br>05:40 |

|  |                                   |  |  |  |
|--|-----------------------------------|--|--|--|
|  | "20190239365"   "20190289754"     |  |  |  |
|  | "20190327865"   "4093355"         |  |  |  |
|  | "4593978"   "4634225"   "4748765" |  |  |  |
|  | "4763993"   "4921041"   "4952783" |  |  |  |
|  | "4952925"   "5029982"   "5088806" |  |  |  |
|  | "5132666"   "5247374"   "5282114" |  |  |  |
|  | "5293930"   "5351176"   "5432526" |  |  |  |
|  | "5535816"   "5559614"   "5621614" |  |  |  |
|  | "5657641"   "5748269"   "5765743" |  |  |  |
|  | "5767489"   "5808418"   "5818010" |  |  |  |
|  | "5818694"   "5835179"   "5864465" |  |  |  |
|  | "5869818"   "5869919"   "5903433" |  |  |  |
|  | "5991153"   "6003015"   "6007205" |  |  |  |
|  | "6043979"   "6089751"   "6104451" |  |  |  |
|  | "6125565"   "6157432"   "6181070" |  |  |  |
|  | "6191839"   "6198222"   "6211934" |  |  |  |
|  | "6215655"   "6351381"   "6359390" |  |  |  |
|  | "6392727"   "6417900"   "6428198" |  |  |  |
|  | "6437673"   "6473150"   "6476883" |  |  |  |
|  | "6493440"   "6504713"   "6535266" |  |  |  |
|  | "6628355"   "6643130"   "6683639" |  |  |  |
|  | "6701143"   "6714410"   "6727468" |  |  |  |
|  | "6742583"   "6812851"   "6825828" |  |  |  |
|  | "6833992"   "6839104"   "6850209" |  |  |  |
|  | "6885412"   "6886942"   "6891135" |  |  |  |
|  | "6909486"   "6943768"   "6961108" |  |  |  |
|  | "7015470"   "7059757"   "7083285" |  |  |  |
|  | "7157838"   "7161803"   "7190416" |  |  |  |
|  | "7190587"   "7209349"   "7212403" |  |  |  |
|  | "7259964"   "7269023"   "7284874" |  |  |  |
|  | "7396145"   "7447018"   "7452121" |  |  |  |
|  | "7457113"   "7480140"   "7535543" |  |  |  |
|  | "7591508"   "7602469"   "7667964" |  |  |  |
|  | "7682047"   "7752858"   "7753567" |  |  |  |
|  | "7762707"   "7800706"   "7813124" |  |  |  |
|  | "7903416"   "7995342"   "8004648" |  |  |  |
|  | "8035968"   "8081465"   "8102173" |  |  |  |
|  | "8142027"   "8208115"   "8223311" |  |  |  |
|  | "8241573"   "8248784"   "8254121" |  |  |  |
|  | "8269916"   "8270163"   "8274622" |  |  |  |
|  | "8274789"   "8300203"   "8310824" |  |  |  |
|  | "8320119"   "8351014"   "8358397" |  |  |  |
|  | "8369083"   "8373841"   "8379182" |  |  |  |
|  | "8400608"   "8472174"   "8472191" |  |  |  |
|  | "8482695"   "8497972"   "8590602" |  |  |  |
|  | "8649170"   "8649176"   "8654302" |  |  |  |
|  | "8678603"   "8693185"   "8700226" |  |  |  |
|  | "8711321"   "8749749"   "8755021" |  |  |  |
|  | "8758144"   "8760613"   "8767165" |  |  |  |
|  | "8773633"   "8804091"   "8823916" |  |  |  |
|  | "8827472"   "8854572"   "8854595" |  |  |  |
|  | "8879042"   "8976313"   "8988647" |  |  |  |
|  | "9030641"   "9089079"   "9119325" |  |  |  |

|     |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |    |     |                     |
|-----|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----|-----|---------------------|
|     |       | "9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9703230"   "9723765"   "9797588"  <br>"9801305"   "9823690"   "9835893"  <br>"9894800"   "D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |    |     |                     |
| S51 | 1,007 | ((("20180042134") or ("10506740") or<br>("9801305") or ("9173325") or<br>("20150237761") or ("20160041423")<br>or ("9835893") or ("8654302") or<br>("20110013114") or ("8351014") or<br>("20150366101") or ("20110085301")<br>or ("9119325") or ("9030641") or<br>("20130279154") or ("20140111758")<br>or ("20030094006") or ("6684653") or<br>("20080041077") or ("9723765") or<br>("20160242329") or ("10278311") or<br>("20170332523") or ("10548247") or<br>("20190208674") or ("20180310439")<br>or ("20070002536") or ("10485147")<br>or ("20080055856") or ("7486513") or<br>("7342789") or ("8472174") or<br>("20170257978") or ("20110058326")<br>or ("20080055851") or<br>("20080212282") or ("9629287") or<br>("20140295748") or ("8988647") or<br>("20090255142") or ("20120106081")<br>or ("8823916") or ("10266984") or<br>("20140369003") or ("4327274") or<br>("9119330") or ("20120012300") or<br>("20170303442") or ("20080245083")<br>or ("20130170139") or ("8322155") or<br>("9115916") or ("8369083") or<br>("9267714") or ("20140123683") or<br>("10045467") or ("8649170") or<br>("20170127579") or ("20080041076")<br>or ("20190289754") or<br>("20130139530") or ("20160345461")<br>or ("8327656") or ("10314212") or<br>("20180343774") or ("9175434") or<br>("20170127556") or ("9699939") or<br>("20200029460") or ("20150195959")<br>or ("10398063") or ("9560789") or<br>("9549490") or ("10524384") or<br>("20170268159") or ("10400385") or<br>("20170234623") or ("20140345834")<br>or ("7864527") or ("6924981") or<br>("7729115") or ("20120281161") or | US-PGPUB;<br>USPAT | OR | OFF | 2020/02/27<br>06:08 |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |  |
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|  | ("9451733") or ("20040190247") or<br>("8755021") or ("4026263") or<br>("20040100770") or ("20120105790")<br>or ("20080030951") or ("6775137") or<br>("3277956") or ("8749749") or<br>("20050263142") or ("20110238143")<br>or ("6085701") or ("7165539") or<br>("20030091363") or ("6771916") or<br>("8590602") or ("20090086428") or<br>("20190059175") or ("10214037") or<br>("20180162151") or ("20120206687")<br>or ("9897336") or ("20180364519") or<br>("20170023823") or ("6345511") or<br>("20110099834") or ("20090052132")<br>or ("10143106") or ("10398058") or<br>("8627581") or ("8804091") or<br>("9408332") or ("20190193436") or<br>("9873273") or ("9470924") or<br>("6308526") or ("20160236494") or<br>("20160016423") or ("20160143191")<br>or ("20160377303") or<br>("20180317330") or ("8773633") or<br>("10359659") or ("10088702") or<br>("9278564") or ("7918799") or<br>("20150009627") or ("20160192536")<br>or ("20110261523")).PN. or<br>(("9282676") or ("20180223846") or<br>("20090209863") or ("10499516") or<br>("20190335613") or ("20150022967")<br>or ("9797588") or ("20100251742") or<br>("20160195254") or ("20140321103")<br>or ("20150327409") or ("9089079") or<br>("20100305775") or ("20190111758")<br>or ("9370127") or ("9285108") or<br>("20160302331") or ("2299939") or<br>("8145363") or ("6205796") or<br>("20020134544") or ("6367410") or<br>("20190037738") or ("20190170383")<br>or ("7086453") or ("20050056404") or<br>("8152904") or ("10514176") or<br>("20110072970") or ("20090086432")<br>or ("20110077555") or<br>("20180235066") or ("8622162") or<br>("6408630") or ("6196003") or<br>("20140313698") or ("20120180979")<br>or ("20010008071") or<br>("20180035569") or ("5402844") or<br>("20020012375") or ("20090185346")<br>or ("20160050797") or ("6408937") or<br>("20190335573") or ("20190239365")<br>or ("20010021847") or ("5901167") or<br>("20110195652") or ("20070279861")<br>or ("6843306") or ("6164369") or |  |  |  |  |
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|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  | ("8425435") or ("7411785") or<br>("10010722") or ("10160290") or<br>("7841721") or ("4182303") or<br>("20110139525") or ("5931016") or<br>("7724516") or ("20180106484") or<br>("20150351214") or ("9010141") or<br>("20160178716") or ("5936646") or<br>("20130190661") or ("RE43007") or<br>("20160066478") or ("20030057546")<br>or ("7796376") or ("4840225") or<br>("9967964") or ("20040049178") or<br>("9204578") or ("6828675") or<br>("20190170604") or ("20150223367")<br>or ("9575149") or ("20170115366") or<br>("6044648") or ("20180335053") or<br>("20020116933") or ("6635053") or<br>("10082549") or ("5657641") or<br>("20170321907") or ("6490874") or<br>("20140260965") or ("7318821") or<br>("6592577") or ("20170261273") or<br>("6674642") or ("20040001310") or<br>("20050090814") or ("7207986") or<br>("20070028769") or ("4534780") or<br>("5269146") or ("20080055563") or<br>("9885526") or ("20110297351") or<br>("9353966") or ("RE30043") or<br>("20100232107") or ("20030077499")<br>or ("4056091") or ("6830842") or<br>("20160265805") or ("20140190037")<br>or ("8379182") or ("6298681") or<br>("20040040324") or ("20110077556")<br>or ("6334323") or ("8932238") or<br>("2819330") or ("4478055") or<br>("7403392") or ("20110126559") or<br>("5611476") or ("7911782") or<br>("7946986") or ("20200005592") or<br>("6167947") or ("20030217566") or<br>("4860824") or ("20020092316") or<br>("5906108") or ("20030145616") or<br>("6321547") or ("20030145621") or<br>("20110197613").PN. or ("7093454")<br>or ("8297070") or ("20180094840") or<br>("20090056910") or ("20040048123")<br>or ("20060218812") or<br>("20120137716") or ("4344479") or<br>("20060080996") or ("10502468") or<br>("8051672") or ("20150373882") or<br>("5476138") or ("6021150") or<br>("20110077557") or ("8009419") or<br>("8381541") or ("8105265") or<br>("7537849") or ("7010929") or<br>("5835349") or ("10477724") or<br>("6494252") or ("6964176") or |  |  |  |  |
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|  | ("20160270254") or ("9210830") or<br>("20080156014") or ("6350033") or<br>("20090107160") or ("4906182") or<br>("20140146468") or ("10130006") or<br>("20070144192") or ("20180059270")<br>or ("20030011983") or<br>("20150369514") or ("20180100671")<br>or ("20120131944") or ("10054698")<br>or ("6948328") or ("10415848") or<br>("9258926") or ("8117864") or<br>("20150083368") or ("6587336") or<br>("20040042905") or ("20170021695")<br>or ("20100057263") or ("7788940") or<br>("20090099498") or ("6957026") or<br>("20180214303") or ("10398066") or<br>("4967830") or ("6793465") or<br>("20140146467") or ("20160189842")<br>or ("20050180772") or<br>("20150373874") or ("8947873") or<br>("20080141708") or ("20120031392")<br>or ("4397121") or ("5529120") or<br>("9551358") or ("20180291798") or<br>("20160252289") or ("20190053399")<br>or ("20190239381") or ("5193735") or<br>("4318722") or ("5982619") or<br>("5285644") or ("10292305") or<br>("20170067643") or ("9568206") or<br>("20140260383") or ("5538075") or<br>("7963118") or ("5046554") or<br>("5570740") or ("7701715") or<br>("20150250067") or ("20160037685")<br>or ("20190249882") or ("9441839") or<br>("4773589") or ("9784490") or<br>("20120130298") or ("8979788") or<br>("20110277967") or ("4026283") or<br>("20190200488") or ("10440856") or<br>("20080024978") or ("20120024501")<br>or ("20130021746") or ("10015896")<br>or ("8959941") or ("8422218") or<br>("20130032310") or ("8591206") or<br>("20140111940") or ("9101078") or<br>("4953365") or ("8964391") or<br>("5590539") or ("6026565") or<br>("20160258657") or ("20140360492")<br>or ("9982920") or ("20090178780") or<br>("5825621") or ("8854572") or<br>("20130068441") or ("5748656") or<br>("2513373") or ("4285210") or<br>("5564980") or ("8248801") or<br>("20120162906") or ("8361059") or<br>("20150285516") or ("20100139306")<br>or ("20130170140") or<br>("20140123493") or ("20190171092") |  |  |  |  |
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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  | or ("3415312") or ("5086754") or<br>("8435277") or ("6796372") or<br>("20140290567") or ("20140124167")<br>or ("8899171")).PN. or ("7701714") or<br>("20070274043") or ("4242872") or<br>("8964390") or ("20100238394") or<br>("20200025408") or ("20180370263")<br>or ("20100296245") or<br>("20180038660") or ("4307578") or<br>("20200037456") or ("5467250") or<br>("20080306577") or ("7724517") or<br>("20110075363") or ("20190291542")<br>or ("7780657") or ("6109339") or<br>("6649290") or ("20190327865") or<br>("20160230634") or ("20020168556")<br>or ("10434804") or ("5065586") or<br>("8236240") or ("20070209380") or<br>("20170122573") or ("7778013") or<br>("9969193") or ("9261310") or<br>("6506111") or ("5524442") or<br>("4674476") or ("20130228313") or<br>("5349829") or ("4922890") or<br>("8274622") or ("20070097604") or<br>("8358397") or ("2564344") or<br>("20020173266") or ("8760867") or<br>("20170307282") or ("20070274858")<br>or ("7414845") or ("4987881") or<br>("20180317350") or ("20180363278")<br>or ("4142575") or ("20080017355") or<br>("20070267741") or ("4090370") or<br>("20100000758") or ("20070246678")<br>or ("20170064874") or<br>("20110000710") or ("20130025818")<br>or ("5895418") or ("7213639") or<br>("20090193830") or ("20180073753")<br>or ("20070233055") or<br>("20150273974") or ("20090107657")<br>or ("7956284") or ("20060207757") or<br>("5110264") or ("20150224800") or<br>("20070093799") or ("9496200") or<br>("20070241468") or ("20130206058")<br>or ("5937667") or ("4589712") or<br>("20060069418") or ("8210205") or<br>("20180292142") or ("20140262180")<br>or ("20070161974") or ("4706739") or<br>("RE45111") or ("20170080730") or<br>("4449764") or ("10264716") or<br>("9789746") or ("20180160819") or<br>("20190193439") or ("9048344") or<br>("7510174") or ("10442226") or<br>("20080024980") or ("20050259397")<br>or ("20030012234") or<br>("20190113247") or ("5832986") or |  |  |  |  |
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|  | ("20180128510") or ("20080196870")<br>or ("7795533") or ("20090257773") or<br>("20180275293") or ("20150354874")<br>or ("6914919") or ("5606870") or<br>("20200056795") or ("7652884") or<br>("5749243") or ("6138469") or<br>("20180214302") or ("9387709") or<br>("4866743") or ("20040163797") or<br>("20170311476") or ("7203063") or<br>("20120227389") or ("20100007258")<br>or ("7325410") or ("5267446") or<br>("7418825") or ("20110075353") or<br>("2320501") or ("20190198895") or<br>("9759438") or ("20070236881") or<br>("20130252533") or ("20030151892")<br>or ("5113844") or ("20170345346") or<br>("20110232869") or ("6232682") or<br>("4701415") or ("20040083740") or<br>("5499277").PN. or ("20110140820")<br>or ("7165412") or ("20170363306") or<br>("5320167") or ("20060254753") or<br>("20170311487") or ("7377935") or<br>("9354001") or ("7258161") or<br>("20090107159") or ("10524397") or<br>("20170245400") or ("8081054") or<br>("20050205241") or ("7492593") or<br>("5533357") or ("7334630") or<br>("6779348") or ("20060126296") or<br>("4505118") or ("10514174") or<br>("7128025") or ("20150259847") or<br>("10488089") or ("20160003546") or<br>("20180094841") or ("20080023178")<br>or ("20020023453") or ("7096928") or<br>("10006721") or ("20110077514") or<br>("4158950") or ("20080158815") or<br>("20180283803") or ("20160320149")<br>or ("20190219285") or<br>("20020148415") or ("9042099") or<br>("20190184852") or ("7832231") or<br>("4488192") or ("9613548") or<br>("20090200000") or ("20140133099")<br>or ("20120327600") or ("7184269") or<br>("20160198588") or ("20180199467")<br>or ("20170321911") or ("10074954")<br>or ("8929075") or ("6920043") or<br>("7013955") or ("20180315356") or<br>("7802734") or ("8250877") or<br>("4297318") or ("20020050338") or<br>("20130055748") or ("20080148760")<br>or ("8899066") or ("9943014") or<br>("20060000582") or ("7397661") or<br>("20200025429") or ("20080259566")<br>or ("20170328589") or ("7677057") or |  |  |  |  |
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|  | ("9631880") or ("20120279684") or<br>("9313931") or ("5605047") or<br>("10371451") or ("20150068171") or<br>("20010013404") or ("20030136134")<br>or ("20020139514") or ("9810439") or<br>("20050024831") or ("5458188") or<br>("8482695") or ("20030159456") or<br>("20090112368") or ("8037714") or<br>("10309665") or ("20120285543") or<br>("5560362") or ("20180156228") or<br>("20140133096") or ("9042098") or<br>("7969727") or ("4242876") or<br>("20180017345") or ("20070295492")<br>or ("20060177714") or ("6280318") or<br>("20160290666") or ("4330946") or<br>("20190021186") or ("20130056177")<br>or ("20070258612") or<br>("20150292775") or ("20040095728")<br>or ("7672125") or ("4622947") or<br>("20120121487") or ("10060350") or<br>("6944023") or ("7757753") or<br>("6889750") or ("20100277864") or<br>("20150165871") or ("20160298540")<br>or ("20080141686") or<br>("20160061532") or ("20120031601")<br>or ("20090260372") or ("10241103")<br>or ("4348604") or ("20170328879") or<br>("20080049396") or ("7458228") or<br>("2990695") or ("20170356597") or<br>("4449511") or ("4370861") or<br>("9313930") or ("5477687") or<br>("5357586") or ("8693199") or<br>("7340912") or ("6775996")).PN. or<br>(("7073566") or ("7710722") or<br>("20080024981") or ("20080024987")<br>or ("20170172016") or<br>("20190141911") or ("7026065") or<br>("20050258259") or ("7818835") or<br>("20060219381") or ("20090216304")<br>or ("7555792") or ("20190316948") or<br>("20090288440") or ("20080142203")<br>or ("4022550") or ("5692467") or<br>("4324110") or ("20050006488") or<br>("10544902") or ("4373577") or<br>("5586932") or ("7134486") or<br>("4146086") or ("7980094") or<br>("20050174714") or ("5816318") or<br>("4848318") or ("20100118275") or<br>("2179734") or ("7802439") or<br>("5205276") or ("9441840") or<br>("5596622") or ("9593876") or<br>("7511960") or ("2873582") or<br>("5522216") or ("20150153109") or |  |  |  |  |
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|  | ("20130105120") or ("4380156") or<br>("20050241803") or ("20080161976")<br>or ("20070073369") or ("7036559") or<br>("20110094714") or ("20100319365")<br>or ("20090120630") or<br>("20180139864") or ("20080135224")<br>or ("20080310112") or<br>("20090173473") or ("4690209") or<br>("8157626") or ("20180136187") or<br>("20080161975") or ("9151540") or<br>("3290028") or ("20070074682") or<br>("6992483") or ("5253485") or<br>("2526874") or ("10334764") or<br>("7832992") or ("8619425") or<br>("20110315364") or ("20170223870")<br>or ("5042262") or ("6728102") or<br>("5582241") or ("20030044663") or<br>("4704658") or ("7131486") or<br>("10174975") or ("20170176605") or<br>("20130312645") or ("9038406") or<br>("7819634") or ("7673592") or<br>("20150000319") or ("20030205363")<br>or ("4147299") or ("9605875") or<br>("20080062647") or ("3373732") or<br>("20090225514") or ("8941993") or<br>("8453471") or ("20090225513") or<br>("7184267") or ("20180135880") or<br>("9476649") or ("20180263811") or<br>("20080156887") or ("10458682") or<br>("4495545") or ("20100011803") or<br>("10240845") or ("20020148604") or<br>("6061087") or ("20170038123") or<br>("4505131") or ("5239834") or<br>("5610968") or ("20080055848") or<br>("20140053558") or ("9173324") or<br>("6829900") or ("6909283") or<br>("20190226461") or ("6209622") or<br>("20130047653") or ("9689720") or<br>("20160245558") or ("4033825") or<br>("20090209193") or ("8178831") or<br>("20150047384") or ("20190331369")<br>or ("4803846") or ("7854135") or<br>("9392733") or ("20170067644") or<br>("5694442") or ("7975494") or<br>("20180352676") or ("20030085024")<br>or ("20120318328") or<br>("20190113259") or ("20180324976")<br>or ("8055388") or ("20130334447") or<br>("6007205") or ("20100149754")).PN.<br>or (("20190219311") or ("8235777") or<br>("7911793") or ("9746235") or<br>("5732123") or ("20080176503") or<br>("4611791") or ("4294225") or |  |  |  |  |
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|  | ("8546717") or ("7497252") or<br>("7341201") or ("4168706") or<br>("5050390") or ("9351694") or<br>("20120125028") or ("8699737") or<br>("5088295") or ("4333517") or<br>("9267737") or ("8189334") or<br>("8297067") or ("9752803") or<br>("20110315363") or ("6991024") or<br>("10485113") or ("20160116224") or<br>("20130083479") or ("20120160454")<br>or ("20090090115") or ("4092088") or<br>("7830657") or ("7856838") or<br>("7534167") or ("20030231467") or<br>("20180199450") or ("4430994") or<br>("8601827") or ("9223360") or<br>("20180314103") or ("20130220579")<br>or ("9338924") or ("20080160901") or<br>("20080141707") or ("20110272120")<br>or ("9835357") or ("20110061591") or<br>("4190099") or ("20170038346") or<br>("4336692") or ("8089764") or<br>("7878889") or ("5572880") or<br>("6896612") or ("9918413") or<br>("8235776") or ("7957132") or<br>("8693198") or ("6131571") or<br>("20100307716") or ("20180328600")<br>or ("6279337") or ("8431404") or<br>("20150343554") or ("20110030932")<br>or ("20160120058") or ("7363879") or<br>("20170164525") or ("20120120542")<br>or ("20190143445") or<br>("20090007581") or ("20200039260")<br>or ("20140153689") or ("9908195") or<br>("20190069449") or ("4755236") or<br>("20110207391") or ("20170181325")<br>or ("6497110") or ("9297571") or<br>("20060279930") or ("8968232") or<br>("5562411") or ("20080060372") or<br>("7185697") or ("20130269204") or<br>("20140260361") or ("5361591") or<br>("20110218600") or ("3470704") or<br>("6167621") or ("20030062149") or<br>("5689968") or ("20080196868") or<br>("9228779") or ("5890371") or<br>("RE36808") or ("20120012283") or<br>("6704198") or ("10568217") or<br>("20030164231") or ("20040089442")<br>or ("20110134604") or ("6942018") or<br>("10371443") or ("4485642") or<br>("7984684") or ("8467168") or<br>("20110105010") or ("9763366") or<br>("5724828") or ("20110289943") or<br>("20120171943") or ("20190196312") |  |  |  |  |
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|  | or ("9086859") or ("20100078156") or<br>("20070268669") or ("6393730") or<br>("20180347578") or ("5240403") or<br>("4295342") or ("5348077") or<br>("20050098299") or ("20120318492")<br>or ("20180155969") or<br>("20090013553") or ("8467189") or<br>("5526650") or ("20140314395") or<br>("9283109") or ("7385810") or<br>("20110061832") or ("20070084463")<br>or ("20120167600") or ("9032742") or<br>("4589265").PN. or ("20110088883")<br>or ("20070030650") or ("10139159")<br>or ("9273875") or ("4138857") or<br>("20020135981") or ("7610764") or<br>("4308042") or ("6053238") or<br>("9414519") or ("20080058697") or<br>("20120133256") or ("9267881") or<br>("20100246118") or ("9677822") or<br>("8439104") or ("9968010") or<br>("8378677") or ("4859405") or<br>("9055696") or ("6217440") or<br>("6865825") or ("20140151003") or<br>("8031468") or ("20120270310") or<br>("20130081790") or ("20120127657")<br>or ("20120167610") or<br>("20120075797") or ("20100188082")<br>or ("8240165") or ("7905106") or<br>("4265220") or ("10189114") or<br>("7348527") or ("20160120059") or<br>("10184699") or ("20130104414") or<br>("20040257766") or ("20010045104")<br>or ("6564795") or ("7905096") or<br>("20100321887") or ("9282684") or<br>("7946112") or ("20160288244") or<br>("20070102426") or ("9648790") or<br>("20180238623") or ("8119300") or<br>("20140250713") or ("20120118534")<br>or ("9128681") or ("10151539") or<br>("7040101") or ("4424190") or<br>("5467615") or ("8035968") or<br>("6182608") or ("20190053400") or<br>("6580609") or ("20060133033") or<br>("10288328") or ("8514575") or<br>("20180045138") or ("20040169771")<br>or ("9920708") or ("6230501") or<br>("20090260777") or ("20020121095")<br>or ("20030154724") or<br>("20090310300") or ("4046529") or<br>("20150182650") or ("5513558").PN. |  |  |  |  |
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| S52 | 428     | S51 and @ad<="20080320"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB                                             | ADJ | OFF | 2020/02/27<br>06:09 |
| S53 | 29      | (US-20090154096-\$ or US-20060082271-\$ or US-20180088398-\$ or US-20140334100-\$ or US-20130194782-\$ or US-20120236499-\$ or US-20110167845-\$ or US-20110162831-\$ or US-20110058326-\$ or US-20100177479-\$ or US-20090086430-\$ or US-20080285290-\$ or US-20070081344-\$ or US-20090279240-\$ or US-20040135482-\$ or US-20110085301-\$ or US-20090244472-\$ or US-20090135365-\$ or US-20090126906-\$ or US-20150009627-\$ or US-20130201685-\$ or US-20120188481-\$ or US-20110122162-\$).did. or (US-6493440-\$ or US-5991153-\$ or US-5869919-\$ or US-5748269-\$ or US-8274622-\$ or US-10088702-\$).did. | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/27<br>06:14 |
| S54 | 4,133   | ((("MANUFACTURING") near3 ("RESOURCES"))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:45 |
| S55 | 0       | S54 and (enclosure and "electronic image assembly" and display and "open loop" and "closed loop").clm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:46 |
| S56 | 40      | S54 and ("open loop" and "closed loop").clm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:47 |
| S57 | 1,123   | cross flow heat exchanger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:53 |
| S58 | 253     | S57 and (LCD or display or panel)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:54 |
| S59 | 3,471   | H05K7/202,206,20972.cpc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>11:31 |
| S60 | 597,701 | "59" and (LCD or display or panel)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>16:07 |
| S61 | 3,471   | H05K7/202,206,20972.cpc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>16:08 |

|     |       |                                                                                                       |                                                                            |     |     |                     |
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| S62 | 3,471 | H05K7/202,206,20972.cpc.                                                                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>16:40 |
| S63 | 579   | S62 and (LCD or display or panel)                                                                     | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>16:40 |
| S64 | 166   | S63 and @ad<="20080320"                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB                                             | ADJ | OFF | 2020/02/28<br>16:42 |
| S65 | 927   | ((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))                                                   | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:18 |
| S66 | 839   | ((((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))).inv.                                           | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:20 |
| S67 | 4,133 | ((("MANUFACTURING") near3 ("RESOURCES"))                                                              | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:20 |
| S68 | 4,737 | S67 or S65                                                                                            | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:20 |
| S69 | 0     | S68 and (electronic image and cooling and enclosure and heat exchanger and (air or gas))              | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:23 |
| S70 | 0     | S68 and (electronic image and cooling and enclosure and heat exchanger and (air or gas))              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>17:25 |
| S72 | 0     | S68 and ("electronic image assembly" and "cooling system" and enclosure and "heat exchanger" and air) | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>17:32 |
| S74 | 141   | S68 and ("open loop" and "closed loop")                                                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>17:33 |
| S75 | 141   | S68 and ("open loop" and "closed loop")                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:34 |

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| S76 | 141   | S75 and @ad<="20191209"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>17:35 |
| S77 | 929   | ((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S78 | 4,144 | ((("MANUFACTURING") near3 ("RESOURCES"))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S79 | 4,748 | S78 or S77                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S80 | 142   | S79 and ("open loop" and "closed loop")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S81 | 97    | S80 and cool\$3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S82 | 77    | S81 and (transparent same display)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:57 |
| S83 | 2     | "15789331"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>17:16 |
| S84 | 202   | ("10080316"   "10088702"  <br>"10194564"   "10212845"  <br>"10278311"   "10314212"  <br>"10359659"   "10398066"  <br>"10420257"   "10485113"  <br>"10499516"   "10506738"  <br>"10506740"   "20010001459"  <br>"20010019454"   "20020009978"  <br>"20020033919"   "20020050793"  <br>"20020065046"   "20020084891"  <br>"20020101553"   "20020112026"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020164962"  <br>"20020167637"   "20030007109"  <br>"20030020884"   "20030043091"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035032"   "20040035558"  <br>"20040036622"   "20040036834"  <br>"20040042174"   "20040103570"  <br>"20040105159"   "20040135482"  <br>"20040165139"   "20040223299"  <br>"20050012039"   "20050012722"  <br>"20050062373"   "20050073632"  <br>"20050073639"   "20050127796"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050253699"  <br>"20050276053"   "20050286131"  <br>"20060012958"   "20060012985"  <br>"20060018093"   "20060034051" | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>19:05 |

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|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |     |     |                     |
|-----|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
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| S85 | 230 | ("20150192371"   "20150253611"  <br>"20150264826"   "20150319882"  <br>"20150366101"   "20160041423"  <br>"20160044829"   "20160162297"  <br>"20160192536"   "20160195254"  <br>"20160198588"   "20160238876"  <br>"20160242329"   "20160242330"  <br>"20160249493"   "20160302331"  <br>"20170023823"   "20170068042"  <br>"20170074453"   "20170083043"  <br>"20170083062"   "20170111486"  <br>"20170111520"   "20170111521"  <br>"20170127579"   "20170140344"  <br>"20170147992"   "20170163519"  <br>"20170175411"   "20170188490"  <br>"20170245400"   "20170257978"  <br>"20170332523"   "20180042134"  <br>"20180116073"   "20180314103"  <br>"20180315356"   "20180317330"  <br>"20180317350"   "20180364519"  <br>"20190037738"   "20190089176"  <br>"20190133002"   "20190208674"  <br>"20190239365"   "20190289754"  <br>"20190327865"   "4093355"  <br>"4593978"   "4634225"   "4748765"  <br>"4763993"   "4921041"   "4952783"  <br>"4952925"   "5029982"   "5088806"  <br>"5132666"   "5247374"   "5282114"  <br>"5293930"   "5351176"   "5432526"  <br>"5535816"   "5559614"   "5621614"  <br>"5657641"   "5748269"   "5765743"  <br>"5767489"   "5808418"   "5818010"  <br>"5818694"   "5835179"   "5864465"  <br>"5869818"   "5869919"   "5903433"  <br>"5991153"   "6003015"   "6007205"  <br>"6043979"   "6089751"   "6104451" | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/03/11<br>19:05 |

|     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                |     |    |                     |
|-----|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|----|---------------------|
|     |   | "6125565"   "6157432"   "6181070"  <br>"6191839"   "6198222"   "6211934"  <br>"6215655"   "6351381"   "6359390"  <br>"6392727"   "6417900"   "6428198"  <br>"6437673"   "6473150"   "6476883"  <br>"6493440"   "6504713"   "6535266"  <br>"6628355"   "6643130"   "6683639"  <br>"6701143"   "6714410"   "6727468"  <br>"6742583"   "6812851"   "6825828"  <br>"6833992"   "6839104"   "6850209"  <br>"6885412"   "6886942"   "6891135"  <br>"6909486"   "6943768"   "6961108"  <br>"7015470"   "7059757"   "7083285"  <br>"7157838"   "7161803"   "7190416"  <br>"7190587"   "7209349"   "7212403"  <br>"7259964"   "7269023"   "7284874"  <br>"7396145"   "7447018"   "7452121"  <br>"7457113"   "7480140"   "7535543"  <br>"7591508"   "7602469"   "7667964"  <br>"7682047"   "7752858"   "7753567"  <br>"7762707"   "7800706"   "7813124"  <br>"7903416"   "7995342"   "8004648"  <br>"8035968"   "8081465"   "8102173"  <br>"8142027"   "8208115"   "8223311"  <br>"8241573"   "8248784"   "8254121"  <br>"8269916"   "8270163"   "8274622"  <br>"8274789"   "8300203"   "8310824"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8590602"  <br>"8649170"   "8649176"   "8654302"  <br>"8678603"   "8693185"   "8700226"  <br>"8711321"   "8749749"   "8755021"  <br>"8758144"   "8760613"   "8767165"  <br>"8773633"   "8804091"   "8823916"  <br>"8827472"   "8854572"   "8854595"  <br>"8879042"   "8976313"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9703230"   "9723765"   "9797588"  <br>"9801305"   "9823690"   "9835893"  <br>"9894800"   "D608775").PN. |                                |     |    |                     |
| S92 | 2 | "20050253699"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/13<br>18:49 |

|      |        |                                                                                                                                                                                                                                                                                                                                                                                                            |                                |     |     |                     |
|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S93  | 132    | "20040105159" or "5991153"                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>01:14 |
| S94  | 116    | "20010009508" or "5869919"                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>01:40 |
| S95  | 37     | ((polarizer or polarize) same (sun or solar or radiation)) with (display or LCD) and (airflow) and (blower or fan or air)                                                                                                                                                                                                                                                                                  | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>01:58 |
| S96  | 22,544 | (G02F1/133308 OR G02F2001/133334 OR G02F1/133385 OR G02F2201/08 OR G02F2201/36 OR G02F1/133528 OR H01L51/5234 OR H05K9/0081 OR H05K7/20972 OR Y02P20/133).CPC.                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:02 |
| S97  | 7,648  | S96 and (polarizer or polariser or polarise or polarize)                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:02 |
| S98  | 7,536  | S97 and (solar or sun or uv or ultraviolet or light or sunshine)                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:03 |
| S99  | 7,454  | S98 and (display or panel or lcd)                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:04 |
| S100 | 3,193  | S99 and (air or blower or cool\$3 or fan)                                                                                                                                                                                                                                                                                                                                                                  | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:04 |
| S101 | 115    | electronic display and (closed near2 cool\$3)                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:05 |
| S102 | 980    | S100 and @ad<="20091218"                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:05 |
| S103 | 206    | ("10080316"   "10088702"   "10180591"   "10194564"   "10212845"   "10278311"   "10306781"   "10314212"   "10359659"   "10359817"   "10383238"   "10398066"   "10420257"   "10485113"   "10485147"   "10485148"   "10499516"   "10506738"   "10506740"   "10524384"   "10524397"   "10548247"   "10624218"   "10660245"   "10687446"   "10716224"   "10721836"   "10736245"   "20010001459"   "20010019454" | US-PGPUB;<br>USPAT             | ADJ | ON  | 2020/09/14<br>02:11 |

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|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |     |    |                     |
|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|----|---------------------|
|      |     | "20090065007"   "20090086430"  <br>"20090095819"   "20090104989"  <br>"20090120629"   "20090122218"  <br>"20090126906"   "20090126907"  <br>"20090126914"   "20090129021"  <br>"20090135365"   "20090147170"  <br>"20090154096"   "20090174626"  <br>"20090231807"   "20090241437"  <br>"20090244472"   "20090251650"  <br>"20090266507"   "20090279240"  <br>"20090302727"   "20090306820"  <br>"20090323275"   "20100060861"  <br>"20100079949"   "20100079979"  <br>"20100162747"   "20100171889"  <br>"20100182562"   "20100220249"  <br>"20100226091"   "20100232107"  <br>"20100238394"   "20100321887"  <br>"20110001898"   "20110013114"  <br>"20110019363"   "20110032489"  <br>"20110051071"   "20110058326"  <br>"20110072697"   "20110075361"  <br>"20110083460"   "20110083824"  <br>"20110085301"   "20110085302"  <br>"20110090630"   "20110114384"  <br>"20110116000"   "20110116231"  <br>"20110122162"   "20110134356"  <br>"20110141672"   "20110141724"  <br>"20110162831"   "20110167845"  <br>"20110261523"   "20110297810"  <br>"20120006523"   "20120012295"  <br>"20120012300"   "20120014063"  <br>"20120020114"   "20120038849"  <br>"20120044217"   "20120105790"  <br>"20120106081"   "20120188481"  <br>"20120206687"   "20120236499").PN. |                    |     |    |                     |
| S104 | 247 | ("20120249402"   "20120255704"  <br>"20120274876"   "20120284547"  <br>"20120327600"   "20130170140"  <br>"20130173358"   "20130176517"  <br>"20130201685"   "20130258659"  <br>"20130279154"   "20130294039"  <br>"20130344794"   "20140044147"  <br>"20140085564"   "20140111758"  <br>"20140113540"   "20140134767"  <br>"20140184980"   "20140190240"  <br>"20140268657"   "20140313666"  <br>"20140313698"   "20140314395"  <br>"20140334100"   "20140361138"  <br>"20150009625"   "20150009627"  <br>"20150192371"   "20150253611"  <br>"20150264826"   "20150319882"  <br>"20150366101"   "20160041423"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT | ADJ | ON | 2020/09/14<br>02:11 |

|               |               |           |  |  |  |
|---------------|---------------|-----------|--|--|--|
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| "20170074453" | "20170083043" |           |  |  |  |
| "20170083062" | "20170111486" |           |  |  |  |
| "20170111520" | "20170111521" |           |  |  |  |
| "20170127579" | "20170140344" |           |  |  |  |
| "20170147992" | "20170163519" |           |  |  |  |
| "20170175411" | "20170188490" |           |  |  |  |
| "20170245400" | "20170257978" |           |  |  |  |
| "20170332523" | "20170345346" |           |  |  |  |
| "20180042134" | "20180088368" |           |  |  |  |
| "20180116073" | "20180314103" |           |  |  |  |
| "20180315356" | "20180317330" |           |  |  |  |
| "20180317350" | "20180364519" |           |  |  |  |
| "20190037738" | "20190089176" |           |  |  |  |
| "20190133002" | "20190208674" |           |  |  |  |
| "20190239365" | "20190289754" |           |  |  |  |
| "20190327865" | "20200154597" |           |  |  |  |
| "20200163235" | "20200205303" |           |  |  |  |
| "20200253095" | "4093355"     |           |  |  |  |
| "4593978"     | "4634225"     | "4748765" |  |  |  |
| "4763993"     | "4921041"     | "4952783" |  |  |  |
| "4952925"     | "5029982"     | "5088806" |  |  |  |
| "5132666"     | "5247374"     | "5282114" |  |  |  |
| "5285677"     | "5293930"     | "5351176" |  |  |  |
| "5432526"     | "5535816"     | "5559614" |  |  |  |
| "5621614"     | "5657641"     | "5748269" |  |  |  |
| "5765743"     | "5767489"     | "5808418" |  |  |  |
| "5818010"     | "5818694"     | "5835179" |  |  |  |
| "5864465"     | "5869818"     | "5869919" |  |  |  |
| "5903433"     | "5991153"     | "6003015" |  |  |  |
| "6007205"     | "6043979"     | "6089751" |  |  |  |
| "6104451"     | "6125565"     | "6157432" |  |  |  |
| "6181070"     | "6191839"     | "6198222" |  |  |  |
| "6211934"     | "6215655"     | "6351381" |  |  |  |
| "6359390"     | "6392727"     | "6417900" |  |  |  |
| "6428198"     | "6437673"     | "6473150" |  |  |  |
| "6476883"     | "6493440"     | "6504713" |  |  |  |
| "6535266"     | "6628355"     | "6643130" |  |  |  |
| "6683639"     | "6701143"     | "6714410" |  |  |  |
| "6727468"     | "6742583"     | "6812851" |  |  |  |
| "6825828"     | "6833992"     | "6839104" |  |  |  |
| "6850209"     | "6885412"     | "6886942" |  |  |  |
| "6891135"     | "6909486"     | "6943768" |  |  |  |
| "6961108"     | "7015470"     | "7059757" |  |  |  |
| "7083285"     | "7157838"     | "7161803" |  |  |  |
| "7190416"     | "7190587"     | "7209349" |  |  |  |
| "7212403"     | "7259964"     | "7269023" |  |  |  |
| "7284874"     | "7396145"     | "7447018" |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |     |     |                     |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
|      |     | "7452121"   "7457113"   "7480140"  <br>"7518864"   "7535543"   "7591508"  <br>"7602469"   "7667964"   "7682047"  <br>"7752858"   "7753567"   "7762707"  <br>"7800706"   "7813124"   "7903416"  <br>"7995342"   "8004648"   "8035968"  <br>"8081465"   "8102173"   "8142027"  <br>"8208115"   "8223311"   "8241573"  <br>"8248784"   "8254121"   "8269916"  <br>"8270163"   "8274622"   "8274789"  <br>"8300203"   "8310824"   "8320119"  <br>"8351014"   "8358397"   "8369083"  <br>"8373841"   "8379182"   "8400608"  <br>"8472174"   "8472191"   "8482695"  <br>"8497972"   "8590602"   "8649170"  <br>"8649176"   "8654302"   "8678603"  <br>"8693185"   "8700226"   "8711321"  <br>"8749749"   "8755021"   "8758144"  <br>"8760613"   "8767165"   "8773633"  <br>"8804091"   "8823916"   "8827472"  <br>"8854572"   "8854595"   "8879042"  <br>"8976313"   "8988647"   "9030641"  <br>"9089079"   "9119325"   "9119330"  <br>"9173322"   "9173325"   "9282676"  <br>"9285108"   "9313917"   "9338923"  <br>"9357673"   "9370127"  <br>"9414516").PN. |                    |     |     |                     |
| S105 | 24  | ("9448569"   "9451060"   "9451733"  <br>"9456525"   "9470924"   "9500896"  <br>"9516485"   "9549490"   "9594271"  <br>"9613548"   "9622392"   "9629287"  <br>"9648790"   "9655289"   "9703230"  <br>"9723765"   "9743553"   "9797588"  <br>"9801305"   "9823690"   "9835893"  <br>"9861007"   "9894800"  <br>"D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT | ADJ | ON  | 2020/09/14<br>02:11 |
| S106 | 24  | ("20020009978"   "20020065046"  <br>"20020084891"   "20020164962"  <br>"20030043091"   "20040223299"  <br>"20050073639"   "20070103863"  <br>"20090059518"   "20110122162"  <br>"6701143"   "6714410"   "6812851"  <br>"6825828"   "6850209"   "7157838"  <br>"7161803"   "7259964"   "7269023"  <br>"7452121"   "7591508"   "7903416"  <br>"8758144"   "9894800").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:15 |
| S107 | 225 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:15 |

|               |               |           |  |  |
|---------------|---------------|-----------|--|--|
| "20030007109" | "20030020884" |           |  |  |
| "20030104210" | "20030128511" |           |  |  |
| "20030214785" | "20040012722" |           |  |  |
| "20040035558" | "20040036834" |           |  |  |
| "20040103570" | "20040105159" |           |  |  |
| "20040165139" | "20050012039" |           |  |  |
| "20050012722" | "20050062373" |           |  |  |
| "20050073632" | "20050134525" |           |  |  |
| "20050134526" | "20050213950" |           |  |  |
| "20050229630" | "20050237714" |           |  |  |
| "20050276053" | "20050286131" |           |  |  |
| "20060012958" | "20060018093" |           |  |  |
| "20060034051" | "20060056994" |           |  |  |
| "20060082271" | "20060092348" |           |  |  |
| "20060125998" | "20060132699" |           |  |  |
| "20060177587" | "20060199514" |           |  |  |
| "20060209266" | "20060260790" |           |  |  |
| "20060262079" | "20060266499" |           |  |  |
| "20060283579" | "20070019419" |           |  |  |
| "20070030879" | "20070047239" |           |  |  |
| "20070065091" | "20070076431" |           |  |  |
| "20070103866" | "20070115686" |           |  |  |
| "20070139929" | "20070140671" |           |  |  |
| "20070151274" | "20070151664" |           |  |  |
| "20070171353" | "20070206158" |           |  |  |
| "20070211205" | "20070212211" |           |  |  |
| "20070217221" | "20070237636" |           |  |  |
| "20070267174" | "20080055534" |           |  |  |
| "20080076342" | "20080099193" |           |  |  |
| "20080148609" | "20080209934" |           |  |  |
| "20080218446" | "20080236005" |           |  |  |
| "20080267790" | "20080283234" |           |  |  |
| "20080285290" | "4093355"     |           |  |  |
| "4593978"     | "4634225"     | "4748765" |  |  |
| "4763993"     | "4921041"     | "4952783" |  |  |
| "4952925"     | "5029982"     | "5088806" |  |  |
| "5132666"     | "5247374"     | "5282114" |  |  |
| "5293930"     | "5351176"     | "5432526" |  |  |
| "5535816"     | "5559614"     | "5621614" |  |  |
| "5657641"     | "5748269"     | "5765743" |  |  |
| "5767489"     | "5808418"     | "5818010" |  |  |
| "5818694"     | "5835179"     | "5864465" |  |  |
| "5869818"     | "5869919"     | "5903433" |  |  |
| "5991153"     | "6003015"     | "6007205" |  |  |
| "6089751"     | "6104451"     | "6157432" |  |  |
| "6181070"     | "6191839"     | "6198222" |  |  |
| "6211934"     | "6215655"     | "6351381" |  |  |
| "6392727"     | "6417900"     | "6428198" |  |  |
| "6473150"     | "6493440"     | "6504713" |  |  |
| "6535266"     | "6628355"     | "6727468" |  |  |
| "6839104"     | "6885412"     | "6886942" |  |  |
| "6891135"     | "6909486"     | "6943768" |  |  |
| "6961108"     | "7015470"     | "7059757" |  |  |

|      |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                       |     |     |                     |
|------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----|-----|---------------------|
|      |       | "7083285"   "7190587"   "7209349"  <br>"7212403"   "7284874"   "7457113"  <br>"7480140"   "7535543"   "7602469"  <br>"7667964"   "7752858"   "7753567"  <br>"7800706"   "7813124"   "7995342"  <br>"8004648"   "8035968"   "8081465"  <br>"8102173"   "8142027"   "8208115"  <br>"8223311"   "8241573"   "8248784"  <br>"8254121"   "8269916"   "8270163"  <br>"8274622"   "8274789"   "8300203"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8649170"  <br>"8649176"   "8654302"   "8678603"  <br>"8693185"   "8700226"   "8711321"  <br>"8749749"   "8755021"   "8760613"  <br>"8767165"   "8773633"   "8804091"  <br>"8823916"   "8827472"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9723765"   "9797588"   "9801305"  <br>"9835893"   "D608775").PN. |                                                       |     |     |                     |
| S108 | 177   | ((("MANUFACTURING") near3<br>("RESOURCES") near3<br>("INTERNATIONAL") near3<br>("INC"))).AS,AANM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | USPAT                                                 | ADJ | OFF | 2020/09/14<br>02:15 |
| S109 | 1,233 | ((("DUNN") near3 ("William")) OR<br>(("HUBBARD") near3 ("Tim"))).INV.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | ADJ | OFF | 2020/09/14<br>02:15 |
| S110 | 24    | ("20020009978"   "20020065046"  <br>"20020084891"   "20020164962"  <br>"20030043091"   "20040223299"  <br>"20050073639"   "20070103863"  <br>"20090059518"   "20110122162"  <br>"6701143"   "6714410"   "6812851"  <br>"6825828"   "6850209"   "7157838"  <br>"7161803"   "7259964"   "7269023"  <br>"7452121"   "7591508"   "7903416"  <br>"8758144"   "9894800").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT                                    | ADJ | OFF | 2020/09/14<br>02:15 |
| S111 | 225   | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT                                    | ADJ | OFF | 2020/09/14<br>02:15 |

|               |               |           |  |  |  |
|---------------|---------------|-----------|--|--|--|
| "20020126248" | "20020148600" |           |  |  |  |
| "20020149714" | "20020154255" |           |  |  |  |
| "20020164944" | "20020167637" |           |  |  |  |
| "20030007109" | "20030020884" |           |  |  |  |
| "20030104210" | "20030128511" |           |  |  |  |
| "20030214785" | "20040012722" |           |  |  |  |
| "20040035558" | "20040036834" |           |  |  |  |
| "20040103570" | "20040105159" |           |  |  |  |
| "20040165139" | "20050012039" |           |  |  |  |
| "20050012722" | "20050062373" |           |  |  |  |
| "20050073632" | "20050134525" |           |  |  |  |
| "20050134526" | "20050213950" |           |  |  |  |
| "20050229630" | "20050237714" |           |  |  |  |
| "20050276053" | "20050286131" |           |  |  |  |
| "20060012958" | "20060018093" |           |  |  |  |
| "20060034051" | "20060056994" |           |  |  |  |
| "20060082271" | "20060092348" |           |  |  |  |
| "20060125998" | "20060132699" |           |  |  |  |
| "20060177587" | "20060199514" |           |  |  |  |
| "20060209266" | "20060260790" |           |  |  |  |
| "20060262079" | "20060266499" |           |  |  |  |
| "20060283579" | "20070019419" |           |  |  |  |
| "20070030879" | "20070047239" |           |  |  |  |
| "20070065091" | "20070076431" |           |  |  |  |
| "20070103866" | "20070115686" |           |  |  |  |
| "20070139929" | "20070140671" |           |  |  |  |
| "20070151274" | "20070151664" |           |  |  |  |
| "20070171353" | "20070206158" |           |  |  |  |
| "20070211205" | "20070212211" |           |  |  |  |
| "20070217221" | "20070237636" |           |  |  |  |
| "20070267174" | "20080055534" |           |  |  |  |
| "20080076342" | "20080099193" |           |  |  |  |
| "20080148609" | "20080209934" |           |  |  |  |
| "20080218446" | "20080236005" |           |  |  |  |
| "20080267790" | "20080283234" |           |  |  |  |
| "20080285290" | "4093355"     |           |  |  |  |
| "4593978"     | "4634225"     | "4748765" |  |  |  |
| "4763993"     | "4921041"     | "4952783" |  |  |  |
| "4952925"     | "5029982"     | "5088806" |  |  |  |
| "5132666"     | "5247374"     | "5282114" |  |  |  |
| "5293930"     | "5351176"     | "5432526" |  |  |  |
| "5535816"     | "5559614"     | "5621614" |  |  |  |
| "5657641"     | "5748269"     | "5765743" |  |  |  |
| "5767489"     | "5808418"     | "5818010" |  |  |  |
| "5818694"     | "5835179"     | "5864465" |  |  |  |
| "5869818"     | "5869919"     | "5903433" |  |  |  |
| "5991153"     | "6003015"     | "6007205" |  |  |  |
| "6089751"     | "6104451"     | "6157432" |  |  |  |
| "6181070"     | "6191839"     | "6198222" |  |  |  |
| "6211934"     | "6215655"     | "6351381" |  |  |  |
| "6392727"     | "6417900"     | "6428198" |  |  |  |
| "6473150"     | "6493440"     | "6504713" |  |  |  |
| "6535266"     | "6628355"     | "6727468" |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                |     |     |                     |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|      |     | "6839104"   "6885412"   "6886942"  <br>"6891135"   "6909486"   "6943768"  <br>"6961108"   "7015470"   "7059757"  <br>"7083285"   "7190587"   "7209349"  <br>"7212403"   "7284874"   "7457113"  <br>"7480140"   "7535543"   "7602469"  <br>"7667964"   "7752858"   "7753567"  <br>"7800706"   "7813124"   "7995342"  <br>"8004648"   "8035968"   "8081465"  <br>"8102173"   "8142027"   "8208115"  <br>"8223311"   "8241573"   "8248784"  <br>"8254121"   "8269916"   "8270163"  <br>"8274622"   "8274789"   "8300203"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8649170"  <br>"8649176"   "8654302"   "8678603"  <br>"8693185"   "8700226"   "8711321"  <br>"8749749"   "8755021"   "8760613"  <br>"8767165"   "8773633"   "8804091"  <br>"8823916"   "8827472"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9723765"   "9797588"   "9801305"  <br>"9835893"   "D608775").PN. |                                |     |     |                     |
| S112 | 177 | ((("MANUFACTURING") near3<br>("RESOURCES") near3<br>("INTERNATIONAL") near3<br>("INC"))).AS,AANM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | USPAT                          | ADJ | OFF | 2020/09/14<br>02:15 |
| S113 | 0   | S110 S111 S112                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S114 | 375 | S110 S111 S112                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | OR  | OFF | 2020/09/14<br>02:15 |
| S115 | 2   | ((("6493440") or ("20090154096"))).PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S116 | 1   | ("5991153").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S117 | 1   | ("20060082271").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |

|      |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |     |     |                     |
|------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S118 | 1     | ("5869919").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S119 | 1     | ("5748269").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S120 | 2     | ((("20050073632") or<br>("20070206158")).PN.                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S121 | 16    | ("20150366101"   "20110167845"  <br>"20160198589"   "20120236499"  <br>"20100177479"   "20110058326"  <br>"20090086430"   "20160198589"  <br>"7486517"   "20080285290"  <br>"20150075758"   "20110162831"  <br>"20070081344"   "20110310315"  <br>"20140334100"   "20170172016"  <br>"20130194782").PN.                                                                                                                                         | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S122 | 2     | "15719374"                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S123 | 115   | electronic display and (closed near2<br>cool\$3)                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S124 | 8     | S101 and @ad<="20080320"                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S125 | 526   | display and (closed near2 loop near3<br>gas)                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S126 | 166   | S125 and @ad<="20071116"                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S127 | 42    | S126 and heat exchanger                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S128 | 1,212 | H05K7/202 G02F1/133385<br>H05K7/20136 H05K7/20163<br>H05K7/20972                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | OR  | OFF | 2020/09/14<br>02:15 |
| S129 | 243   | ("20070081344"   "20090009047"  <br>"20090122218"   "20090302727"  <br>"20110085302"   "20120188481"  <br>"6043979"   "6742583"   "8590602"  <br>"20020009978"   "20020065046"  <br>"20020084891"   "20020164962"  <br>"20030043091"   "20040223299"  <br>"20050073639"   "20070103863"  <br>"20090059518"   "20110122162"  <br>"6701143"   "6714410"   "6812851"  <br>"6825828"   "6850209"   "7157838"  <br>"7161803"   "7259964"   "7269023" | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/09/14<br>02:15 |

|                                   |  |  |  |
|-----------------------------------|--|--|--|
| "7452121"   "7591508"   "7903416" |  |  |  |
| "8758144"   "9894800"             |  |  |  |
| "20010001459"   "20010019454"     |  |  |  |
| "20020033919"   "20020101553"     |  |  |  |
| "20020126248"   "20020148600"     |  |  |  |
| "20020149714"   "20020154255"     |  |  |  |
| "20020164944"   "20020167637"     |  |  |  |
| "20030007109"   "20030020884"     |  |  |  |
| "20030104210"   "20030128511"     |  |  |  |
| "20030214785"   "20040012722"     |  |  |  |
| "20040035558"   "20040036834"     |  |  |  |
| "20040103570"   "20040105159"     |  |  |  |
| "20040165139"   "20050012039"     |  |  |  |
| "20050012722"   "20050062373"     |  |  |  |
| "20050073632"   "20050134525"     |  |  |  |
| "20050134526"   "20050213950"     |  |  |  |
| "20050229630"   "20050237714"     |  |  |  |
| "20050276053"   "20050286131"     |  |  |  |
| "20060012958"   "20060018093"     |  |  |  |
| "20060034051"   "20060056994"     |  |  |  |
| "20060082271"   "20060092348"     |  |  |  |
| "20060125998"   "20060132699"     |  |  |  |
| "20060177587"   "20060199514"     |  |  |  |
| "20060209266"   "20060260790"     |  |  |  |
| "20060262079"   "20060266499"     |  |  |  |
| "20060283579"   "20070019419"     |  |  |  |
| "20070030879"   "20070047239"     |  |  |  |
| "20070065091"   "20070076431"     |  |  |  |
| "20070103866"   "20070115686"     |  |  |  |
| "20070139929"   "20070140671"     |  |  |  |
| "20070151274"   "20070151664"     |  |  |  |
| "20070171353"   "20070206158"     |  |  |  |
| "20070211205"   "20070212211"     |  |  |  |
| "20070217221"   "20070237636"     |  |  |  |
| "20070267174"   "20080055534"     |  |  |  |
| "20080076342"   "20080099193"     |  |  |  |
| "20080148609"   "20080209934"     |  |  |  |
| "20080218446"   "20080236005"     |  |  |  |
| "20080267790"   "20080283234"     |  |  |  |
| "20080285290"   "4093355"         |  |  |  |
| "4593978"   "4634225"   "4748765" |  |  |  |
| "4763993"   "4921041"   "4952783" |  |  |  |
| "4952925"   "5029982"   "5088806" |  |  |  |
| "5132666"   "5247374"   "5282114" |  |  |  |
| "5293930"   "5351176"   "5432526" |  |  |  |
| "5535816"   "5559614"   "5621614" |  |  |  |
| "5657641"   "5748269"   "5765743" |  |  |  |
| "5767489"   "5808418"   "5818010" |  |  |  |
| "5818694"   "5835179"   "5864465" |  |  |  |
| "5869818"   "5869919"   "5903433" |  |  |  |
| "5991153"   "6003015"   "6007205" |  |  |  |
| "6089751"   "6104451"   "6157432" |  |  |  |
| "6181070"   "6191839"   "6198222" |  |  |  |

|      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                |     |     |                     |
|------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|      |        | "6211934"   "6215655"   "6351381"  <br>"6392727"   "6417900"   "6428198"  <br>"6473150"   "6493440"   "6504713"  <br>"6535266"   "6628355"   "6727468"  <br>"6839104"   "6885412"   "6886942"  <br>"6891135"   "6909486"   "6943768"  <br>"6961108"   "7015470"   "7059757"  <br>"7083285"   "7190587"   "7209349"  <br>"7212403"   "7284874"   "7457113"  <br>"7480140"   "7535543"   "7602469"  <br>"7667964"   "7752858"   "7753567"  <br>"7800706"   "7813124"   "7995342"  <br>"8004648"   "8035968"   "8081465"  <br>"8102173"   "8142027"   "8208115"  <br>"8223311"   "8241573"   "8248784"  <br>"8254121"   "8269916"   "8270163"  <br>"8274622"   "8274789"   "8300203"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8649170"  <br>"8649176"   "8654302"   "8678603"  <br>"8693185"   "8700226"   "8711321"  <br>"8749749"   "8755021"   "8760613"  <br>"8767165"   "8773633"   "8804091"  <br>"8823916"   "8827472"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525").PN. |                                |     |     |                     |
| S130 | 15     | ("9470924"   "9500896"   "9516485"  <br>"9549490"   "9594271"   "9613548"  <br>"9622392"   "9629287"   "9648790"  <br>"9655289"   "9723765"   "9797588"  <br>"9801305"   "9835893"  <br>"D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/09/14<br>02:15 |
| S131 | 5      | ("20040042174"   "20050127796"  <br>"20090231807"   "6476883"  <br>"7762707").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/09/14<br>02:15 |
| S132 | 1,020  | ((closed loop and open loop) with (gas<br>or cool\$3 or dissipation)) and (display<br>or panel or screen)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S133 | 28,454 | ((closed and open) with (gas or cool\$3<br>or dissipation)) and (display or panel or<br>screen)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S134 | 1,721  | S133 and ("361".clas. or H05K\$.cpc. or<br>G06F\$.cpc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                |     |     |                     |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S135 | 106 | (<br>"20020050793"   "20050073639"  <br>"20170175411"   "6125565"  <br>"6850209"   "7525633"   "7535547"  <br>"8827472"   "9655289"  <br>"20020148600"   "20030128511"  <br>"20040012722"   "20040035558"  <br>"20050073632"   "20050134526"  <br>"20060034051"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20070076431"   "20070139929"  <br>"20070267174"   "20080055534"  <br>"20080267790"   "20080283234"  <br>"20090154096"   "20100182562"  <br>"20100220249"   "20110051071"  <br>"20110261523"   "20140085564"  <br>"20150264826"   "20160192536"  <br>"20160242329"   "20170074453"  <br>"20170111521"   "4593978"  <br>"5293930"   "5835179"   "5864465"  <br>"6157432"   "6181070"   "6198222"  <br>"6428198"   "6943768"   "7015470"  <br>"7190587"   "8142027"   "8223311"  <br>"8241573"   "8270163"   "8274789"  <br>"8472191"   "8700226"   "9089079"  <br>"9119330"   "D608775"  <br>"20020112026"   "20090059518"  <br>"20170163519"   "20170332523"  <br>"6701143"   "7682047"   "9801305"  <br>"D657422"   "D669938"  <br>"20020126248"   "20020154255"  <br>"20030020884"   "20040036834"  <br>"20040165139"   "20050012722"  <br>"20050229630"   "20050237714"  <br>"20060132699"   "20070103866"  <br>"20070212211"   "20090279240"  <br>"20100162747"   "20100171889"  <br>"20100232107"   "20120006523"  <br>"20120012300"   "20120106081"  <br>"20120249402"   "20130201685"  <br>"20150319882"   "20160302331"  <br>"20170111520"   "5748269"  <br>"5869919"   "5991153"   "6089751"  <br>"6886942"   "7059757"   "7212403"  <br>"8274622"   "8482695"   "8854595"  <br>"9173322"   "9282676"   "9622392"  <br>"20020009978"   "20020164962"  <br>"20070103863"   "20120188481").PN. | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S136 | 0   | (<br>"20020050793"   "20050073639"  <br>"20170175411"   "6125565"  <br>"6850209"   "7525633"   "7535547"  <br>"8827472"   "9655289"  <br>"20020148600"   "20030128511"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |

|      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                              |     |     |                     |
|------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|      |    | "20040012722"   "20040035558"  <br>"20050073632"   "20050134526"  <br>"20060034051"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20070076431"   "20070139929"  <br>"20070267174"   "20080055534"  <br>"20080267790"   "20080283234"  <br>"20090154096"   "20100182562"  <br>"20100220249"   "20110051071"  <br>"20110261523"   "20140085564"  <br>"20150264826"   "20160192536"  <br>"20160242329"   "20170074453"  <br>"20170111521"   "4593978"  <br>"5293930"   "5835179"   "5864465"  <br>"6157432"   "6181070"   "6198222"  <br>"6428198"   "6943768"   "7015470"  <br>"7190587"   "8142027"   "8223311"  <br>"8241573"   "8270163"   "8274789"  <br>"8472191"   "8700226"   "9089079"  <br>"9119330"   "D608775"  <br>"20020112026"   "20090059518"  <br>"20170163519"   "20170332523"  <br>"6701143"   "7682047"   "9801305"  <br>"D657422"   "D669938"  <br>"20020126248"   "20020154255"  <br>"20030020884"   "20040036834"  <br>"20040165139"   "20050012722"  <br>"20050229630"   "20050237714"  <br>"20060132699"   "20070103866"  <br>"20070212211"   "20090279240"  <br>"20100162747"   "20100171889"  <br>"20100232107"   "20120006523"  <br>"20120012300"   "20120106081"  <br>"20120249402"   "20130201685"  <br>"20150319882"   "20160302331"  <br>"20170111520"   "5748269"  <br>"5869919"   "5991153"   "6089751"  <br>"6886942"   "7059757"   "7212403"  <br>"8274622"   "8482695"   "8854595"  <br>"9173322"   "9282676"   "9622392"  <br>"20020009978"   "20020164962"  <br>"20070103863"  <br>"20120188481")".PN.and"<br>@ad<="20080909" |                              |     |     |                     |
| S137 | 87 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20030007109"  <br>"20030104210"   "20040036834"  <br>"20040105159"   "20040165139"  <br>"20050012722"   "20050073632"  <br>"20060082271"   "20060092348"  <br>"20060132699"   "20060177587"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2020/09/14<br>02:15 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |     |     |                     |
|------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|      |     | "20060209266"   "20070103866"  <br>"20070151664"   "20070206158"  <br>"20070212211"   "4093355"  <br>"4593978"   "4634225"   "5029982"  <br>"5088806"   "5247374"   "5559614"  <br>"5748269"   "5767489"   "5818010"  <br>"5869919"   "5991153"   "6089751"  <br>"6157432"   "6191839"   "6392727"  <br>"6417900"   "6493440"   "6535266"  <br>"6628355"   "6839104"   "6885412"  <br>"6909486"   "6943768"   "6961108"  <br>"7059757"   "7083285").PN. OR<br>("8274622").URPN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |     |     |                     |
| S138 | 296 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030043091"   "20030104210"  <br>"20030128511"   "20030214785"  <br>"20040012722"   "20040035558"  <br>"20040036834"   "20040103570"  <br>"20040105159"   "20040165139"  <br>"20040223299"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050073639"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050276053"  <br>"20050286131"   "20060012958"  <br>"20060018093"   "20060034051"  <br>"20060056994"   "20060082271"  <br>"20060092348"   "20060125998"  <br>"20060132699"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20060260790"   "20060262079"  <br>"20060266499"   "20060283579"  <br>"20070019419"   "20070030879"  <br>"20070047239"   "20070065091"  <br>"20070076431"   "20070103863"  <br>"20070103866"   "20070115686"  <br>"20070139929"   "20070140671"  <br>"20070151274"   "20070151664"  <br>"20070171353"   "20070206158"  <br>"20070211205"   "20070212211"  <br>"20070217221"   "20070237636"  <br>"20070267174"   "20080055534"  <br>"20080076342"   "20080099193"  <br>"20080148609"   "20080209934"  <br>"20080218446"   "20080236005"  <br>"20080267790"   "20080283234" | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2020/09/14<br>02:15 |

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|----------------|-------------------|-----------|--|--|
| "20080285290"  | "20090009729"     |           |  |  |
| "20090086430"  | "20090120629"     |           |  |  |
| "20090126906"  | "20090126907"     |           |  |  |
| "20090126914"  | "20090135365"     |           |  |  |
| "20090147170"  | "20090154096"     |           |  |  |
| "20090174626"  | "20090244472"     |           |  |  |
| "20090279240"  | "20090306820"     |           |  |  |
| "20100060861") | PN. OR            |           |  |  |
| ("20100079949" | "20100162747"     |           |  |  |
| "20100171889"  | "20100182562"     |           |  |  |
| "20100220249"  | "20100226091"     |           |  |  |
| "20100232107"  | "20100238394"     |           |  |  |
| "20100321887"  | "20110001898"     |           |  |  |
| "20110013114"  | "20110019363"     |           |  |  |
| "20110051071"  | "20110058326"     |           |  |  |
| "20110075361"  | "20110083460"     |           |  |  |
| "20110083824"  | "20110085301"     |           |  |  |
| "20110114384"  | "20110116000"     |           |  |  |
| "20110122162"  | "20110141724"     |           |  |  |
| "20110261523"  | "20120006523"     |           |  |  |
| "20120012295"  | "20120012300"     |           |  |  |
| "20120014063"  | "20120020114"     |           |  |  |
| "20120038849"  | "20120044217"     |           |  |  |
| "20120106081"  | "20120206687"     |           |  |  |
| "20120249402"  | "20120255704"     |           |  |  |
| "20120274876"  | "20120284547"     |           |  |  |
| "20130170140"  | "20130201685"     |           |  |  |
| "20130258659"  | "20130279154"     |           |  |  |
| "20130294039"  | "20140085564"     |           |  |  |
| "20140111758"  | "20140113540"     |           |  |  |
| "4093355"      | "4593978"         | "4634225" |  |  |
| "4748765"      | "4763993"         | "4921041" |  |  |
| "4952783"      | "4952925"         | "5029982" |  |  |
| "5088806"      | "5247374"         | "5282114" |  |  |
| "5293930"      | "5432526"         | "5535816" |  |  |
| "5559614"      | "5621614"         | "5657641" |  |  |
| "5748269"      | "5765743"         | "5767489" |  |  |
| "5808418"      | "5818010"         | "5818694" |  |  |
| "5835179"      | "5864465"         | "5869818" |  |  |
| "5869919"      | "5903433"         | "5991153" |  |  |
| "6003015"      | "6007205"         | "6089751" |  |  |
| "6104451"      | "6157432"         | "6181070" |  |  |
| "6191839"      | "6198222"         | "6211934" |  |  |
| "6215655"      | "6351381"         | "6392727" |  |  |
| "6417900"      | "6428198"         | "6473150" |  |  |
| "6493440"      | "6504713"         | "6535266" |  |  |
| "6628355"      | "6714410"         | "6727468" |  |  |
| "6825828"      | "6839104"         | "6885412" |  |  |
| "6886942"      | "6891135"         | "6909486" |  |  |
| "6943768"      | "6961108"         | "7015470" |  |  |
| "7059757"      | "7083285"         | "7157838" |  |  |
| "7161803"      | "7190587"         |           |  |  |
| "7209349")     | PN. OR ("7212403" |           |  |  |

|      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |     |     |                     |
|------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|      |    | "7259964"   "7269023"   "7284874"  <br>"7452121"   "7457113"   "7480140"  <br>"7535543"   "7591508"   "7602469"  <br>"7667964"   "7752858"   "7753567"  <br>"7800706"   "7813124"   "7903416"  <br>"7995342"   "8004648"   "8035968"  <br>"8081465"   "8102173"   "8142027"  <br>"8208115"   "8223311"   "8241573"  <br>"8248784"   "8254121"   "8269916"  <br>"8270163"   "8274622"   "8274789"  <br>"8300203"   "8320119"   "8351014"  <br>"8358397"   "8369083"   "8373841"  <br>"8379182"   "8400608"   "8472174"  <br>"8472191"   "8482695"   "8497972"  <br>"8649170"   "8649176"   "8654302"  <br>"8678603"   "8693185"   "8700226"  <br>"8711321"   "8749749"   "8755021"  <br>"8760613"   "8767165"   "8773633"  <br>"8804091"   "8823916"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9723765"  <br>"D608775").PN. OR<br>("10088702").URPN. |                              |     |     |                     |
| S139 | 58 | ("20010001459"   "20020126248"  <br>"20020149714"   "20060199514"  <br>"20070212211"   "6157432"  <br>"6535266"   "6943768"   "7059757"  <br>"20070206158"   "20020033919"  <br>"20040105159"   "20050012722"  <br>"20070103866"   "20100182562"  <br>"4593978"   "5748269"   "6191839"  <br>"6885412"   "20050286131"  <br>"20060177587"   "20070206158"  <br>"4093355"   "5559614"   "6089751"  <br>"6392727"   "6417900"   "5869919"  <br>"20030007109"   "20050073632"  <br>"20060092348"   "4634225"  <br>"5029982"   "5088806"   "6839104"  <br>"7083285"   "20010019454"  <br>"20020101553"   "20030104210"  <br>"20070140671"   "6493440"  <br>"5991153"   "20040165139"  <br>"20050213950"   "5767489"  <br>"20060132699"   "20060209266"  <br>"7284874"   "20050127796"                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2020/09/14<br>02:15 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |     |     |                     |
|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|      |     | "20060082271"   "5247374"  <br>"5818010"   "6628355"   "6909486"  <br>"6961108"   "20070151664"  <br>"20060082271"   "20060132699"  <br>"20020033919"   "20040036834"  <br>"20070019419"   "20110013114").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |     |     |                     |
| S140 | 255 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035558"   "20040036834"  <br>"20040103570"   "20040105159"  <br>"20040165139"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050127796"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050276053"  <br>"20050286131"   "20060012958"  <br>"20060012985"   "20060018093"  <br>"20060034051"   "20060056994"  <br>"20060082271"   "20060092346"  <br>"20060092348"   "20060125998"  <br>"20060132699"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20060260790"   "20060262079"  <br>"20060266499"   "20060283579"  <br>"20070019419"   "20070030879"  <br>"20070047239"   "20070065091"  <br>"20070076431"   "20070103866"  <br>"20070115686"   "20070139929"  <br>"20070140671"   "20070151274"  <br>"20070151664"   "20070171353"  <br>"20070206158"   "20070211205"  <br>"20070212211"   "20070217221"  <br>"20070237636"   "20070267174"  <br>"20080055534"   "20080076342"  <br>"20080099193"   "20080148609"  <br>"20080209934"   "20080218446"  <br>"20080236005"   "20080267790"  <br>"20080283234"   "20080285290"  <br>"20090009729"   "20090086430"  <br>"20090120629"   "20090126906"  <br>"20090126907"   "20090126914"  <br>"20090135365"   "20090147170"  <br>"20090154096"   "20090174626"  <br>"20090244472"   "20090279240"  <br>"20090306820"   "20100060861" | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2020/09/14<br>02:15 |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  |  | "20100079949").PN. OR<br>("20100182562"   "20110013114"  <br>"20110058326"   "4093355"  <br>"4593978"   "4634225"   "4748765"  <br>"4763993"   "4921041"   "4952783"  <br>"4952925"   "5029982"   "5088806"  <br>"5247374"   "5282114"   "5293930"  <br>"5432526"   "5535816"   "5559614"  <br>"5621614"   "5657641"   "5748269"  <br>"5765743"   "5767489"   "5808418"  <br>"5818010"   "5818694"   "5835179"  <br>"5864465"   "5869818"   "5869919"  <br>"5903433"   "5991153"   "6003015"  <br>"6007205"   "6089751"   "6104451"  <br>"6157432"   "6181070"   "6191839"  <br>"6198222"   "6211934"   "6215655"  <br>"6351381"   "6392727"   "6417900"  <br>"6428198"   "6473150"   "6493440"  <br>"6504713"   "6535266"   "6628355"  <br>"6727468"   "6839104"   "6885412"  <br>"6886942"   "6891135"   "6909486"  <br>"6943768"   "6961108"   "7015470"  <br>"7059757"   "7083285"   "7190587"  <br>"7209349"   "7212403"   "7284874"  <br>"7457113"   "7480140"   "7535543"  <br>"7602469"   "7667964"   "7752858"  <br>"7753567"   "7800706"   "7813124"  <br>"7995342"   "8004648"   "8035968"  <br>"8081465"   "8102173"   "8142027"  <br>"8208115"   "8223311"   "8241573"  <br>"8248784"   "8254121"   "8269916"  <br>"8270163"   "8274622"   "8274789"  <br>"8300203"   "8320119"   "8351014"  <br>"8358397"   "8369083"   "8373841"  <br>"8379182"   "8400608"   "8472174"  <br>"8472191"   "8482695"   "8497972"  <br>"8649170"   "8649176"   "8654302"  <br>"8678603"   "8693185"   "8700226"  <br>"8711321"   "8749749"   "8755021"  <br>"8760613"   "8767165"   "8773633"  <br>"8804091"   "8823916"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"  <br>"9119325").PN. OR ("9119330"  <br>"9173322"   "9173325"   "9282676"  <br>"9285108"   "9313917"   "9370127"  <br>"9448569"   "9451060"   "9451733"  <br>"9456525"   "9470924"   "9500896"  <br>"9516485"   "9549490"   "9594271"  <br>"9613548"   "9622392"   "9629287"  <br>"9648790"   "9723765"  <br>"D608775").PN. OR ("9835893").URPN. |  |  |  |  |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |     |     |                  |
|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----|-----|------------------|
| S141 | 5   | ("20040042174"   "20050127796"   "20090231807"   "6476883"   "7762707").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB; USPAT        | ADJ | OFF | 2020/09/14 02:15 |
| S142 | 4   | "15789331"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB; USPAT; USOCR | ADJ | OFF | 2020/09/14 02:15 |
| S143 | 12  | electronic display image assembly front portion rear portion open loop ambient air flow path closed loop gas circulation path heat exchanger pathway gas circulation device force circulating gas air circulation device                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB; USPAT; USOCR | AND | OFF | 2020/09/14 02:15 |
| S144 | 202 | (<br>"10080316"   "10088702"  <br>"10194564"   "10212845"  <br>"10278311"   "10314212"  <br>"10359659"   "10398066"  <br>"10420257"   "10485113"  <br>"10499516"   "10506738"  <br>"10506740"   "20010001459"  <br>"20010019454"   "20020009978"  <br>"20020033919"   "20020050793"  <br>"20020065046"   "20020084891"  <br>"20020101553"   "20020112026"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020164962"  <br>"20020167637"   "20030007109"  <br>"20030020884"   "20030043091"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035032"   "20040035558"  <br>"20040036622"   "20040036834"  <br>"20040042174"   "20040103570"  <br>"20040105159"   "20040135482"  <br>"20040165139"   "20040223299"  <br>"20050012039"   "20050012722"  <br>"20050062373"   "20050073632"  <br>"20050073639"   "20050127796"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050253699"  <br>"20050276053"   "20050286131"  <br>"20060012958"   "20060012985"  <br>"20060018093"   "20060034051"  <br>"20060056994"   "20060082271"  <br>"20060092348"   "20060125998"  <br>"20060132699"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20060260790"   "20060262079"  <br>"20060266499"   "20060269216"  <br>"20060283579"   "20070013647"  <br>) | US-PGPUB; USPAT        | ADJ | OFF | 2020/09/14 02:15 |

|               |               |  |  |  |  |
|---------------|---------------|--|--|--|--|
| "20070019419" | "20070030879" |  |  |  |  |
| "20070047239" | "20070065091" |  |  |  |  |
| "20070076431" | "20070081344" |  |  |  |  |
| "20070103863" | "20070103866" |  |  |  |  |
| "20070115686" | "20070139929" |  |  |  |  |
| "20070140671" | "20070151274" |  |  |  |  |
| "20070151664" | "20070171353" |  |  |  |  |
| "20070206158" | "20070211205" |  |  |  |  |
| "20070212211" | "20070217221" |  |  |  |  |
| "20070230167" | "20070237636" |  |  |  |  |
| "20070267174" | "20080035315" |  |  |  |  |
| "20080054144" | "20080055534" |  |  |  |  |
| "20080076342" | "20080099193" |  |  |  |  |
| "20080148609" | "20080209934" |  |  |  |  |
| "20080218446" | "20080236005" |  |  |  |  |
| "20080267790" | "20080283234" |  |  |  |  |
| "20080285290" | "20080310116" |  |  |  |  |
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| "20090059518" | "20090065007" |  |  |  |  |
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| "20090126914" | "20090135365" |  |  |  |  |
| "20090147170" | "20090154096" |  |  |  |  |
| "20090174626" | "20090231807" |  |  |  |  |
| "20090241437" | "20090244472" |  |  |  |  |
| "20090251650" | "20090266507" |  |  |  |  |
| "20090279240" | "20090302727" |  |  |  |  |
| "20090306820" | "20090323275" |  |  |  |  |
| "20100060861" | "20100079949" |  |  |  |  |
| "20100162747" | "20100171889" |  |  |  |  |
| "20100182562" | "20100220249" |  |  |  |  |
| "20100226091" | "20100232107" |  |  |  |  |
| "20100238394" | "20100321887" |  |  |  |  |
| "20110001898" | "20110013114" |  |  |  |  |
| "20110019363" | "20110032489" |  |  |  |  |
| "20110051071" | "20110058326" |  |  |  |  |
| "20110072697" | "20110075361" |  |  |  |  |
| "20110083460" | "20110083824" |  |  |  |  |
| "20110085301" | "20110085302" |  |  |  |  |
| "20110090630" | "20110114384" |  |  |  |  |
| "20110116000" | "20110116231" |  |  |  |  |
| "20110122162" | "20110141672" |  |  |  |  |
| "20110141724" | "20110261523" |  |  |  |  |
| "20110297810" | "20120006523" |  |  |  |  |
| "20120012295" | "20120012300" |  |  |  |  |
| "20120014063" | "20120020114" |  |  |  |  |
| "20120038849" | "20120044217" |  |  |  |  |
| "20120105790" | "20120106081" |  |  |  |  |
| "20120188481" | "20120206687" |  |  |  |  |
| "20120249402" | "20120255704" |  |  |  |  |
| "20120274876" | "20120284547" |  |  |  |  |
| "20120327600" | "20130170140" |  |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |     |     |                     |
|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
|      |     | "20130173358"   "20130176517"  <br>"20130201685"   "20130258659"  <br>"20130279154"   "20130294039"  <br>"20130344794"   "20140044147"  <br>"20140085564"   "20140111758"  <br>"20140113540"   "20140134767"  <br>"20140190240"   "20140268657"  <br>"20140313698"   "20140314395"  <br>"20140361138"   "20150009627").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |     |     |                     |
| S145 | 230 | ("20150192371"   "20150253611"  <br>"20150264826"   "20150319882"  <br>"20150366101"   "20160041423"  <br>"20160044829"   "20160162297"  <br>"20160192536"   "20160195254"  <br>"20160198588"   "20160238876"  <br>"20160242329"   "20160242330"  <br>"20160249493"   "20160302331"  <br>"20170023823"   "20170068042"  <br>"20170074453"   "20170083043"  <br>"20170083062"   "20170111486"  <br>"20170111520"   "20170111521"  <br>"20170127579"   "20170140344"  <br>"20170147992"   "20170163519"  <br>"20170175411"   "20170188490"  <br>"20170245400"   "20170257978"  <br>"20170332523"   "20180042134"  <br>"20180116073"   "20180314103"  <br>"20180315356"   "20180317330"  <br>"20180317350"   "20180364519"  <br>"20190037738"   "20190089176"  <br>"20190133002"   "20190208674"  <br>"20190239365"   "20190289754"  <br>"20190327865"   "4093355"  <br>"4593978"   "4634225"   "4748765"  <br>"4763993"   "4921041"   "4952783"  <br>"4952925"   "5029982"   "5088806"  <br>"5132666"   "5247374"   "5282114"  <br>"5293930"   "5351176"   "5432526"  <br>"5535816"   "5559614"   "5621614"  <br>"5657641"   "5748269"   "5765743"  <br>"5767489"   "5808418"   "5818010"  <br>"5818694"   "5835179"   "5864465"  <br>"5869818"   "5869919"   "5903433"  <br>"5991153"   "6003015"   "6007205"  <br>"6043979"   "6089751"   "6104451"  <br>"6125565"   "6157432"   "6181070"  <br>"6191839"   "6198222"   "6211934"  <br>"6215655"   "6351381"   "6359390"  <br>"6392727"   "6417900"   "6428198"  <br>"6437673"   "6473150"   "6476883"  <br>"6493440"   "6504713"   "6535266"  <br>"6628355"   "6643130"   "6683639" | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:15 |

|      |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                    |    |     |                     |
|------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----|-----|---------------------|
|      |       | "6701143"   "6714410"   "6727468"  <br>"6742583"   "6812851"   "6825828"  <br>"6833992"   "6839104"   "6850209"  <br>"6885412"   "6886942"   "6891135"  <br>"6909486"   "6943768"   "6961108"  <br>"7015470"   "7059757"   "7083285"  <br>"7157838"   "7161803"   "7190416"  <br>"7190587"   "7209349"   "7212403"  <br>"7259964"   "7269023"   "7284874"  <br>"7396145"   "7447018"   "7452121"  <br>"7457113"   "7480140"   "7535543"  <br>"7591508"   "7602469"   "7667964"  <br>"7682047"   "7752858"   "7753567"  <br>"7762707"   "7800706"   "7813124"  <br>"7903416"   "7995342"   "8004648"  <br>"8035968"   "8081465"   "8102173"  <br>"8142027"   "8208115"   "8223311"  <br>"8241573"   "8248784"   "8254121"  <br>"8269916"   "8270163"   "8274622"  <br>"8274789"   "8300203"   "8310824"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8590602"  <br>"8649170"   "8649176"   "8654302"  <br>"8678603"   "8693185"   "8700226"  <br>"8711321"   "8749749"   "8755021"  <br>"8758144"   "8760613"   "8767165"  <br>"8773633"   "8804091"   "8823916"  <br>"8827472"   "8854572"   "8854595"  <br>"8879042"   "8976313"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9703230"   "9723765"   "9797588"  <br>"9801305"   "9823690"   "9835893"  <br>"9894800"   "D608775").PN. |                    |    |     |                     |
| S146 | 1,007 | (("20180042134") or ("10506740") or<br>("9801305") or ("9173325") or<br>("20150237761") or ("20160041423")<br>or ("9835893") or ("8654302") or<br>("20110013114") or ("8351014") or<br>("20150366101") or ("20110085301")<br>or ("9119325") or ("9030641") or<br>("20130279154") or ("20140111758")<br>or ("20030094006") or ("6684653") or<br>("20080041077") or ("9723765") or                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT | OR | OFF | 2020/09/14<br>02:15 |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |  |
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|  | ("20160242329") or ("10278311") or<br>("20170332523") or ("10548247") or<br>("20190208674") or ("20180310439")<br>or ("20070002536") or ("10485147")<br>or ("20080055856") or ("7486513") or<br>("7342789") or ("8472174") or<br>("20170257978") or ("20110058326")<br>or ("20080055851") or<br>("20080212282") or ("9629287") or<br>("20140295748") or ("8988647") or<br>("20090255142") or ("20120106081")<br>or ("8823916") or ("10266984") or<br>("20140369003") or ("4327274") or<br>("9119330") or ("20120012300") or<br>("20170303442") or ("20080245083")<br>or ("20130170139") or ("8322155") or<br>("9115916") or ("8369083") or<br>("9267714") or ("20140123683") or<br>("10045467") or ("8649170") or<br>("20170127579") or ("20080041076")<br>or ("20190289754") or<br>("20130139530") or ("20160345461")<br>or ("8327656") or ("10314212") or<br>("20180343774") or ("9175434") or<br>("20170127556") or ("9699939") or<br>("20200029460") or ("20150195959")<br>or ("10398063") or ("9560789") or<br>("9549490") or ("10524384") or<br>("20170268159") or ("10400385") or<br>("20170234623") or ("20140345834")<br>or ("7864527") or ("6924981") or<br>("7729115") or ("20120281161") or<br>("9451733") or ("20040190247") or<br>("8755021") or ("4026263") or<br>("20040100770") or ("20120105790")<br>or ("20080030951") or ("6775137") or<br>("3277956") or ("8749749") or<br>("20050263142") or ("20110238143")<br>or ("6085701") or ("7165539") or<br>("20030091363") or ("6771916") or<br>("8590602") or ("20090086428") or<br>("20190059175") or ("10214037") or<br>("20180162151") or ("20120206687")<br>or ("9897336") or ("20180364519") or<br>("20170023823") or ("6345511") or<br>("20110099834") or ("20090052132")<br>or ("10143106") or ("10398058") or<br>("8627581") or ("8804091") or<br>("9408332") or ("20190193436") or<br>("9873273") or ("9470924") or<br>("6308526") or ("20160236494") or<br>("20160016423") or ("20160143191")<br>or ("20160377303") or |  |  |  |  |
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|  | ("20180317330") or ("8773633") or<br>("10359659") or ("10088702") or<br>("9278564") or ("7918799") or<br>("20150009627") or ("20160192536")<br>or ("20110261523")).PN. or<br>(("9282676") or ("20180223846") or<br>("20090209863") or ("10499516") or<br>("20190335613") or ("20150022967")<br>or ("9797588") or ("20100251742") or<br>("20160195254") or ("20140321103")<br>or ("20150327409") or ("9089079") or<br>("20100305775") or ("20190111758")<br>or ("9370127") or ("9285108") or<br>("20160302331") or ("2299939") or<br>("8145363") or ("6205796") or<br>("20020134544") or ("6367410") or<br>("20190037738") or ("20190170383")<br>or ("7086453") or ("20050056404") or<br>("8152904") or ("10514176") or<br>("20110072970") or ("20090086432")<br>or ("20110077555") or<br>("20180235066") or ("8622162") or<br>("6408630") or ("6196003") or<br>("20140313698") or ("20120180979")<br>or ("20010008071") or<br>("20180035569") or ("5402844") or<br>("20020012375") or ("20090185346")<br>or ("20160050797") or ("6408937") or<br>("20190335573") or ("20190239365")<br>or ("20010021847") or ("5901167") or<br>("20110195652") or ("20070279861")<br>or ("6843306") or ("6164369") or<br>("8425435") or ("7411785") or<br>("10010722") or ("10160290") or<br>("7841721") or ("4182303") or<br>("20110139525") or ("5931016") or<br>("7724516") or ("20180106484") or<br>("20150351214") or ("9010141") or<br>("20160178716") or ("5936646") or<br>("20130190661") or ("RE43007") or<br>("20160066478") or ("20030057546")<br>or ("7796376") or ("4840225") or<br>("9967964") or ("20040049178") or<br>("9204578") or ("6828675") or<br>("20190170604") or ("20150223367")<br>or ("9575149") or ("20170115366") or<br>("6044648") or ("20180335053") or<br>("20020116933") or ("6635053") or<br>("10082549") or ("5657641") or<br>("20170321907") or ("6490874") or<br>("20140260965") or ("7318821") or<br>("6592577") or ("20170261273") or<br>("6674642") or ("20040001310") or |  |  |  |  |
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|  | ("20050090814") or ("7207986") or<br>("20070028769") or ("4534780") or<br>("5269146") or ("20080055563") or<br>("9885526") or ("20110297351") or<br>("9353966") or ("RE30043") or<br>("20100232107") or ("20030077499")<br>or ("4056091") or ("6830842") or<br>("20160265805") or ("20140190037")<br>or ("8379182") or ("6298681") or<br>("20040040324") or ("20110077556")<br>or ("6334323") or ("8932238") or<br>("2819330") or ("4478055") or<br>("7403392") or ("20110126559") or<br>("5611476") or ("7911782") or<br>("7946986") or ("20200005592") or<br>("6167947") or ("20030217566") or<br>("4860824") or ("20020092316") or<br>("5906108") or ("20030145616") or<br>("6321547") or ("20030145621") or<br>("20110197613").PN. or ("7093454")<br>or ("8297070") or ("20180094840") or<br>("20090056910") or ("20040048123")<br>or ("20060218812") or<br>("20120137716") or ("4344479") or<br>("20060080996") or ("10502468") or<br>("8051672") or ("20150373882") or<br>("5476138") or ("6021150") or<br>("20110077557") or ("8009419") or<br>("8381541") or ("8105265") or<br>("7537849") or ("7010929") or<br>("5835349") or ("10477724") or<br>("6494252") or ("6964176") or<br>("20160270254") or ("9210830") or<br>("20080156014") or ("6350033") or<br>("20090107160") or ("4906182") or<br>("20140146468") or ("10130006") or<br>("20070144192") or ("20180059270")<br>or ("20030011983") or<br>("20150369514") or ("20180100671")<br>or ("20120131944") or ("10054698")<br>or ("6948328") or ("10415848") or<br>("9258926") or ("8117864") or<br>("20150083368") or ("6587336") or<br>("20040042905") or ("20170021695")<br>or ("20100057263") or ("7788940") or<br>("20090099498") or ("6957026") or<br>("20180214303") or ("10398066") or<br>("4967830") or ("6793465") or<br>("20140146467") or ("20160189842")<br>or ("20050180772") or<br>("20150373874") or ("8947873") or<br>("20080141708") or ("20120031392")<br>or ("4397121") or ("5529120") or |  |  |  |  |
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|  | ("9551358") or ("20180291798") or<br>("20160252289") or ("20190053399")<br>or ("20190239381") or ("5193735") or<br>("4318722") or ("5982619") or<br>("5285644") or ("10292305") or<br>("20170067643") or ("9568206") or<br>("20140260383") or ("5538075") or<br>("7963118") or ("5046554") or<br>("5570740") or ("7701715") or<br>("20150250067") or ("20160037685")<br>or ("20190249882") or ("9441839") or<br>("4773589") or ("9784490") or<br>("20120130298") or ("8979788") or<br>("20110277967") or ("4026283") or<br>("20190200488") or ("10440856") or<br>("20080024978") or ("20120024501")<br>or ("20130021746") or ("10015896")<br>or ("8959941") or ("8422218") or<br>("20130032310") or ("8591206") or<br>("20140111940") or ("9101078") or<br>("4953365") or ("8964391") or<br>("5590539") or ("6026565") or<br>("20160258657") or ("20140360492")<br>or ("9982920") or ("20090178780") or<br>("5825621") or ("8854572") or<br>("20130068441") or ("5748656") or<br>("2513373") or ("4285210") or<br>("5564980") or ("8248801") or<br>("20120162906") or ("8361059") or<br>("20150285516") or ("20100139306")<br>or ("20130170140") or<br>("20140123493") or ("20190171092")<br>or ("3415312") or ("5086754") or<br>("8435277") or ("6796372") or<br>("20140290567") or ("20140124167")<br>or ("8899171").PN. or ("7701714") or<br>("20070274043") or ("4242872") or<br>("8964390") or ("20100238394") or<br>("20200025408") or ("20180370263")<br>or ("20100296245") or<br>("20180038660") or ("4307578") or<br>("20200037456") or ("5467250") or<br>("20080306577") or ("7724517") or<br>("20110075363") or ("20190291542")<br>or ("7780657") or ("6109339") or<br>("6649290") or ("20190327865") or<br>("20160230634") or ("20020168556")<br>or ("10434804") or ("5065586") or<br>("8236240") or ("20070209380") or<br>("20170122573") or ("7778013") or<br>("9969193") or ("9261310") or<br>("6506111") or ("5524442") or<br>("4674476") or ("20130228313") or |  |  |  |  |
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|  | ("5349829") or ("4922890") or<br>("8274622") or ("20070097604") or<br>("8358397") or ("2564344") or<br>("20020173266") or ("8760867") or<br>("20170307282") or ("20070274858")<br>or ("7414845") or ("4987881") or<br>("20180317350") or ("20180363278")<br>or ("4142575") or ("20080017355") or<br>("20070267741") or ("4090370") or<br>("20100000758") or ("20070246678")<br>or ("20170064874") or<br>("20110000710") or ("20130025818")<br>or ("5895418") or ("7213639") or<br>("20090193830") or ("20180073753")<br>or ("20070233055") or<br>("20150273974") or ("20090107657")<br>or ("7956284") or ("20060207757") or<br>("5110264") or ("20150224800") or<br>("20070093799") or ("9496200") or<br>("20070241468") or ("20130206058")<br>or ("5937667") or ("4589712") or<br>("20060069418") or ("8210205") or<br>("20180292142") or ("20140262180")<br>or ("20070161974") or ("4706739") or<br>("RE45111") or ("20170080730") or<br>("4449764") or ("10264716") or<br>("9789746") or ("20180160819") or<br>("20190193439") or ("9048344") or<br>("7510174") or ("10442226") or<br>("20080024980") or ("20050259397")<br>or ("20030012234") or<br>("20190113247") or ("5832986") or<br>("20180128510") or ("20080196870")<br>or ("7795533") or ("20090257773") or<br>("20180275293") or ("20150354874")<br>or ("6914919") or ("5606870") or<br>("20200056795") or ("7652884") or<br>("5749243") or ("6138469") or<br>("20180214302") or ("9387709") or<br>("4866743") or ("20040163797") or<br>("20170311476") or ("7203063") or<br>("20120227389") or ("20100007258")<br>or ("7325410") or ("5267446") or<br>("7418825") or ("20110075353") or<br>("2320501") or ("20190198895") or<br>("9759438") or ("20070236881") or<br>("20130252533") or ("20030151892")<br>or ("5113844") or ("20170345346") or<br>("20110232869") or ("6232682") or<br>("4701415") or ("20040083740") or<br>("5499277").PN. or ("20110140820")<br>or ("7165412") or ("20170363306") or<br>("5320167") or ("20060254753") or |  |  |  |  |
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|  | ("20170311487") or ("7377935") or<br>("9354001") or ("7258161") or<br>("20090107159") or ("10524397") or<br>("20170245400") or ("8081054") or<br>("20050205241") or ("7492593") or<br>("5533357") or ("7334630") or<br>("6779348") or ("20060126296") or<br>("4505118") or ("10514174") or<br>("7128025") or ("20150259847") or<br>("10488089") or ("20160003546") or<br>("20180094841") or ("20080023178")<br>or ("20020023453") or ("7096928") or<br>("10006721") or ("20110077514") or<br>("4158950") or ("20080158815") or<br>("20180283803") or ("20160320149")<br>or ("20190219285") or<br>("20020148415") or ("9042099") or<br>("20190184852") or ("7832231") or<br>("4488192") or ("9613548") or<br>("20090200000") or ("20140133099")<br>or ("20120327600") or ("7184269") or<br>("20160198588") or ("20180199467")<br>or ("20170321911") or ("10074954")<br>or ("8929075") or ("6920043") or<br>("7013955") or ("20180315356") or<br>("7802734") or ("8250877") or<br>("4297318") or ("20020050338") or<br>("20130055748") or ("20080148760")<br>or ("8899066") or ("9943014") or<br>("20060000582") or ("7397661") or<br>("20200025429") or ("20080259566")<br>or ("20170328589") or ("7677057") or<br>("9631880") or ("20120279684") or<br>("9313931") or ("5605047") or<br>("10371451") or ("20150068171") or<br>("20010013404") or ("20030136134")<br>or ("20020139514") or ("9810439") or<br>("20050024831") or ("5458188") or<br>("8482695") or ("20030159456") or<br>("20090112368") or ("8037714") or<br>("10309665") or ("20120285543") or<br>("5560362") or ("20180156228") or<br>("20140133096") or ("9042098") or<br>("7969727") or ("4242876") or<br>("20180017345") or ("20070295492")<br>or ("20060177714") or ("6280318") or<br>("20160290666") or ("4330946") or<br>("20190021186") or ("20130056177")<br>or ("20070258612") or<br>("20150292775") or ("20040095728")<br>or ("7672125") or ("4622947") or<br>("20120121487") or ("10060350") or<br>("6944023") or ("7757753") or |  |  |  |  |
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|  | ("6889750") or ("20100277864") or<br>("20150165871") or ("20160298540")<br>or ("20080141686") or<br>("20160061532") or ("20120031601")<br>or ("20090260372") or ("10241103")<br>or ("4348604") or ("20170328879") or<br>("20080049396") or ("7458228") or<br>("2990695") or ("20170356597") or<br>("4449511") or ("4370861") or<br>("9313930") or ("5477687") or<br>("5357586") or ("8693199") or<br>("7340912") or ("6775996")).PN. or<br>("7073566") or ("7710722") or<br>("20080024981") or ("20080024987")<br>or ("20170172016") or<br>("20190141911") or ("7026065") or<br>("20050258259") or ("7818835") or<br>("20060219381") or ("20090216304")<br>or ("7555792") or ("20190316948") or<br>("20090288440") or ("20080142203")<br>or ("4022550") or ("5692467") or<br>("4324110") or ("20050006488") or<br>("10544902") or ("4373577") or<br>("5586932") or ("7134486") or<br>("4146086") or ("7980094") or<br>("20050174714") or ("5816318") or<br>("4848318") or ("20100118275") or<br>("2179734") or ("7802439") or<br>("5205276") or ("9441840") or<br>("5596622") or ("9593876") or<br>("7511960") or ("2873582") or<br>("5522216") or ("20150153109") or<br>("20130105120") or ("4380156") or<br>("20050241803") or ("20080161976")<br>or ("20070073369") or ("7036559") or<br>("20110094714") or ("20100319365")<br>or ("20090120630") or<br>("20180139864") or ("20080135224")<br>or ("20080310112") or<br>("20090173473") or ("4690209") or<br>("8157626") or ("20180136187") or<br>("20080161975") or ("9151540") or<br>("3290028") or ("20070074682") or<br>("6992483") or ("5253485") or<br>("2526874") or ("10334764") or<br>("7832992") or ("8619425") or<br>("20110315364") or ("20170223870")<br>or ("5042262") or ("6728102") or<br>("5582241") or ("20030044663") or<br>("4704658") or ("7131486") or<br>("10174975") or ("20170176605") or<br>("20130312645") or ("9038406") or<br>("7819634") or ("7673592") or |  |  |  |  |
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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |  |  |  |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  | ("20150000319") or ("20030205363")<br>or ("4147299") or ("9605875") or<br>("20080062647") or ("3373732") or<br>("20090225514") or ("8941993") or<br>("8453471") or ("20090225513") or<br>("7184267") or ("20180135880") or<br>("9476649") or ("20180263811") or<br>("20080156887") or ("10458682") or<br>("4495545") or ("20100011803") or<br>("10240845") or ("20020148604") or<br>("6061087") or ("20170038123") or<br>("4505131") or ("5239834") or<br>("5610968") or ("20080055848") or<br>("20140053558") or ("9173324") or<br>("6829900") or ("6909283") or<br>("20190226461") or ("6209622") or<br>("20130047653") or ("9689720") or<br>("20160245558") or ("4033825") or<br>("20090209193") or ("8178831") or<br>("20150047384") or ("20190331369")<br>or ("4803846") or ("7854135") or<br>("9392733") or ("20170067644") or<br>("5694442") or ("7975494") or<br>("20180352676") or ("20030085024")<br>or ("20120318328") or<br>("20190113259") or ("20180324976")<br>or ("8055388") or ("20130334447") or<br>("6007205") or ("20100149754")).PN.<br>or (("20190219311") or ("8235777") or<br>("7911793") or ("9746235") or<br>("5732123") or ("20080176503") or<br>("4611791") or ("4294225") or<br>("8546717") or ("7497252") or<br>("7341201") or ("4168706") or<br>("5050390") or ("9351694") or<br>("20120125028") or ("8699737") or<br>("5088295") or ("4333517") or<br>("9267737") or ("8189334") or<br>("8297067") or ("9752803") or<br>("20110315363") or ("6991024") or<br>("10485113") or ("20160116224") or<br>("20130083479") or ("20120160454")<br>or ("20090090115") or ("4092088") or<br>("7830657") or ("7856838") or<br>("7534167") or ("20030231467") or<br>("20180199450") or ("4430994") or<br>("8601827") or ("9223360") or<br>("20180314103") or ("20130220579")<br>or ("9338924") or ("20080160901") or<br>("20080141707") or ("20110272120")<br>or ("9835357") or ("20110061591") or<br>("4190099") or ("20170038346") or<br>("4336692") or ("8089764") or |  |  |  |  |
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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  | ("7878889") or ("5572880") or<br>("6896612") or ("9918413") or<br>("8235776") or ("7957132") or<br>("8693198") or ("6131571") or<br>("20100307716") or ("20180328600")<br>or ("6279337") or ("8431404") or<br>("20150343554") or ("20110030932")<br>or ("20160120058") or ("7363879") or<br>("20170164525") or ("20120120542")<br>or ("20190143445") or<br>("20090007581") or ("20200039260")<br>or ("20140153689") or ("9908195") or<br>("20190069449") or ("4755236") or<br>("20110207391") or ("20170181325")<br>or ("6497110") or ("9297571") or<br>("20060279930") or ("8968232") or<br>("5562411") or ("20080060372") or<br>("7185697") or ("20130269204") or<br>("20140260361") or ("5361591") or<br>("20110218600") or ("3470704") or<br>("6167621") or ("20030062149") or<br>("5689968") or ("20080196868") or<br>("9228779") or ("5890371") or<br>("RE36808") or ("20120012283") or<br>("6704198") or ("10568217") or<br>("20030164231") or ("20040089442")<br>or ("20110134604") or ("6942018") or<br>("10371443") or ("4485642") or<br>("7984684") or ("8467168") or<br>("20110105010") or ("9763366") or<br>("5724828") or ("20110289943") or<br>("20120171943") or ("20190196312")<br>or ("9086859") or ("20100078156") or<br>("20070268669") or ("6393730") or<br>("20180347578") or ("5240403") or<br>("4295342") or ("5348077") or<br>("20050098299") or ("20120318492")<br>or ("20180155969") or<br>("20090013553") or ("8467189") or<br>("5526650") or ("20140314395") or<br>("9283109") or ("7385810") or<br>("20110061832") or ("20070084463")<br>or ("20120167600") or ("9032742") or<br>("4589265").PN. or ("20110088883")<br>or ("20070030650") or ("10139159")<br>or ("9273875") or ("4138857") or<br>("20020135981") or ("7610764") or<br>("4308042") or ("6053238") or<br>("9414519") or ("20080058697") or<br>("20120133256") or ("9267881") or<br>("20100246118") or ("9677822") or<br>("8439104") or ("9968010") or<br>("8378677") or ("4859405") or |  |  |  |  |
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|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                |     |     |                     |
|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|      |     | ("9055696") or ("6217440") or<br>("6865825") or ("20140151003") or<br>("8031468") or ("20120270310") or<br>("20130081790") or ("20120127657")<br>or ("20120167610") or<br>("20120075797") or ("20100188082")<br>or ("8240165") or ("7905106") or<br>("4265220") or ("10189114") or<br>("7348527") or ("20160120059") or<br>("10184699") or ("20130104414") or<br>("20040257766") or ("20010045104")<br>or ("6564795") or ("7905096") or<br>("20100321887") or ("9282684") or<br>("7946112") or ("20160288244") or<br>("20070102426") or ("9648790") or<br>("20180238623") or ("8119300") or<br>("20140250713") or ("20120118534")<br>or ("9128681") or ("10151539") or<br>("7040101") or ("4424190") or<br>("5467615") or ("8035968") or<br>("6182608") or ("20190053400") or<br>("6580609") or ("20060133033") or<br>("10288328") or ("8514575") or<br>("20180045138") or ("20040169771")<br>or ("9920708") or ("6230501") or<br>("20090260777") or ("20020121095")<br>or ("20030154724") or<br>("20090310300") or ("4046529") or<br>("20150182650") or ("5513558")).PN. |                                |     |     |                     |
| S147 | 428 | S146 and @ad<="20080320"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S148 | 29  | (US-20090154096-\$ or US-<br>20060082271-\$ or US-20180088398-\$<br>or US-20140334100-\$ or US-<br>20130194782-\$ or US-20120236499-\$<br>or US-20110167845-\$ or US-<br>20110162831-\$ or US-20110058326-\$<br>or US-20100177479-\$ or US-<br>20090086430-\$ or US-20080285290-\$<br>or US-20070081344-\$ or US-<br>20090279240-\$ or US-20040135482-\$<br>or US-20110085301-\$ or US-<br>20090244472-\$ or US-20090135365-\$<br>or US-20090126906-\$ or US-<br>20150009627-\$ or US-20130201685-\$<br>or US-20120188481-\$ or US-<br>20110122162-\$).did. or (US-6493440-\$<br>or US-5991153-\$ or US-5869919-\$ or<br>US-5748269-\$ or US-8274622-\$ or US-<br>10088702-\$).did.                                                                                                                                                                                                                                                                                                                                                                                       | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/09/14<br>02:15 |

|      |         |                                                                                                         |                                                                            |     |     |                     |
|------|---------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----|-----|---------------------|
| S149 | 4,332   | ((("MANUFACTURING") near3 ("RESOURCES"))                                                                | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S150 | 2       | S149 and (enclosure and "electronic image assembly" and display and "open loop" and "closed loop").clm. | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S151 | 54      | S149 and ("open loop" and "closed loop").clm.                                                           | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S152 | 1,161   | cross flow heat exchanger                                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S153 | 264     | S152 and (LCD or display or panel)                                                                      | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S154 | 3,706   | H05K7/202,206,20972.cpc.                                                                                | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S155 | 617,836 | "59" and (LCD or display or panel)                                                                      | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S156 | 3,706   | H05K7/202,206,20972.cpc.                                                                                | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S157 | 3,706   | H05K7/202,206,20972.cpc.                                                                                | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S158 | 626     | S157 and (LCD or display or panel)                                                                      | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S159 | 166     | S158 and @ad<="20080320"                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB                                             | ADJ | OFF | 2020/09/14<br>02:15 |
| S160 | 966     | ((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))                                                     | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S161 | 875     | ((((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))))inv.                                             | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S162 | 4,332   | ((("MANUFACTURING") near3 ("RESOURCES"))                                                                | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S163 | 4,941   | S162 or S160                                                                                            | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |

|      |       |                                                                                                        |                                                                            |     |     |                     |
|------|-------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----|-----|---------------------|
| S164 | 2     | S163 and (electronic image and cooling and enclosure and heat exchanger and (air or gas))              | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S165 | 2     | S163 and (electronic image and cooling and enclosure and heat exchanger and (air or gas))              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:16 |
| S166 | 2     | S163 and ("electronic image assembly" and "cooling system" and enclosure and "heat exchanger" and air) | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:16 |
| S167 | 158   | S163 and ("open loop" and "closed loop")                                                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:16 |
| S168 | 158   | S163 and ("open loop" and "closed loop")                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S169 | 149   | S168 and @ad<="20191209"                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB                                             | ADJ | OFF | 2020/09/14<br>02:16 |
| S170 | 966   | ((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))                                                    | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S171 | 4,332 | ((("MANUFACTURING") near3 ("RESOURCES"))                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S172 | 4,941 | S171 or S170                                                                                           | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S173 | 158   | S172 and ("open loop" and "closed loop")                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S174 | 113   | S173 and cool\$3                                                                                       | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S175 | 90    | S174 and (transparent same display)                                                                    | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S176 | 4     | "15789331"                                                                                             | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S177 | 202   | ("10080316"   "10088702"   "10194564"   "10212845"   "10278311"   "10314212"   "10359659"   "10398066" | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |

|  |                               |  |  |  |
|--|-------------------------------|--|--|--|
|  | "10420257"   "10485113"       |  |  |  |
|  | "10499516"   "10506738"       |  |  |  |
|  | "10506740"   "20010001459"    |  |  |  |
|  | "20010019454"   "20020009978" |  |  |  |
|  | "20020033919"   "20020050793" |  |  |  |
|  | "20020065046"   "20020084891" |  |  |  |
|  | "20020101553"   "20020112026" |  |  |  |
|  | "20020126248"   "20020148600" |  |  |  |
|  | "20020149714"   "20020154255" |  |  |  |
|  | "20020164944"   "20020164962" |  |  |  |
|  | "20020167637"   "20030007109" |  |  |  |
|  | "20030020884"   "20030043091" |  |  |  |
|  | "20030104210"   "20030128511" |  |  |  |
|  | "20030214785"   "20040012722" |  |  |  |
|  | "20040035032"   "20040035558" |  |  |  |
|  | "20040036622"   "20040036834" |  |  |  |
|  | "20040042174"   "20040103570" |  |  |  |
|  | "20040105159"   "20040135482" |  |  |  |
|  | "20040165139"   "20040223299" |  |  |  |
|  | "20050012039"   "20050012722" |  |  |  |
|  | "20050062373"   "20050073632" |  |  |  |
|  | "20050073639"   "20050127796" |  |  |  |
|  | "20050134525"   "20050134526" |  |  |  |
|  | "20050213950"   "20050229630" |  |  |  |
|  | "20050237714"   "20050253699" |  |  |  |
|  | "20050276053"   "20050286131" |  |  |  |
|  | "20060012958"   "20060012985" |  |  |  |
|  | "20060018093"   "20060034051" |  |  |  |
|  | "20060056994"   "20060082271" |  |  |  |
|  | "20060092348"   "20060125998" |  |  |  |
|  | "20060132699"   "20060177587" |  |  |  |
|  | "20060199514"   "20060209266" |  |  |  |
|  | "20060260790"   "20060262079" |  |  |  |
|  | "20060266499"   "20060269216" |  |  |  |
|  | "20060283579"   "20070013647" |  |  |  |
|  | "20070019419"   "20070030879" |  |  |  |
|  | "20070047239"   "20070065091" |  |  |  |
|  | "20070076431"   "20070081344" |  |  |  |
|  | "20070103863"   "20070103866" |  |  |  |
|  | "20070115686"   "20070139929" |  |  |  |
|  | "20070140671"   "20070151274" |  |  |  |
|  | "20070151664"   "20070171353" |  |  |  |
|  | "20070206158"   "20070211205" |  |  |  |
|  | "20070212211"   "20070217221" |  |  |  |
|  | "20070230167"   "20070237636" |  |  |  |
|  | "20070267174"   "20080035315" |  |  |  |
|  | "20080054144"   "20080055534" |  |  |  |
|  | "20080076342"   "20080099193" |  |  |  |
|  | "20080148609"   "20080209934" |  |  |  |
|  | "20080218446"   "20080236005" |  |  |  |
|  | "20080267790"   "20080283234" |  |  |  |
|  | "20080285290"   "20080310116" |  |  |  |
|  | "20090009047"   "20090009729" |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |     |     |                     |
|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
|      |     | "20090059518"   "20090065007"  <br>"20090086430"   "20090104989"  <br>"20090120629"   "20090122218"  <br>"20090126906"   "20090126907"  <br>"20090126914"   "20090135365"  <br>"20090147170"   "20090154096"  <br>"20090174626"   "20090231807"  <br>"20090241437"   "20090244472"  <br>"20090251650"   "20090266507"  <br>"20090279240"   "20090302727"  <br>"20090306820"   "20090323275"  <br>"20100060861"   "20100079949"  <br>"20100162747"   "20100171889"  <br>"20100182562"   "20100220249"  <br>"20100226091"   "20100232107"  <br>"20100238394"   "20100321887"  <br>"20110001898"   "20110013114"  <br>"20110019363"   "20110032489"  <br>"20110051071"   "20110058326"  <br>"20110072697"   "20110075361"  <br>"20110083460"   "20110083824"  <br>"20110085301"   "20110085302"  <br>"20110090630"   "20110114384"  <br>"20110116000"   "20110116231"  <br>"20110122162"   "20110141672"  <br>"20110141724"   "20110261523"  <br>"20110297810"   "20120006523"  <br>"20120012295"   "20120012300"  <br>"20120014063"   "20120020114"  <br>"20120038849"   "20120044217"  <br>"20120105790"   "20120106081"  <br>"20120188481"   "20120206687"  <br>"20120249402"   "20120255704"  <br>"20120274876"   "20120284547"  <br>"20120327600"   "20130170140"  <br>"20130173358"   "20130176517"  <br>"20130201685"   "20130258659"  <br>"20130279154"   "20130294039"  <br>"20130344794"   "20140044147"  <br>"20140085564"   "20140111758"  <br>"20140113540"   "20140134767"  <br>"20140190240"   "20140268657"  <br>"20140313698"   "20140314395"  <br>"20140361138"   "20150009627").PN. |                    |     |     |                     |
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| "20180315356" | "20180317330" |           |  |  |
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| "4952925"     | "5029982"     | "5088806" |  |  |
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| "5535816"     | "5559614"     | "5621614" |  |  |
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| "5818694"     | "5835179"     | "5864465" |  |  |
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| "7457113"     | "7480140"     | "7535543" |  |  |
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| "7903416"     | "7995342"     | "8004648" |  |  |
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|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                |     |    |                     |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|----|---------------------|
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| S179 | 2   | "20050253699"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/14<br>02:16 |
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| "20090266507" | "20090279240" |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |     |    |                     |
|------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|----|---------------------|
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| "5132666"     | "5247374"     | "5282114" |  |  |
| "5285677"     | "5293930"     | "5351176" |  |  |
| "5432526"     | "5535816"     | "5559614" |  |  |
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| "5765743"     | "5767489"     | "5808418" |  |  |
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| "5864465"     | "5869818"     | "5869919" |  |  |
| "5903433"     | "5991153"     | "6003015" |  |  |
| "6007205"     | "6043979"     | "6089751" |  |  |
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| "7452121"     | "7457113"     | "7480140" |  |  |
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| "8248784"     | "8254121"     | "8269916" |  |  |
| "8270163"     | "8274622"     | "8274789" |  |  |

|      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |     |    |                     |
|------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|----|---------------------|
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| S198 | 189    | g02f1/0311.cpc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/14<br>19:21 |
| S199 | 4      | "9075262"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/15<br>09:28 |
| S201 | 0      | (display or LCD or panel) same<br>(transparent (panel or screen or<br>display)) same (polarizer or polarize or<br>"optical filter" or polarizing or tint)<br>same ((air cool\$3 or fan or blower or<br>air) with (air path or groove or space<br>or opening or space))                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/15<br>10:01 |
| S202 | 516    | (display or LCD or panel) and<br>(transparent (panel or screen or<br>display)) and (polarizer or polarize or<br>"optical filter" or polarizing or tint) and<br>((air cool\$3 or fan or blower or air)<br>with (air path or groove or space or<br>opening or space))                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/15<br>11:07 |
| S203 | 31,497 | (G02B5/30 OR G02B6/0055 OR<br>G02F1/133528 OR G02F2001/133388<br>OR G02F1/133308 OR G02F1/133385                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/15<br>13:23 |

|      |        |                                                                                                                                                                                                                                                                                                                                                                                                            |                                |     |     |                     |
|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|      |        | OR G07F17/3211 OR G09F13/0413 OR G09F13/12).CPC.                                                                                                                                                                                                                                                                                                                                                           |                                |     |     |                     |
| S204 | 30,371 | S203 and (display or LCD or panel)                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/15<br>13:24 |
| S205 | 13,964 | (polarizer or polarize or "optical filter" or polarizing or tint) and S204                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/15<br>13:25 |
| S206 | 590    | (transparent (panel or screen or display)) and S205                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/15<br>13:28 |
| S207 | 314    | (air cool\$3 or fan or blower or air) and S206                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/15<br>13:29 |
| S208 | 223    | S207 not S202                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/15<br>13:29 |
| S209 | 44     | S208 and @ad<="20080320"                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/15<br>13:30 |
| S210 | 5,906  | ((polarizer or polarize or "optical filter" or polarizing or tint) and (display or lcd or screen) and (air or fan or cool\$3 or blower) and (solar or sunlight or sun)) and @ad<="20080320"                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/15<br>13:36 |
| S211 | 16     | ((polarizer or polarize or "optical filter" or polarizing or tint) same (display or lcd or screen) same (air or fan or cool\$3 or blower) same (solar or sunlight or sun)) and @ad<="20080320"                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/15<br>13:37 |
| S212 | 215    | S203 and S210                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/15<br>13:41 |
| S213 | 199    | S212 not (S207 or S208 or S202)                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/15<br>13:41 |
| S214 | 191    | ("1342894"   "1385162"   "1434268"   "1462348"   "1518403"   "1592393"   "1620338"   "1666047"   "2108054"   "2187803"   "2258014"   "2283268"   "2395561"   "2464887"   "2552184"   "2552185"   "2569918"   "2660925"   "2668478"   "2688271"   "2700323"   "2742819"   "2813802"   "2852980"   "2883291"   "3113033"   "3174067"   "3217596"   "3250175"   "3253504"   "3255342"   "3293982"   "3325666" | US-PGPUB;<br>USPAT;<br>USOCR   | ADJ | ON  | 2020/09/15<br>14:01 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                              |     |    |                     |
|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|----|---------------------|
|      |     | "3482911"   "3499112"   "3499702"  <br>"3514198"   "3536391"   "3574444"  <br>"3575452"   "3575499"   "3586851"  <br>"3761172"   "3807850"   "3824003"  <br>"3836243"   "3844650"   "3862360"  <br>"3895866"   "3944320"   "3979160"  <br>"3980403"   "4060316"   "4080052"  <br>"4088400"   "4095881"   "4154007"  <br>"4165160"   "4171874"   "4185895"  <br>"4194833"   "4195915"   "4222641"  <br>"4239349"   "4275395"   "4294524"  <br>"4315258"   "4338006"   "4349817"  <br>"4365869"   "4368963"   "4372639"  <br>"4386826"   "4386836"   "4403216"  <br>"4409583"   "4420234"   "4423927"  <br>"4453810"   "4507547"   "4514042"  <br>"4526441"   "4536014"   "4564276"  <br>"4577959"   "4613207"   "4652101"  <br>"4660936"   "4664482"   "4671634"  <br>"4687301"   "4704004"   "4722593"  <br>"4726662"   "4756604"   "4765718"  <br>"4765734"   "4770525"   "4779510"  <br>"4812034"   "4824210"   "4846694"  <br>"4864390"   "4880303"   "4881110"  <br>"4882599"   "4944578"  <br>"4953971").PN. OR ("5255029").URPN.            |                              |     |    |                     |
| S215 | 162 | ("1342894"   "1385162"   "1434268"  <br>"1462348"   "1518403"   "1592393"  <br>"1620338"   "1666047"   "2108054"  <br>"2187803"   "2258014"   "2283268"  <br>"2395561"   "2464887"   "2552184"  <br>"2552185"   "2569918"   "2660925"  <br>"2668478"   "2688271"   "2700323"  <br>"2742819"   "2813802"   "2852980"  <br>"2883291"   "3113033"   "3174067"  <br>"3217596"   "3250175"   "3253504"  <br>"3255342"   "3293982"   "3325666"  <br>"3482911"   "3499112"   "3499702"  <br>"3514198"   "3536391"   "3574444"  <br>"3575452"   "3575499"   "3586851"  <br>"3761172"   "3807850"   "3824003"  <br>"3836243"   "3844650"   "3862360"  <br>"3895866"   "3944320"   "3979160"  <br>"3980403"   "4060316"   "4080052"  <br>"4088400"   "4095881"   "4154007"  <br>"4165160"   "4171874"   "4185895"  <br>"4194833"   "4195915"   "4222641"  <br>"4239349"   "4275395"   "4294524"  <br>"4315258"   "4338006"   "4349817"  <br>"4365869"   "4368963"   "4372639"  <br>"4386826"   "4386836"   "4403216"  <br>"4409583"   "4420234"   "4423927" | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | ON | 2020/09/15<br>14:02 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                |     |     |                     |
|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|      |     | "4453810"   "4507547"   "4514042"  <br>"4526441"   "4536014"   "4564276"  <br>"4577959"   "4613207"   "4652101"  <br>"4660936"   "4664482"   "4671634"  <br>"4687301"   "4704004"   "4722593"  <br>"4726662"   "4756604"   "4763993"  <br>"4765718"   "4765734"   "4770525"  <br>"4779510"   "4787737"   "4812034"  <br>"4824210"   "4846694"   "4864390"  <br>"4880303"   "4881110"   "4882599"  <br>"4941732"   "4944578"   "4953971"  <br>"4976536"   "5048949").PN. OR<br>("5227821").URPN.                                                     |                                |     |     |                     |
| S216 | 75  | ("2187803"   "2552184"   "3255342"  <br>"3514198"   "3575499"   "3844650"  <br>"3895866"   "3980403"   "4088400"  <br>"4154007"   "4171874"   "4185895"  <br>"4194833"   "4195915"   "4222641"  <br>"4294524"   "4315258"   "4349817"  <br>"4365869"   "4368963"   "4372639"  <br>"4386826"   "4403216"   "4409583"  <br>"4423927"   "4453810"   "4536014"  <br>"4613207"   "4652101"   "4660936"  <br>"4664482"   "4671634"   "4704004"  <br>"4722593"   "4726662"   "4756604"  <br>"4765718"   "4812034"  <br>"4824210").PN. OR ("5187510").URPN. | US-PGPUB;<br>USPAT;<br>USOCR   | ADJ | ON  | 2020/09/15<br>14:02 |
| S217 | 68  | ("2552184"   "3980403"   "4088400"  <br>"4154007"   "4171874"   "4185895"  <br>"4194833"   "4222641"   "4294524"  <br>"4315258"   "4349817"   "4365869"  <br>"4368963"   "4372639"   "4386826"  <br>"4403216"   "4409583"   "4423927"  <br>"4536014"   "4613207"   "4652101"  <br>"4660936"   "4664482"   "4704004"  <br>"4722593"   "4726662"   "4756604"  <br>"4765718").PN. OR ("4976536").URPN.                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>USOCR   | ADJ | ON  | 2020/09/15<br>14:03 |
| S218 | 96  | ("3844650"   "4154007"   "4194833"  <br>"4222641"   "4294524"   "4349817"  <br>"4365869"   "4368963"   "4372639"  <br>"4386836"   "4403216"   "4409583"  <br>"4514042").PN. OR ("4763993").URPN.                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT;<br>USOCR   | ADJ | ON  | 2020/09/15<br>14:03 |
| S219 | 190 | (S214 or S215 or S216 or S217 or<br>S218) and @ad<="20080320"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/15<br>14:05 |
| S220 | 0   | ((polarizer or polarize or "optical filter"<br>or polarizing or tint) same (display or<br>lcd or screen) same (air or fan or<br>cool\$3 or blower) same (solar or<br>sunlight or sun)) and S219                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/15<br>14:05 |

|      |    |                                                                                                                                                                                                                                                                          |                          |     |     |                  |
|------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----|-----|------------------|
| S221 | 15 | ((polarizer or polarize or "optical filter" or polarizing or tint) and (display or lcd or screen) and (air or fan or cool\$3 or blower) and (solar or sunlight or sun)) and S219                                                                                         | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2020/09/15 14:06 |
| S222 | 65 | ("4687298"   "4749261"   "4806221"   "5132830"   "5150235"   "5187510"   "5196953"   "5232634"   "5237437"   "5239406"   "5249071"   "5299041"   "5311340"   "5661578"   "5680185"   "5706067"   "5724111"   "5754262"   "5768019"   "5808714").PN. OR ("6211934").URPN. | US-PGPUB; USPAT; USOCR   | ADJ | ON  | 2020/09/15 14:08 |
| S223 | 65 | ("4687298"   "4749261"   "4806221"   "5132830"   "5150235"   "5187510"   "5196953"   "5232634"   "5237437"   "5239406"   "5249071"   "5299041"   "5311340"   "5661578"   "5680185"   "5706067"   "5724111"   "5754262"   "5768019"   "5808714").PN. OR ("6211934").URPN. | US-PGPUB; USPAT; USOCR   | ADJ | ON  | 2020/09/15 17:19 |
| S224 | 5  | ("20070046874"   "4292370"   "4976536"   "5255029"   "5920367").PN.                                                                                                                                                                                                      | US-PGPUB; USPAT          | ADJ | ON  | 2020/12/27 20:47 |
| S225 | 6  | ("10757844"   "20170231112"   "20200275585"   "6392727"   "7466546"   "7492589").PN.                                                                                                                                                                                     | US-PGPUB; USPAT          | ADJ | ON  | 2020/12/27 20:55 |

2/23/2021 2:51:18 PM

C:\Users\mmatey\Documents\EAST\Workspaces\16933932 (Electronic display with cooling).wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|                   |                                 |   |                                            |
|-------------------|---------------------------------|---|--------------------------------------------|
| App. No.:         | 16/933,932                      | : |                                            |
| Confirmation No.: | 5816                            | : |                                            |
| Inventor:         | Dunn, William et. al.           | : | <b>RESPONSE TO FINAL<br/>OFFICE ACTION</b> |
| Filed:            | July 20, 2020                   | : |                                            |
| Examiner:         | Matey, Michael A.               | : |                                            |
| Art Unit:         | 2835                            | : |                                            |
| Docket No.:       | MAN2241-045R                    | : |                                            |
| Title:            | ELECTRONIC DISPLAY WITH COOLING | : |                                            |

|                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>CERTIFICATE OF TRANSMISSION UNDER 37 CFR § 1.8 (a)<br/>Date of Transmission: February 19, 2021<br/>I hereby certify that this correspondence is being electronically filed<br/>via EFS-Web.<br/><br/><u>/Trisha M. Beachy-Bryant/</u><br/>Trisha M. Beachy-Bryant, Paralegal</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The following papers are filed in response to the Final Office Action mailed December 31, 2020. A **LISTING OF CLAIMS** begins at page 2 and **REMARKS** begin at page 8.

As this response is filed within two months of the mailing date of the Final Office Action, no additional fees are believed to be due and Applicant believes it is entitled to Advisory Practice. Please charge any fee deficiency to Deposit Account 19-4076.

| Electronic Acknowledgement Receipt          |                                         |
|---------------------------------------------|-----------------------------------------|
| <b>EFS ID:</b>                              | 41974171                                |
| <b>Application Number:</b>                  | 16933932                                |
| <b>International Application Number:</b>    |                                         |
| <b>Confirmation Number:</b>                 | 5816                                    |
| <b>Title of Invention:</b>                  | ELECTRONIC DISPLAY WITH COOLING         |
| <b>First Named Inventor/Applicant Name:</b> | William Dunn                            |
| <b>Customer Number:</b>                     | 8698                                    |
| <b>Filer:</b>                               | Adam Jeffery Smith/Trisha Beachy-Bryant |
| <b>Filer Authorized By:</b>                 | Adam Jeffery Smith                      |
| <b>Attorney Docket Number:</b>              | MAN2241-045R                            |
| <b>Receipt Date:</b>                        | 19-FEB-2021                             |
| <b>Filing Date:</b>                         | 20-JUL-2020                             |
| <b>Time Stamp:</b>                          | 18:00:16                                |
| <b>Application Type:</b>                    | Utility under 35 USC 111(a)             |

**Payment information:**

| Submitted with Payment |                      | no                           |                                                   |                  |                  |
|------------------------|----------------------|------------------------------|---------------------------------------------------|------------------|------------------|
| <b>File Listing:</b>   |                      |                              |                                                   |                  |                  |
| Document Number        | Document Description | File Name                    | File Size(Bytes)/<br>Message Digest               | Multi Part /.zip | Pages (if appl.) |
| 1                      |                      | MAN2241-045R_OAR_2-19-21.pdf | 51424<br>8b25a3e06775f2a6e7fad510671bba60c4b4bbce | yes              | 10               |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Multipart Description/PDF files in .zip description |       |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------|-----|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Document Description                                | Start | End |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Applicant Arguments/Remarks Made in an Amendment    | 8     | 10  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Claims                                              | 2     | 7   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Response After Final Action                         | 1     | 1   |
| <b>Warnings:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                     |       |     |
| <b>Information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                     |       |     |
| <b>Total Files Size (in bytes):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                     | 51424 |     |
| <p>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.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b><br/> If a new application is being filed and the application includes the necessary components for a 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.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b><br/> 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.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b><br/> 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.</p> |                                                     |       |     |

**REMARKS**

In response to the Office Action mailed December 31, 2020, Applicant respectfully requests that Examiner enter the above amendments and consider the following remarks. Unless expressly stated otherwise, the amendments and remarks made herein are irrelevant to any claims in any other patent applications. The failure to expressly address any reason for any rejection should not be understood to be agreement with such reason. Additionally, some arguments may be made collectively herein in the interests of brevity and compact prosecution and should not be understood as an admission that such claims rise and fall together.

Claims 1, 6-7, 11, and 17 are amended. Claims 4-5 are cancelled. No claims are added or withdrawn. As a result, claims 1, 3, 6-7, and 10-20 remain pending in the application. Applicant respectfully requests further examination and reconsideration of the application in light of the accompanying remarks.

**Claim Amendments<sup>1</sup>**

Claim 1 is amended to incorporate the limitations of now cancelled claims 4-5 with further amendments for clarity, and the dependency of claim 6 is amended to reflect the same.

Claim 7 is amended to correct one or more potential informalities.

Claim 11 is amended for clarity and/or to correct one or more potential informalities.

Claim 17 is amended to correct one or more potential informalities.

No new matter is added.

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<sup>1</sup> Citations are made herein with reference to the corresponding published application.

Allowable Subject Matter

Applicant thanks Examiner for allowing claims 11-20. Applicant thanks Examiner for noting that claims 5-7 would be allowable if re-written in independent form to include all limitations of the base claim and any intervening claims. Claim 1 is amended to incorporate the limitations of now cancelled claims 4-5 with further amendments for clarity. Further amendments are made to other claims for clarity and/or to correct potential informalities. Therefore, Applicant respectfully submits that the application is now in position for allowance and the same is respectfully requested.

Claim Rejection Under 35 USC § 103

Examiner has rejected claims 1, 3-4, and 10 under 35 USC § 103 as allegedly being obvious over US Pat. No. 5,991,153 to Heady *et. al.* ("Heady") in view of US Pub. No. 2002/0033919 to Sanelle *et. al.* ("Sanelle"). Applicant respectfully traverses.

Without necessarily agreeing to Examiner's position, but in the interest of furthering prosecution, Applicant has amended claim 1 herewith to incorporate the limitations of now cancelled claims 4-5, which Examiner has indicated to be allowable. As noted above, certain further amendments are made to these and other claims for clarity and/or to correct potential informalities.

In light of the foregoing, Applicant respectfully submits that the rejection is overcome and the application is now in position for allowance.

App. No. 16/933,932  
Dkt. No.: MAN2241-045R  
Re.: Office Action of December 31, 2020

Conclusion

Applicant respectfully submits that the present application is now in condition for allowance, and such action is earnestly requested. Telephone inquiry to the undersigned in order to clarify or otherwise expedite prosecution of the present application is respectfully encouraged.

Respectfully submitted,

Date: February 19, 2021

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Dublin, OH 43017-5043  
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Fax: (614) 792-5536  
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**LISTING OF CLAIMS**

**Claim 1 (currently amended)** A cooling system for an electronic image assembly, the cooling system comprising:

a housing for the electronic image assembly;

a cover panel forming a forward portion of the housing, wherein the cover panel is located forward of, and at least some distance from, the electronic image assembly and is configured to permit viewing of images displayed at the electronic image assembly through said cover panel;

a closed loop airflow pathway passing through the housing, wherein said closed loop airflow pathway passes around said electronic image assembly and is configured to accommodate circulating gas, and wherein at least a portion of said closed loop airflow pathway extends between said electronic image assembly and said cover panel;

an open loop airflow pathway for ambient air passing through said housing and behind said electronic image assembly;

at least one air circulation device positioned to force the circulating gas air through the closed loop airflow pathway when activated; and

at least one polarizer located at an inward facing surface of said cover panel and configured to prevent at least some sunlight striking said cover panel from traveling beyond said at least one polarizer.

**Claim 2 (cancelled)**

**Claim 3 (previously presented)** The cooling system of claim 1 further comprising:

at least one film having anti-reflection properties located at said cover panel.

**Claims 4-5 (cancelled)**

**Claim 6 (currently amended)** The cooling system of claim ~~5~~1 further comprising:

a heat exchanger located rearward of the electronic image assembly, wherein a first portion of said heat exchanger forms part of said open loop airflow pathway, and wherein a second portion of said heat exchanger forms part of said closed loop airflow pathway.

**Claim 7 (currently amended)** The cooling system of claim 6 further comprising:

an inlet located at a first portion of said housing for ingesting ~~said~~ ambient air into said open loop airflow pathway; and

an exhaust located at a second portion of said housing for exhausting ~~said~~ ambient air from said open loop airflow pathway.

**Claims 8-9 (cancelled)**

**Claim 10 (original)** The cooling system of claim 1 wherein:

said at least one polarizer comprises a linear polarizer.

**Claim 11 (currently amended)** A cooling system for an electronic image assembly, the cooling system comprising:

a housing for the electronic image assembly;

a transparent cover panel forming a front portion of the housing, the transparent cover panel located forward of, and at least some distance from, the electronic image assembly;

an open loop airflow pathway passing through the housing behind the electronic image assembly;

a closed loop gas circulation pathway contained within the housing, wherein a portion of said closed loop gas circulation pathway passes between said transparent cover panel and said electronic image assembly;

an inlet located at a first portion of said housing for ingesting ambient air into said open loop airflow pathway;

an exhaust located at a second portion of said housing for exhausting said ambient air from said open loop airflow pathway;

an air circulation device positioned along said open loop airflow pathway between said inlet and said exhaust, wherein said air circulation device is configured to force said ambient air through the open loop air-flowairflow pathway when activated;

a gas circulation device positioned along said closed loop gas circulation pathway to force circulating gas around the closed loop gas circulation pathway when activated;

a heat exchanger located rearward of the electronic image assembly, wherein a first portion of said heat exchanger forms part of said open loop airflow pathway, and wherein a second portion of said heat exchanger forms part of said closed loop gas circulation pathway; and

one or more solar energy reduction layers located at said transparent cover panel, wherein each of said one or more solar energy reduction layers is configured to prevent a portion of solar energy entering said transparent cover panel from thermally interacting with the circulating gas at said portion of said closed loop gas circulation pathway passing between said transparent cover panel and said electronic image assembly or thermally interacting with said electronic image assembly.

**Claim 12 (original)** The cooling system of claim 11 wherein:

said air circulation device comprises one or more fan assemblies; and  
said gas circulation device comprises one or more fan assemblies.

**Claim 13 (original)** The cooling system of claim 11 wherein:

at least one of said one or more solar energy reduction layers comprise a polarizer.

**Claim 14 (original)** The cooling system of claim 13 wherein:

said polarizer comprises a linear polarizer.

**Claim 15 (original)** The cooling system of claim 11 wherein:

at least one of said one or more solar energy reduction layers comprise a film having anti-reflection properties.

**Claim 16 (original)** The cooling system of claim 11 wherein:

at least a first one of said one or more solar energy reduction layers comprise a polarizer; and

at least a second one of said one or more solar energy reduction layers comprise a film having anti-reflection properties.

**Claim 17 (currently amended)** A method for cooling an electronic image assembly, said method comprising the steps of:

placing said the electronic image assembly within a housing;

forcing circulating air through a closed loop airflow pathway within said housing, wherein at least a portion of said closed loop airflow pathway extends between an electronic image assembly and a cover panel forming a front portion of said housing and spaced apart from said electronic image assembly, wherein said cover panel is configured to permit viewing of images displayed at the electronic image assembly ~~though-through~~ said cover panel;

forcing ambient air through a second airflow pathway within said housing, wherein said second airflow pathway extends behind said electronic image assembly; and

providing one or more solar energy reduction layers at an inward facing surface of said cover panel, wherein each of said one or more solar energy reduction layers is configured to reduce ~~the-an~~ amount of solar energy transferred to said circulating air in at least said portion of said ~~first-closed loop~~ airflow pathway.

**Claim 18 (original)** The cooling method of claim 17 wherein:

at least one of said one or more solar energy reduction layers comprise a polarizer.

**Claim 19 (original)** The cooling method of claim 18 wherein:

at least one of said one or more solar energy reduction layers comprise a film having anti-reflection properties.

**Claim 20 (previously presented)** The cooling method of claim 17 further comprising the steps of:

thermally transferring heat between said circulating air in said closed loop airflow pathway and said ambient air in said second airflow pathway at a heat exchanger common to said closed loop airflow pathway and said second airflow pathway.

|                                                                                                                                 |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------|------------------------------------|---------------------------|---------------|---------------------------------------|-----------|--------------------|---------------------|---|--|
| <b>PATENT APPLICATION FEE DETERMINATION RECORD</b><br>Substitute for Form PTO-875                                               |                                                                                          |                                                                                                                                                                                                                               |                                  | Application or Docket Number<br>16/933,932 |                                    | Filing Date<br>07/20/2020 |               | <input type="checkbox"/> To be Mailed |           |                    |                     |   |  |
| ENTITY: <input checked="" type="checkbox"/> LARGE <input type="checkbox"/> SMALL <input type="checkbox"/> MICRO                 |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
| <b>APPLICATION AS FILED - PART I</b>                                                                                            |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
|                                                                                                                                 |                                                                                          | (Column 1)                                                                                                                                                                                                                    |                                  | (Column 2)                                 |                                    |                           |               |                                       |           |                    |                     |   |  |
| FOR                                                                                                                             |                                                                                          | NUMBER FILED                                                                                                                                                                                                                  |                                  | NUMBER EXTRA                               |                                    | RATE (\$)                 |               | FEE (\$)                              |           |                    |                     |   |  |
| <input type="checkbox"/> BASIC FEE<br>(37 CFR 1.16(a), (b), or (c))                                                             |                                                                                          | N/A                                                                                                                                                                                                                           |                                  | N/A                                        |                                    | N/A                       |               |                                       |           |                    |                     |   |  |
| <input type="checkbox"/> SEARCH FEE<br>(37 CFR 1.16(k), (l), or (m))                                                            |                                                                                          | N/A                                                                                                                                                                                                                           |                                  | N/A                                        |                                    | N/A                       |               |                                       |           |                    |                     |   |  |
| <input type="checkbox"/> EXAMINATION FEE<br>(37 CFR 1.16(o), (p), or (q))                                                       |                                                                                          | N/A                                                                                                                                                                                                                           |                                  | N/A                                        |                                    | N/A                       |               |                                       |           |                    |                     |   |  |
| TOTAL CLAIMS<br>(37 CFR 1.16(j))                                                                                                |                                                                                          | minus 20 = *                                                                                                                                                                                                                  |                                  |                                            |                                    | x \$100 =                 |               |                                       |           |                    |                     |   |  |
| INDEPENDENT CLAIMS<br>(37 CFR 1.16(h))                                                                                          |                                                                                          | minus 3 = *                                                                                                                                                                                                                   |                                  |                                            |                                    | x \$460 =                 |               |                                       |           |                    |                     |   |  |
| <input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s))                                                                  |                                                                                          | If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s). |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
| <input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))                                                      |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
| * If the difference in column 1 is less than zero, enter "0" in column 2.                                                       |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    | TOTAL                     |               |                                       |           |                    |                     |   |  |
| <b>APPLICATION AS AMENDED - PART II</b>                                                                                         |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
|                                                                                                                                 |                                                                                          | (Column 1)                                                                                                                                                                                                                    |                                  | (Column 2)                                 |                                    | (Column 3)                |               |                                       |           |                    |                     |   |  |
| <b>AMENDMENT</b>                                                                                                                | 02/19/2021                                                                               |                                                                                                                                                                                                                               | CLAIMS REMAINING AFTER AMENDMENT |                                            | HIGHEST NUMBER PREVIOUSLY PAID FOR |                           | PRESENT EXTRA |                                       | RATE (\$) |                    | ADDITIONAL FEE (\$) |   |  |
|                                                                                                                                 | Total<br>(37 CFR 1.16(j))                                                                |                                                                                                                                                                                                                               | * 15                             |                                            | Minus ** 20                        |                           | = 0           |                                       | x \$100 = |                    | 0                   |   |  |
|                                                                                                                                 | Independent<br>(37 CFR 1.16(h))                                                          |                                                                                                                                                                                                                               | * 3                              |                                            | Minus *** 3                        |                           | = 0           |                                       | x \$480 = |                    | 0                   |   |  |
|                                                                                                                                 | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                           |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
|                                                                                                                                 | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
|                                                                                                                                 |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           | TOTAL ADD'L FEE    |                     | 0 |  |
| <b>AMENDMENT</b>                                                                                                                |                                                                                          |                                                                                                                                                                                                                               | CLAIMS REMAINING AFTER AMENDMENT |                                            | HIGHEST NUMBER PREVIOUSLY PAID FOR |                           | PRESENT EXTRA |                                       | RATE (\$) |                    | ADDITIONAL FEE (\$) |   |  |
|                                                                                                                                 | Total<br>(37 CFR 1.16(j))                                                                |                                                                                                                                                                                                                               | *                                |                                            | Minus **                           |                           | =             |                                       | x \$0 =   |                    |                     |   |  |
|                                                                                                                                 | Independent<br>(37 CFR 1.16(h))                                                          |                                                                                                                                                                                                                               | *                                |                                            | Minus ***                          |                           | =             |                                       | x \$0 =   |                    |                     |   |  |
|                                                                                                                                 | <input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))                           |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
|                                                                                                                                 | <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
|                                                                                                                                 |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           | TOTAL ADD'L FEE    |                     |   |  |
| * If the entry in column 1 is less than the entry in column 2, write "0" in column 3.                                           |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           | LIE                |                     |   |  |
| ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".                                       |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           | /MELINDA L OLIVER/ |                     |   |  |
| *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".                                        |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |
| The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1. |                                                                                          |                                                                                                                                                                                                                               |                                  |                                            |                                    |                           |               |                                       |           |                    |                     |   |  |

This collection of information is required by 37 CFR 1.16. 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 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. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, 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.*



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| APPLICATION NO.        | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------|-------------|----------------------|---------------------|------------------|
| 16/933,932             | 07/20/2020  | William Dunn         | MAN2241-045R        | 5816             |
| 8698                   | 7590        | 12/31/2020           |                     |                  |
| STANDLEY LAW GROUP LLP |             |                      | EXAMINER            |                  |
| 6300 Riverside Drive   |             |                      | MATEY, MICHAEL A    |                  |
| Dublin, OH 43017       |             |                      |                     |                  |
|                        |             |                      | ART UNIT            | PAPER NUMBER     |
|                        |             |                      | 2835                |                  |
|                        |             |                      | NOTIFICATION DATE   | DELIVERY MODE    |
|                        |             |                      | 12/31/2020          | ELECTRONIC       |

**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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

standleydocketing@standleyllp.com



***Notice of Pre-AIA or AIA Status***

The present application is being examined under the pre-AIA first to invent provisions.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim(s) 1, 3-4 and 10 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Heady et al. US5991153 in view of Sanelle et al. US2002/0033919.**

**Per claim 1** Heady et al. teaches a cooling system for an electronic image assembly (col.3, line 37-44), the cooling system comprising: a housing (105) for the

electronic image assembly (see fig.3-4); a cover panel (207) forming a forward portion of the housing (see fig.3-4), wherein the cover panel is located forward of, and at least some distance from, the electronic image assembly (110, see fig.3-4) and is configured to permit viewing of images displayed at the electronic image assembly through said cover panel (col.5, line 49-56); a closed loop airflow pathway passing through the housing (see fig.3-4; col.3, line 37-44, "...air is circulated.. sealed display housing"), wherein at least a portion of said closed loop airflow pathway extends between said electronic image assembly (110) and said cover panel (207, see fig.3-4); at least one air circulation device (140) positioned to force air through the closed loop airflow pathway when activated (see fig.3-4); and

Heady et al. does not explicitly teach at least one polarizer located at an inward facing surface of said cover panel and configured to prevent at least some sunlight striking said cover panel from traveling beyond said at least one polarizer.

Sanelle et al. however discloses at least one polarizer (115; [0073]) located at an inward facing surface of said cover panel (125, see fig.8; [0062]) and configured to prevent at least some sunlight striking said cover panel from traveling beyond said at least one polarizer ([0002]-[004] & [0014]).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have a polarizer on a cover panel as taught by Sanelle et al. in the electronic image assembly of Heady et al., because the polarizer reduces the heat being transmitted to the display via the cover panel and also reduces glare on the electronic image assembly, thus ensuring that the electronic image assembly is cool enough and clear enough to be placed and viewed outdoors in the sunlight.

**Per claim 3** Heady et al. teaches the cooling system of claim 1

Heady does not explicitly teach further comprising: at least one film having anti-reflection properties located at said cover panel.

Sanelle et al. however discloses at least one film (131) having anti-reflection properties located at said cover panel ([0063]).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have an anti-reflection property located at said cover panel as taught by Sanelle et al. in the cooling system of Heady et al., because it improves reflections caused by the sun, thus ensuring improved clarity and visibility of the electronic image assembly when placed outdoors.

**Per claim 4 Heady et al.** in view of Sanelle et al. teaches the cooling system of claim 1 wherein: said closed loop airflow pathway encircles said electronic image assembly and is configured to accommodate circulating gas (see fig.3-4).

**Per claim 10** Heady et al. in view of **Sanelle et al.** teaches the cooling system of claim 1 wherein: said at least one polarizer comprises a linear polarizer ([0018]).

**Claim(s) 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

2. **Claim 5** includes allowable subject matter because of the cooling system of claim 4 further comprising: **an open loop airflow pathway for ambient air passing through said housing and behind said electronic image assembly.**

**Claim(s) 6-7,** depends on claim 5 therefore allowable for the same reason.

***Allowable Subject matter***

**Claims 11 - 20 are allowable**

3. **Regarding Independent claim 11**, patentability exists, at least in part, with the claimed combination of elements and features of: A cooling system for an electronic image assembly, the cooling system comprising: a housing for the electronic image assembly; a transparent cover panel forming a front portion of the housing, the transparent cover panel located forward of, and at least some distance from, the electronic image assembly; **an open loop airflow pathway passing through the housing behind the electronic image assembly; a closed loop gas circulation pathway contained within the housing**, wherein a portion of said closed loop gas circulation pathway passes between said transparent cover panel and said electronic image assembly; an inlet located at a first portion of said housing for ingesting ambient air into said open loop airflow pathway; an exhaust located at a second portion of said housing for exhausting ambient air from said open loop airflow pathway; an air circulation device positioned along said open loop airflow pathway between said inlet and said exhaust, wherein said air circulation device is configured to force ambient air through the open loop air flow pathway; a gas circulation device positioned along said closed loop gas circulation pathway to force circulating gas around the closed loop pathway; a heat exchanger located rearward of the electronic image assembly, wherein a first portion of said heat exchanger forms part of said open loop airflow pathway, and wherein a second portion of said heat exchanger forms part of said closed loop gas circulation pathway; and one or more solar energy reduction layers located at said

transparent panel, wherein each of said one or more solar energy reduction layers is configured to prevent a portion of solar energy entering said transparent cover from thermally interacting with circulating gas at said portion of said closed loop gas circulation pathway passing between said transparent panel and said electronic image assembly or thermally interacting with said electronic image assembly.

**Claim(s) 12-16**, depends on claim 11 therefore allowable for the same reason.

**Regarding Independent claim 17**, patentability exists, at least in part, with the claimed combination of elements and features of: A method for cooling an electronic image assembly, said method comprising the steps of: placing said the electronic image assembly within a housing; **forcing circulating air through a closed loop airflow pathway within said housing, wherein at least a portion of said closed loop airflow pathway extends between an electronic image assembly and a cover panel** forming a front portion of said housing and spaced apart from said electronic image assembly, wherein said cover panel is configured to permit viewing of images displayed at the electronic image assembly through said cover panel; **forcing ambient air through a second airflow pathway within said housing wherein said second airflow pathway extends behind said electronic image assembly**; and providing one or more solar energy reduction layers at an inward facing surface of said cover pane, wherein each of said one or more solar energy reduction layers is configured to reduce the amount of solar energy transferred to said circulating air in at least said portion of said first airflow pathway.

**Claim(s) 18-20**, depends on claim 17 therefore allowable for the same reason.

***Email Communication***

4. Applicant is encouraged to authorize the Examiner to communicate via email by filing form PTO/SB/439 either via USPS, Central Fax, or EFS-Web. See MPEP 502.01, 502, 502.05.

***Response to Arguments***

5. Applicant's arguments with respect to claim(s) 1 & 17 have been considered but are moot because the new ground of rejection does not rely on any combination of reference applied in the prior rejection of record for any teaching or matter specifically challenged in the argument.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A MATEY whose telephone number is (571)270-5648. The examiner can normally be reached on Monday-Friday 9AM-6PM EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAYPRAKASH GANDHI can be reached on 5712723740. The fax phone number for the organization where this application or proceeding 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 applications 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 <https://ppair-my.uspto.gov/pair/PrivatePair>. 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 Service Representative or access

Application/Control Number: 16/933,932  
Art Unit: 2835

Page 9

to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-  
272-1000.

/MICHAEL A MATEY/  
Examiner, Art Unit 2835

/BINH B TRAN/  
Primary Examiner, Art Unit 2848

|                                          |                                       |                                                           |             |
|------------------------------------------|---------------------------------------|-----------------------------------------------------------|-------------|
| <b><i>Notice of References Cited</i></b> | Application/Control No.<br>16/933,932 | Applicant(s)/Patent Under<br>Reexamination<br>Dunn et al. |             |
|                                          | Examiner<br>MICHAEL A MATEY           | Art Unit<br>2835                                          | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name              | CPC Classification | US Classification |
|---|---|--------------------------------------------------|-----------------|-------------------|--------------------|-------------------|
| * | A | US-5991153-A                                     | 11-1999         | Heady, Gregory S. | H05K7/20972        | 361/704           |
|   | B |                                                  |                 |                   |                    |                   |
|   | C |                                                  |                 |                   |                    |                   |
|   | D |                                                  |                 |                   |                    |                   |
|   | E |                                                  |                 |                   |                    |                   |
|   | F |                                                  |                 |                   |                    |                   |
|   | G |                                                  |                 |                   |                    |                   |
|   | H |                                                  |                 |                   |                    |                   |
|   | I |                                                  |                 |                   |                    |                   |
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|   | K |                                                  |                 |                   |                    |                   |
|   | L |                                                  |                 |                   |                    |                   |
|   | M |                                                  |                 |                   |                    |                   |

**FOREIGN PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Country | Name | CPC Classification |
|---|---|--------------------------------------------------|-----------------|---------|------|--------------------|
|   | N |                                                  |                 |         |      |                    |
|   | O |                                                  |                 |         |      |                    |
|   | P |                                                  |                 |         |      |                    |
|   | Q |                                                  |                 |         |      |                    |
|   | R |                                                  |                 |         |      |                    |
|   | S |                                                  |                 |         |      |                    |
|   | T |                                                  |                 |         |      |                    |

**NON-PATENT DOCUMENTS**

| * |   | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|-------------------------------------------------------------------------------------------|
|   | U |                                                                                           |
|   | V |                                                                                           |
|   | W |                                                                                           |
|   | X |                                                                                           |

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

|                                                                                                          |                                              |                                                               |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|
| <b>Search Notes</b><br> | <b>Application/Control No.</b><br>16/933,932 | <b>Applicant(s)/Patent Under Reexamination</b><br>Dunn et al. |
|                                                                                                          | <b>Examiner</b><br>MICHAEL A MATEY           | <b>Art Unit</b><br>2835                                       |

| CPC - Searched*                                                                                                                                         |            |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|
| Symbol                                                                                                                                                  | Date       | Examiner |
| G02B5/30 OR G02B6/0055 OR G02F1/133528 OR G02F2001/133388 OR G02F1/133308 OR G02F1/133385 OR G07F17/3211 OR G09F13/0413 OR G09F13/12 OR G02F1/0311 OR   | 09/17/2020 | MM       |
| H05K7/202,206,20972.cpc.                                                                                                                                | 09/17/2020 | MM       |
| H05K7/20136 H05K7/20163 H05K7/20972                                                                                                                     | 09/17/2020 | MM       |
| G02F1/133308 OR G02F2001/133334 OR G02F1/133385 OR G02F2201/08 OR G02F2201/36 OR G02F1/133528 OR H01L51/5234 OR H05K9/0081 OR H05K7/20972 OR Y02P20/133 | 09/17/2020 | MM       |

| CPC Combination Sets - Searched* |      |          |
|----------------------------------|------|----------|
| Symbol                           | Date | Examiner |
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| US Classification - Searched* |          |      |          |
|-------------------------------|----------|------|----------|
| Class                         | Subclass | Date | Examiner |
|                               |          |      |          |

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

| Search Notes                                              |            |          |
|-----------------------------------------------------------|------------|----------|
| Search Notes                                              | Date       | Examiner |
| Please see attached Inventor Assignee East search history | 09/17/2020 | MM       |
| conducted an IP.com search (Claims)                       | 09/17/2020 | MM       |
| Please see attached PGPub text search                     | 09/17/2020 | MM       |
| Please see attached East search history                   | 09/17/2020 | MM       |
| Please see attached East search history                   | 12/27/2020 | MM       |

|                                              |                                                  |
|----------------------------------------------|--------------------------------------------------|
| /MICHAEL A MATEY/<br>Examiner, Art Unit 2835 | /BINH B TRAN/<br>Primary Examiner, Art Unit 2848 |
|----------------------------------------------|--------------------------------------------------|

|                                                                                                                 |                                              |                                                               |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|
| <b><i>Search Notes</i></b><br> | <b>Application/Control No.</b><br>16/933,932 | <b>Applicant(s)/Patent Under Reexamination</b><br>Dunn et al. |
|                                                                                                                 | <b>Examiner</b><br>MICHAEL A MATEY           | <b>Art Unit</b><br>2835                                       |

| Interference Search |                       |      |          |
|---------------------|-----------------------|------|----------|
| US Class/CPC Symbol | US Subclass/CPC Group | Date | Examiner |
|                     |                       |      |          |

|                                              |                                                  |
|----------------------------------------------|--------------------------------------------------|
| /MICHAEL A MATEY/<br>Examiner, Art Unit 2835 | /BINH B TRAN/<br>Primary Examiner, Art Unit 2848 |
|----------------------------------------------|--------------------------------------------------|

|                                                                                                                    |                                              |                                                               |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------|
| <b><i>Index of Claims</i></b><br> | <b>Application/Control No.</b><br>16/933,932 | <b>Applicant(s)/Patent Under Reexamination</b><br>Dunn et al. |
|                                                                                                                    | <b>Examiner</b><br>MICHAEL A MATEY           | <b>Art Unit</b><br>2835                                       |

|   |                 |   |                   |   |                     |   |                 |
|---|-----------------|---|-------------------|---|---------------------|---|-----------------|
| ✓ | <b>Rejected</b> | - | <b>Cancelled</b>  | N | <b>Non-Elected</b>  | A | <b>Appeal</b>   |
| = | <b>Allowed</b>  | ÷ | <b>Restricted</b> | I | <b>Interference</b> | O | <b>Objected</b> |

| CLAIMS                                                                                                                                                                            |          |            |            |  |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|------------|--|--|--|--|--|--|--|
| <input type="checkbox"/> Claims renumbered in the same order as presented by applicant <input type="checkbox"/> CPA <input type="checkbox"/> T.D. <input type="checkbox"/> R.1.47 |          |            |            |  |  |  |  |  |  |  |
| CLAIM                                                                                                                                                                             |          | DATE       |            |  |  |  |  |  |  |  |
| Final                                                                                                                                                                             | Original | 09/17/2020 | 12/27/2020 |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 1        | ✓          | ✓          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 2        | ✓          | -          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 3        | ✓          | ✓          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 4        | ✓          | ✓          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 5        | ✓          | O          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 6        | ✓          | O          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 7        | ✓          | O          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 8        | ✓          | -          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 9        | ✓          | -          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 10       | ✓          | ✓          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 11       | =          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 12       | =          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 13       | =          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 14       | =          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 15       | =          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 16       | =          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 17       | ✓          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 18       | ✓          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 19       | ✓          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   | 20       | O          | =          |  |  |  |  |  |  |  |
|                                                                                                                                                                                   |          |            |            |  |  |  |  |  |  |  |
|                                                                                                                                                                                   |          |            |            |  |  |  |  |  |  |  |
|                                                                                                                                                                                   |          |            |            |  |  |  |  |  |  |  |
|                                                                                                                                                                                   |          |            |            |  |  |  |  |  |  |  |

## EAST Search History

### EAST Search History (Prior Art)

| Ref # | Hits | Search Query                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DBs             | Default Operator | Plurals | Time Stamp       |
|-------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|---------|------------------|
| L1    | 5    | ("20070046874"   "4292370"   "4976536"   "5255029"   "5920367").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB; USPAT | ADJ              | ON      | 2020/12/27 20:47 |
| L2    | 6    | ("10757844"   "20170231112"   "20200275585"   "6392727"   "7466546"   "7492589").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB; USPAT | ADJ              | ON      | 2020/12/27 20:55 |
| S1    | 24   | ("20020009978"   "20020065046"   "20020084891"   "20020164962"   "20030043091"   "20040223299"   "20050073639"   "20070103863"   "20090059518"   "20110122162"   "6701143"   "6714410"   "6812851"   "6825828"   "6850209"   "7157838"   "7161803"   "7259964"   "7269023"   "7452121"   "7591508"   "7903416"   "8758144"   "9894800").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB; USPAT | ADJ              | OFF     | 2018/09/28 14:32 |
| S2    | 225  | ("20010001459"   "20010019454"   "20020033919"   "20020101553"   "20020126248"   "20020148600"   "20020149714"   "20020154255"   "20020164944"   "20020167637"   "20030007109"   "20030020884"   "20030104210"   "20030128511"   "20030214785"   "20040012722"   "20040035558"   "20040036834"   "20040103570"   "20040105159"   "20040165139"   "20050012039"   "20050012722"   "20050062373"   "20050073632"   "20050134525"   "20050134526"   "20050213950"   "20050229630"   "20050237714"   "20050276053"   "20050286131"   "20060012958"   "20060018093"   "20060034051"   "20060056994"   "20060082271"   "20060092348"   "20060125998"   "20060132699"   "20060177587"   "20060199514"   "20060209266"   "20060260790"   "20060262079"   "20060266499"   "20060283579"   "20070019419"   "20070030879"   "20070047239"   "20070065091"   "20070076431"   "20070103866"   "20070115686"   "20070139929"   "20070140671"   "20070151274"   "20070151664").PN. | US-PGPUB; USPAT | ADJ              | OFF     | 2018/09/28 14:32 |

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|    |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                       |     |     |                     |
|----|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----|-----|---------------------|
|    |       | "9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9723765"   "9797588"   "9801305"  <br>"9835893"   "D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                       |     |     |                     |
| S3 | 106   | ((("MANUFACTURING") near3<br>("RESOURCES") near3<br>("INTERNATIONAL") near3<br>("INC"))).AS,AANM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | USPAT                                                 | ADJ | OFF | 2018/09/28<br>14:32 |
| S4 | 1,117 | ((("DUNN") near3 ("William")) OR<br>(("HUBBARD") near3 ("Tim"))).INV.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | ADJ | OFF | 2018/09/28<br>14:32 |
| S5 | 24    | ("20020009978"   "20020065046"  <br>"20020084891"   "20020164962"  <br>"20030043091"   "20040223299"  <br>"20050073639"   "20070103863"  <br>"20090059518"   "20110122162"  <br>"6701143"   "6714410"   "6812851"  <br>"6825828"   "6850209"   "7157838"  <br>"7161803"   "7259964"   "7269023"  <br>"7452121"   "7591508"   "7903416"  <br>"8758144"   "9894800").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT                                    | ADJ | OFF | 2018/09/28<br>16:02 |
| S6 | 225   | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035558"   "20040036834"  <br>"20040103570"   "20040105159"  <br>"20040165139"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050134525"  <br>"20050134526"   "20050213950"  <br>"20050229630"   "20050237714"  <br>"20050276053"   "20050286131"  <br>"20060012958"   "20060018093"  <br>"20060034051"   "20060056994"  <br>"20060082271"   "20060092348"  <br>"20060125998"   "20060132699"  <br>"20060177587"   "20060199514"  <br>"20060209266"   "20060260790"  <br>"20060262079"   "20060266499"  <br>"20060283579"   "20070019419"  <br>"20070030879"   "20070047239"  <br>"20070065091"   "20070076431" | US-PGPUB;<br>USPAT                                    | ADJ | OFF | 2018/09/28<br>16:02 |

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| S7  | 106 | ((("MANUFACTURING") near3<br>("RESOURCES") near3<br>("INTERNATIONAL") near3<br>("INC"))).AS,AANM.                                                                                                                                                                                                                                                  | USPAT                          | ADJ | OFF | 2018/09/28<br>16:02 |
| S8  | 0   | S5 S6 S7                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/28<br>16:02 |
| S9  | 304 | S5 S6 S7                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT;<br>IBM_TDB | OR  | OFF | 2018/09/28<br>16:02 |
| S10 | 2   | ((("6493440") or ("20090154096"))).PN.                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT             | OR  | OFF | 2018/09/28<br>16:17 |
| S11 | 1   | ("5991153").PN.                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT             | OR  | OFF | 2018/09/30<br>13:03 |
| S12 | 1   | ("20060082271").PN.                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT             | OR  | OFF | 2018/09/30<br>13:06 |
| S13 | 1   | ("5869919").PN.                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT             | OR  | OFF | 2018/09/30<br>13:09 |
| S14 | 1   | ("5748269").PN.                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT             | OR  | OFF | 2018/09/30<br>13:11 |
| S15 | 2   | ((("20050073632") or<br>("20070206158"))).PN.                                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT             | OR  | OFF | 2018/09/30<br>13:15 |
| S16 | 16  | ("20150366101"   "20110167845"  <br>"20160198589"   "20120236499"  <br>"20100177479"   "20110058326"  <br>"20090086430"   "20160198589"  <br>"7486517"   "20080285290"  <br>"20150075758"   "20110162831"  <br>"20070081344"   "20110310315"  <br>"20140334100"   "20170172016"  <br>"20130194782").PN.                                            | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/30<br>14:04 |
| S17 | 1   | "15719374"                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/30<br>14:05 |
| S18 | 86  | electronic display and (closed near2<br>cool\$3)                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/30<br>14:25 |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                |     |     |                     |
|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S19 | 8   | S18 and @ad<="20080320"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/30<br>14:25 |
| S22 | 422 | display and (closed near2 loop near3<br>gas)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/30<br>14:33 |
| S23 | 166 | S22 and @ad<="20071116"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/30<br>14:33 |
| S24 | 42  | S23 and heat exchanger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2018/09/30<br>14:33 |
| S25 | 717 | H05K7/202 G02F1/133385<br>H05K7/20136 H05K7/20163<br>H05K7/20972                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT;<br>IBM_TDB | OR  | OFF | 2018/09/30<br>16:35 |
| S26 | 243 | ("20070081344"   "20090009047"  <br>"20090122218"   "20090302727"  <br>"20110085302"   "20120188481"  <br>"6043979"   "6742583"   "8590602"  <br>"20020009978"   "20020065046"  <br>"20020084891"   "20020164962"  <br>"20030043091"   "20040223299"  <br>"20050073639"   "20070103863"  <br>"20090059518"   "20110122162"  <br>"6701143"   "6714410"   "6812851"  <br>"6825828"   "6850209"   "7157838"  <br>"7161803"   "7259964"   "7269023"  <br>"7452121"   "7591508"   "7903416"  <br>"8758144"   "9894800"  <br>"20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035558"   "20040036834"  <br>"20040103570"   "20040105159"  <br>"20040165139"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050134525"  <br>"20050134526"   "20050213950"  <br>"20050229630"   "20050237714"  <br>"20050276053"   "20050286131"  <br>"20060012958"   "20060018093"  <br>"20060034051"   "20060056994"  <br>"20060082271"   "20060092348"  <br>"20060125998"   "20060132699"  <br>"20060177587"   "20060199514"  <br>"20060209266"   "20060260790" | US-PGPUB;<br>USPAT             | ADJ | OFF | 2019/04/27<br>18:49 |

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| "20070065091" | "20070076431" |           |  |  |
| "20070103866" | "20070115686" |           |  |  |
| "20070139929" | "20070140671" |           |  |  |
| "20070151274" | "20070151664" |           |  |  |
| "20070171353" | "20070206158" |           |  |  |
| "20070211205" | "20070212211" |           |  |  |
| "20070217221" | "20070237636" |           |  |  |
| "20070267174" | "20080055534" |           |  |  |
| "20080076342" | "20080099193" |           |  |  |
| "20080148609" | "20080209934" |           |  |  |
| "20080218446" | "20080236005" |           |  |  |
| "20080267790" | "20080283234" |           |  |  |
| "20080285290" | "4093355"     |           |  |  |
| "4593978"     | "4634225"     | "4748765" |  |  |
| "4763993"     | "4921041"     | "4952783" |  |  |
| "4952925"     | "5029982"     | "5088806" |  |  |
| "5132666"     | "5247374"     | "5282114" |  |  |
| "5293930"     | "5351176"     | "5432526" |  |  |
| "5535816"     | "5559614"     | "5621614" |  |  |
| "5657641"     | "5748269"     | "5765743" |  |  |
| "5767489"     | "5808418"     | "5818010" |  |  |
| "5818694"     | "5835179"     | "5864465" |  |  |
| "5869818"     | "5869919"     | "5903433" |  |  |
| "5991153"     | "6003015"     | "6007205" |  |  |
| "6089751"     | "6104451"     | "6157432" |  |  |
| "6181070"     | "6191839"     | "6198222" |  |  |
| "6211934"     | "6215655"     | "6351381" |  |  |
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| "6473150"     | "6493440"     | "6504713" |  |  |
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| "6839104"     | "6885412"     | "6886942" |  |  |
| "6891135"     | "6909486"     | "6943768" |  |  |
| "6961108"     | "7015470"     | "7059757" |  |  |
| "7083285"     | "7190587"     | "7209349" |  |  |
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| "7480140"     | "7535543"     | "7602469" |  |  |
| "7667964"     | "7752858"     | "7753567" |  |  |
| "7800706"     | "7813124"     | "7995342" |  |  |
| "8004648"     | "8035968"     | "8081465" |  |  |
| "8102173"     | "8142027"     | "8208115" |  |  |
| "8223311"     | "8241573"     | "8248784" |  |  |
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| "8320119"     | "8351014"     | "8358397" |  |  |
| "8369083"     | "8373841"     | "8379182" |  |  |
| "8400608"     | "8472174"     | "8472191" |  |  |
| "8482695"     | "8497972"     | "8649170" |  |  |
| "8649176"     | "8654302"     | "8678603" |  |  |
| "8693185"     | "8700226"     | "8711321" |  |  |
| "8749749"     | "8755021"     | "8760613" |  |  |

|     |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                |     |     |                     |
|-----|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|     |        | "8767165"   "8773633"   "8804091"  <br>"8823916"   "8827472"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                |     |     |                     |
| S27 | 15     | ("9470924"   "9500896"   "9516485"  <br>"9549490"   "9594271"   "9613548"  <br>"9622392"   "9629287"   "9648790"  <br>"9655289"   "9723765"   "9797588"  <br>"9801305"   "9835893"  <br>"D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT             | ADJ | OFF | 2019/04/27<br>18:49 |
| S28 | 5      | ("20040042174"   "20050127796"  <br>"20090231807"   "6476883"  <br>"7762707").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT             | ADJ | OFF | 2019/05/23<br>14:44 |
| S29 | 884    | ((closed loop and open loop) with (gas<br>or cool\$3 or dissipation)) and (display<br>or panel or screen)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2019/05/25<br>12:58 |
| S30 | 25,828 | ((closed and open) with (gas or cool\$3<br>or dissipation)) and (display or panel or<br>screen)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2019/05/25<br>12:59 |
| S31 | 1,499  | S30 and ("361".clas. or H05K\$.cpc. or<br>G06F\$.cpc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2019/05/25<br>13:00 |
| S32 | 106    | ("20020050793"   "20050073639"  <br>"20170175411"   "6125565"  <br>"6850209"   "7525633"   "7535547"  <br>"8827472"   "9655289"  <br>"20020148600"   "20030128511"  <br>"20040012722"   "20040035558"  <br>"20050073632"   "20050134526"  <br>"20060034051"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20070076431"   "20070139929"  <br>"20070267174"   "20080055534"  <br>"20080267790"   "20080283234"  <br>"20090154096"   "20100182562"  <br>"20100220249"   "20110051071"  <br>"20110261523"   "20140085564"  <br>"20150264826"   "20160192536"  <br>"20160242329"   "20170074453"  <br>"20170111521"   "4593978"  <br>"5293930"   "5835179"   "5864465"  <br>"6157432"   "6181070"   "6198222"  <br>"6428198"   "6943768"   "7015470"  <br>"7190587"   "8142027"   "8223311"  <br>"8241573"   "8270163"   "8274789"  <br>"8472191"   "8700226"   "9089079" | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2019/05/25<br>13:06 |

|     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                |     |     |                     |
|-----|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|     |   | "9119330"   "D608775"  <br>"20020112026"   "20090059518"  <br>"20170163519"   "20170332523"  <br>"6701143"   "7682047"   "9801305"  <br>"D657422"   "D669938"  <br>"20020126248"   "20020154255"  <br>"20030020884"   "20040036834"  <br>"20040165139"   "20050012722"  <br>"20050229630"   "20050237714"  <br>"20060132699"   "20070103866"  <br>"20070212211"   "20090279240"  <br>"20100162747"   "20100171889"  <br>"20100232107"   "20120006523"  <br>"20120012300"   "20120106081"  <br>"20120249402"   "20130201685"  <br>"20150319882"   "20160302331"  <br>"20170111520"   "5748269"  <br>"5869919"   "5991153"   "6089751"  <br>"6886942"   "7059757"   "7212403"  <br>"8274622"   "8482695"   "8854595"  <br>"9173322"   "9282676"   "9622392"  <br>"20020009978"   "20020164962"  <br>"20070103863"   "20120188481").PN.                                                                                                                                                                                                               |                                |     |     |                     |
| S33 | 0 | ("20020050793"   "20050073639"  <br>"20170175411"   "6125565"  <br>"6850209"   "7525633"   "7535547"  <br>"8827472"   "9655289"  <br>"20020148600"   "20030128511"  <br>"20040012722"   "20040035558"  <br>"20050073632"   "20050134526"  <br>"20060034051"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20070076431"   "20070139929"  <br>"20070267174"   "20080055534"  <br>"20080267790"   "20080283234"  <br>"20090154096"   "20100182562"  <br>"20100220249"   "20110051071"  <br>"20110261523"   "20140085564"  <br>"20150264826"   "20160192536"  <br>"20160242329"   "20170074453"  <br>"20170111521"   "4593978"  <br>"5293930"   "5835179"   "5864465"  <br>"6157432"   "6181070"   "6198222"  <br>"6428198"   "6943768"   "7015470"  <br>"7190587"   "8142027"   "8223311"  <br>"8241573"   "8270163"   "8274789"  <br>"8472191"   "8700226"   "9089079"  <br>"9119330"   "D608775"  <br>"20020112026"   "20090059518"  <br>"20170163519"   "20170332523"  <br>"6701143"   "7682047"   "9801305"  <br>"D657422"   "D669938" | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2019/05/25<br>13:08 |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |     |     |                     |
|-----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|     |     | "20020126248"   "20020154255"  <br>"20030020884"   "20040036834"  <br>"20040165139"   "20050012722"  <br>"20050229630"   "20050237714"  <br>"20060132699"   "20070103866"  <br>"20070212211"   "20090279240"  <br>"20100162747"   "20100171889"  <br>"20100232107"   "20120006523"  <br>"20120012300"   "20120106081"  <br>"20120249402"   "20130201685"  <br>"20150319882"   "20160302331"  <br>"20170111520"   "5748269"  <br>"5869919"   "5991153"   "6089751"  <br>"6886942"   "7059757"   "7212403"  <br>"8274622"   "8482695"   "8854595"  <br>"9173322"   "9282676"   "9622392"  <br>"20020009978"   "20020164962"  <br>"20070103863"  <br>"20120188481").PN.and"<br>@ad<="20080909"                                                                              |                              |     |     |                     |
| S34 | 67  | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20030007109"  <br>"20030104210"   "20040036834"  <br>"20040105159"   "20040165139"  <br>"20050012722"   "20050073632"  <br>"20060082271"   "20060092348"  <br>"20060132699"   "20060177587"  <br>"20060209266"   "20070103866"  <br>"20070151664"   "20070206158"  <br>"20070212211"   "4093355"  <br>"4593978"   "4634225"   "5029982"  <br>"5088806"   "5247374"   "5559614"  <br>"5748269"   "5767489"   "5818010"  <br>"5869919"   "5991153"   "6089751"  <br>"6157432"   "6191839"   "6392727"  <br>"6417900"   "6493440"   "6535266"  <br>"6628355"   "6839104"   "6885412"  <br>"6909486"   "6943768"   "6961108"  <br>"7059757"   "7083285").PN. OR<br>("8274622").URPN. | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2019/05/25<br>13:19 |
| S35 | 289 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030043091"   "20030104210"  <br>"20030128511"   "20030214785"  <br>"20040012722"   "20040035558"  <br>"20040036834"   "20040103570"  <br>"20040105159"   "20040165139"                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2019/05/25<br>13:23 |

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| "20100232107"  | "20100238394" |  |  |  |  |
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| "20110051071"  | "20110058326" |  |  |  |  |
| "20110075361"  | "20110083460" |  |  |  |  |
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| "20110122162"  | "20110141724" |  |  |  |  |
| "20110261523"  | "20120006523" |  |  |  |  |
| "20120012295"  | "20120012300" |  |  |  |  |
| "20120014063"  | "20120020114" |  |  |  |  |
| "20120038849"  | "20120044217" |  |  |  |  |
| "20120106081"  | "20120206687" |  |  |  |  |
| "20120249402"  | "20120255704" |  |  |  |  |

|  |                                   |  |  |  |
|--|-----------------------------------|--|--|--|
|  | "20120274876"   "20120284547"     |  |  |  |
|  | "20130170140"   "20130201685"     |  |  |  |
|  | "20130258659"   "20130279154"     |  |  |  |
|  | "20130294039"   "20140085564"     |  |  |  |
|  | "20140111758"   "20140113540"     |  |  |  |
|  | "4093355"   "4593978"   "4634225" |  |  |  |
|  | "4748765"   "4763993"   "4921041" |  |  |  |
|  | "4952783"   "4952925"   "5029982" |  |  |  |
|  | "5088806"   "5247374"   "5282114" |  |  |  |
|  | "5293930"   "5432526"   "5535816" |  |  |  |
|  | "5559614"   "5621614"   "5657641" |  |  |  |
|  | "5748269"   "5765743"   "5767489" |  |  |  |
|  | "5808418"   "5818010"   "5818694" |  |  |  |
|  | "5835179"   "5864465"   "5869818" |  |  |  |
|  | "5869919"   "5903433"   "5991153" |  |  |  |
|  | "6003015"   "6007205"   "6089751" |  |  |  |
|  | "6104451"   "6157432"   "6181070" |  |  |  |
|  | "6191839"   "6198222"   "6211934" |  |  |  |
|  | "6215655"   "6351381"   "6392727" |  |  |  |
|  | "6417900"   "6428198"   "6473150" |  |  |  |
|  | "6493440"   "6504713"   "6535266" |  |  |  |
|  | "6628355"   "6714410"   "6727468" |  |  |  |
|  | "6825828"   "6839104"   "6885412" |  |  |  |
|  | "6886942"   "6891135"   "6909486" |  |  |  |
|  | "6943768"   "6961108"   "7015470" |  |  |  |
|  | "7059757"   "7083285"   "7157838" |  |  |  |
|  | "7161803"   "7190587"             |  |  |  |
|  | "7209349").PN. OR ("7212403"      |  |  |  |
|  | "7259964"   "7269023"   "7284874" |  |  |  |
|  | "7452121"   "7457113"   "7480140" |  |  |  |
|  | "7535543"   "7591508"   "7602469" |  |  |  |
|  | "7667964"   "7752858"   "7753567" |  |  |  |
|  | "7800706"   "7813124"   "7903416" |  |  |  |
|  | "7995342"   "8004648"   "8035968" |  |  |  |
|  | "8081465"   "8102173"   "8142027" |  |  |  |
|  | "8208115"   "8223311"   "8241573" |  |  |  |
|  | "8248784"   "8254121"   "8269916" |  |  |  |
|  | "8270163"   "8274622"   "8274789" |  |  |  |
|  | "8300203"   "8320119"   "8351014" |  |  |  |
|  | "8358397"   "8369083"   "8373841" |  |  |  |
|  | "8379182"   "8400608"   "8472174" |  |  |  |
|  | "8472191"   "8482695"   "8497972" |  |  |  |
|  | "8649170"   "8649176"   "8654302" |  |  |  |
|  | "8678603"   "8693185"   "8700226" |  |  |  |
|  | "8711321"   "8749749"   "8755021" |  |  |  |
|  | "8760613"   "8767165"   "8773633" |  |  |  |
|  | "8804091"   "8823916"   "8854572" |  |  |  |
|  | "8854595"   "8879042"   "8988647" |  |  |  |
|  | "9030641"   "9089079"   "9119325" |  |  |  |
|  | "9119330"   "9173322"   "9173325" |  |  |  |
|  | "9282676"   "9285108"   "9313917" |  |  |  |
|  | "9370127"   "9448569"   "9451060" |  |  |  |
|  | "9451733"   "9456525"   "9470924" |  |  |  |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |     |     |                     |
|-----|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|     |     | "9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9723765"  <br>"D608775").PN. OR<br>("10088702").URPN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |     |     |                     |
| S36 | 58  | ("20010001459"   "20020126248"  <br>"20020149714"   "20060199514"  <br>"20070212211"   "6157432"  <br>"6535266"   "6943768"   "7059757"  <br>"20070206158"   "20020033919"  <br>"20040105159"   "20050012722"  <br>"20070103866"   "20100182562"  <br>"4593978"   "5748269"   "6191839"  <br>"6885412"   "20050286131"  <br>"20060177587"   "20070206158"  <br>"4093355"   "5559614"   "6089751"  <br>"6392727"   "6417900"   "5869919"  <br>"20030007109"   "20050073632"  <br>"20060092348"   "4634225"  <br>"5029982"   "5088806"   "6839104"  <br>"7083285"   "20010019454"  <br>"20020101553"   "20030104210"  <br>"20070140671"   "6493440"  <br>"5991153"   "20040165139"  <br>"20050213950"   "5767489"  <br>"20060132699"   "20060209266"  <br>"7284874"   "20050127796"  <br>"20060082271"   "5247374"  <br>"5818010"   "6628355"   "6909486"  <br>"6961108"   "20070151664"  <br>"20060082271"   "20060132699"  <br>"20020033919"   "20040036834"  <br>"20070019419"   "20110013114").PN. | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2019/05/25<br>13:24 |
| S37 | 240 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035558"   "20040036834"  <br>"20040103570"   "20040105159"  <br>"20040165139"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050127796"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050276053"  <br>"20050286131"   "20060012958"  <br>"20060012985"   "20060018093"  <br>"20060034051"   "20060056994"                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2019/05/25<br>13:30 |

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| "20060092348"  | "20060125998" |           |  |  |
| "20060132699"  | "20060177587" |           |  |  |
| "20060199514"  | "20060209266" |           |  |  |
| "20060260790"  | "20060262079" |           |  |  |
| "20060266499"  | "20060283579" |           |  |  |
| "20070019419"  | "20070030879" |           |  |  |
| "20070047239"  | "20070065091" |           |  |  |
| "20070076431"  | "20070103866" |           |  |  |
| "20070115686"  | "20070139929" |           |  |  |
| "20070140671"  | "20070151274" |           |  |  |
| "20070151664"  | "20070171353" |           |  |  |
| "20070206158"  | "20070211205" |           |  |  |
| "20070212211"  | "20070217221" |           |  |  |
| "20070237636"  | "20070267174" |           |  |  |
| "20080055534"  | "20080076342" |           |  |  |
| "20080099193"  | "20080148609" |           |  |  |
| "20080209934"  | "20080218446" |           |  |  |
| "20080236005"  | "20080267790" |           |  |  |
| "20080283234"  | "20080285290" |           |  |  |
| "20090009729"  | "20090086430" |           |  |  |
| "20090120629"  | "20090126906" |           |  |  |
| "20090126907"  | "20090126914" |           |  |  |
| "20090135365"  | "20090147170" |           |  |  |
| "20090154096"  | "20090174626" |           |  |  |
| "20090244472"  | "20090279240" |           |  |  |
| "20090306820"  | "20100060861" |           |  |  |
| "20100079949") | PN. OR        |           |  |  |
| ("20100182562" | "20110013114" |           |  |  |
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| "4593978"      | "4634225"     | "4748765" |  |  |
| "4763993"      | "4921041"     | "4952783" |  |  |
| "4952925"      | "5029982"     | "5088806" |  |  |
| "5247374"      | "5282114"     | "5293930" |  |  |
| "5432526"      | "5535816"     | "5559614" |  |  |
| "5621614"      | "5657641"     | "5748269" |  |  |
| "5765743"      | "5767489"     | "5808418" |  |  |
| "5818010"      | "5818694"     | "5835179" |  |  |
| "5864465"      | "5869818"     | "5869919" |  |  |
| "5903433"      | "5991153"     | "6003015" |  |  |
| "6007205"      | "6089751"     | "6104451" |  |  |
| "6157432"      | "6181070"     | "6191839" |  |  |
| "6198222"      | "6211934"     | "6215655" |  |  |
| "6351381"      | "6392727"     | "6417900" |  |  |
| "6428198"      | "6473150"     | "6493440" |  |  |
| "6504713"      | "6535266"     | "6628355" |  |  |
| "6727468"      | "6839104"     | "6885412" |  |  |
| "6886942"      | "6891135"     | "6909486" |  |  |
| "6943768"      | "6961108"     | "7015470" |  |  |
| "7059757"      | "7083285"     | "7190587" |  |  |
| "7209349"      | "7212403"     | "7284874" |  |  |
| "7457113"      | "7480140"     | "7535543" |  |  |
| "7602469"      | "7667964"     | "7752858" |  |  |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |     |     |                     |
|-----|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|     |     | "7753567"   "7800706"   "7813124"  <br>"7995342"   "8004648"   "8035968"  <br>"8081465"   "8102173"   "8142027"  <br>"8208115"   "8223311"   "8241573"  <br>"8248784"   "8254121"   "8269916"  <br>"8270163"   "8274622"   "8274789"  <br>"8300203"   "8320119"   "8351014"  <br>"8358397"   "8369083"   "8373841"  <br>"8379182"   "8400608"   "8472174"  <br>"8472191"   "8482695"   "8497972"  <br>"8649170"   "8649176"   "8654302"  <br>"8678603"   "8693185"   "8700226"  <br>"8711321"   "8749749"   "8755021"  <br>"8760613"   "8767165"   "8773633"  <br>"8804091"   "8823916"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"  <br>"9119325").PN. OR ("9119330"  <br>"9173322"   "9173325"   "9282676"  <br>"9285108"   "9313917"   "9370127"  <br>"9448569"   "9451060"   "9451733"  <br>"9456525"   "9470924"   "9500896"  <br>"9516485"   "9549490"   "9594271"  <br>"9613548"   "9622392"   "9629287"  <br>"9648790"   "9723765"  <br>"D608775").PN. OR ("9835893").URPN. |                              |     |     |                     |
| S38 | 5   | ("20040042174"   "20050127796"  <br>"20090231807"   "6476883"  <br>"7762707").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT           | ADJ | OFF | 2019/05/29<br>10:12 |
| S39 | 1   | "15789331"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2019/09/02<br>02:58 |
| S40 | 8   | electronic display image assembly front<br>portion rear portion open loop ambient<br>air flow path closed loop gas circulation<br>path heat exchanger pathway gas<br>circulation device force circulating gas<br>air circulation device                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>USOCR | AND | OFF | 2019/09/02<br>03:02 |
| S49 | 202 | ("10080316"   "10088702"  <br>"10194564"   "10212845"  <br>"10278311"   "10314212"  <br>"10359659"   "10398066"  <br>"10420257"   "10485113"  <br>"10499516"   "10506738"  <br>"10506740"   "20010001459"  <br>"20010019454"   "20020009978"  <br>"20020033919"   "20020050793"  <br>"20020065046"   "20020084891"  <br>"20020101553"   "20020112026"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT           | ADJ | OFF | 2020/02/27<br>05:40 |

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| "20030214785" | "20040012722" |
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| "20040036622" | "20040036834" |
| "20040042174" | "20040103570" |
| "20040105159" | "20040135482" |
| "20040165139" | "20040223299" |
| "20050012039" | "20050012722" |
| "20050062373" | "20050073632" |
| "20050073639" | "20050127796" |
| "20050134525" | "20050134526" |
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| "20060056994" | "20060082271" |
| "20060092348" | "20060125998" |
| "20060132699" | "20060177587" |
| "20060199514" | "20060209266" |
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| "20070047239" | "20070065091" |
| "20070076431" | "20070081344" |
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| "20070140671" | "20070151274" |
| "20070151664" | "20070171353" |
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| "20070212211" | "20070217221" |
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| "20070267174" | "20080035315" |
| "20080054144" | "20080055534" |
| "20080076342" | "20080099193" |
| "20080148609" | "20080209934" |
| "20080218446" | "20080236005" |
| "20080267790" | "20080283234" |
| "20080285290" | "20080310116" |
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| "20090059518" | "20090065007" |
| "20090086430" | "20090104989" |
| "20090120629" | "20090122218" |
| "20090126906" | "20090126907" |
| "20090126914" | "20090135365" |
| "20090147170" | "20090154096" |
| "20090174626" | "20090231807" |
| "20090241437" | "20090244472" |
| "20090251650" | "20090266507" |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |     |     |                     |
|-----|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
|     |     | "20090279240"   "20090302727"  <br>"20090306820"   "20090323275"  <br>"20100060861"   "20100079949"  <br>"20100162747"   "20100171889"  <br>"20100182562"   "20100220249"  <br>"20100226091"   "20100232107"  <br>"20100238394"   "20100321887"  <br>"20110001898"   "20110013114"  <br>"20110019363"   "20110032489"  <br>"20110051071"   "20110058326"  <br>"20110072697"   "20110075361"  <br>"20110083460"   "20110083824"  <br>"20110085301"   "20110085302"  <br>"20110090630"   "20110114384"  <br>"20110116000"   "20110116231"  <br>"20110122162"   "20110141672"  <br>"20110141724"   "20110261523"  <br>"20110297810"   "20120006523"  <br>"20120012295"   "20120012300"  <br>"20120014063"   "20120020114"  <br>"20120038849"   "20120044217"  <br>"20120105790"   "20120106081"  <br>"20120188481"   "20120206687"  <br>"20120249402"   "20120255704"  <br>"20120274876"   "20120284547"  <br>"20120327600"   "20130170140"  <br>"20130173358"   "20130176517"  <br>"20130201685"   "20130258659"  <br>"20130279154"   "20130294039"  <br>"20130344794"   "20140044147"  <br>"20140085564"   "20140111758"  <br>"20140113540"   "20140134767"  <br>"20140190240"   "20140268657"  <br>"20140313698"   "20140314395"  <br>"20140361138"   "20150009627").PN. |                    |     |     |                     |
| S50 | 230 | ("20150192371"   "20150253611"  <br>"20150264826"   "20150319882"  <br>"20150366101"   "20160041423"  <br>"20160044829"   "20160162297"  <br>"20160192536"   "20160195254"  <br>"20160198588"   "20160238876"  <br>"20160242329"   "20160242330"  <br>"20160249493"   "20160302331"  <br>"20170023823"   "20170068042"  <br>"20170074453"   "20170083043"  <br>"20170083062"   "20170111486"  <br>"20170111520"   "20170111521"  <br>"20170127579"   "20170140344"  <br>"20170147992"   "20170163519"  <br>"20170175411"   "20170188490"  <br>"20170245400"   "20170257978"  <br>"20170332523"   "20180042134"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/02/27<br>05:40 |

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|  | "20180315356"   "20180317330"     |  |  |  |
|  | "20180317350"   "20180364519"     |  |  |  |
|  | "20190037738"   "20190089176"     |  |  |  |
|  | "20190133002"   "20190208674"     |  |  |  |
|  | "20190239365"   "20190289754"     |  |  |  |
|  | "20190327865"   "4093355"         |  |  |  |
|  | "4593978"   "4634225"   "4748765" |  |  |  |
|  | "4763993"   "4921041"   "4952783" |  |  |  |
|  | "4952925"   "5029982"   "5088806" |  |  |  |
|  | "5132666"   "5247374"   "5282114" |  |  |  |
|  | "5293930"   "5351176"   "5432526" |  |  |  |
|  | "5535816"   "5559614"   "5621614" |  |  |  |
|  | "5657641"   "5748269"   "5765743" |  |  |  |
|  | "5767489"   "5808418"   "5818010" |  |  |  |
|  | "5818694"   "5835179"   "5864465" |  |  |  |
|  | "5869818"   "5869919"   "5903433" |  |  |  |
|  | "5991153"   "6003015"   "6007205" |  |  |  |
|  | "6043979"   "6089751"   "6104451" |  |  |  |
|  | "6125565"   "6157432"   "6181070" |  |  |  |
|  | "6191839"   "6198222"   "6211934" |  |  |  |
|  | "6215655"   "6351381"   "6359390" |  |  |  |
|  | "6392727"   "6417900"   "6428198" |  |  |  |
|  | "6437673"   "6473150"   "6476883" |  |  |  |
|  | "6493440"   "6504713"   "6535266" |  |  |  |
|  | "6628355"   "6643130"   "6683639" |  |  |  |
|  | "6701143"   "6714410"   "6727468" |  |  |  |
|  | "6742583"   "6812851"   "6825828" |  |  |  |
|  | "6833992"   "6839104"   "6850209" |  |  |  |
|  | "6885412"   "6886942"   "6891135" |  |  |  |
|  | "6909486"   "6943768"   "6961108" |  |  |  |
|  | "7015470"   "7059757"   "7083285" |  |  |  |
|  | "7157838"   "7161803"   "7190416" |  |  |  |
|  | "7190587"   "7209349"   "7212403" |  |  |  |
|  | "7259964"   "7269023"   "7284874" |  |  |  |
|  | "7396145"   "7447018"   "7452121" |  |  |  |
|  | "7457113"   "7480140"   "7535543" |  |  |  |
|  | "7591508"   "7602469"   "7667964" |  |  |  |
|  | "7682047"   "7752858"   "7753567" |  |  |  |
|  | "7762707"   "7800706"   "7813124" |  |  |  |
|  | "7903416"   "7995342"   "8004648" |  |  |  |
|  | "8035968"   "8081465"   "8102173" |  |  |  |
|  | "8142027"   "8208115"   "8223311" |  |  |  |
|  | "8241573"   "8248784"   "8254121" |  |  |  |
|  | "8269916"   "8270163"   "8274622" |  |  |  |
|  | "8274789"   "8300203"   "8310824" |  |  |  |
|  | "8320119"   "8351014"   "8358397" |  |  |  |
|  | "8369083"   "8373841"   "8379182" |  |  |  |
|  | "8400608"   "8472174"   "8472191" |  |  |  |
|  | "8482695"   "8497972"   "8590602" |  |  |  |
|  | "8649170"   "8649176"   "8654302" |  |  |  |
|  | "8678603"   "8693185"   "8700226" |  |  |  |
|  | "8711321"   "8749749"   "8755021" |  |  |  |

|     |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |    |     |                     |
|-----|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----|-----|---------------------|
|     |       | "8758144"   "8760613"   "8767165"  <br>"8773633"   "8804091"   "8823916"  <br>"8827472"   "8854572"   "8854595"  <br>"8879042"   "8976313"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9703230"   "9723765"   "9797588"  <br>"9801305"   "9823690"   "9835893"  <br>"9894800"   "D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                    |    |     |                     |
| S51 | 1,007 | (("20180042134") or ("10506740") or<br>("9801305") or ("9173325") or<br>("20150237761") or ("20160041423")<br>or ("9835893") or ("8654302") or<br>("20110013114") or ("8351014") or<br>("20150366101") or ("20110085301")<br>or ("9119325") or ("9030641") or<br>("20130279154") or ("20140111758")<br>or ("20030094006") or ("6684653") or<br>("20080041077") or ("9723765") or<br>("20160242329") or ("10278311") or<br>("20170332523") or ("10548247") or<br>("20190208674") or ("20180310439")<br>or ("20070002536") or ("10485147")<br>or ("20080055856") or ("7486513") or<br>("7342789") or ("8472174") or<br>("20170257978") or ("20110058326")<br>or ("20080055851") or<br>("20080212282") or ("9629287") or<br>("20140295748") or ("8988647") or<br>("20090255142") or ("20120106081")<br>or ("8823916") or ("10266984") or<br>("20140369003") or ("4327274") or<br>("9119330") or ("20120012300") or<br>("20170303442") or ("20080245083")<br>or ("20130170139") or ("8322155") or<br>("9115916") or ("8369083") or<br>("9267714") or ("20140123683") or<br>("10045467") or ("8649170") or<br>("20170127579") or ("20080041076")<br>or ("20190289754") or<br>("20130139530") or ("20160345461")<br>or ("8327656") or ("10314212") or<br>("20180343774") or ("9175434") or<br>("20170127556") or ("9699939") or<br>("20200029460") or ("20150195959")<br>or ("10398063") or ("9560789") or | US-PGPUB;<br>USPAT | OR | OFF | 2020/02/27<br>06:08 |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |  |  |  |
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|  | ("9549490") or ("10524384") or<br>("20170268159") or ("10400385") or<br>("20170234623") or ("20140345834")<br>or ("7864527") or ("6924981") or<br>("7729115") or ("20120281161") or<br>("9451733") or ("20040190247") or<br>("8755021") or ("4026263") or<br>("20040100770") or ("20120105790")<br>or ("20080030951") or ("6775137") or<br>("3277956") or ("8749749") or<br>("20050263142") or ("20110238143")<br>or ("6085701") or ("7165539") or<br>("20030091363") or ("6771916") or<br>("8590602") or ("20090086428") or<br>("20190059175") or ("10214037") or<br>("20180162151") or ("20120206687")<br>or ("9897336") or ("20180364519") or<br>("20170023823") or ("6345511") or<br>("20110099834") or ("20090052132")<br>or ("10143106") or ("10398058") or<br>("8627581") or ("8804091") or<br>("9408332") or ("20190193436") or<br>("9873273") or ("9470924") or<br>("6308526") or ("20160236494") or<br>("20160016423") or ("20160143191")<br>or ("20160377303") or<br>("20180317330") or ("8773633") or<br>("10359659") or ("10088702") or<br>("9278564") or ("7918799") or<br>("20150009627") or ("20160192536")<br>or ("20110261523")).PN. or<br>("9282676") or ("20180223846") or<br>("20090209863") or ("10499516") or<br>("20190335613") or ("20150022967")<br>or ("9797588") or ("20100251742") or<br>("20160195254") or ("20140321103")<br>or ("20150327409") or ("9089079") or<br>("20100305775") or ("20190111758")<br>or ("9370127") or ("9285108") or<br>("20160302331") or ("2299939") or<br>("8145363") or ("6205796") or<br>("20020134544") or ("6367410") or<br>("20190037738") or ("20190170383")<br>or ("7086453") or ("20050056404") or<br>("8152904") or ("10514176") or<br>("20110072970") or ("20090086432")<br>or ("20110077555") or<br>("20180235066") or ("8622162") or<br>("6408630") or ("6196003") or<br>("20140313698") or ("20120180979")<br>or ("20010008071") or<br>("20180035569") or ("5402844") or<br>("20020012375") or ("20090185346") |  |  |  |  |
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|  | or ("20160050797") or ("6408937") or<br>("20190335573") or ("20190239365")<br>or ("20010021847") or ("5901167") or<br>("20110195652") or ("20070279861")<br>or ("6843306") or ("6164369") or<br>("8425435") or ("7411785") or<br>("10010722") or ("10160290") or<br>("7841721") or ("4182303") or<br>("20110139525") or ("5931016") or<br>("7724516") or ("20180106484") or<br>("20150351214") or ("9010141") or<br>("20160178716") or ("5936646") or<br>("20130190661") or ("RE43007") or<br>("20160066478") or ("20030057546")<br>or ("7796376") or ("4840225") or<br>("9967964") or ("20040049178") or<br>("9204578") or ("6828675") or<br>("20190170604") or ("20150223367")<br>or ("9575149") or ("20170115366") or<br>("6044648") or ("20180335053") or<br>("20020116933") or ("6635053") or<br>("10082549") or ("5657641") or<br>("20170321907") or ("6490874") or<br>("20140260965") or ("7318821") or<br>("6592577") or ("20170261273") or<br>("6674642") or ("20040001310") or<br>("20050090814") or ("7207986") or<br>("20070028769") or ("4534780") or<br>("5269146") or ("20080055563") or<br>("9885526") or ("20110297351") or<br>("9353966") or ("RE30043") or<br>("20100232107") or ("20030077499")<br>or ("4056091") or ("6830842") or<br>("20160265805") or ("20140190037")<br>or ("8379182") or ("6298681") or<br>("20040040324") or ("20110077556")<br>or ("6334323") or ("8932238") or<br>("2819330") or ("4478055") or<br>("7403392") or ("20110126559") or<br>("5611476") or ("7911782") or<br>("7946986") or ("20200005592") or<br>("6167947") or ("20030217566") or<br>("4860824") or ("20020092316") or<br>("5906108") or ("20030145616") or<br>("6321547") or ("20030145621") or<br>("20110197613")).PN. or ("7093454")<br>or ("8297070") or ("20180094840") or<br>("20090056910") or ("20040048123")<br>or ("20060218812") or<br>("20120137716") or ("4344479") or<br>("20060080996") or ("10502468") or<br>("8051672") or ("20150373882") or<br>("5476138") or ("6021150") or |  |  |  |  |
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|  | ("20110077557") or ("8009419") or<br>("8381541") or ("8105265") or<br>("7537849") or ("7010929") or<br>("5835349") or ("10477724") or<br>("6494252") or ("6964176") or<br>("20160270254") or ("9210830") or<br>("20080156014") or ("6350033") or<br>("20090107160") or ("4906182") or<br>("20140146468") or ("10130006") or<br>("20070144192") or ("20180059270")<br>or ("20030011983") or<br>("20150369514") or ("20180100671")<br>or ("20120131944") or ("10054698")<br>or ("6948328") or ("10415848") or<br>("9258926") or ("8117864") or<br>("20150083368") or ("6587336") or<br>("20040042905") or ("20170021695")<br>or ("20100057263") or ("7788940") or<br>("20090099498") or ("6957026") or<br>("20180214303") or ("10398066") or<br>("4967830") or ("6793465") or<br>("20140146467") or ("20160189842")<br>or ("20050180772") or<br>("20150373874") or ("8947873") or<br>("20080141708") or ("20120031392")<br>or ("4397121") or ("5529120") or<br>("9551358") or ("20180291798") or<br>("20160252289") or ("20190053399")<br>or ("20190239381") or ("5193735") or<br>("4318722") or ("5982619") or<br>("5285644") or ("10292305") or<br>("20170067643") or ("9568206") or<br>("20140260383") or ("5538075") or<br>("7963118") or ("5046554") or<br>("5570740") or ("7701715") or<br>("20150250067") or ("20160037685")<br>or ("20190249882") or ("9441839") or<br>("4773589") or ("9784490") or<br>("20120130298") or ("8979788") or<br>("20110277967") or ("4026283") or<br>("20190200488") or ("10440856") or<br>("20080024978") or ("20120024501")<br>or ("20130021746") or ("10015896")<br>or ("8959941") or ("8422218") or<br>("20130032310") or ("8591206") or<br>("20140111940") or ("9101078") or<br>("4953365") or ("8964391") or<br>("5590539") or ("6026565") or<br>("20160258657") or ("20140360492")<br>or ("9982920") or ("20090178780") or<br>("5825621") or ("8854572") or<br>("20130068441") or ("5748656") or<br>("2513373") or ("4285210") or |  |  |  |  |
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|  | ("5564980") or ("8248801") or<br>("20120162906") or ("8361059") or<br>("20150285516") or ("20100139306")<br>or ("20130170140") or<br>("20140123493") or ("20190171092")<br>or ("3415312") or ("5086754") or<br>("8435277") or ("6796372") or<br>("20140290567") or ("20140124167")<br>or ("8899171").PN. or ("7701714") or<br>("20070274043") or ("4242872") or<br>("8964390") or ("20100238394") or<br>("20200025408") or ("20180370263")<br>or ("20100296245") or<br>("20180038660") or ("4307578") or<br>("20200037456") or ("5467250") or<br>("20080306577") or ("7724517") or<br>("20110075363") or ("20190291542")<br>or ("7780657") or ("6109339") or<br>("6649290") or ("20190327865") or<br>("20160230634") or ("20020168556")<br>or ("10434804") or ("5065586") or<br>("8236240") or ("20070209380") or<br>("20170122573") or ("7778013") or<br>("9969193") or ("9261310") or<br>("6506111") or ("5524442") or<br>("4674476") or ("20130228313") or<br>("5349829") or ("4922890") or<br>("8274622") or ("20070097604") or<br>("8358397") or ("2564344") or<br>("20020173266") or ("8760867") or<br>("20170307282") or ("20070274858")<br>or ("7414845") or ("4987881") or<br>("20180317350") or ("20180363278")<br>or ("4142575") or ("20080017355") or<br>("20070267741") or ("4090370") or<br>("20100000758") or ("20070246678")<br>or ("20170064874") or<br>("20110000710") or ("20130025818")<br>or ("5895418") or ("7213639") or<br>("20090193830") or ("20180073753")<br>or ("20070233055") or<br>("20150273974") or ("20090107657")<br>or ("7956284") or ("20060207757") or<br>("5110264") or ("20150224800") or<br>("20070093799") or ("9496200") or<br>("20070241468") or ("20130206058")<br>or ("5937667") or ("4589712") or<br>("20060069418") or ("8210205") or<br>("20180292142") or ("20140262180")<br>or ("20070161974") or ("4706739") or<br>("RE45111") or ("20170080730") or<br>("4449764") or ("10264716") or<br>("9789746") or ("20180160819") or |  |  |  |  |
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|  | ("20190193439") or ("9048344") or<br>("7510174") or ("10442226") or<br>("20080024980") or ("20050259397")<br>or ("20030012234") or<br>("20190113247") or ("5832986") or<br>("20180128510") or ("20080196870")<br>or ("7795533") or ("20090257773") or<br>("20180275293") or ("20150354874")<br>or ("6914919") or ("5606870") or<br>("20200056795") or ("7652884") or<br>("5749243") or ("6138469") or<br>("20180214302") or ("9387709") or<br>("4866743") or ("20040163797") or<br>("20170311476") or ("7203063") or<br>("20120227389") or ("20100007258")<br>or ("7325410") or ("5267446") or<br>("7418825") or ("20110075353") or<br>("2320501") or ("20190198895") or<br>("9759438") or ("20070236881") or<br>("20130252533") or ("20030151892")<br>or ("5113844") or ("20170345346") or<br>("20110232869") or ("6232682") or<br>("4701415") or ("20040083740") or<br>("5499277").PN. or ("20110140820")<br>or ("7165412") or ("20170363306") or<br>("5320167") or ("20060254753") or<br>("20170311487") or ("7377935") or<br>("9354001") or ("7258161") or<br>("20090107159") or ("10524397") or<br>("20170245400") or ("8081054") or<br>("20050205241") or ("7492593") or<br>("5533357") or ("7334630") or<br>("6779348") or ("20060126296") or<br>("4505118") or ("10514174") or<br>("7128025") or ("20150259847") or<br>("10488089") or ("20160003546") or<br>("20180094841") or ("20080023178")<br>or ("20020023453") or ("7096928") or<br>("10006721") or ("20110077514") or<br>("4158950") or ("20080158815") or<br>("20180283803") or ("20160320149")<br>or ("20190219285") or<br>("20020148415") or ("9042099") or<br>("20190184852") or ("7832231") or<br>("4488192") or ("9613548") or<br>("20090200000") or ("20140133099")<br>or ("20120327600") or ("7184269") or<br>("20160198588") or ("20180199467")<br>or ("20170321911") or ("10074954")<br>or ("8929075") or ("6920043") or<br>("7013955") or ("20180315356") or<br>("7802734") or ("8250877") or<br>("4297318") or ("20020050338") or |  |  |  |  |
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|  | ("20130055748") or ("20080148760")<br>or ("8899066") or ("9943014") or<br>("20060000582") or ("7397661") or<br>("20200025429") or ("20080259566")<br>or ("20170328589") or ("7677057") or<br>("9631880") or ("20120279684") or<br>("9313931") or ("5605047") or<br>("10371451") or ("20150068171") or<br>("20010013404") or ("20030136134")<br>or ("20020139514") or ("9810439") or<br>("20050024831") or ("5458188") or<br>("8482695") or ("20030159456") or<br>("20090112368") or ("8037714") or<br>("10309665") or ("20120285543") or<br>("5560362") or ("20180156228") or<br>("20140133096") or ("9042098") or<br>("7969727") or ("4242876") or<br>("20180017345") or ("20070295492")<br>or ("20060177714") or ("6280318") or<br>("20160290666") or ("4330946") or<br>("20190021186") or ("20130056177")<br>or ("20070258612") or<br>("20150292775") or ("20040095728")<br>or ("7672125") or ("4622947") or<br>("20120121487") or ("10060350") or<br>("6944023") or ("7757753") or<br>("6889750") or ("20100277864") or<br>("20150165871") or ("20160298540")<br>or ("20080141686") or<br>("20160061532") or ("20120031601")<br>or ("20090260372") or ("10241103")<br>or ("4348604") or ("20170328879") or<br>("20080049396") or ("7458228") or<br>("2990695") or ("20170356597") or<br>("4449511") or ("4370861") or<br>("9313930") or ("5477687") or<br>("5357586") or ("8693199") or<br>("7340912") or ("6775996")).PN. or<br>(("7073566") or ("7710722") or<br>("20080024981") or ("20080024987")<br>or ("20170172016") or<br>("20190141911") or ("7026065") or<br>("20050258259") or ("7818835") or<br>("20060219381") or ("20090216304")<br>or ("7555792") or ("20190316948") or<br>("20090288440") or ("20080142203")<br>or ("4022550") or ("5692467") or<br>("4324110") or ("20050006488") or<br>("10544902") or ("4373577") or<br>("5586932") or ("7134486") or<br>("4146086") or ("7980094") or<br>("20050174714") or ("5816318") or<br>("4848318") or ("20100118275") or |  |  |  |  |
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|  | ("2179734") or ("7802439") or<br>("5205276") or ("9441840") or<br>("5596622") or ("9593876") or<br>("7511960") or ("2873582") or<br>("5522216") or ("20150153109") or<br>("20130105120") or ("4380156") or<br>("20050241803") or ("20080161976")<br>or ("20070073369") or ("7036559") or<br>("20110094714") or ("20100319365")<br>or ("20090120630") or<br>("20180139864") or ("20080135224")<br>or ("20080310112") or<br>("20090173473") or ("4690209") or<br>("8157626") or ("20180136187") or<br>("20080161975") or ("9151540") or<br>("3290028") or ("20070074682") or<br>("6992483") or ("5253485") or<br>("2526874") or ("10334764") or<br>("7832992") or ("8619425") or<br>("20110315364") or ("20170223870")<br>or ("5042262") or ("6728102") or<br>("5582241") or ("20030044663") or<br>("4704658") or ("7131486") or<br>("10174975") or ("20170176605") or<br>("20130312645") or ("9038406") or<br>("7819634") or ("7673592") or<br>("20150000319") or ("20030205363")<br>or ("4147299") or ("9605875") or<br>("20080062647") or ("3373732") or<br>("20090225514") or ("8941993") or<br>("8453471") or ("20090225513") or<br>("7184267") or ("20180135880") or<br>("9476649") or ("20180263811") or<br>("20080156887") or ("10458682") or<br>("4495545") or ("20100011803") or<br>("10240845") or ("20020148604") or<br>("6061087") or ("20170038123") or<br>("4505131") or ("5239834") or<br>("5610968") or ("20080055848") or<br>("20140053558") or ("9173324") or<br>("6829900") or ("6909283") or<br>("20190226461") or ("6209622") or<br>("20130047653") or ("9689720") or<br>("20160245558") or ("4033825") or<br>("20090209193") or ("8178831") or<br>("20150047384") or ("20190331369")<br>or ("4803846") or ("7854135") or<br>("9392733") or ("20170067644") or<br>("5694442") or ("7975494") or<br>("20180352676") or ("20030085024")<br>or ("20120318328") or<br>("20190113259") or ("20180324976")<br>or ("8055388") or ("20130334447") or |  |  |  |  |
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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  |  |
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|  | ("6007205") or ("20100149754")).PN.<br>or ("20190219311") or ("8235777") or<br>("7911793") or ("9746235") or<br>("5732123") or ("20080176503") or<br>("4611791") or ("4294225") or<br>("8546717") or ("7497252") or<br>("7341201") or ("4168706") or<br>("5050390") or ("9351694") or<br>("20120125028") or ("8699737") or<br>("5088295") or ("4333517") or<br>("9267737") or ("8189334") or<br>("8297067") or ("9752803") or<br>("20110315363") or ("6991024") or<br>("10485113") or ("20160116224") or<br>("20130083479") or ("20120160454")<br>or ("20090090115") or ("4092088") or<br>("7830657") or ("7856838") or<br>("7534167") or ("20030231467") or<br>("20180199450") or ("4430994") or<br>("8601827") or ("9223360") or<br>("20180314103") or ("20130220579")<br>or ("9338924") or ("20080160901") or<br>("20080141707") or ("20110272120")<br>or ("9835357") or ("20110061591") or<br>("4190099") or ("20170038346") or<br>("4336692") or ("8089764") or<br>("7878889") or ("5572880") or<br>("6896612") or ("9918413") or<br>("8235776") or ("7957132") or<br>("8693198") or ("6131571") or<br>("20100307716") or ("20180328600")<br>or ("6279337") or ("8431404") or<br>("20150343554") or ("20110030932")<br>or ("20160120058") or ("7363879") or<br>("20170164525") or ("20120120542")<br>or ("20190143445") or<br>("20090007581") or ("20200039260")<br>or ("20140153689") or ("9908195") or<br>("20190069449") or ("4755236") or<br>("20110207391") or ("20170181325")<br>or ("6497110") or ("9297571") or<br>("20060279930") or ("8968232") or<br>("5562411") or ("20080060372") or<br>("7185697") or ("20130269204") or<br>("20140260361") or ("5361591") or<br>("20110218600") or ("3470704") or<br>("6167621") or ("20030062149") or<br>("5689968") or ("20080196868") or<br>("9228779") or ("5890371") or<br>("RE36808") or ("20120012283") or<br>("6704198") or ("10568217") or<br>("20030164231") or ("20040089442")<br>or ("20110134604") or ("6942018") or |  |  |  |  |
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|  | <p> ("10371443") or ("4485642") or<br/> ("7984684") or ("8467168") or<br/> ("20110105010") or ("9763366") or<br/> ("5724828") or ("20110289943") or<br/> ("20120171943") or ("20190196312")<br/> or ("9086859") or ("20100078156") or<br/> ("20070268669") or ("6393730") or<br/> ("20180347578") or ("5240403") or<br/> ("4295342") or ("5348077") or<br/> ("20050098299") or ("20120318492")<br/> or ("20180155969") or<br/> ("20090013553") or ("8467189") or<br/> ("5526650") or ("20140314395") or<br/> ("9283109") or ("7385810") or<br/> ("20110061832") or ("20070084463")<br/> or ("20120167600") or ("9032742") or<br/> ("4589265").PN. or ("20110088883")<br/> or ("20070030650") or ("10139159")<br/> or ("9273875") or ("4138857") or<br/> ("20020135981") or ("7610764") or<br/> ("4308042") or ("6053238") or<br/> ("9414519") or ("20080058697") or<br/> ("20120133256") or ("9267881") or<br/> ("20100246118") or ("9677822") or<br/> ("8439104") or ("9968010") or<br/> ("8378677") or ("4859405") or<br/> ("9055696") or ("6217440") or<br/> ("6865825") or ("20140151003") or<br/> ("8031468") or ("20120270310") or<br/> ("20130081790") or ("20120127657")<br/> or ("20120167610") or<br/> ("20120075797") or ("20100188082")<br/> or ("8240165") or ("7905106") or<br/> ("4265220") or ("10189114") or<br/> ("7348527") or ("20160120059") or<br/> ("10184699") or ("20130104414") or<br/> ("20040257766") or ("20010045104")<br/> or ("6564795") or ("7905096") or<br/> ("20100321887") or ("9282684") or<br/> ("7946112") or ("20160288244") or<br/> ("20070102426") or ("9648790") or<br/> ("20180238623") or ("8119300") or<br/> ("20140250713") or ("20120118534")<br/> or ("9128681") or ("10151539") or<br/> ("7040101") or ("4424190") or<br/> ("5467615") or ("8035968") or<br/> ("6182608") or ("20190053400") or<br/> ("6580609") or ("20060133033") or<br/> ("10288328") or ("8514575") or<br/> ("20180045138") or ("20040169771")<br/> or ("9920708") or ("6230501") or<br/> ("20090260777") or ("20020121095")<br/> or ("20030154724") or </p> |  |  |  |  |
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|     |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                            |     |     |                     |
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|     |         | ("20090310300") or ("4046529") or ("20150182650") or ("5513558")).PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                            |     |     |                     |
| S52 | 428     | S51 and @ad<="20080320"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB                                             | ADJ | OFF | 2020/02/27<br>06:09 |
| S53 | 29      | (US-20090154096-\$ or US-20060082271-\$ or US-20180088398-\$ or US-20140334100-\$ or US-20130194782-\$ or US-20120236499-\$ or US-20110167845-\$ or US-20110162831-\$ or US-20110058326-\$ or US-20100177479-\$ or US-20090086430-\$ or US-20080285290-\$ or US-20070081344-\$ or US-20090279240-\$ or US-20040135482-\$ or US-20110085301-\$ or US-20090244472-\$ or US-20090135365-\$ or US-20090126906-\$ or US-20150009627-\$ or US-20130201685-\$ or US-20120188481-\$ or US-20110122162-\$).did. or (US-6493440-\$ or US-5991153-\$ or US-5869919-\$ or US-5748269-\$ or US-8274622-\$ or US-10088702-\$).did. | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/27<br>06:14 |
| S54 | 4,133   | ((("MANUFACTURING") near3 ("RESOURCES"))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:45 |
| S55 | 0       | S54 and (enclosure and "electronic image assembly" and display and "open loop" and "closed loop").clm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:46 |
| S56 | 40      | S54 and ("open loop" and "closed loop").clm.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:47 |
| S57 | 1,123   | cross flow heat exchanger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:53 |
| S58 | 253     | S57 and (LCD or display or panel)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>10:54 |
| S59 | 3,471   | H05K7/202,206,20972.cpc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>11:31 |
| S60 | 597,701 | "59" and (LCD or display or panel)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>16:07 |
| S61 | 3,471   | H05K7/202,206,20972.cpc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;                                | ADJ | OFF | 2020/02/28<br>16:08 |

|     |       |                                                                                                       |                                                                            |     |     |                     |
|-----|-------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----|-----|---------------------|
|     |       |                                                                                                       | JPO;<br>DERWENT;<br>IBM_TDB                                                |     |     |                     |
| S62 | 3,471 | H05K7/202,206,20972.cpc.                                                                              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>16:40 |
| S63 | 579   | S62 and (LCD or display or panel)                                                                     | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>16:40 |
| S64 | 166   | S63 and @ad<="20080320"                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB                                             | ADJ | OFF | 2020/02/28<br>16:42 |
| S65 | 927   | ((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))                                                   | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:18 |
| S66 | 839   | ((((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))).inv.                                           | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:20 |
| S67 | 4,133 | ((("MANUFACTURING") near3 ("RESOURCES"))                                                              | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:20 |
| S68 | 4,737 | S67 or S65                                                                                            | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:20 |
| S69 | 0     | S68 and (electronic image and cooling and enclosure and heat exchanger and (air or gas))              | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/02/28<br>17:23 |
| S70 | 0     | S68 and (electronic image and cooling and enclosure and heat exchanger and (air or gas))              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>17:25 |
| S72 | 0     | S68 and ("electronic image assembly" and "cooling system" and enclosure and "heat exchanger" and air) | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>17:32 |
| S74 | 141   | S68 and ("open loop" and "closed loop")                                                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>17:33 |

|     |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |     |     |                     |
|-----|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S75 | 141   | S68 and ("open loop" and "closed loop")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/02/28<br>17:34 |
| S76 | 141   | S75 and @ad<="20191209"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/02/28<br>17:35 |
| S77 | 929   | ((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S78 | 4,144 | ((("MANUFACTURING") near3 ("RESOURCES"))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S79 | 4,748 | S78 or S77                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S80 | 142   | S79 and ("open loop" and "closed loop")                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S81 | 97    | S80 and cool\$3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:56 |
| S82 | 77    | S81 and (transparent same display)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>16:57 |
| S83 | 2     | "15789331"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>17:16 |
| S84 | 202   | ("10080316"   "10088702"  <br>"10194564"   "10212845"  <br>"10278311"   "10314212"  <br>"10359659"   "10398066"  <br>"10420257"   "10485113"  <br>"10499516"   "10506738"  <br>"10506740"   "20010001459"  <br>"20010019454"   "20020009978"  <br>"20020033919"   "20020050793"  <br>"20020065046"   "20020084891"  <br>"20020101553"   "20020112026"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020164962"  <br>"20020167637"   "20030007109"  <br>"20030020884"   "20030043091"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035032"   "20040035558"  <br>"20040036622"   "20040036834"  <br>"20040042174"   "20040103570"  <br>"20040105159"   "20040135482"  <br>"20040165139"   "20040223299"  <br>"20050012039"   "20050012722"  <br>"20050062373"   "20050073632"  <br>"20050073639"   "20050127796"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050253699"  <br>"20050276053"   "20050286131" | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/03/11<br>19:05 |

|               |               |  |  |  |  |
|---------------|---------------|--|--|--|--|
| "20060012958" | "20060012985" |  |  |  |  |
| "20060018093" | "20060034051" |  |  |  |  |
| "20060056994" | "20060082271" |  |  |  |  |
| "20060092348" | "20060125998" |  |  |  |  |
| "20060132699" | "20060177587" |  |  |  |  |
| "20060199514" | "20060209266" |  |  |  |  |
| "20060260790" | "20060262079" |  |  |  |  |
| "20060266499" | "20060269216" |  |  |  |  |
| "20060283579" | "20070013647" |  |  |  |  |
| "20070019419" | "20070030879" |  |  |  |  |
| "20070047239" | "20070065091" |  |  |  |  |
| "20070076431" | "20070081344" |  |  |  |  |
| "20070103863" | "20070103866" |  |  |  |  |
| "20070115686" | "20070139929" |  |  |  |  |
| "20070140671" | "20070151274" |  |  |  |  |
| "20070151664" | "20070171353" |  |  |  |  |
| "20070206158" | "20070211205" |  |  |  |  |
| "20070212211" | "20070217221" |  |  |  |  |
| "20070230167" | "20070237636" |  |  |  |  |
| "20070267174" | "20080035315" |  |  |  |  |
| "20080054144" | "20080055534" |  |  |  |  |
| "20080076342" | "20080099193" |  |  |  |  |
| "20080148609" | "20080209934" |  |  |  |  |
| "20080218446" | "20080236005" |  |  |  |  |
| "20080267790" | "20080283234" |  |  |  |  |
| "20080285290" | "20080310116" |  |  |  |  |
| "20090009047" | "20090009729" |  |  |  |  |
| "20090059518" | "20090065007" |  |  |  |  |
| "20090086430" | "20090104989" |  |  |  |  |
| "20090120629" | "20090122218" |  |  |  |  |
| "20090126906" | "20090126907" |  |  |  |  |
| "20090126914" | "20090135365" |  |  |  |  |
| "20090147170" | "20090154096" |  |  |  |  |
| "20090174626" | "20090231807" |  |  |  |  |
| "20090241437" | "20090244472" |  |  |  |  |
| "20090251650" | "20090266507" |  |  |  |  |
| "20090279240" | "20090302727" |  |  |  |  |
| "20090306820" | "20090323275" |  |  |  |  |
| "20100060861" | "20100079949" |  |  |  |  |
| "20100162747" | "20100171889" |  |  |  |  |
| "20100182562" | "20100220249" |  |  |  |  |
| "20100226091" | "20100232107" |  |  |  |  |
| "20100238394" | "20100321887" |  |  |  |  |
| "20110001898" | "20110013114" |  |  |  |  |
| "20110019363" | "20110032489" |  |  |  |  |
| "20110051071" | "20110058326" |  |  |  |  |
| "20110072697" | "20110075361" |  |  |  |  |
| "20110083460" | "20110083824" |  |  |  |  |
| "20110085301" | "20110085302" |  |  |  |  |
| "20110090630" | "20110114384" |  |  |  |  |
| "20110116000" | "20110116231" |  |  |  |  |
| "20110122162" | "20110141672" |  |  |  |  |
| "20110141724" | "20110261523" |  |  |  |  |

|     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |     |     |                     |
|-----|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
|     |     | "20110297810"   "20120006523"  <br>"20120012295"   "20120012300"  <br>"20120014063"   "20120020114"  <br>"20120038849"   "20120044217"  <br>"20120105790"   "20120106081"  <br>"20120188481"   "20120206687"  <br>"20120249402"   "20120255704"  <br>"20120274876"   "20120284547"  <br>"20120327600"   "20130170140"  <br>"20130173358"   "20130176517"  <br>"20130201685"   "20130258659"  <br>"20130279154"   "20130294039"  <br>"20130344794"   "20140044147"  <br>"20140085564"   "20140111758"  <br>"20140113540"   "20140134767"  <br>"20140190240"   "20140268657"  <br>"20140313698"   "20140314395"  <br>"20140361138"   "20150009627").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |     |     |                     |
| S85 | 230 | ("20150192371"   "20150253611"  <br>"20150264826"   "20150319882"  <br>"20150366101"   "20160041423"  <br>"20160044829"   "20160162297"  <br>"20160192536"   "20160195254"  <br>"20160198588"   "20160238876"  <br>"20160242329"   "20160242330"  <br>"20160249493"   "20160302331"  <br>"20170023823"   "20170068042"  <br>"20170074453"   "20170083043"  <br>"20170083062"   "20170111486"  <br>"20170111520"   "20170111521"  <br>"20170127579"   "20170140344"  <br>"20170147992"   "20170163519"  <br>"20170175411"   "20170188490"  <br>"20170245400"   "20170257978"  <br>"20170332523"   "20180042134"  <br>"20180116073"   "20180314103"  <br>"20180315356"   "20180317330"  <br>"20180317350"   "20180364519"  <br>"20190037738"   "20190089176"  <br>"20190133002"   "20190208674"  <br>"20190239365"   "20190289754"  <br>"20190327865"   "4093355"  <br>"4593978"   "4634225"   "4748765"  <br>"4763993"   "4921041"   "4952783"  <br>"4952925"   "5029982"   "5088806"  <br>"5132666"   "5247374"   "5282114"  <br>"5293930"   "5351176"   "5432526"  <br>"5535816"   "5559614"   "5621614"  <br>"5657641"   "5748269"   "5765743"  <br>"5767489"   "5808418"   "5818010"  <br>"5818694"   "5835179"   "5864465"  <br>"5869818"   "5869919"   "5903433" | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/03/11<br>19:05 |

|  |           |                |           |  |  |  |  |
|--|-----------|----------------|-----------|--|--|--|--|
|  | "5991153" | "6003015"      | "6007205" |  |  |  |  |
|  | "6043979" | "6089751"      | "6104451" |  |  |  |  |
|  | "6125565" | "6157432"      | "6181070" |  |  |  |  |
|  | "6191839" | "6198222"      | "6211934" |  |  |  |  |
|  | "6215655" | "6351381"      | "6359390" |  |  |  |  |
|  | "6392727" | "6417900"      | "6428198" |  |  |  |  |
|  | "6437673" | "6473150"      | "6476883" |  |  |  |  |
|  | "6493440" | "6504713"      | "6535266" |  |  |  |  |
|  | "6628355" | "6643130"      | "6683639" |  |  |  |  |
|  | "6701143" | "6714410"      | "6727468" |  |  |  |  |
|  | "6742583" | "6812851"      | "6825828" |  |  |  |  |
|  | "6833992" | "6839104"      | "6850209" |  |  |  |  |
|  | "6885412" | "6886942"      | "6891135" |  |  |  |  |
|  | "6909486" | "6943768"      | "6961108" |  |  |  |  |
|  | "7015470" | "7059757"      | "7083285" |  |  |  |  |
|  | "7157838" | "7161803"      | "7190416" |  |  |  |  |
|  | "7190587" | "7209349"      | "7212403" |  |  |  |  |
|  | "7259964" | "7269023"      | "7284874" |  |  |  |  |
|  | "7396145" | "7447018"      | "7452121" |  |  |  |  |
|  | "7457113" | "7480140"      | "7535543" |  |  |  |  |
|  | "7591508" | "7602469"      | "7667964" |  |  |  |  |
|  | "7682047" | "7752858"      | "7753567" |  |  |  |  |
|  | "7762707" | "7800706"      | "7813124" |  |  |  |  |
|  | "7903416" | "7995342"      | "8004648" |  |  |  |  |
|  | "8035968" | "8081465"      | "8102173" |  |  |  |  |
|  | "8142027" | "8208115"      | "8223311" |  |  |  |  |
|  | "8241573" | "8248784"      | "8254121" |  |  |  |  |
|  | "8269916" | "8270163"      | "8274622" |  |  |  |  |
|  | "8274789" | "8300203"      | "8310824" |  |  |  |  |
|  | "8320119" | "8351014"      | "8358397" |  |  |  |  |
|  | "8369083" | "8373841"      | "8379182" |  |  |  |  |
|  | "8400608" | "8472174"      | "8472191" |  |  |  |  |
|  | "8482695" | "8497972"      | "8590602" |  |  |  |  |
|  | "8649170" | "8649176"      | "8654302" |  |  |  |  |
|  | "8678603" | "8693185"      | "8700226" |  |  |  |  |
|  | "8711321" | "8749749"      | "8755021" |  |  |  |  |
|  | "8758144" | "8760613"      | "8767165" |  |  |  |  |
|  | "8773633" | "8804091"      | "8823916" |  |  |  |  |
|  | "8827472" | "8854572"      | "8854595" |  |  |  |  |
|  | "8879042" | "8976313"      | "8988647" |  |  |  |  |
|  | "9030641" | "9089079"      | "9119325" |  |  |  |  |
|  | "9119330" | "9173322"      | "9173325" |  |  |  |  |
|  | "9282676" | "9285108"      | "9313917" |  |  |  |  |
|  | "9370127" | "9448569"      | "9451060" |  |  |  |  |
|  | "9451733" | "9456525"      | "9470924" |  |  |  |  |
|  | "9500896" | "9516485"      | "9549490" |  |  |  |  |
|  | "9594271" | "9613548"      | "9622392" |  |  |  |  |
|  | "9629287" | "9648790"      | "9655289" |  |  |  |  |
|  | "9703230" | "9723765"      | "9797588" |  |  |  |  |
|  | "9801305" | "9823690"      | "9835893" |  |  |  |  |
|  | "9894800" | "D608775").PN. |           |  |  |  |  |

|      |        |                                                                                                                                                                                                                                                                                                                        |                                |     |     |                     |
|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S92  | 2      | "20050253699"                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/13<br>18:49 |
| S93  | 132    | "20040105159" or "5991153"                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>01:14 |
| S94  | 116    | "20010009508" or "5869919"                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>01:40 |
| S95  | 37     | ((polarizer or polarize) same (sun or solar or radiation)) with (display or LCD) and (airflow) and (blower or fan or air)                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>01:58 |
| S96  | 22,544 | (G02F1/133308 OR G02F2001/133334 OR G02F1/133385 OR G02F2201/08 OR G02F2201/36 OR G02F1/133528 OR H01L51/5234 OR H05K9/0081 OR H05K7/20972 OR Y02P20/133).CPC.                                                                                                                                                         | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:02 |
| S97  | 7,648  | S96 and (polarizer or polariser or polarise or polarize)                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:02 |
| S98  | 7,536  | S97 and (solar or sun or uv or ultraviolet or light or sunshine)                                                                                                                                                                                                                                                       | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:03 |
| S99  | 7,454  | S98 and (display or panel or lcd)                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:04 |
| S100 | 3,193  | S99 and (air or blower or cool\$3 or fan)                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON  | 2020/09/14<br>02:04 |
| S101 | 115    | electronic display and (closed near2 cool\$3)                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:05 |
| S102 | 980    | S100 and @ad<="20091218"                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:05 |
| S103 | 206    | ("10080316"   "10088702"   "10180591"   "10194564"   "10212845"   "10278311"   "10306781"   "10314212"   "10359659"   "10359817"   "10383238"   "10398066"   "10420257"   "10485113"   "10485147"   "10485148"   "10499516"   "10506738"   "10506740"   "10524384"   "10524397"   "10548247"   "10624218"   "10660245" | US-PGPUB;<br>USPAT             | ADJ | ON  | 2020/09/14<br>02:11 |

|  |                               |  |  |  |
|--|-------------------------------|--|--|--|
|  | "10687446"   "10716224"       |  |  |  |
|  | "10721836"   "10736245"       |  |  |  |
|  | "20010001459"   "20010019454" |  |  |  |
|  | "20010023914"   "20010032404" |  |  |  |
|  | "20020009978"   "20020033919" |  |  |  |
|  | "20020050793"   "20020065046" |  |  |  |
|  | "20020084891"   "20020101553" |  |  |  |
|  | "20020112026"   "20020126248" |  |  |  |
|  | "20020148600"   "20020149714" |  |  |  |
|  | "20020154255"   "20020164944" |  |  |  |
|  | "20020164962"   "20020167637" |  |  |  |
|  | "20030007109"   "20030020884" |  |  |  |
|  | "20030043091"   "20030104210" |  |  |  |
|  | "20030128511"   "20030214785" |  |  |  |
|  | "20040012722"   "20040035032" |  |  |  |
|  | "20040035558"   "20040036622" |  |  |  |
|  | "20040036834"   "20040042174" |  |  |  |
|  | "20040103570"   "20040105159" |  |  |  |
|  | "20040135482"   "20040165139" |  |  |  |
|  | "20040223299"   "20050012039" |  |  |  |
|  | "20050012722"   "20050062373" |  |  |  |
|  | "20050073632"   "20050073639" |  |  |  |
|  | "20050127796"   "20050134525" |  |  |  |
|  | "20050134526"   "20050213950" |  |  |  |
|  | "20050219841"   "20050229630" |  |  |  |
|  | "20050237714"   "20050253699" |  |  |  |
|  | "20050276053"   "20050286131" |  |  |  |
|  | "20060012958"   "20060012985" |  |  |  |
|  | "20060018093"   "20060034051" |  |  |  |
|  | "20060056994"   "20060082271" |  |  |  |
|  | "20060092348"   "20060125998" |  |  |  |
|  | "20060132699"   "20060177587" |  |  |  |
|  | "20060199514"   "20060209266" |  |  |  |
|  | "20060260790"   "20060262079" |  |  |  |
|  | "20060266499"   "20060269216" |  |  |  |
|  | "20060283579"   "20070013647" |  |  |  |
|  | "20070019419"   "20070030879" |  |  |  |
|  | "20070047239"   "20070065091" |  |  |  |
|  | "20070076431"   "20070081344" |  |  |  |
|  | "20070103863"   "20070103866" |  |  |  |
|  | "20070115686"   "20070139929" |  |  |  |
|  | "20070140671"   "20070144704" |  |  |  |
|  | "20070151274"   "20070151664" |  |  |  |
|  | "20070171353"   "20070206158" |  |  |  |
|  | "20070211205"   "20070212211" |  |  |  |
|  | "20070217221"   "20070230167" |  |  |  |
|  | "20070237636"   "20070267174" |  |  |  |
|  | "20080035315"   "20080054144" |  |  |  |
|  | "20080055534"   "20080076342" |  |  |  |
|  | "20080099193"   "20080148609" |  |  |  |
|  | "20080209934"   "20080218446" |  |  |  |
|  | "20080236005"   "20080267790" |  |  |  |
|  | "20080283234"   "20080285290" |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |     |    |                     |
|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|----|---------------------|
|      |     | "20080296134"   "20080310116"  <br>"20080310158"   "20090009047"  <br>"20090009729"   "20090059518"  <br>"20090065007"   "20090086430"  <br>"20090095819"   "20090104989"  <br>"20090120629"   "20090122218"  <br>"20090126906"   "20090126907"  <br>"20090126914"   "20090129021"  <br>"20090135365"   "20090147170"  <br>"20090154096"   "20090174626"  <br>"20090231807"   "20090241437"  <br>"20090244472"   "20090251650"  <br>"20090266507"   "20090279240"  <br>"20090302727"   "20090306820"  <br>"20090323275"   "20100060861"  <br>"20100079949"   "20100079979"  <br>"20100162747"   "20100171889"  <br>"20100182562"   "20100220249"  <br>"20100226091"   "20100232107"  <br>"20100238394"   "20100321887"  <br>"20110001898"   "20110013114"  <br>"20110019363"   "20110032489"  <br>"20110051071"   "20110058326"  <br>"20110072697"   "20110075361"  <br>"20110083460"   "20110083824"  <br>"20110085301"   "20110085302"  <br>"20110090630"   "20110114384"  <br>"20110116000"   "20110116231"  <br>"20110122162"   "20110134356"  <br>"20110141672"   "20110141724"  <br>"20110162831"   "20110167845"  <br>"20110261523"   "20110297810"  <br>"20120006523"   "20120012295"  <br>"20120012300"   "20120014063"  <br>"20120020114"   "20120038849"  <br>"20120044217"   "20120105790"  <br>"20120106081"   "20120188481"  <br>"20120206687"   "20120236499").PN. |                    |     |    |                     |
| S104 | 247 | ("20120249402"   "20120255704"  <br>"20120274876"   "20120284547"  <br>"20120327600"   "20130170140"  <br>"20130173358"   "20130176517"  <br>"20130201685"   "20130258659"  <br>"20130279154"   "20130294039"  <br>"20130344794"   "20140044147"  <br>"20140085564"   "20140111758"  <br>"20140113540"   "20140134767"  <br>"20140184980"   "20140190240"  <br>"20140268657"   "20140313666"  <br>"20140313698"   "20140314395"  <br>"20140334100"   "20140361138"  <br>"20150009625"   "20150009627"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT | ADJ | ON | 2020/09/14<br>02:11 |

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|---------------|---------------|-----------|--|--|
| "20150192371" | "20150253611" |           |  |  |
| "20150264826" | "20150319882" |           |  |  |
| "20150366101" | "20160041423" |           |  |  |
| "20160044829" | "20160162297" |           |  |  |
| "20160192536" | "20160195254" |           |  |  |
| "20160198588" | "20160238876" |           |  |  |
| "20160242329" | "20160242330" |           |  |  |
| "20160249493" | "20160302331" |           |  |  |
| "20170023823" | "20170068042" |           |  |  |
| "20170074453" | "20170083043" |           |  |  |
| "20170083062" | "20170111486" |           |  |  |
| "20170111520" | "20170111521" |           |  |  |
| "20170127579" | "20170140344" |           |  |  |
| "20170147992" | "20170163519" |           |  |  |
| "20170175411" | "20170188490" |           |  |  |
| "20170245400" | "20170257978" |           |  |  |
| "20170332523" | "20170345346" |           |  |  |
| "20180042134" | "20180088368" |           |  |  |
| "20180116073" | "20180314103" |           |  |  |
| "20180315356" | "20180317330" |           |  |  |
| "20180317350" | "20180364519" |           |  |  |
| "20190037738" | "20190089176" |           |  |  |
| "20190133002" | "20190208674" |           |  |  |
| "20190239365" | "20190289754" |           |  |  |
| "20190327865" | "20200154597" |           |  |  |
| "20200163235" | "20200205303" |           |  |  |
| "20200253095" | "4093355"     |           |  |  |
| "4593978"     | "4634225"     | "4748765" |  |  |
| "4763993"     | "4921041"     | "4952783" |  |  |
| "4952925"     | "5029982"     | "5088806" |  |  |
| "5132666"     | "5247374"     | "5282114" |  |  |
| "5285677"     | "5293930"     | "5351176" |  |  |
| "5432526"     | "5535816"     | "5559614" |  |  |
| "5621614"     | "5657641"     | "5748269" |  |  |
| "5765743"     | "5767489"     | "5808418" |  |  |
| "5818010"     | "5818694"     | "5835179" |  |  |
| "5864465"     | "5869818"     | "5869919" |  |  |
| "5903433"     | "5991153"     | "6003015" |  |  |
| "6007205"     | "6043979"     | "6089751" |  |  |
| "6104451"     | "6125565"     | "6157432" |  |  |
| "6181070"     | "6191839"     | "6198222" |  |  |
| "6211934"     | "6215655"     | "6351381" |  |  |
| "6359390"     | "6392727"     | "6417900" |  |  |
| "6428198"     | "6437673"     | "6473150" |  |  |
| "6476883"     | "6493440"     | "6504713" |  |  |
| "6535266"     | "6628355"     | "6643130" |  |  |
| "6683639"     | "6701143"     | "6714410" |  |  |
| "6727468"     | "6742583"     | "6812851" |  |  |
| "6825828"     | "6833992"     | "6839104" |  |  |
| "6850209"     | "6885412"     | "6886942" |  |  |
| "6891135"     | "6909486"     | "6943768" |  |  |
| "6961108"     | "7015470"     | "7059757" |  |  |
| "7083285"     | "7157838"     | "7161803" |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |     |     |                     |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
|      |     | "7190416"   "7190587"   "7209349"  <br>"7212403"   "7259964"   "7269023"  <br>"7284874"   "7396145"   "7447018"  <br>"7452121"   "7457113"   "7480140"  <br>"7518864"   "7535543"   "7591508"  <br>"7602469"   "7667964"   "7682047"  <br>"7752858"   "7753567"   "7762707"  <br>"7800706"   "7813124"   "7903416"  <br>"7995342"   "8004648"   "8035968"  <br>"8081465"   "8102173"   "8142027"  <br>"8208115"   "8223311"   "8241573"  <br>"8248784"   "8254121"   "8269916"  <br>"8270163"   "8274622"   "8274789"  <br>"8300203"   "8310824"   "8320119"  <br>"8351014"   "8358397"   "8369083"  <br>"8373841"   "8379182"   "8400608"  <br>"8472174"   "8472191"   "8482695"  <br>"8497972"   "8590602"   "8649170"  <br>"8649176"   "8654302"   "8678603"  <br>"8693185"   "8700226"   "8711321"  <br>"8749749"   "8755021"   "8758144"  <br>"8760613"   "8767165"   "8773633"  <br>"8804091"   "8823916"   "8827472"  <br>"8854572"   "8854595"   "8879042"  <br>"8976313"   "8988647"   "9030641"  <br>"9089079"   "9119325"   "9119330"  <br>"9173322"   "9173325"   "9282676"  <br>"9285108"   "9313917"   "9338923"  <br>"9357673"   "9370127"  <br>"9414516").PN. |                    |     |     |                     |
| S105 | 24  | ("9448569"   "9451060"   "9451733"  <br>"9456525"   "9470924"   "9500896"  <br>"9516485"   "9549490"   "9594271"  <br>"9613548"   "9622392"   "9629287"  <br>"9648790"   "9655289"   "9703230"  <br>"9723765"   "9743553"   "9797588"  <br>"9801305"   "9823690"   "9835893"  <br>"9861007"   "9894800"  <br>"D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | US-PGPUB;<br>USPAT | ADJ | ON  | 2020/09/14<br>02:11 |
| S106 | 24  | ("20020009978"   "20020065046"  <br>"20020084891"   "20020164962"  <br>"20030043091"   "20040223299"  <br>"20050073639"   "20070103863"  <br>"20090059518"   "20110122162"  <br>"6701143"   "6714410"   "6812851"  <br>"6825828"   "6850209"   "7157838"  <br>"7161803"   "7259964"   "7269023"  <br>"7452121"   "7591508"   "7903416"  <br>"8758144"   "9894800").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:15 |
| S107 | 225 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:15 |

|               |               |           |  |  |  |
|---------------|---------------|-----------|--|--|--|
| "20020126248" | "20020148600" |           |  |  |  |
| "20020149714" | "20020154255" |           |  |  |  |
| "20020164944" | "20020167637" |           |  |  |  |
| "20030007109" | "20030020884" |           |  |  |  |
| "20030104210" | "20030128511" |           |  |  |  |
| "20030214785" | "20040012722" |           |  |  |  |
| "20040035558" | "20040036834" |           |  |  |  |
| "20040103570" | "20040105159" |           |  |  |  |
| "20040165139" | "20050012039" |           |  |  |  |
| "20050012722" | "20050062373" |           |  |  |  |
| "20050073632" | "20050134525" |           |  |  |  |
| "20050134526" | "20050213950" |           |  |  |  |
| "20050229630" | "20050237714" |           |  |  |  |
| "20050276053" | "20050286131" |           |  |  |  |
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| "20060034051" | "20060056994" |           |  |  |  |
| "20060082271" | "20060092348" |           |  |  |  |
| "20060125998" | "20060132699" |           |  |  |  |
| "20060177587" | "20060199514" |           |  |  |  |
| "20060209266" | "20060260790" |           |  |  |  |
| "20060262079" | "20060266499" |           |  |  |  |
| "20060283579" | "20070019419" |           |  |  |  |
| "20070030879" | "20070047239" |           |  |  |  |
| "20070065091" | "20070076431" |           |  |  |  |
| "20070103866" | "20070115686" |           |  |  |  |
| "20070139929" | "20070140671" |           |  |  |  |
| "20070151274" | "20070151664" |           |  |  |  |
| "20070171353" | "20070206158" |           |  |  |  |
| "20070211205" | "20070212211" |           |  |  |  |
| "20070217221" | "20070237636" |           |  |  |  |
| "20070267174" | "20080055534" |           |  |  |  |
| "20080076342" | "20080099193" |           |  |  |  |
| "20080148609" | "20080209934" |           |  |  |  |
| "20080218446" | "20080236005" |           |  |  |  |
| "20080267790" | "20080283234" |           |  |  |  |
| "20080285290" | "4093355"     |           |  |  |  |
| "4593978"     | "4634225"     | "4748765" |  |  |  |
| "4763993"     | "4921041"     | "4952783" |  |  |  |
| "4952925"     | "5029982"     | "5088806" |  |  |  |
| "5132666"     | "5247374"     | "5282114" |  |  |  |
| "5293930"     | "5351176"     | "5432526" |  |  |  |
| "5535816"     | "5559614"     | "5621614" |  |  |  |
| "5657641"     | "5748269"     | "5765743" |  |  |  |
| "5767489"     | "5808418"     | "5818010" |  |  |  |
| "5818694"     | "5835179"     | "5864465" |  |  |  |
| "5869818"     | "5869919"     | "5903433" |  |  |  |
| "5991153"     | "6003015"     | "6007205" |  |  |  |
| "6089751"     | "6104451"     | "6157432" |  |  |  |
| "6181070"     | "6191839"     | "6198222" |  |  |  |
| "6211934"     | "6215655"     | "6351381" |  |  |  |
| "6392727"     | "6417900"     | "6428198" |  |  |  |
| "6473150"     | "6493440"     | "6504713" |  |  |  |
| "6535266"     | "6628355"     | "6727468" |  |  |  |

|      |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                       |     |     |                     |
|------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----|-----|---------------------|
|      |       | "6839104"   "6885412"   "6886942"  <br>"6891135"   "6909486"   "6943768"  <br>"6961108"   "7015470"   "7059757"  <br>"7083285"   "7190587"   "7209349"  <br>"7212403"   "7284874"   "7457113"  <br>"7480140"   "7535543"   "7602469"  <br>"7667964"   "7752858"   "7753567"  <br>"7800706"   "7813124"   "7995342"  <br>"8004648"   "8035968"   "8081465"  <br>"8102173"   "8142027"   "8208115"  <br>"8223311"   "8241573"   "8248784"  <br>"8254121"   "8269916"   "8270163"  <br>"8274622"   "8274789"   "8300203"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8649170"  <br>"8649176"   "8654302"   "8678603"  <br>"8693185"   "8700226"   "8711321"  <br>"8749749"   "8755021"   "8760613"  <br>"8767165"   "8773633"   "8804091"  <br>"8823916"   "8827472"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9723765"   "9797588"   "9801305"  <br>"9835893"   "D608775").PN. |                                                       |     |     |                     |
| S108 | 177   | ((("MANUFACTURING") near3<br>("RESOURCES") near3<br>("INTERNATIONAL") near3<br>("INC"))).AS,AANM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | USPAT                                                 | ADJ | OFF | 2020/09/14<br>02:15 |
| S109 | 1,233 | ((("DUNN") near3 ("William")) OR<br>(("HUBBARD") near3 ("Tim"))).INV.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT | ADJ | OFF | 2020/09/14<br>02:15 |
| S110 | 24    | ("20020009978"   "20020065046"  <br>"20020084891"   "20020164962"  <br>"20030043091"   "20040223299"  <br>"20050073639"   "20070103863"  <br>"20090059518"   "20110122162"  <br>"6701143"   "6714410"   "6812851"  <br>"6825828"   "6850209"   "7157838"  <br>"7161803"   "7259964"   "7269023"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT                                    | ADJ | OFF | 2020/09/14<br>02:15 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                    |     |     |                     |
|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
|      |     | "7452121"   "7591508"   "7903416"  <br>"8758144"   "9894800").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                    |     |     |                     |
| S111 | 225 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035558"   "20040036834"  <br>"20040103570"   "20040105159"  <br>"20040165139"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050134525"  <br>"20050134526"   "20050213950"  <br>"20050229630"   "20050237714"  <br>"20050276053"   "20050286131"  <br>"20060012958"   "20060018093"  <br>"20060034051"   "20060056994"  <br>"20060082271"   "20060092348"  <br>"20060125998"   "20060132699"  <br>"20060177587"   "20060199514"  <br>"20060209266"   "20060260790"  <br>"20060262079"   "20060266499"  <br>"20060283579"   "20070019419"  <br>"20070030879"   "20070047239"  <br>"20070065091"   "20070076431"  <br>"20070103866"   "20070115686"  <br>"20070139929"   "20070140671"  <br>"20070151274"   "20070151664"  <br>"20070171353"   "20070206158"  <br>"20070211205"   "20070212211"  <br>"20070217221"   "20070237636"  <br>"20070267174"   "20080055534"  <br>"20080076342"   "20080099193"  <br>"20080148609"   "20080209934"  <br>"20080218446"   "20080236005"  <br>"20080267790"   "20080283234"  <br>"20080285290"   "4093355"  <br>"4593978"   "4634225"   "4748765"  <br>"4763993"   "4921041"   "4952783"  <br>"4952925"   "5029982"   "5088806"  <br>"5132666"   "5247374"   "5282114"  <br>"5293930"   "5351176"   "5432526"  <br>"5535816"   "5559614"   "5621614"  <br>"5657641"   "5748269"   "5765743"  <br>"5767489"   "5808418"   "5818010"  <br>"5818694"   "5835179"   "5864465"  <br>"5869818"   "5869919"   "5903433"  <br>"5991153"   "6003015"   "6007205"  <br>"6089751"   "6104451"   "6157432" | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:15 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                |     |     |                     |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|      |     | "6181070"   "6191839"   "6198222"  <br>"6211934"   "6215655"   "6351381"  <br>"6392727"   "6417900"   "6428198"  <br>"6473150"   "6493440"   "6504713"  <br>"6535266"   "6628355"   "6727468"  <br>"6839104"   "6885412"   "6886942"  <br>"6891135"   "6909486"   "6943768"  <br>"6961108"   "7015470"   "7059757"  <br>"7083285"   "7190587"   "7209349"  <br>"7212403"   "7284874"   "7457113"  <br>"7480140"   "7535543"   "7602469"  <br>"7667964"   "7752858"   "7753567"  <br>"7800706"   "7813124"   "7995342"  <br>"8004648"   "8035968"   "8081465"  <br>"8102173"   "8142027"   "8208115"  <br>"8223311"   "8241573"   "8248784"  <br>"8254121"   "8269916"   "8270163"  <br>"8274622"   "8274789"   "8300203"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8649170"  <br>"8649176"   "8654302"   "8678603"  <br>"8693185"   "8700226"   "8711321"  <br>"8749749"   "8755021"   "8760613"  <br>"8767165"   "8773633"   "8804091"  <br>"8823916"   "8827472"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9723765"   "9797588"   "9801305"  <br>"9835893"   "D608775").PN. |                                |     |     |                     |
| S112 | 177 | ((("MANUFACTURING") near3<br>("RESOURCES") near3<br>("INTERNATIONAL") near3<br>("INC"))).AS,AANM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | USPAT                          | ADJ | OFF | 2020/09/14<br>02:15 |
| S113 | 0   | S110 S111 S112                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S114 | 375 | S110 S111 S112                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | OR  | OFF | 2020/09/14<br>02:15 |
| S115 | 2   | ((("6493440") or ("20090154096"))).PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |

|      |       |                                                                                                                                                                                                                                                                                                         |                                |     |     |                     |
|------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S116 | 1     | ("5991153").PN.                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S117 | 1     | ("20060082271").PN.                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S118 | 1     | ("5869919").PN.                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S119 | 1     | ("5748269").PN.                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S120 | 2     | ((("20050073632") or<br>("20070206158")).PN.                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT             | OR  | OFF | 2020/09/14<br>02:15 |
| S121 | 16    | ("20150366101"   "20110167845"  <br>"20160198589"   "20120236499"  <br>"20100177479"   "20110058326"  <br>"20090086430"   "20160198589"  <br>"7486517"   "20080285290"  <br>"20150075758"   "20110162831"  <br>"20070081344"   "20110310315"  <br>"20140334100"   "20170172016"  <br>"20130194782").PN. | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S122 | 2     | "15719374"                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S123 | 115   | electronic display and (closed near2<br>cool\$3)                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S124 | 8     | S101 and @ad<="20080320"                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S125 | 526   | display and (closed near2 loop near3<br>gas)                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S126 | 166   | S125 and @ad<="20071116"                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S127 | 42    | S126 and heat exchanger                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S128 | 1,212 | H05K7/202 G02F1/133385<br>H05K7/20136 H05K7/20163<br>H05K7/20972                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>IBM_TDB | OR  | OFF | 2020/09/14<br>02:15 |
| S129 | 243   | ("20070081344"   "20090009047"  <br>"20090122218"   "20090302727"  <br>"20110085302"   "20120188481"  <br>"6043979"   "6742583"   "8590602"  <br>"20020009978"   "20020065046"  <br>"20020084891"   "20020164962"  <br>"20030043091"   "20040223299"                                                    | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/09/14<br>02:15 |

|  |                                   |  |  |  |
|--|-----------------------------------|--|--|--|
|  | "20050073639"   "20070103863"     |  |  |  |
|  | "20090059518"   "20110122162"     |  |  |  |
|  | "6701143"   "6714410"   "6812851" |  |  |  |
|  | "6825828"   "6850209"   "7157838" |  |  |  |
|  | "7161803"   "7259964"   "7269023" |  |  |  |
|  | "7452121"   "7591508"   "7903416" |  |  |  |
|  | "8758144"   "9894800"             |  |  |  |
|  | "20010001459"   "20010019454"     |  |  |  |
|  | "20020033919"   "20020101553"     |  |  |  |
|  | "20020126248"   "20020148600"     |  |  |  |
|  | "20020149714"   "20020154255"     |  |  |  |
|  | "20020164944"   "20020167637"     |  |  |  |
|  | "20030007109"   "20030020884"     |  |  |  |
|  | "20030104210"   "20030128511"     |  |  |  |
|  | "20030214785"   "20040012722"     |  |  |  |
|  | "20040035558"   "20040036834"     |  |  |  |
|  | "20040103570"   "20040105159"     |  |  |  |
|  | "20040165139"   "20050012039"     |  |  |  |
|  | "20050012722"   "20050062373"     |  |  |  |
|  | "20050073632"   "20050134525"     |  |  |  |
|  | "20050134526"   "20050213950"     |  |  |  |
|  | "20050229630"   "20050237714"     |  |  |  |
|  | "20050276053"   "20050286131"     |  |  |  |
|  | "20060012958"   "20060018093"     |  |  |  |
|  | "20060034051"   "20060056994"     |  |  |  |
|  | "20060082271"   "20060092348"     |  |  |  |
|  | "20060125998"   "20060132699"     |  |  |  |
|  | "20060177587"   "20060199514"     |  |  |  |
|  | "20060209266"   "20060260790"     |  |  |  |
|  | "20060262079"   "20060266499"     |  |  |  |
|  | "20060283579"   "20070019419"     |  |  |  |
|  | "20070030879"   "20070047239"     |  |  |  |
|  | "20070065091"   "20070076431"     |  |  |  |
|  | "20070103866"   "20070115686"     |  |  |  |
|  | "20070139929"   "20070140671"     |  |  |  |
|  | "20070151274"   "20070151664"     |  |  |  |
|  | "20070171353"   "20070206158"     |  |  |  |
|  | "20070211205"   "20070212211"     |  |  |  |
|  | "20070217221"   "20070237636"     |  |  |  |
|  | "20070267174"   "20080055534"     |  |  |  |
|  | "20080076342"   "20080099193"     |  |  |  |
|  | "20080148609"   "20080209934"     |  |  |  |
|  | "20080218446"   "20080236005"     |  |  |  |
|  | "20080267790"   "20080283234"     |  |  |  |
|  | "20080285290"   "4093355"         |  |  |  |
|  | "4593978"   "4634225"   "4748765" |  |  |  |
|  | "4763993"   "4921041"   "4952783" |  |  |  |
|  | "4952925"   "5029982"   "5088806" |  |  |  |
|  | "5132666"   "5247374"   "5282114" |  |  |  |
|  | "5293930"   "5351176"   "5432526" |  |  |  |
|  | "5535816"   "5559614"   "5621614" |  |  |  |
|  | "5657641"   "5748269"   "5765743" |  |  |  |
|  | "5767489"   "5808418"   "5818010" |  |  |  |

|      |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                |     |     |                     |
|------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|      |       | "5818694"   "5835179"   "5864465"  <br>"5869818"   "5869919"   "5903433"  <br>"5991153"   "6003015"   "6007205"  <br>"6089751"   "6104451"   "6157432"  <br>"6181070"   "6191839"   "6198222"  <br>"6211934"   "6215655"   "6351381"  <br>"6392727"   "6417900"   "6428198"  <br>"6473150"   "6493440"   "6504713"  <br>"6535266"   "6628355"   "6727468"  <br>"6839104"   "6885412"   "6886942"  <br>"6891135"   "6909486"   "6943768"  <br>"6961108"   "7015470"   "7059757"  <br>"7083285"   "7190587"   "7209349"  <br>"7212403"   "7284874"   "7457113"  <br>"7480140"   "7535543"   "7602469"  <br>"7667964"   "7752858"   "7753567"  <br>"7800706"   "7813124"   "7995342"  <br>"8004648"   "8035968"   "8081465"  <br>"8102173"   "8142027"   "8208115"  <br>"8223311"   "8241573"   "8248784"  <br>"8254121"   "8269916"   "8270163"  <br>"8274622"   "8274789"   "8300203"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8649170"  <br>"8649176"   "8654302"   "8678603"  <br>"8693185"   "8700226"   "8711321"  <br>"8749749"   "8755021"   "8760613"  <br>"8767165"   "8773633"   "8804091"  <br>"8823916"   "8827472"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525").PN. |                                |     |     |                     |
| S130 | 15    | ("9470924"   "9500896"   "9516485"  <br>"9549490"   "9594271"   "9613548"  <br>"9622392"   "9629287"   "9648790"  <br>"9655289"   "9723765"   "9797588"  <br>"9801305"   "9835893"  <br>"D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/09/14<br>02:15 |
| S131 | 5     | ("20040042174"   "20050127796"  <br>"20090231807"   "6476883"  <br>"7762707").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/09/14<br>02:15 |
| S132 | 1,020 | ((closed loop and open loop) with (gas<br>or cool\$ or dissipation)) and (display<br>or panel or screen)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |

|      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                |     |     |                     |
|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S133 | 28,454 | ((closed and open) with (gas or cool\$3 or dissipation)) and (display or panel or screen)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S134 | 1,721  | S133 and ("361".clas. or H05K\$.cpc. or G06F\$.cpc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S135 | 106    | ("20020050793"   "20050073639"   "20170175411"   "6125565"   "6850209"   "7525633"   "7535547"   "8827472"   "9655289"   "20020148600"   "20030128511"   "20040012722"   "20040035558"   "20050073632"   "20050134526"   "20060034051"   "20060177587"   "20060199514"   "20060209266"   "20070076431"   "20070139929"   "20070267174"   "20080055534"   "20080267790"   "20080283234"   "20090154096"   "20100182562"   "20100220249"   "20110051071"   "20110261523"   "20140085564"   "20150264826"   "20160192536"   "20160242329"   "20170074453"   "20170111521"   "4593978"   "5293930"   "5835179"   "5864465"   "6157432"   "6181070"   "6198222"   "6428198"   "6943768"   "7015470"   "7190587"   "8142027"   "8223311"   "8241573"   "8270163"   "8274789"   "8472191"   "8700226"   "9089079"   "9119330"   "D608775"   "20020112026"   "20090059518"   "20170163519"   "20170332523"   "6701143"   "7682047"   "9801305"   "D657422"   "D669938"   "20020126248"   "20020154255"   "20030020884"   "20040036834"   "20040165139"   "20050012722"   "20050229630"   "20050237714"   "20060132699"   "20070103866"   "20070212211"   "20090279240"   "20100162747"   "20100171889"   "20100232107"   "20120006523"   "20120012300"   "20120106081"   "20120249402"   "20130201685"   "20150319882"   "20160302331"   "20170111520"   "5748269"   "5869919"   "5991153"   "6089751"   "6886942"   "7059757"   "7212403"   "8274622"   "8482695"   "8854595"   "9173322"   "9282676"   "9622392" | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |

|      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                |     |     |                     |
|------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
|      |   | "20020009978"   "20020164962"  <br>"20070103863"   "20120188481").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                |     |     |                     |
| S136 | 0 | (<br>"20020050793"   "20050073639"  <br>"20170175411"   "6125565"  <br>"6850209"   "7525633"   "7535547"  <br>"8827472"   "9655289"  <br>"20020148600"   "20030128511"  <br>"20040012722"   "20040035558"  <br>"20050073632"   "20050134526"  <br>"20060034051"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20070076431"   "20070139929"  <br>"20070267174"   "20080055534"  <br>"20080267790"   "20080283234"  <br>"20090154096"   "20100182562"  <br>"20100220249"   "20110051071"  <br>"20110261523"   "20140085564"  <br>"20150264826"   "20160192536"  <br>"20160242329"   "20170074453"  <br>"20170111521"   "4593978"  <br>"5293930"   "5835179"   "5864465"  <br>"6157432"   "6181070"   "6198222"  <br>"6428198"   "6943768"   "7015470"  <br>"7190587"   "8142027"   "8223311"  <br>"8241573"   "8270163"   "8274789"  <br>"8472191"   "8700226"   "9089079"  <br>"9119330"   "D608775"  <br>"20020112026"   "20090059518"  <br>"20170163519"   "20170332523"  <br>"6701143"   "7682047"   "9801305"  <br>"D657422"   "D669938"  <br>"20020126248"   "20020154255"  <br>"20030020884"   "20040036834"  <br>"20040165139"   "20050012722"  <br>"20050229630"   "20050237714"  <br>"20060132699"   "20070103866"  <br>"20070212211"   "20090279240"  <br>"20100162747"   "20100171889"  <br>"20100232107"   "20120006523"  <br>"20120012300"   "20120106081"  <br>"20120249402"   "20130201685"  <br>"20150319882"   "20160302331"  <br>"20170111520"   "5748269"  <br>"5869919"   "5991153"   "6089751"  <br>"6886942"   "7059757"   "7212403"  <br>"8274622"   "8482695"   "8854595"  <br>"9173322"   "9282676"   "9622392"  <br>"20020009978"   "20020164962"  <br>"20070103863"  <br>"20120188481").PN.and"<br>@ad<="20080909" | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                              |     |     |                     |
|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
| S137 | 87  | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20030007109"  <br>"20030104210"   "20040036834"  <br>"20040105159"   "20040165139"  <br>"20050012722"   "20050073632"  <br>"20060082271"   "20060092348"  <br>"20060132699"   "20060177587"  <br>"20060209266"   "20070103866"  <br>"20070151664"   "20070206158"  <br>"20070212211"   "4093355"  <br>"4593978"   "4634225"   "5029982"  <br>"5088806"   "5247374"   "5559614"  <br>"5748269"   "5767489"   "5818010"  <br>"5869919"   "5991153"   "6089751"  <br>"6157432"   "6191839"   "6392727"  <br>"6417900"   "6493440"   "6535266"  <br>"6628355"   "6839104"   "6885412"  <br>"6909486"   "6943768"   "6961108"  <br>"7059757"   "7083285").PN. OR<br>("8274622").URPN.                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2020/09/14<br>02:15 |
| S138 | 296 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030043091"   "20030104210"  <br>"20030128511"   "20030214785"  <br>"20040012722"   "20040035558"  <br>"20040036834"   "20040103570"  <br>"20040105159"   "20040165139"  <br>"20040223299"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050073639"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050276053"  <br>"20050286131"   "20060012958"  <br>"20060018093"   "20060034051"  <br>"20060056994"   "20060082271"  <br>"20060092348"   "20060125998"  <br>"20060132699"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20060260790"   "20060262079"  <br>"20060266499"   "20060283579"  <br>"20070019419"   "20070030879"  <br>"20070047239"   "20070065091"  <br>"20070076431"   "20070103863"  <br>"20070103866"   "20070115686"  <br>"20070139929"   "20070140671"  <br>"20070151274"   "20070151664" | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2020/09/14<br>02:15 |

|                       |               |           |  |  |
|-----------------------|---------------|-----------|--|--|
| "20070171353"         | "20070206158" |           |  |  |
| "20070211205"         | "20070212211" |           |  |  |
| "20070217221"         | "20070237636" |           |  |  |
| "20070267174"         | "20080055534" |           |  |  |
| "20080076342"         | "20080099193" |           |  |  |
| "20080148609"         | "20080209934" |           |  |  |
| "20080218446"         | "20080236005" |           |  |  |
| "20080267790"         | "20080283234" |           |  |  |
| "20080285290"         | "20090009729" |           |  |  |
| "20090086430"         | "20090120629" |           |  |  |
| "20090126906"         | "20090126907" |           |  |  |
| "20090126914"         | "20090135365" |           |  |  |
| "20090147170"         | "20090154096" |           |  |  |
| "20090174626"         | "20090244472" |           |  |  |
| "20090279240"         | "20090306820" |           |  |  |
| "20100060861").PN. OR |               |           |  |  |
| ("20100079949"        | "20100162747" |           |  |  |
| "20100171889"         | "20100182562" |           |  |  |
| "20100220249"         | "20100226091" |           |  |  |
| "20100232107"         | "20100238394" |           |  |  |
| "20100321887"         | "20110001898" |           |  |  |
| "20110013114"         | "20110019363" |           |  |  |
| "20110051071"         | "20110058326" |           |  |  |
| "20110075361"         | "20110083460" |           |  |  |
| "20110083824"         | "20110085301" |           |  |  |
| "20110114384"         | "20110116000" |           |  |  |
| "20110122162"         | "20110141724" |           |  |  |
| "20110261523"         | "20120006523" |           |  |  |
| "20120012295"         | "20120012300" |           |  |  |
| "20120014063"         | "20120020114" |           |  |  |
| "20120038849"         | "20120044217" |           |  |  |
| "20120106081"         | "20120206687" |           |  |  |
| "20120249402"         | "20120255704" |           |  |  |
| "20120274876"         | "20120284547" |           |  |  |
| "20130170140"         | "20130201685" |           |  |  |
| "20130258659"         | "20130279154" |           |  |  |
| "20130294039"         | "20140085564" |           |  |  |
| "20140111758"         | "20140113540" |           |  |  |
| "4093355"             | "4593978"     | "4634225" |  |  |
| "4748765"             | "4763993"     | "4921041" |  |  |
| "4952783"             | "4952925"     | "5029982" |  |  |
| "5088806"             | "5247374"     | "5282114" |  |  |
| "5293930"             | "5432526"     | "5535816" |  |  |
| "5559614"             | "5621614"     | "5657641" |  |  |
| "5748269"             | "5765743"     | "5767489" |  |  |
| "5808418"             | "5818010"     | "5818694" |  |  |
| "5835179"             | "5864465"     | "5869818" |  |  |
| "5869919"             | "5903433"     | "5991153" |  |  |
| "6003015"             | "6007205"     | "6089751" |  |  |
| "6104451"             | "6157432"     | "6181070" |  |  |
| "6191839"             | "6198222"     | "6211934" |  |  |
| "6215655"             | "6351381"     | "6392727" |  |  |
| "6417900"             | "6428198"     | "6473150" |  |  |

|      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |     |     |                     |
|------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|      |    | "6493440"   "6504713"   "6535266"  <br>"6628355"   "6714410"   "6727468"  <br>"6825828"   "6839104"   "6885412"  <br>"6886942"   "6891135"   "6909486"  <br>"6943768"   "6961108"   "7015470"  <br>"7059757"   "7083285"   "7157838"  <br>"7161803"   "7190587"  <br>"7209349").PN. OR ("7212403"  <br>"7259964"   "7269023"   "7284874"  <br>"7452121"   "7457113"   "7480140"  <br>"7535543"   "7591508"   "7602469"  <br>"7667964"   "7752858"   "7753567"  <br>"7800706"   "7813124"   "7903416"  <br>"7995342"   "8004648"   "8035968"  <br>"8081465"   "8102173"   "8142027"  <br>"8208115"   "8223311"   "8241573"  <br>"8248784"   "8254121"   "8269916"  <br>"8270163"   "8274622"   "8274789"  <br>"8300203"   "8320119"   "8351014"  <br>"8358397"   "8369083"   "8373841"  <br>"8379182"   "8400608"   "8472174"  <br>"8472191"   "8482695"   "8497972"  <br>"8649170"   "8649176"   "8654302"  <br>"8678603"   "8693185"   "8700226"  <br>"8711321"   "8749749"   "8755021"  <br>"8760613"   "8767165"   "8773633"  <br>"8804091"   "8823916"   "8854572"  <br>"8854595"   "8879042"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9723765"  <br>"D608775").PN. OR<br>("10088702").URPN. |                              |     |     |                     |
| S139 | 58 | ("20010001459"   "20020126248"  <br>"20020149714"   "20060199514"  <br>"20070212211"   "6157432"  <br>"6535266"   "6943768"   "7059757"  <br>"20070206158"   "20020033919"  <br>"20040105159"   "20050012722"  <br>"20070103866"   "20100182562"  <br>"4593978"   "5748269"   "6191839"  <br>"6885412"   "20050286131"  <br>"20060177587"   "20070206158"  <br>"4093355"   "5559614"   "6089751"  <br>"6392727"   "6417900"   "5869919"  <br>"20030007109"   "20050073632"  <br>"20060092348"   "4634225"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2020/09/14<br>02:15 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |     |     |                     |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|      |     | "5029982"   "5088806"   "6839104"  <br>"7083285"   "20010019454"  <br>"20020101553"   "20030104210"  <br>"20070140671"   "6493440"  <br>"5991153"   "20040165139"  <br>"20050213950"   "5767489"  <br>"20060132699"   "20060209266"  <br>"7284874"   "20050127796"  <br>"20060082271"   "5247374"  <br>"5818010"   "6628355"   "6909486"  <br>"6961108"   "20070151664"  <br>"20060082271"   "20060132699"  <br>"20020033919"   "20040036834"  <br>"20070019419"   "20110013114").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |     |     |                     |
| S140 | 255 | ("20010001459"   "20010019454"  <br>"20020033919"   "20020101553"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020167637"  <br>"20030007109"   "20030020884"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035558"   "20040036834"  <br>"20040103570"   "20040105159"  <br>"20040165139"   "20050012039"  <br>"20050012722"   "20050062373"  <br>"20050073632"   "20050127796"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050276053"  <br>"20050286131"   "20060012958"  <br>"20060012985"   "20060018093"  <br>"20060034051"   "20060056994"  <br>"20060082271"   "20060092346"  <br>"20060092348"   "20060125998"  <br>"20060132699"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20060260790"   "20060262079"  <br>"20060266499"   "20060283579"  <br>"20070019419"   "20070030879"  <br>"20070047239"   "20070065091"  <br>"20070076431"   "20070103866"  <br>"20070115686"   "20070139929"  <br>"20070140671"   "20070151274"  <br>"20070151664"   "20070171353"  <br>"20070206158"   "20070211205"  <br>"20070212211"   "20070217221"  <br>"20070237636"   "20070267174"  <br>"20080055534"   "20080076342"  <br>"20080099193"   "20080148609"  <br>"20080209934"   "20080218446"  <br>"20080236005"   "20080267790" | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2020/09/14<br>02:15 |

|  |                                   |  |  |  |
|--|-----------------------------------|--|--|--|
|  | "20080283234"   "20080285290"     |  |  |  |
|  | "20090009729"   "20090086430"     |  |  |  |
|  | "20090120629"   "20090126906"     |  |  |  |
|  | "20090126907"   "20090126914"     |  |  |  |
|  | "20090135365"   "20090147170"     |  |  |  |
|  | "20090154096"   "20090174626"     |  |  |  |
|  | "20090244472"   "20090279240"     |  |  |  |
|  | "20090306820"   "20100060861"     |  |  |  |
|  | "20100079949").PN. OR             |  |  |  |
|  | ("20100182562"   "20110013114"    |  |  |  |
|  | "20110058326"   "4093355"         |  |  |  |
|  | "4593978"   "4634225"   "4748765" |  |  |  |
|  | "4763993"   "4921041"   "4952783" |  |  |  |
|  | "4952925"   "5029982"   "5088806" |  |  |  |
|  | "5247374"   "5282114"   "5293930" |  |  |  |
|  | "5432526"   "5535816"   "5559614" |  |  |  |
|  | "5621614"   "5657641"   "5748269" |  |  |  |
|  | "5765743"   "5767489"   "5808418" |  |  |  |
|  | "5818010"   "5818694"   "5835179" |  |  |  |
|  | "5864465"   "5869818"   "5869919" |  |  |  |
|  | "5903433"   "5991153"   "6003015" |  |  |  |
|  | "6007205"   "6089751"   "6104451" |  |  |  |
|  | "6157432"   "6181070"   "6191839" |  |  |  |
|  | "6198222"   "6211934"   "6215655" |  |  |  |
|  | "6351381"   "6392727"   "6417900" |  |  |  |
|  | "6428198"   "6473150"   "6493440" |  |  |  |
|  | "6504713"   "6535266"   "6628355" |  |  |  |
|  | "6727468"   "6839104"   "6885412" |  |  |  |
|  | "6886942"   "6891135"   "6909486" |  |  |  |
|  | "6943768"   "6961108"   "7015470" |  |  |  |
|  | "7059757"   "7083285"   "7190587" |  |  |  |
|  | "7209349"   "7212403"   "7284874" |  |  |  |
|  | "7457113"   "7480140"   "7535543" |  |  |  |
|  | "7602469"   "7667964"   "7752858" |  |  |  |
|  | "7753567"   "7800706"   "7813124" |  |  |  |
|  | "7995342"   "8004648"   "8035968" |  |  |  |
|  | "8081465"   "8102173"   "8142027" |  |  |  |
|  | "8208115"   "8223311"   "8241573" |  |  |  |
|  | "8248784"   "8254121"   "8269916" |  |  |  |
|  | "8270163"   "8274622"   "8274789" |  |  |  |
|  | "8300203"   "8320119"   "8351014" |  |  |  |
|  | "8358397"   "8369083"   "8373841" |  |  |  |
|  | "8379182"   "8400608"   "8472174" |  |  |  |
|  | "8472191"   "8482695"   "8497972" |  |  |  |
|  | "8649170"   "8649176"   "8654302" |  |  |  |
|  | "8678603"   "8693185"   "8700226" |  |  |  |
|  | "8711321"   "8749749"   "8755021" |  |  |  |
|  | "8760613"   "8767165"   "8773633" |  |  |  |
|  | "8804091"   "8823916"   "8854572" |  |  |  |
|  | "8854595"   "8879042"   "8988647" |  |  |  |
|  | "9030641"   "9089079"             |  |  |  |
|  | "9119325").PN. OR ("9119330"      |  |  |  |
|  | "9173322"   "9173325"   "9282676" |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                              |     |     |                     |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|-----|---------------------|
|      |     | "9285108"   "9313917"   "9370127"  <br>"9448569"   "9451060"   "9451733"  <br>"9456525"   "9470924"   "9500896"  <br>"9516485"   "9549490"   "9594271"  <br>"9613548"   "9622392"   "9629287"  <br>"9648790"   "9723765"  <br>"D608775").PN. OR ("9835893").URPN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |     |     |                     |
| S141 | 5   | ("20040042174"   "20050127796"  <br>"20090231807"   "6476883"  <br>"7762707").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT           | ADJ | OFF | 2020/09/14<br>02:15 |
| S142 | 4   | "15789331"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | OFF | 2020/09/14<br>02:15 |
| S143 | 12  | electronic display image assembly front<br>portion rear portion open loop ambient<br>air flow path closed loop gas circulation<br>path heat exchanger pathway gas<br>circulation device force circulating gas<br>air circulation device                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>USOCR | AND | OFF | 2020/09/14<br>02:15 |
| S144 | 202 | ("10080316"   "10088702"  <br>"10194564"   "10212845"  <br>"10278311"   "10314212"  <br>"10359659"   "10398066"  <br>"10420257"   "10485113"  <br>"10499516"   "10506738"  <br>"10506740"   "20010001459"  <br>"20010019454"   "20020009978"  <br>"20020033919"   "20020050793"  <br>"20020065046"   "20020084891"  <br>"20020101553"   "20020112026"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020164962"  <br>"20020167637"   "20030007109"  <br>"20030020884"   "20030043091"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035032"   "20040035558"  <br>"20040036622"   "20040036834"  <br>"20040042174"   "20040103570"  <br>"20040105159"   "20040135482"  <br>"20040165139"   "20040223299"  <br>"20050012039"   "20050012722"  <br>"20050062373"   "20050073632"  <br>"20050073639"   "20050127796"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050253699"  <br>"20050276053"   "20050286131"  <br>"20060012958"   "20060012985"  <br>"20060018093"   "20060034051" | US-PGPUB;<br>USPAT           | ADJ | OFF | 2020/09/14<br>02:15 |

|               |               |  |  |  |  |
|---------------|---------------|--|--|--|--|
| "20060056994" | "20060082271" |  |  |  |  |
| "20060092348" | "20060125998" |  |  |  |  |
| "20060132699" | "20060177587" |  |  |  |  |
| "20060199514" | "20060209266" |  |  |  |  |
| "20060260790" | "20060262079" |  |  |  |  |
| "20060266499" | "20060269216" |  |  |  |  |
| "20060283579" | "20070013647" |  |  |  |  |
| "20070019419" | "20070030879" |  |  |  |  |
| "20070047239" | "20070065091" |  |  |  |  |
| "20070076431" | "20070081344" |  |  |  |  |
| "20070103863" | "20070103866" |  |  |  |  |
| "20070115686" | "20070139929" |  |  |  |  |
| "20070140671" | "20070151274" |  |  |  |  |
| "20070151664" | "20070171353" |  |  |  |  |
| "20070206158" | "20070211205" |  |  |  |  |
| "20070212211" | "20070217221" |  |  |  |  |
| "20070230167" | "20070237636" |  |  |  |  |
| "20070267174" | "20080035315" |  |  |  |  |
| "20080054144" | "20080055534" |  |  |  |  |
| "20080076342" | "20080099193" |  |  |  |  |
| "20080148609" | "20080209934" |  |  |  |  |
| "20080218446" | "20080236005" |  |  |  |  |
| "20080267790" | "20080283234" |  |  |  |  |
| "20080285290" | "20080310116" |  |  |  |  |
| "20090009047" | "20090009729" |  |  |  |  |
| "20090059518" | "20090065007" |  |  |  |  |
| "20090086430" | "20090104989" |  |  |  |  |
| "20090120629" | "20090122218" |  |  |  |  |
| "20090126906" | "20090126907" |  |  |  |  |
| "20090126914" | "20090135365" |  |  |  |  |
| "20090147170" | "20090154096" |  |  |  |  |
| "20090174626" | "20090231807" |  |  |  |  |
| "20090241437" | "20090244472" |  |  |  |  |
| "20090251650" | "20090266507" |  |  |  |  |
| "20090279240" | "20090302727" |  |  |  |  |
| "20090306820" | "20090323275" |  |  |  |  |
| "20100060861" | "20100079949" |  |  |  |  |
| "20100162747" | "20100171889" |  |  |  |  |
| "20100182562" | "20100220249" |  |  |  |  |
| "20100226091" | "20100232107" |  |  |  |  |
| "20100238394" | "20100321887" |  |  |  |  |
| "20110001898" | "20110013114" |  |  |  |  |
| "20110019363" | "20110032489" |  |  |  |  |
| "20110051071" | "20110058326" |  |  |  |  |
| "20110072697" | "20110075361" |  |  |  |  |
| "20110083460" | "20110083824" |  |  |  |  |
| "20110085301" | "20110085302" |  |  |  |  |
| "20110090630" | "20110114384" |  |  |  |  |
| "20110116000" | "20110116231" |  |  |  |  |
| "20110122162" | "20110141672" |  |  |  |  |
| "20110141724" | "20110261523" |  |  |  |  |
| "20110297810" | "20120006523" |  |  |  |  |
| "20120012295" | "20120012300" |  |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |     |     |                     |
|------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
|      |     | "20120014063"   "20120020114"  <br>"20120038849"   "20120044217"  <br>"20120105790"   "20120106081"  <br>"20120188481"   "20120206687"  <br>"20120249402"   "20120255704"  <br>"20120274876"   "20120284547"  <br>"20120327600"   "20130170140"  <br>"20130173358"   "20130176517"  <br>"20130201685"   "20130258659"  <br>"20130279154"   "20130294039"  <br>"20130344794"   "20140044147"  <br>"20140085564"   "20140111758"  <br>"20140113540"   "20140134767"  <br>"20140190240"   "20140268657"  <br>"20140313698"   "20140314395"  <br>"20140361138"   "20150009627").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |     |     |                     |
| S145 | 230 | ("20150192371"   "20150253611"  <br>"20150264826"   "20150319882"  <br>"20150366101"   "20160041423"  <br>"20160044829"   "20160162297"  <br>"20160192536"   "20160195254"  <br>"20160198588"   "20160238876"  <br>"20160242329"   "20160242330"  <br>"20160249493"   "20160302331"  <br>"20170023823"   "20170068042"  <br>"20170074453"   "20170083043"  <br>"20170083062"   "20170111486"  <br>"20170111520"   "20170111521"  <br>"20170127579"   "20170140344"  <br>"20170147992"   "20170163519"  <br>"20170175411"   "20170188490"  <br>"20170245400"   "20170257978"  <br>"20170332523"   "20180042134"  <br>"20180116073"   "20180314103"  <br>"20180315356"   "20180317330"  <br>"20180317350"   "20180364519"  <br>"20190037738"   "20190089176"  <br>"20190133002"   "20190208674"  <br>"20190239365"   "20190289754"  <br>"20190327865"   "4093355"  <br>"4593978"   "4634225"   "4748765"  <br>"4763993"   "4921041"   "4952783"  <br>"4952925"   "5029982"   "5088806"  <br>"5132666"   "5247374"   "5282114"  <br>"5293930"   "5351176"   "5432526"  <br>"5535816"   "5559614"   "5621614"  <br>"5657641"   "5748269"   "5765743"  <br>"5767489"   "5808418"   "5818010"  <br>"5818694"   "5835179"   "5864465"  <br>"5869818"   "5869919"   "5903433"  <br>"5991153"   "6003015"   "6007205"  <br>"6043979"   "6089751"   "6104451" | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:15 |

|      |       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |    |     |                     |
|------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----|-----|---------------------|
|      |       | "6125565"   "6157432"   "6181070"  <br>"6191839"   "6198222"   "6211934"  <br>"6215655"   "6351381"   "6359390"  <br>"6392727"   "6417900"   "6428198"  <br>"6437673"   "6473150"   "6476883"  <br>"6493440"   "6504713"   "6535266"  <br>"6628355"   "6643130"   "6683639"  <br>"6701143"   "6714410"   "6727468"  <br>"6742583"   "6812851"   "6825828"  <br>"6833992"   "6839104"   "6850209"  <br>"6885412"   "6886942"   "6891135"  <br>"6909486"   "6943768"   "6961108"  <br>"7015470"   "7059757"   "7083285"  <br>"7157838"   "7161803"   "7190416"  <br>"7190587"   "7209349"   "7212403"  <br>"7259964"   "7269023"   "7284874"  <br>"7396145"   "7447018"   "7452121"  <br>"7457113"   "7480140"   "7535543"  <br>"7591508"   "7602469"   "7667964"  <br>"7682047"   "7752858"   "7753567"  <br>"7762707"   "7800706"   "7813124"  <br>"7903416"   "7995342"   "8004648"  <br>"8035968"   "8081465"   "8102173"  <br>"8142027"   "8208115"   "8223311"  <br>"8241573"   "8248784"   "8254121"  <br>"8269916"   "8270163"   "8274622"  <br>"8274789"   "8300203"   "8310824"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8590602"  <br>"8649170"   "8649176"   "8654302"  <br>"8678603"   "8693185"   "8700226"  <br>"8711321"   "8749749"   "8755021"  <br>"8758144"   "8760613"   "8767165"  <br>"8773633"   "8804091"   "8823916"  <br>"8827472"   "8854572"   "8854595"  <br>"8879042"   "8976313"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9703230"   "9723765"   "9797588"  <br>"9801305"   "9823690"   "9835893"  <br>"9894800"   "D608775").PN. |                    |    |     |                     |
| S146 | 1,007 | (("20180042134") or ("10506740") or ("9801305") or ("9173325") or ("20150237761") or ("20160041423"))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | US-PGPUB;<br>USPAT | OR | OFF | 2020/09/14<br>02:15 |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  |  |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
|  | or ("9835893") or ("8654302") or<br>("20110013114") or ("8351014") or<br>("20150366101") or ("20110085301")<br>or ("9119325") or ("9030641") or<br>("20130279154") or ("20140111758")<br>or ("20030094006") or ("6684653") or<br>("20080041077") or ("9723765") or<br>("20160242329") or ("10278311") or<br>("20170332523") or ("10548247") or<br>("20190208674") or ("20180310439")<br>or ("20070002536") or ("10485147")<br>or ("20080055856") or ("7486513") or<br>("7342789") or ("8472174") or<br>("20170257978") or ("20110058326")<br>or ("20080055851") or<br>("20080212282") or ("9629287") or<br>("20140295748") or ("8988647") or<br>("20090255142") or ("20120106081")<br>or ("8823916") or ("10266984") or<br>("20140369003") or ("4327274") or<br>("9119330") or ("20120012300") or<br>("20170303442") or ("20080245083")<br>or ("20130170139") or ("8322155") or<br>("9115916") or ("8369083") or<br>("9267714") or ("20140123683") or<br>("10045467") or ("8649170") or<br>("20170127579") or ("20080041076")<br>or ("20190289754") or<br>("20130139530") or ("20160345461")<br>or ("8327656") or ("10314212") or<br>("20180343774") or ("9175434") or<br>("20170127556") or ("9699939") or<br>("20200029460") or ("20150195959")<br>or ("10398063") or ("9560789") or<br>("9549490") or ("10524384") or<br>("20170268159") or ("10400385") or<br>("20170234623") or ("20140345834")<br>or ("7864527") or ("6924981") or<br>("7729115") or ("20120281161") or<br>("9451733") or ("20040190247") or<br>("8755021") or ("4026263") or<br>("20040100770") or ("20120105790")<br>or ("20080030951") or ("6775137") or<br>("3277956") or ("8749749") or<br>("20050263142") or ("20110238143")<br>or ("6085701") or ("7165539") or<br>("20030091363") or ("6771916") or<br>("8590602") or ("20090086428") or<br>("20190059175") or ("10214037") or<br>("20180162151") or ("20120206687")<br>or ("9897336") or ("20180364519") or<br>("20170023823") or ("6345511") or<br>("20110099834") or ("20090052132") |  |  |  |  |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|

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|  | or ("10143106") or ("10398058") or<br>("8627581") or ("8804091") or<br>("9408332") or ("20190193436") or<br>("9873273") or ("9470924") or<br>("6308526") or ("20160236494") or<br>("20160016423") or ("20160143191")<br>or ("20160377303") or<br>("20180317330") or ("8773633") or<br>("10359659") or ("10088702") or<br>("9278564") or ("7918799") or<br>("20150009627") or ("20160192536")<br>or ("20110261523").PN. or<br>("9282676") or ("20180223846") or<br>("20090209863") or ("10499516") or<br>("20190335613") or ("20150022967")<br>or ("9797588") or ("20100251742") or<br>("20160195254") or ("20140321103")<br>or ("20150327409") or ("9089079") or<br>("20100305775") or ("20190111758")<br>or ("9370127") or ("9285108") or<br>("20160302331") or ("2299939") or<br>("8145363") or ("6205796") or<br>("20020134544") or ("6367410") or<br>("20190037738") or ("20190170383")<br>or ("7086453") or ("20050056404") or<br>("8152904") or ("10514176") or<br>("20110072970") or ("20090086432")<br>or ("20110077555") or<br>("20180235066") or ("8622162") or<br>("6408630") or ("6196003") or<br>("20140313698") or ("20120180979")<br>or ("20010008071") or<br>("20180035569") or ("5402844") or<br>("20020012375") or ("20090185346")<br>or ("20160050797") or ("6408937") or<br>("20190335573") or ("20190239365")<br>or ("20010021847") or ("5901167") or<br>("20110195652") or ("20070279861")<br>or ("6843306") or ("6164369") or<br>("8425435") or ("7411785") or<br>("10010722") or ("10160290") or<br>("7841721") or ("4182303") or<br>("20110139525") or ("5931016") or<br>("7724516") or ("20180106484") or<br>("20150351214") or ("9010141") or<br>("20160178716") or ("5936646") or<br>("20130190661") or ("RE43007") or<br>("20160066478") or ("20030057546")<br>or ("7796376") or ("4840225") or<br>("9967964") or ("20040049178") or<br>("9204578") or ("6828675") or<br>("20190170604") or ("20150223367")<br>or ("9575149") or ("20170115366") or |  |  |  |  |
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|  | ("6044648") or ("20180335053") or<br>("20020116933") or ("6635053") or<br>("10082549") or ("5657641") or<br>("20170321907") or ("6490874") or<br>("20140260965") or ("7318821") or<br>("6592577") or ("20170261273") or<br>("6674642") or ("20040001310") or<br>("20050090814") or ("7207986") or<br>("20070028769") or ("4534780") or<br>("5269146") or ("20080055563") or<br>("9885526") or ("20110297351") or<br>("9353966") or ("RE30043") or<br>("20100232107") or ("20030077499")<br>or ("4056091") or ("6830842") or<br>("20160265805") or ("20140190037")<br>or ("8379182") or ("6298681") or<br>("20040040324") or ("20110077556")<br>or ("6334323") or ("8932238") or<br>("2819330") or ("4478055") or<br>("7403392") or ("20110126559") or<br>("5611476") or ("7911782") or<br>("7946986") or ("20200005592") or<br>("6167947") or ("20030217566") or<br>("4860824") or ("20020092316") or<br>("5906108") or ("20030145616") or<br>("6321547") or ("20030145621") or<br>("20110197613").PN. or ("7093454")<br>or ("8297070") or ("20180094840") or<br>("20090056910") or ("20040048123")<br>or ("20060218812") or<br>("20120137716") or ("4344479") or<br>("20060080996") or ("10502468") or<br>("8051672") or ("20150373882") or<br>("5476138") or ("6021150") or<br>("20110077557") or ("8009419") or<br>("8381541") or ("8105265") or<br>("7537849") or ("7010929") or<br>("5835349") or ("10477724") or<br>("6494252") or ("6964176") or<br>("20160270254") or ("9210830") or<br>("20080156014") or ("6350033") or<br>("20090107160") or ("4906182") or<br>("20140146468") or ("10130006") or<br>("20070144192") or ("20180059270")<br>or ("20030011983") or<br>("20150369514") or ("20180100671")<br>or ("20120131944") or ("10054698")<br>or ("6948328") or ("10415848") or<br>("9258926") or ("8117864") or<br>("20150083368") or ("6587336") or<br>("20040042905") or ("20170021695")<br>or ("20100057263") or ("7788940") or<br>("20090099498") or ("6957026") or |  |  |  |  |
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|  | ("20180214303") or ("10398066") or<br>("4967830") or ("6793465") or<br>("20140146467") or ("20160189842")<br>or ("20050180772") or<br>("20150373874") or ("8947873") or<br>("20080141708") or ("20120031392")<br>or ("4397121") or ("5529120") or<br>("9551358") or ("20180291798") or<br>("20160252289") or ("20190053399")<br>or ("20190239381") or ("5193735") or<br>("4318722") or ("5982619") or<br>("5285644") or ("10292305") or<br>("20170067643") or ("9568206") or<br>("20140260383") or ("5538075") or<br>("7963118") or ("5046554") or<br>("5570740") or ("7701715") or<br>("20150250067") or ("20160037685")<br>or ("20190249882") or ("9441839") or<br>("4773589") or ("9784490") or<br>("20120130298") or ("8979788") or<br>("20110277967") or ("4026283") or<br>("20190200488") or ("10440856") or<br>("20080024978") or ("20120024501")<br>or ("20130021746") or ("10015896")<br>or ("8959941") or ("8422218") or<br>("20130032310") or ("8591206") or<br>("20140111940") or ("9101078") or<br>("4953365") or ("8964391") or<br>("5590539") or ("6026565") or<br>("20160258657") or ("20140360492")<br>or ("9982920") or ("20090178780") or<br>("5825621") or ("8854572") or<br>("20130068441") or ("5748656") or<br>("2513373") or ("4285210") or<br>("5564980") or ("8248801") or<br>("20120162906") or ("8361059") or<br>("20150285516") or ("20100139306")<br>or ("20130170140") or<br>("20140123493") or ("20190171092")<br>or ("3415312") or ("5086754") or<br>("8435277") or ("6796372") or<br>("20140290567") or ("20140124167")<br>or ("8899171").PN. or ("7701714") or<br>("20070274043") or ("4242872") or<br>("8964390") or ("20100238394") or<br>("20200025408") or ("20180370263")<br>or ("20100296245") or<br>("20180038660") or ("4307578") or<br>("20200037456") or ("5467250") or<br>("20080306577") or ("7724517") or<br>("20110075363") or ("20190291542")<br>or ("7780657") or ("6109339") or<br>("6649290") or ("20190327865") or |  |  |  |  |
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|  | ("20160230634") or ("20020168556")<br>or ("10434804") or ("5065586") or<br>("8236240") or ("20070209380") or<br>("20170122573") or ("7778013") or<br>("9969193") or ("9261310") or<br>("6506111") or ("5524442") or<br>("4674476") or ("20130228313") or<br>("5349829") or ("4922890") or<br>("8274622") or ("20070097604") or<br>("8358397") or ("2564344") or<br>("20020173266") or ("8760867") or<br>("20170307282") or ("20070274858")<br>or ("7414845") or ("4987881") or<br>("20180317350") or ("20180363278")<br>or ("4142575") or ("20080017355") or<br>("20070267741") or ("4090370") or<br>("20100000758") or ("20070246678")<br>or ("20170064874") or<br>("20110000710") or ("20130025818")<br>or ("5895418") or ("7213639") or<br>("20090193830") or ("20180073753")<br>or ("20070233055") or<br>("20150273974") or ("20090107657")<br>or ("7956284") or ("20060207757") or<br>("5110264") or ("20150224800") or<br>("20070093799") or ("9496200") or<br>("20070241468") or ("20130206058")<br>or ("5937667") or ("4589712") or<br>("20060069418") or ("8210205") or<br>("20180292142") or ("20140262180")<br>or ("20070161974") or ("4706739") or<br>("RE45111") or ("20170080730") or<br>("4449764") or ("10264716") or<br>("9789746") or ("20180160819") or<br>("20190193439") or ("9048344") or<br>("7510174") or ("10442226") or<br>("20080024980") or ("20050259397")<br>or ("20030012234") or<br>("20190113247") or ("5832986") or<br>("20180128510") or ("20080196870")<br>or ("7795533") or ("20090257773") or<br>("20180275293") or ("20150354874")<br>or ("6914919") or ("5606870") or<br>("20200056795") or ("7652884") or<br>("5749243") or ("6138469") or<br>("20180214302") or ("9387709") or<br>("4866743") or ("20040163797") or<br>("20170311476") or ("7203063") or<br>("20120227389") or ("20100007258")<br>or ("7325410") or ("5267446") or<br>("7418825") or ("20110075353") or<br>("2320501") or ("20190198895") or<br>("9759438") or ("20070236881") or |  |  |  |  |
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|  | ("20130252533") or ("20030151892")<br>or ("5113844") or ("20170345346") or<br>("20110232869") or ("6232682") or<br>("4701415") or ("20040083740") or<br>("5499277").PN. or ("20110140820")<br>or ("7165412") or ("20170363306") or<br>("5320167") or ("20060254753") or<br>("20170311487") or ("7377935") or<br>("9354001") or ("7258161") or<br>("20090107159") or ("10524397") or<br>("20170245400") or ("8081054") or<br>("20050205241") or ("7492593") or<br>("5533357") or ("7334630") or<br>("6779348") or ("20060126296") or<br>("4505118") or ("10514174") or<br>("7128025") or ("20150259847") or<br>("10488089") or ("20160003546") or<br>("20180094841") or ("20080023178")<br>or ("20020023453") or ("7096928") or<br>("10006721") or ("20110077514") or<br>("4158950") or ("20080158815") or<br>("20180283803") or ("20160320149")<br>or ("20190219285") or<br>("20020148415") or ("9042099") or<br>("20190184852") or ("7832231") or<br>("4488192") or ("9613548") or<br>("20090200000") or ("20140133099")<br>or ("20120327600") or ("7184269") or<br>("20160198588") or ("20180199467")<br>or ("20170321911") or ("10074954")<br>or ("8929075") or ("6920043") or<br>("7013955") or ("20180315356") or<br>("7802734") or ("8250877") or<br>("4297318") or ("20020050338") or<br>("20130055748") or ("20080148760")<br>or ("8899066") or ("9943014") or<br>("20060000582") or ("7397661") or<br>("20200025429") or ("20080259566")<br>or ("20170328589") or ("7677057") or<br>("9631880") or ("20120279684") or<br>("9313931") or ("5605047") or<br>("10371451") or ("20150068171") or<br>("20010013404") or ("20030136134")<br>or ("20020139514") or ("9810439") or<br>("20050024831") or ("5458188") or<br>("8482695") or ("20030159456") or<br>("20090112368") or ("8037714") or<br>("10309665") or ("20120285543") or<br>("5560362") or ("20180156228") or<br>("20140133096") or ("9042098") or<br>("7969727") or ("4242876") or<br>("20180017345") or ("20070295492")<br>or ("20060177714") or ("6280318") or |  |  |  |  |
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|  | <p> ("20160290666") or ("4330946") or<br/> ("20190021186") or ("20130056177")<br/> or ("20070258612") or<br/> ("20150292775") or ("20040095728")<br/> or ("7672125") or ("4622947") or<br/> ("20120121487") or ("10060350") or<br/> ("6944023") or ("7757753") or<br/> ("6889750") or ("20100277864") or<br/> ("20150165871") or ("20160298540")<br/> or ("20080141686") or<br/> ("20160061532") or ("20120031601")<br/> or ("20090260372") or ("10241103")<br/> or ("4348604") or ("20170328879") or<br/> ("20080049396") or ("7458228") or<br/> ("2990695") or ("20170356597") or<br/> ("4449511") or ("4370861") or<br/> ("9313930") or ("5477687") or<br/> ("5357586") or ("8693199") or<br/> ("7340912") or ("6775996")).PN. or<br/> (("7073566") or ("7710722")) or<br/> ("20080024981") or ("20080024987")<br/> or ("20170172016") or<br/> ("20190141911") or ("7026065") or<br/> ("20050258259") or ("7818835") or<br/> ("20060219381") or ("20090216304")<br/> or ("7555792") or ("20190316948") or<br/> ("20090288440") or ("20080142203")<br/> or ("4022550") or ("5692467") or<br/> ("4324110") or ("20050006488") or<br/> ("10544902") or ("4373577") or<br/> ("5586932") or ("7134486") or<br/> ("4146086") or ("7980094") or<br/> ("20050174714") or ("5816318") or<br/> ("4848318") or ("20100118275") or<br/> ("2179734") or ("7802439") or<br/> ("5205276") or ("9441840") or<br/> ("5596622") or ("9593876") or<br/> ("7511960") or ("2873582") or<br/> ("5522216") or ("20150153109") or<br/> ("20130105120") or ("4380156") or<br/> ("20050241803") or ("20080161976")<br/> or ("20070073369") or ("7036559") or<br/> ("20110094714") or ("20100319365")<br/> or ("20090120630") or<br/> ("20180139864") or ("20080135224")<br/> or ("20080310112") or<br/> ("20090173473") or ("4690209") or<br/> ("8157626") or ("20180136187") or<br/> ("20080161975") or ("9151540") or<br/> ("3290028") or ("20070074682") or<br/> ("6992483") or ("5253485") or<br/> ("2526874") or ("10334764") or<br/> ("7832992") or ("8619425") or </p> |  |  |  |  |
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|  | ("20110315364") or ("20170223870")<br>or ("5042262") or ("6728102") or<br>("5582241") or ("20030044663") or<br>("4704658") or ("7131486") or<br>("10174975") or ("20170176605") or<br>("20130312645") or ("9038406") or<br>("7819634") or ("7673592") or<br>("20150000319") or ("20030205363")<br>or ("4147299") or ("9605875") or<br>("20080062647") or ("3373732") or<br>("20090225514") or ("8941993") or<br>("8453471") or ("20090225513") or<br>("7184267") or ("20180135880") or<br>("9476649") or ("20180263811") or<br>("20080156887") or ("10458682") or<br>("4495545") or ("20100011803") or<br>("10240845") or ("20020148604") or<br>("6061087") or ("20170038123") or<br>("4505131") or ("5239834") or<br>("5610968") or ("20080055848") or<br>("20140053558") or ("9173324") or<br>("6829900") or ("6909283") or<br>("20190226461") or ("6209622") or<br>("20130047653") or ("9689720") or<br>("20160245558") or ("4033825") or<br>("20090209193") or ("8178831") or<br>("20150047384") or ("20190331369")<br>or ("4803846") or ("7854135") or<br>("9392733") or ("20170067644") or<br>("5694442") or ("7975494") or<br>("20180352676") or ("20030085024")<br>or ("20120318328") or<br>("20190113259") or ("20180324976")<br>or ("8055388") or ("20130334447") or<br>("6007205") or ("20100149754").PN.<br>or (("20190219311") or ("8235777") or<br>("7911793") or ("9746235") or<br>("5732123") or ("20080176503") or<br>("4611791") or ("4294225") or<br>("8546717") or ("7497252") or<br>("7341201") or ("4168706") or<br>("5050390") or ("9351694") or<br>("20120125028") or ("8699737") or<br>("5088295") or ("4333517") or<br>("9267737") or ("8189334") or<br>("8297067") or ("9752803") or<br>("20110315363") or ("6991024") or<br>("10485113") or ("20160116224") or<br>("20130083479") or ("20120160454")<br>or ("20090090115") or ("4092088") or<br>("7830657") or ("7856838") or<br>("7534167") or ("20030231467") or<br>("20180199450") or ("4430994") or |  |  |  |  |
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|  | ("8601827") or ("9223360") or<br>("20180314103") or ("20130220579")<br>or ("9338924") or ("20080160901") or<br>("20080141707") or ("20110272120")<br>or ("9835357") or ("20110061591") or<br>("4190099") or ("20170038346") or<br>("4336692") or ("8089764") or<br>("7878889") or ("5572880") or<br>("6896612") or ("9918413") or<br>("8235776") or ("7957132") or<br>("8693198") or ("6131571") or<br>("20100307716") or ("20180328600")<br>or ("6279337") or ("8431404") or<br>("20150343554") or ("20110030932")<br>or ("20160120058") or ("7363879") or<br>("20170164525") or ("20120120542")<br>or ("20190143445") or<br>("20090007581") or ("20200039260")<br>or ("20140153689") or ("9908195") or<br>("20190069449") or ("4755236") or<br>("20110207391") or ("20170181325")<br>or ("6497110") or ("9297571") or<br>("20060279930") or ("8968232") or<br>("5562411") or ("20080060372") or<br>("7185697") or ("20130269204") or<br>("20140260361") or ("5361591") or<br>("20110218600") or ("3470704") or<br>("6167621") or ("20030062149") or<br>("5689968") or ("20080196868") or<br>("9228779") or ("5890371") or<br>("RE36808") or ("20120012283") or<br>("6704198") or ("10568217") or<br>("20030164231") or ("20040089442")<br>or ("20110134604") or ("6942018") or<br>("10371443") or ("4485642") or<br>("7984684") or ("8467168") or<br>("20110105010") or ("9763366") or<br>("5724828") or ("20110289943") or<br>("20120171943") or ("20190196312")<br>or ("9086859") or ("20100078156") or<br>("20070268669") or ("6393730") or<br>("20180347578") or ("5240403") or<br>("4295342") or ("5348077") or<br>("20050098299") or ("20120318492")<br>or ("20180155969") or<br>("20090013553") or ("8467189") or<br>("5526650") or ("20140314395") or<br>("9283109") or ("7385810") or<br>("20110061832") or ("20070084463")<br>or ("20120167600") or ("9032742") or<br>("4589265").PN. or ("20110088883")<br>or ("20070030650") or ("10139159")<br>or ("9273875") or ("4138857") or |  |  |  |  |
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|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                |     |     |                     |
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|      |     | ("20020135981") or ("7610764") or<br>("4308042") or ("6053238") or<br>("9414519") or ("20080058697") or<br>("20120133256") or ("9267881") or<br>("20100246118") or ("9677822") or<br>("8439104") or ("9968010") or<br>("8378677") or ("4859405") or<br>("9055696") or ("6217440") or<br>("6865825") or ("20140151003") or<br>("8031468") or ("20120270310") or<br>("20130081790") or ("20120127657")<br>or ("20120167610") or<br>("20120075797") or ("20100188082")<br>or ("8240165") or ("7905106") or<br>("4265220") or ("10189114") or<br>("7348527") or ("20160120059") or<br>("10184699") or ("20130104414") or<br>("20040257766") or ("20010045104")<br>or ("6564795") or ("7905096") or<br>("20100321887") or ("9282684") or<br>("7946112") or ("20160288244") or<br>("20070102426") or ("9648790") or<br>("20180238623") or ("8119300") or<br>("20140250713") or ("20120118534")<br>or ("9128681") or ("10151539") or<br>("7040101") or ("4424190") or<br>("5467615") or ("8035968") or<br>("6182608") or ("20190053400") or<br>("6580609") or ("20060133033") or<br>("10288328") or ("8514575") or<br>("20180045138") or ("20040169771")<br>or ("9920708") or ("6230501") or<br>("20090260777") or ("20020121095")<br>or ("20030154724") or<br>("20090310300") or ("4046529") or<br>("20150182650") or ("5513558")).PN. |                                |     |     |                     |
| S147 | 428 | S146 and @ad<="20080320"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S148 | 29  | (US-20090154096-\$ or US-<br>20060082271-\$ or US-20180088398-\$<br>or US-20140334100-\$ or US-<br>20130194782-\$ or US-20120236499-\$<br>or US-20110167845-\$ or US-<br>20110162831-\$ or US-20110058326-\$<br>or US-20100177479-\$ or US-<br>20090086430-\$ or US-20080285290-\$<br>or US-20070081344-\$ or US-<br>20090279240-\$ or US-20040135482-\$<br>or US-20110085301-\$ or US-<br>20090244472-\$ or US-20090135365-\$<br>or US-20090126906-\$ or US-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | US-PGPUB;<br>USPAT             | ADJ | OFF | 2020/09/14<br>02:15 |

|      |         |                                                                                                                                                                                                   |                                                                            |     |     |                     |
|------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----|-----|---------------------|
|      |         | 20150009627-\$ or US-20130201685-\$ or US-20120188481-\$ or US-20110122162-\$).did. or (US-6493440-\$ or US-5991153-\$ or US-5869919-\$ or US-5748269-\$ or US-8274622-\$ or US-10088702-\$).did. |                                                                            |     |     |                     |
| S149 | 4,332   | ((("MANUFACTURING") near3 ("RESOURCES"))                                                                                                                                                          | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S150 | 2       | S149 and (enclosure and "electronic image assembly" and display and "open loop" and "closed loop").clm.                                                                                           | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S151 | 54      | S149 and ("open loop" and "closed loop").clm.                                                                                                                                                     | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S152 | 1,161   | cross flow heat exchanger                                                                                                                                                                         | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S153 | 264     | S152 and (LCD or display or panel)                                                                                                                                                                | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S154 | 3,706   | H05K7/202,206,20972.cpc.                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S155 | 617,836 | "59" and (LCD or display or panel)                                                                                                                                                                | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S156 | 3,706   | H05K7/202,206,20972.cpc.                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S157 | 3,706   | H05K7/202,206,20972.cpc.                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:15 |
| S158 | 626     | S157 and (LCD or display or panel)                                                                                                                                                                | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |
| S159 | 166     | S158 and @ad<="20080320"                                                                                                                                                                          | US-PGPUB;<br>USPAT;<br>IBM_TDB                                             | ADJ | OFF | 2020/09/14<br>02:15 |
| S160 | 966     | ((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))                                                                                                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:15 |

|      |       |                                                                                                        |                                                                            |     |     |                     |
|------|-------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----|-----|---------------------|
| S161 | 875   | ((Dunn) near2 (William)) or ((Hubbard) near3 (Tim)).inv.                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S162 | 4,332 | ((("MANUFACTURING") near3 ("RESOURCES"))                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S163 | 4,941 | S162 or S160                                                                                           | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S164 | 2     | S163 and (electronic image and cooling and enclosure and heat exchanger and (air or gas))              | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S165 | 2     | S163 and (electronic image and cooling and enclosure and heat exchanger and (air or gas))              | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:16 |
| S166 | 2     | S163 and ("electronic image assembly" and "cooling system" and enclosure and "heat exchanger" and air) | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:16 |
| S167 | 158   | S163 and ("open loop" and "closed loop")                                                               | US-PGPUB;<br>USPAT;<br>USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | ADJ | OFF | 2020/09/14<br>02:16 |
| S168 | 158   | S163 and ("open loop" and "closed loop")                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S169 | 149   | S168 and @ad<="20191209"                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB                                             | ADJ | OFF | 2020/09/14<br>02:16 |
| S170 | 966   | ((Dunn) near2 (William)) or ((Hubbard) near3 (Tim))                                                    | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S171 | 4,332 | ((("MANUFACTURING") near3 ("RESOURCES"))                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S172 | 4,941 | S171 or S170                                                                                           | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S173 | 158   | S172 and ("open loop" and "closed loop")                                                               | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S174 | 113   | S173 and cool\$3                                                                                       | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |
| S175 | 90    | S174 and (transparent same display)                                                                    | US-PGPUB;<br>USPAT                                                         | ADJ | OFF | 2020/09/14<br>02:16 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |     |     |                     |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
| S176 | 4   | "15789331"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:16 |
| S177 | 202 | ("10080316"   "10088702"  <br>"10194564"   "10212845"  <br>"10278311"   "10314212"  <br>"10359659"   "10398066"  <br>"10420257"   "10485113"  <br>"10499516"   "10506738"  <br>"10506740"   "20010001459"  <br>"20010019454"   "20020009978"  <br>"20020033919"   "20020050793"  <br>"20020065046"   "20020084891"  <br>"20020101553"   "20020112026"  <br>"20020126248"   "20020148600"  <br>"20020149714"   "20020154255"  <br>"20020164944"   "20020164962"  <br>"20020167637"   "20030007109"  <br>"20030020884"   "20030043091"  <br>"20030104210"   "20030128511"  <br>"20030214785"   "20040012722"  <br>"20040035032"   "20040035558"  <br>"20040036622"   "20040036834"  <br>"20040042174"   "20040103570"  <br>"20040105159"   "20040135482"  <br>"20040165139"   "20040223299"  <br>"20050012039"   "20050012722"  <br>"20050062373"   "20050073632"  <br>"20050073639"   "20050127796"  <br>"20050134525"   "20050134526"  <br>"20050213950"   "20050229630"  <br>"20050237714"   "20050253699"  <br>"20050276053"   "20050286131"  <br>"20060012958"   "20060012985"  <br>"20060018093"   "20060034051"  <br>"20060056994"   "20060082271"  <br>"20060092348"   "20060125998"  <br>"20060132699"   "20060177587"  <br>"20060199514"   "20060209266"  <br>"20060260790"   "20060262079"  <br>"20060266499"   "20060269216"  <br>"20060283579"   "20070013647"  <br>"20070019419"   "20070030879"  <br>"20070047239"   "20070065091"  <br>"20070076431"   "20070081344"  <br>"20070103863"   "20070103866"  <br>"20070115686"   "20070139929"  <br>"20070140671"   "20070151274"  <br>"20070151664"   "20070171353"  <br>"20070206158"   "20070211205"  <br>"20070212211"   "20070217221"  <br>"20070230167"   "20070237636"  <br>"20070267174"   "20080035315" | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:16 |

|               |                    |  |  |  |
|---------------|--------------------|--|--|--|
| "20080054144" | "20080055534"      |  |  |  |
| "20080076342" | "20080099193"      |  |  |  |
| "20080148609" | "20080209934"      |  |  |  |
| "20080218446" | "20080236005"      |  |  |  |
| "20080267790" | "20080283234"      |  |  |  |
| "20080285290" | "20080310116"      |  |  |  |
| "20090009047" | "20090009729"      |  |  |  |
| "20090059518" | "20090065007"      |  |  |  |
| "20090086430" | "20090104989"      |  |  |  |
| "20090120629" | "20090122218"      |  |  |  |
| "20090126906" | "20090126907"      |  |  |  |
| "20090126914" | "20090135365"      |  |  |  |
| "20090147170" | "20090154096"      |  |  |  |
| "20090174626" | "20090231807"      |  |  |  |
| "20090241437" | "20090244472"      |  |  |  |
| "20090251650" | "20090266507"      |  |  |  |
| "20090279240" | "20090302727"      |  |  |  |
| "20090306820" | "20090323275"      |  |  |  |
| "20100060861" | "20100079949"      |  |  |  |
| "20100162747" | "20100171889"      |  |  |  |
| "20100182562" | "20100220249"      |  |  |  |
| "20100226091" | "20100232107"      |  |  |  |
| "20100238394" | "20100321887"      |  |  |  |
| "20110001898" | "20110013114"      |  |  |  |
| "20110019363" | "20110032489"      |  |  |  |
| "20110051071" | "20110058326"      |  |  |  |
| "20110072697" | "20110075361"      |  |  |  |
| "20110083460" | "20110083824"      |  |  |  |
| "20110085301" | "20110085302"      |  |  |  |
| "20110090630" | "20110114384"      |  |  |  |
| "20110116000" | "20110116231"      |  |  |  |
| "20110122162" | "20110141672"      |  |  |  |
| "20110141724" | "20110261523"      |  |  |  |
| "20110297810" | "20120006523"      |  |  |  |
| "20120012295" | "20120012300"      |  |  |  |
| "20120014063" | "20120020114"      |  |  |  |
| "20120038849" | "20120044217"      |  |  |  |
| "20120105790" | "20120106081"      |  |  |  |
| "20120188481" | "20120206687"      |  |  |  |
| "20120249402" | "20120255704"      |  |  |  |
| "20120274876" | "20120284547"      |  |  |  |
| "20120327600" | "20130170140"      |  |  |  |
| "20130173358" | "20130176517"      |  |  |  |
| "20130201685" | "20130258659"      |  |  |  |
| "20130279154" | "20130294039"      |  |  |  |
| "20130344794" | "20140044147"      |  |  |  |
| "20140085564" | "20140111758"      |  |  |  |
| "20140113540" | "20140134767"      |  |  |  |
| "20140190240" | "20140268657"      |  |  |  |
| "20140313698" | "20140314395"      |  |  |  |
| "20140361138" | "20150009627").PN. |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                    |     |     |                     |
|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|---------------------|
| S178 | 230 | ("20150192371"   "20150253611"  <br>"20150264826"   "20150319882"  <br>"20150366101"   "20160041423"  <br>"20160044829"   "20160162297"  <br>"20160192536"   "20160195254"  <br>"20160198588"   "20160238876"  <br>"20160242329"   "20160242330"  <br>"20160249493"   "20160302331"  <br>"20170023823"   "20170068042"  <br>"20170074453"   "20170083043"  <br>"20170083062"   "20170111486"  <br>"20170111520"   "20170111521"  <br>"20170127579"   "20170140344"  <br>"20170147992"   "20170163519"  <br>"20170175411"   "20170188490"  <br>"20170245400"   "20170257978"  <br>"20170332523"   "20180042134"  <br>"20180116073"   "20180314103"  <br>"20180315356"   "20180317330"  <br>"20180317350"   "20180364519"  <br>"20190037738"   "20190089176"  <br>"20190133002"   "20190208674"  <br>"20190239365"   "20190289754"  <br>"20190327865"   "4093355"  <br>"4593978"   "4634225"   "4748765"  <br>"4763993"   "4921041"   "4952783"  <br>"4952925"   "5029982"   "5088806"  <br>"5132666"   "5247374"   "5282114"  <br>"5293930"   "5351176"   "5432526"  <br>"5535816"   "5559614"   "5621614"  <br>"5657641"   "5748269"   "5765743"  <br>"5767489"   "5808418"   "5818010"  <br>"5818694"   "5835179"   "5864465"  <br>"5869818"   "5869919"   "5903433"  <br>"5991153"   "6003015"   "6007205"  <br>"6043979"   "6089751"   "6104451"  <br>"6125565"   "6157432"   "6181070"  <br>"6191839"   "6198222"   "6211934"  <br>"6215655"   "6351381"   "6359390"  <br>"6392727"   "6417900"   "6428198"  <br>"6437673"   "6473150"   "6476883"  <br>"6493440"   "6504713"   "6535266"  <br>"6628355"   "6643130"   "6683639"  <br>"6701143"   "6714410"   "6727468"  <br>"6742583"   "6812851"   "6825828"  <br>"6833992"   "6839104"   "6850209"  <br>"6885412"   "6886942"   "6891135"  <br>"6909486"   "6943768"   "6961108"  <br>"7015470"   "7059757"   "7083285"  <br>"7157838"   "7161803"   "7190416"  <br>"7190587"   "7209349"   "7212403"  <br>"7259964"   "7269023"   "7284874"  <br>"7396145"   "7447018"   "7452121" | US-PGPUB;<br>USPAT | ADJ | OFF | 2020/09/14<br>02:16 |
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|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                |     |    |                     |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|----|---------------------|
|      |     | "7457113"   "7480140"   "7535543"  <br>"7591508"   "7602469"   "7667964"  <br>"7682047"   "7752858"   "7753567"  <br>"7762707"   "7800706"   "7813124"  <br>"7903416"   "7995342"   "8004648"  <br>"8035968"   "8081465"   "8102173"  <br>"8142027"   "8208115"   "8223311"  <br>"8241573"   "8248784"   "8254121"  <br>"8269916"   "8270163"   "8274622"  <br>"8274789"   "8300203"   "8310824"  <br>"8320119"   "8351014"   "8358397"  <br>"8369083"   "8373841"   "8379182"  <br>"8400608"   "8472174"   "8472191"  <br>"8482695"   "8497972"   "8590602"  <br>"8649170"   "8649176"   "8654302"  <br>"8678603"   "8693185"   "8700226"  <br>"8711321"   "8749749"   "8755021"  <br>"8758144"   "8760613"   "8767165"  <br>"8773633"   "8804091"   "8823916"  <br>"8827472"   "8854572"   "8854595"  <br>"8879042"   "8976313"   "8988647"  <br>"9030641"   "9089079"   "9119325"  <br>"9119330"   "9173322"   "9173325"  <br>"9282676"   "9285108"   "9313917"  <br>"9370127"   "9448569"   "9451060"  <br>"9451733"   "9456525"   "9470924"  <br>"9500896"   "9516485"   "9549490"  <br>"9594271"   "9613548"   "9622392"  <br>"9629287"   "9648790"   "9655289"  <br>"9703230"   "9723765"   "9797588"  <br>"9801305"   "9823690"   "9835893"  <br>"9894800"   "D608775").PN. |                                |     |    |                     |
| S179 | 2   | "20050253699"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/14<br>02:16 |
| S194 | 206 | ("10080316"   "10088702"  <br>"10180591"   "10194564"  <br>"10212845"   "10278311"  <br>"10306781"   "10314212"  <br>"10359659"   "10359817"  <br>"10383238"   "10398066"  <br>"10420257"   "10485113"  <br>"10485147"   "10485148"  <br>"10499516"   "10506738"  <br>"10506740"   "10524384"  <br>"10524397"   "10548247"  <br>"10624218"   "10660245"  <br>"10687446"   "10716224"  <br>"10721836"   "10736245"  <br>"20010001459"   "20010019454"  <br>"20010023914"   "20010032404"  <br>"20020009978"   "20020033919"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | US-PGPUB;<br>USPAT             | ADJ | ON | 2020/09/14<br>07:40 |

|               |               |
|---------------|---------------|
| "20020050793" | "20020065046" |
| "20020084891" | "20020101553" |
| "20020112026" | "20020126248" |
| "20020148600" | "20020149714" |
| "20020154255" | "20020164944" |
| "20020164962" | "20020167637" |
| "20030007109" | "20030020884" |
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| "20030128511" | "20030214785" |
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| "20040035558" | "20040036622" |
| "20040036834" | "20040042174" |
| "20040103570" | "20040105159" |
| "20040135482" | "20040165139" |
| "20040223299" | "20050012039" |
| "20050012722" | "20050062373" |
| "20050073632" | "20050073639" |
| "20050127796" | "20050134525" |
| "20050134526" | "20050213950" |
| "20050219841" | "20050229630" |
| "20050237714" | "20050253699" |
| "20050276053" | "20050286131" |
| "20060012958" | "20060012985" |
| "20060018093" | "20060034051" |
| "20060056994" | "20060082271" |
| "20060092348" | "20060125998" |
| "20060132699" | "20060177587" |
| "20060199514" | "20060209266" |
| "20060260790" | "20060262079" |
| "20060266499" | "20060269216" |
| "20060283579" | "20070013647" |
| "20070019419" | "20070030879" |
| "20070047239" | "20070065091" |
| "20070076431" | "20070081344" |
| "20070103863" | "20070103866" |
| "20070115686" | "20070139929" |
| "20070140671" | "20070144704" |
| "20070151274" | "20070151664" |
| "20070171353" | "20070206158" |
| "20070211205" | "20070212211" |
| "20070217221" | "20070230167" |
| "20070237636" | "20070267174" |
| "20080035315" | "20080054144" |
| "20080055534" | "20080076342" |
| "20080099193" | "20080148609" |
| "20080209934" | "20080218446" |
| "20080236005" | "20080267790" |
| "20080283234" | "20080285290" |
| "20080296134" | "20080310116" |
| "20080310158" | "20090009047" |
| "20090009729" | "20090059518" |
| "20090065007" | "20090086430" |
| "20090095819" | "20090104989" |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |     |    |                     |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|----|---------------------|
|      |     | "20090120629"   "20090122218"  <br>"20090126906"   "20090126907"  <br>"20090126914"   "20090129021"  <br>"20090135365"   "20090147170"  <br>"20090154096"   "20090174626"  <br>"20090231807"   "20090241437"  <br>"20090244472"   "20090251650"  <br>"20090266507"   "20090279240"  <br>"20090302727"   "20090306820"  <br>"20090323275"   "20100060861"  <br>"20100079949"   "20100079979"  <br>"20100162747"   "20100171889"  <br>"20100182562"   "20100220249"  <br>"20100226091"   "20100232107"  <br>"20100238394"   "20100321887"  <br>"20110001898"   "20110013114"  <br>"20110019363"   "20110032489"  <br>"20110051071"   "20110058326"  <br>"20110072697"   "20110075361"  <br>"20110083460"   "20110083824"  <br>"20110085301"   "20110085302"  <br>"20110090630"   "20110114384"  <br>"20110116000"   "20110116231"  <br>"20110122162"   "20110134356"  <br>"20110141672"   "20110141724"  <br>"20110162831"   "20110167845"  <br>"20110261523"   "20110297810"  <br>"20120006523"   "20120012295"  <br>"20120012300"   "20120014063"  <br>"20120020114"   "20120038849"  <br>"20120044217"   "20120105790"  <br>"20120106081"   "20120188481"  <br>"20120206687"   "20120236499").PN. |                    |     |    |                     |
| S195 | 247 | ("20120249402"   "20120255704"  <br>"20120274876"   "20120284547"  <br>"20120327600"   "20130170140"  <br>"20130173358"   "20130176517"  <br>"20130201685"   "20130258659"  <br>"20130279154"   "20130294039"  <br>"20130344794"   "20140044147"  <br>"20140085564"   "20140111758"  <br>"20140113540"   "20140134767"  <br>"20140184980"   "20140190240"  <br>"20140268657"   "20140313666"  <br>"20140313698"   "20140314395"  <br>"20140334100"   "20140361138"  <br>"20150009625"   "20150009627"  <br>"20150192371"   "20150253611"  <br>"20150264826"   "20150319882"  <br>"20150366101"   "20160041423"  <br>"20160044829"   "20160162297"  <br>"20160192536"   "20160195254"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | US-PGPUB;<br>USPAT | ADJ | ON | 2020/09/14<br>07:40 |

|  |                                   |  |  |  |
|--|-----------------------------------|--|--|--|
|  | "20160198588"   "20160238876"     |  |  |  |
|  | "20160242329"   "20160242330"     |  |  |  |
|  | "20160249493"   "20160302331"     |  |  |  |
|  | "20170023823"   "20170068042"     |  |  |  |
|  | "20170074453"   "20170083043"     |  |  |  |
|  | "20170083062"   "20170111486"     |  |  |  |
|  | "20170111520"   "20170111521"     |  |  |  |
|  | "20170127579"   "20170140344"     |  |  |  |
|  | "20170147992"   "20170163519"     |  |  |  |
|  | "20170175411"   "20170188490"     |  |  |  |
|  | "20170245400"   "20170257978"     |  |  |  |
|  | "20170332523"   "20170345346"     |  |  |  |
|  | "20180042134"   "20180088368"     |  |  |  |
|  | "20180116073"   "20180314103"     |  |  |  |
|  | "20180315356"   "20180317330"     |  |  |  |
|  | "20180317350"   "20180364519"     |  |  |  |
|  | "20190037738"   "20190089176"     |  |  |  |
|  | "20190133002"   "20190208674"     |  |  |  |
|  | "20190239365"   "20190289754"     |  |  |  |
|  | "20190327865"   "20200154597"     |  |  |  |
|  | "20200163235"   "20200205303"     |  |  |  |
|  | "20200253095"   "4093355"         |  |  |  |
|  | "4593978"   "4634225"   "4748765" |  |  |  |
|  | "4763993"   "4921041"   "4952783" |  |  |  |
|  | "4952925"   "5029982"   "5088806" |  |  |  |
|  | "5132666"   "5247374"   "5282114" |  |  |  |
|  | "5285677"   "5293930"   "5351176" |  |  |  |
|  | "5432526"   "5535816"   "5559614" |  |  |  |
|  | "5621614"   "5657641"   "5748269" |  |  |  |
|  | "5765743"   "5767489"   "5808418" |  |  |  |
|  | "5818010"   "5818694"   "5835179" |  |  |  |
|  | "5864465"   "5869818"   "5869919" |  |  |  |
|  | "5903433"   "5991153"   "6003015" |  |  |  |
|  | "6007205"   "6043979"   "6089751" |  |  |  |
|  | "6104451"   "6125565"   "6157432" |  |  |  |
|  | "6181070"   "6191839"   "6198222" |  |  |  |
|  | "6211934"   "6215655"   "6351381" |  |  |  |
|  | "6359390"   "6392727"   "6417900" |  |  |  |
|  | "6428198"   "6437673"   "6473150" |  |  |  |
|  | "6476883"   "6493440"   "6504713" |  |  |  |
|  | "6535266"   "6628355"   "6643130" |  |  |  |
|  | "6683639"   "6701143"   "6714410" |  |  |  |
|  | "6727468"   "6742583"   "6812851" |  |  |  |
|  | "6825828"   "6833992"   "6839104" |  |  |  |
|  | "6850209"   "6885412"   "6886942" |  |  |  |
|  | "6891135"   "6909486"   "6943768" |  |  |  |
|  | "6961108"   "7015470"   "7059757" |  |  |  |
|  | "7083285"   "7157838"   "7161803" |  |  |  |
|  | "7190416"   "7190587"   "7209349" |  |  |  |
|  | "7212403"   "7259964"   "7269023" |  |  |  |
|  | "7284874"   "7396145"   "7447018" |  |  |  |
|  | "7452121"   "7457113"   "7480140" |  |  |  |
|  | "7518864"   "7535543"   "7591508" |  |  |  |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                |     |    |                     |
|------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|----|---------------------|
|      |     | "7602469"   "7667964"   "7682047"  <br>"7752858"   "7753567"   "7762707"  <br>"7800706"   "7813124"   "7903416"  <br>"7995342"   "8004648"   "8035968"  <br>"8081465"   "8102173"   "8142027"  <br>"8208115"   "8223311"   "8241573"  <br>"8248784"   "8254121"   "8269916"  <br>"8270163"   "8274622"   "8274789"  <br>"8300203"   "8310824"   "8320119"  <br>"8351014"   "8358397"   "8369083"  <br>"8373841"   "8379182"   "8400608"  <br>"8472174"   "8472191"   "8482695"  <br>"8497972"   "8590602"   "8649170"  <br>"8649176"   "8654302"   "8678603"  <br>"8693185"   "8700226"   "8711321"  <br>"8749749"   "8755021"   "8758144"  <br>"8760613"   "8767165"   "8773633"  <br>"8804091"   "8823916"   "8827472"  <br>"8854572"   "8854595"   "8879042"  <br>"8976313"   "8988647"   "9030641"  <br>"9089079"   "9119325"   "9119330"  <br>"9173322"   "9173325"   "9282676"  <br>"9285108"   "9313917"   "9338923"  <br>"9357673"   "9370127"  <br>"9414516").PN. |                                |     |    |                     |
| S196 | 24  | ("9448569"   "9451060"   "9451733"  <br>"9456525"   "9470924"   "9500896"  <br>"9516485"   "9549490"   "9594271"  <br>"9613548"   "9622392"   "9629287"  <br>"9648790"   "9655289"   "9703230"  <br>"9723765"   "9743553"   "9797588"  <br>"9801305"   "9823690"   "9835893"  <br>"9861007"   "9894800"  <br>"D608775").PN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT             | ADJ | ON | 2020/09/14<br>07:40 |
| S198 | 189 | g02f1/0311.cpc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/14<br>19:21 |
| S199 | 4   | "9075262"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/15<br>09:28 |
| S201 | 0   | (display or LCD or panel) same<br>(transparent (panel or screen or<br>display)) same (polarizer or polarize or<br>"optical filter" or polarizing or tint)<br>same ((air cool\$3 or fan or blower or<br>air) with (air path or groove or space<br>or opening or space))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/15<br>10:01 |
| S202 | 516 | (display or LCD or panel) and<br>(transparent (panel or screen or<br>display)) and (polarizer or polarize or<br>"optical filter" or polarizing or tint) and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | ON | 2020/09/15<br>11:07 |

|      |        |                                                                                                                                                                                                |                          |     |     |                  |
|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----|-----|------------------|
|      |        | ((air cool\$3 or fan or blower or air) with (air path or groove or space or opening or space))                                                                                                 |                          |     |     |                  |
| S203 | 31,497 | (G02B5/30 OR G02B6/0055 OR G02F1/133528 OR G02F2001/133388 OR G02F1/133308 OR G02F1/133385 OR G07F17/3211 OR G09F13/0413 OR G09F13/12).CPC.                                                    | US-PGPUB; USPAT; IBM_TDB | ADJ | ON  | 2020/09/15 13:23 |
| S204 | 30,371 | S203 and (display or LCD or panel)                                                                                                                                                             | US-PGPUB; USPAT; IBM_TDB | ADJ | ON  | 2020/09/15 13:24 |
| S205 | 13,964 | (polarizer or polarize or "optical filter" or polarizing or tint) and S204                                                                                                                     | US-PGPUB; USPAT; IBM_TDB | ADJ | ON  | 2020/09/15 13:25 |
| S206 | 590    | (transparent (panel or screen or display)) and S205                                                                                                                                            | US-PGPUB; USPAT; IBM_TDB | ADJ | ON  | 2020/09/15 13:28 |
| S207 | 314    | (air cool\$3 or fan or blower or air) and S206                                                                                                                                                 | US-PGPUB; USPAT; IBM_TDB | ADJ | ON  | 2020/09/15 13:29 |
| S208 | 223    | S207 not S202                                                                                                                                                                                  | US-PGPUB; USPAT; IBM_TDB | ADJ | ON  | 2020/09/15 13:29 |
| S209 | 44     | S208 and @ad<="20080320"                                                                                                                                                                       | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2020/09/15 13:30 |
| S210 | 5,906  | ((polarizer or polarize or "optical filter" or polarizing or tint) and (display or lcd or screen) and (air or fan or cool\$3 or blower) and (solar or sunlight or sun)) and @ad<="20080320"    | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2020/09/15 13:36 |
| S211 | 16     | ((polarizer or polarize or "optical filter" or polarizing or tint) same (display or lcd or screen) same (air or fan or cool\$3 or blower) same (solar or sunlight or sun)) and @ad<="20080320" | US-PGPUB; USPAT; IBM_TDB | ADJ | OFF | 2020/09/15 13:37 |
| S212 | 215    | S203 and S210                                                                                                                                                                                  | US-PGPUB; USPAT; IBM_TDB | ADJ | ON  | 2020/09/15 13:41 |
| S213 | 199    | S212 not (S207 or S208 or S202)                                                                                                                                                                | US-PGPUB; USPAT; IBM_TDB | ADJ | ON  | 2020/09/15 13:41 |
| S214 | 191    | ("1342894"   "1385162"   "1434268"   "1462348"   "1518403"   "1592393"   "1620338"   "1666047"   "2108054"   "2187803"   "2258014"   "2283268"                                                 | US-PGPUB; USPAT; USOCR   | ADJ | ON  | 2020/09/15 14:01 |

|      |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              |     |    |                     |
|------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|----|---------------------|
|      |     | "2395561"   "2464887"   "2552184"  <br>"2552185"   "2569918"   "2660925"  <br>"2668478"   "2688271"   "2700323"  <br>"2742819"   "2813802"   "2852980"  <br>"2883291"   "3113033"   "3174067"  <br>"3217596"   "3250175"   "3253504"  <br>"3255342"   "3293982"   "3325666"  <br>"3482911"   "3499112"   "3499702"  <br>"3514198"   "3536391"   "3574444"  <br>"3575452"   "3575499"   "3586851"  <br>"3761172"   "3807850"   "3824003"  <br>"3836243"   "3844650"   "3862360"  <br>"3895866"   "3944320"   "3979160"  <br>"3980403"   "4060316"   "4080052"  <br>"4088400"   "4095881"   "4154007"  <br>"4165160"   "4171874"   "4185895"  <br>"4194833"   "4195915"   "4222641"  <br>"4239349"   "4275395"   "4294524"  <br>"4315258"   "4338006"   "4349817"  <br>"4365869"   "4368963"   "4372639"  <br>"4386826"   "4386836"   "4403216"  <br>"4409583"   "4420234"   "4423927"  <br>"4453810"   "4507547"   "4514042"  <br>"4526441"   "4536014"   "4564276"  <br>"4577959"   "4613207"   "4652101"  <br>"4660936"   "4664482"   "4671634"  <br>"4687301"   "4704004"   "4722593"  <br>"4726662"   "4756604"   "4765718"  <br>"4765734"   "4770525"   "4779510"  <br>"4812034"   "4824210"   "4846694"  <br>"4864390"   "4880303"   "4881110"  <br>"4882599"   "4944578"  <br>"4953971").PN. OR ("5255029").URPN. |                              |     |    |                     |
| S215 | 162 | ("1342894"   "1385162"   "1434268"  <br>"1462348"   "1518403"   "1592393"  <br>"1620338"   "1666047"   "2108054"  <br>"2187803"   "2258014"   "2283268"  <br>"2395561"   "2464887"   "2552184"  <br>"2552185"   "2569918"   "2660925"  <br>"2668478"   "2688271"   "2700323"  <br>"2742819"   "2813802"   "2852980"  <br>"2883291"   "3113033"   "3174067"  <br>"3217596"   "3250175"   "3253504"  <br>"3255342"   "3293982"   "3325666"  <br>"3482911"   "3499112"   "3499702"  <br>"3514198"   "3536391"   "3574444"  <br>"3575452"   "3575499"   "3586851"  <br>"3761172"   "3807850"   "3824003"  <br>"3836243"   "3844650"   "3862360"  <br>"3895866"   "3944320"   "3979160"  <br>"3980403"   "4060316"   "4080052"  <br>"4088400"   "4095881"   "4154007"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | ON | 2020/09/15<br>14:02 |

|      |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                              |     |    |                     |
|------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----|----|---------------------|
|      |    | "4165160"   "4171874"   "4185895"  <br>"4194833"   "4195915"   "4222641"  <br>"4239349"   "4275395"   "4294524"  <br>"4315258"   "4338006"   "4349817"  <br>"4365869"   "4368963"   "4372639"  <br>"4386826"   "4386836"   "4403216"  <br>"4409583"   "4420234"   "4423927"  <br>"4453810"   "4507547"   "4514042"  <br>"4526441"   "4536014"   "4564276"  <br>"4577959"   "4613207"   "4652101"  <br>"4660936"   "4664482"   "4671634"  <br>"4687301"   "4704004"   "4722593"  <br>"4726662"   "4756604"   "4763993"  <br>"4765718"   "4765734"   "4770525"  <br>"4779510"   "4787737"   "4812034"  <br>"4824210"   "4846694"   "4864390"  <br>"4880303"   "4881110"   "4882599"  <br>"4941732"   "4944578"   "4953971"  <br>"4976536"   "5048949").PN. OR<br>("5227821").URPN. |                              |     |    |                     |
| S216 | 75 | ("2187803"   "2552184"   "3255342"  <br>"3514198"   "3575499"   "3844650"  <br>"3895866"   "3980403"   "4088400"  <br>"4154007"   "4171874"   "4185895"  <br>"4194833"   "4195915"   "4222641"  <br>"4294524"   "4315258"   "4349817"  <br>"4365869"   "4368963"   "4372639"  <br>"4386826"   "4403216"   "4409583"  <br>"4423927"   "4453810"   "4536014"  <br>"4613207"   "4652101"   "4660936"  <br>"4664482"   "4671634"   "4704004"  <br>"4722593"   "4726662"   "4756604"  <br>"4765718"   "4812034"  <br>"4824210").PN. OR ("5187510").URPN.                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | ON | 2020/09/15<br>14:02 |
| S217 | 68 | ("2552184"   "3980403"   "4088400"  <br>"4154007"   "4171874"   "4185895"  <br>"4194833"   "4222641"   "4294524"  <br>"4315258"   "4349817"   "4365869"  <br>"4368963"   "4372639"   "4386826"  <br>"4403216"   "4409583"   "4423927"  <br>"4536014"   "4613207"   "4652101"  <br>"4660936"   "4664482"   "4704004"  <br>"4722593"   "4726662"   "4756604"  <br>"4765718").PN. OR ("4976536").URPN.                                                                                                                                                                                                                                                                                                                                                                              | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | ON | 2020/09/15<br>14:03 |
| S218 | 96 | ("3844650"   "4154007"   "4194833"  <br>"4222641"   "4294524"   "4349817"  <br>"4365869"   "4368963"   "4372639"  <br>"4386836"   "4403216"   "4409583"  <br>"4514042").PN. OR ("4763993").URPN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | US-PGPUB;<br>USPAT;<br>USOCR | ADJ | ON | 2020/09/15<br>14:03 |

|      |     |                                                                                                                                                                                                                                                                          |                                |     |     |                     |
|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----|---------------------|
| S219 | 190 | (S214 or S215 or S216 or S217 or S218) and @ad<="20080320"                                                                                                                                                                                                               | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/15<br>14:05 |
| S220 | 0   | ((polarizer or polarize or "optical filter" or polarizing or tint) same (display or lcd or screen) same (air or fan or cool\$3 or blower) same (solar or sunlight or sun)) and S219                                                                                      | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/15<br>14:05 |
| S221 | 15  | ((polarizer or polarize or "optical filter" or polarizing or tint) and (display or lcd or screen) and (air or fan or cool\$3 or blower) and (solar or sunlight or sun)) and S219                                                                                         | US-PGPUB;<br>USPAT;<br>IBM_TDB | ADJ | OFF | 2020/09/15<br>14:06 |
| S222 | 65  | ("4687298"   "4749261"   "4806221"   "5132830"   "5150235"   "5187510"   "5196953"   "5232634"   "5237437"   "5239406"   "5249071"   "5299041"   "5311340"   "5661578"   "5680185"   "5706067"   "5724111"   "5754262"   "5768019"   "5808714").PN. OR ("6211934").URPN. | US-PGPUB;<br>USPAT;<br>USOCR   | ADJ | ON  | 2020/09/15<br>14:08 |
| S223 | 65  | ("4687298"   "4749261"   "4806221"   "5132830"   "5150235"   "5187510"   "5196953"   "5232634"   "5237437"   "5239406"   "5249071"   "5299041"   "5311340"   "5661578"   "5680185"   "5706067"   "5724111"   "5754262"   "5768019"   "5808714").PN. OR ("6211934").URPN. | US-PGPUB;<br>USPAT;<br>USOCR   | ADJ | ON  | 2020/09/15<br>17:19 |

#### EAST Search History (Interference)

| Ref # | Hits | Search Query                                                                                                                                                                                                             | DBs                | Default Operator | Plurals | Time Stamp          |
|-------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------|---------|---------------------|
| S41   | 8    | electronic display image assembly front portion rear portion open loop ambient air flow path closed loop gas circulation path heat exchanger pathway gas circulation device force circulating gas air circulation device | US-PGPUB;<br>USPAT | AND              | OFF     | 2019/09/02<br>03:02 |
| S42   | 8    | electronic display image assembly front portion rear portion open loop ambient air flow path closed loop gas circulation path heat exchanger pathway gas circulation device force circulating                            | US-PGPUB;<br>USPAT | AND              | OFF     | 2019/09/02<br>03:02 |
| S43   | 79   | electronic display image assembly front portion rear portion open loop ambient air flow path closed loop gas circulation path heat exchanger pathway                                                                     | US-PGPUB;<br>USPAT | AND              | OFF     | 2019/09/02<br>03:03 |

|      |     |                                                                                                                                                                                                                                |                 |     |     |                  |
|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----|-----|------------------|
| S44  | 79  | display image front portion rear portion open loop ambient air flow path closed loop gas circulation path heat exchanger pathway                                                                                               | US-PGPUB; USPAT | AND | OFF | 2019/09/02 03:04 |
| S45  | 79  | display image front portion rear portion open loop air flow path closed loop gas circulation path heat exchanger pathway                                                                                                       | US-PGPUB; USPAT | AND | OFF | 2019/09/02 03:04 |
| S46  | 225 | display image front portion rear portion open loop air flow path closed loop heat exchanger pathway                                                                                                                            | US-PGPUB; USPAT | AND | OFF | 2019/09/02 03:04 |
| S47  | 146 | S46 not S45                                                                                                                                                                                                                    | US-PGPUB; USPAT | AND | OFF | 2019/09/02 03:05 |
| S48  | 175 | display image front portion rear portion open loop air flow path closed loop heat exchanger pathway fan                                                                                                                        | US-PGPUB; USPAT | AND | OFF | 2019/09/02 03:08 |
| S86  | 22  | cooling system electronic image assembly enclosure mounting space transparent display surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm. | US-PGPUB; USPAT | AND | OFF | 2020/03/11 18:26 |
| S87  | 75  | cooling system electronic image assembly enclosure mounting space surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm.                     | US-PGPUB; USPAT | AND | OFF | 2020/03/11 18:26 |
| S88  | 81  | cooling system electronic image enclosure mounting space surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm.                              | US-PGPUB; USPAT | AND | OFF | 2020/03/11 18:26 |
| S89  | 167 | cooling enclosure mounting space surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm.                                                      | US-PGPUB; USPAT | AND | OFF | 2020/03/11 18:27 |
| S90  | 180 | enclosure mounting space surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm.                                                              | US-PGPUB; USPAT | AND | OFF | 2020/03/11 18:27 |
| S91  | 84  | electronic image enclosure mounting space surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm.                                             | US-PGPUB; USPAT | AND | OFF | 2020/03/11 18:27 |
| S180 | 12  | electronic display image assembly front portion rear portion open loop ambient air flow path closed loop gas circulation path heat exchanger pathway gas circulation                                                           | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:15 |

|      |     |                                                                                                                                                                                                                                |                 |     |     |                  |
|------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----|-----|------------------|
|      |     | device force circulating gas air circulation device                                                                                                                                                                            |                 |     |     |                  |
| S181 | 12  | electronic display image assembly front portion rear portion open loop ambient air flow path closed loop gas circulation path heat exchanger pathway gas circulation device force circulating                                  | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:15 |
| S182 | 149 | electronic display image assembly front portion rear portion open loop ambient air flow path closed loop gas circulation path heat exchanger pathway                                                                           | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:15 |
| S183 | 150 | display image front portion rear portion open loop ambient air flow path closed loop gas circulation path heat exchanger pathway                                                                                               | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:15 |
| S184 | 150 | display image front portion rear portion open loop air flow path closed loop gas circulation path heat exchanger pathway                                                                                                       | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:15 |
| S185 | 368 | display image front portion rear portion open loop air flow path closed loop heat exchanger pathway                                                                                                                            | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:15 |
| S186 | 218 | S185 not S184                                                                                                                                                                                                                  | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:15 |
| S187 | 299 | display image front portion rear portion open loop air flow path closed loop heat exchanger pathway fan                                                                                                                        | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:15 |
| S188 | 24  | cooling system electronic image assembly enclosure mounting space transparent display surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm. | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:16 |
| S189 | 93  | cooling system electronic image assembly enclosure mounting space surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm.                     | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:16 |
| S190 | 102 | cooling system electronic image enclosure mounting space surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm.                              | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:16 |
| S191 | 191 | cooling enclosure mounting space surface front open loop air flow path closed loop gas circulation path heat exchanger gas circulation device air circulation device.clm.                                                      | US-PGPUB; USPAT | AND | OFF | 2020/09/14 02:16 |

|      |     |                                                                                                                                                                                             |                        |     |     |                     |
|------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----|-----|---------------------|
| S192 | 204 | enclosure mounting space surface front<br>open loop air flow path closed loop gas<br>circulation path heat exchanger gas<br>circulation device air circulation device.clm.                  | US-<br>PGPUB;<br>USPAT | AND | OFF | 2020/09/14<br>02:16 |
| S193 | 105 | electronic image enclosure mounting space<br>surface front open loop air flow path closed<br>loop gas circulation path heat exchanger gas<br>circulation device air circulation device.clm. | US-<br>PGPUB;<br>USPAT | AND | OFF | 2020/09/14<br>02:16 |

12/27/2020 9:52:43 PM

C:\Users\mmatey\Documents\EAST\Workspaces\16933932 (Electronic display with cooling).wsp

Doc code: IDS

PTO/SB/08a (01-10)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2012. OMB 0651-0031

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|                                                                                                     | Filing Date            | 2020-07-20      |
|                                                                                                     | First Named Inventor   | William Dunn    |
|                                                                                                     | Art Unit               | 2835            |
|                                                                                                     | Examiner Name          | Michael A Matey |
|                                                                                                     | Attorney Docket Number | MAN2241-045R    |

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|                   | 1       | 5920367       | A                      | 1999-07-06 | Kajimoto et al.                                 |                                                                          |
|                   | 2       | 5255029       | A                      | 1993-10-19 | Vogeley et al.                                  |                                                                          |
|                   | 3       | 4292370       |                        | 1981-09-29 | Pekko                                           |                                                                          |
|                   | 4       | 4976536       |                        | 1990-12-11 | Vogeley et al.                                  |                                                                          |

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|                                                                                                     | First Named Inventor   | William Dunn    |            |  |
|                                                                                                     | Art Unit               | 2835            |            |  |
|                                                                                                     | Examiner Name          | Michael A Matey |            |  |
|                                                                                                     | Attorney Docket Number | MAN2241-045R    |            |  |

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|---|--------------|----|---|------------|--------------------|--|
| 1 | JPH855567    | JP | A | 1996-02-27 | Canon KK           |  |
| 2 | JP2003076286 | JP | A | 2003-03-14 | NGK Insulators LTD |  |

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|                                                                                                     | Examiner Name          | Michael A Matey |
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| Signature  | /Adam J. Smith/ | Date (YYYY-MM-DD)   | 2020-10-29 |
| Name/Print | Adam J. Smith   | Registration Number | 72962      |

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|                                                                                                            | 1       | 7466546            | B2                     | 2008-12-16       | Park                                            |                                                                          |
|                                                                                                            | 2       | 7492589            | B2                     | 2009-02-17       | Park                                            |                                                                          |
|                                                                                                            | 3       | 6392727            | B1                     | 2020-05-21       | Larson et al.                                   |                                                                          |
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|                                                                                                     | Attorney Docket Number | MAN2241-045R     |            |  |

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|                                                                                                     | Examiner Name          | Michael A. Matey |
|                                                                                                     | Attorney Docket Number | MAN2241-045R     |

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Doc code: IDS

PTO/SB/08a (01-10)

Doc description: Information Disclosure Statement (IDS) Filed

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| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br>( Not for submission under 37 CFR 1.99) | Application Number     | 16933932         |
|                                                                                                     | Filing Date            | 2020-07-20       |
|                                                                                                     | First Named Inventor   | William Dunn     |
|                                                                                                     | Art Unit               | 2835             |
|                                                                                                     | Examiner Name          | Michael A. Matey |
|                                                                                                     | Attorney Docket Number | MAN2241-045R     |

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|                                                                                                            | 1       | JPH9-160512                                                                                                                                                                                                                                                     | JP                         | A                      | 1997-06-20                                      | Golden Kitsuzu KK                                                        |                                                                          |                |
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|                                                                                                     | Examiner Name          | Michael A. Matey |
|                                                                                                     | Attorney Docket Number | MAN2241-045R     |

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| Examiner Signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | /MICHAEL A MATEY/ | Date Considered | 12/27/2020 |
| *EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.                                                                                                                                                                                                                                                                                                                                                                                        |                   |                 |            |
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|                                                                                                     | Attorney Docket Number | MAN2241-045R     |

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A certification statement is not submitted herewith.

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|            |                 |                     |            |
|------------|-----------------|---------------------|------------|
| Signature  | /Adam J. Smith/ | Date (YYYY-MM-DD)   | 2020-11-23 |
| Name/Print | Adam J. Smith   | Registration Number | 72962      |

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|                                                                                                     | Examiner Name          | Michael A. Matey |
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|                                                                                                            | 1       | 7466546            | B2                     | 2008-12-16       | Park                                            |                                                                          |        |
|                                                                                                            | 2       | 7492589            | B2                     | 2009-02-17       | Park                                            |                                                                          |        |
|                                                                                                            | 3       | 6392727            | B1                     | 2020-05-21       | Larson et al.                                   |                                                                          |        |
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|                                                                                                            | 1       | 20200275585        | A1                     | 2020-08-27       | Dunn                                            |                                                                          |        |
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|                                                                                                     | Examiner Name          | Michael A. Matey |            |  |
|                                                                                                     | Attorney Docket Number | MAN2241-045R     |            |  |

| Examiner Initial* | Cite No | Foreign Document Number <sup>3</sup> | Country Code <sup>2i</sup> | Kind Code <sup>4</sup> | Publication Date | Name of Patentee or Applicant of cited Document | Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear | T <sup>5</sup> |
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| Signature  | /Adam J. Smith/ | Date (YYYY-MM-DD)   | 2020-12-18 |
| Name/Print | Adam J. Smith   | Registration Number | 72962      |

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|-------------------|---------------------------------|---|------------------------------------------------|
| App. No.:         | 16/933,932                      | : |                                                |
| Confirmation No.: | 5816                            | : |                                                |
| Inventor:         | Dunn, William et. al.           | : | <b>RESPONSE TO NON-FINAL<br/>OFFICE ACTION</b> |
| Filed:            | July 20, 2020                   | : |                                                |
| Examiner:         | Matey, Michael A.               | : |                                                |
| Art Unit:         | 2835                            | : |                                                |
| Docket No.:       | MAN2241-045R                    | : |                                                |
| Title:            | ELECTRONIC DISPLAY WITH COOLING | : |                                                |

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| <p>CERTIFICATE OF TRANSMISSION UNDER 37 CFR § 1.8 (a)<br/>Date of Transmission: December 18, 2020<br/>I hereby certify that this correspondence is being electronically filed<br/>via EFS-Web.</p> <p style="text-align: right;">/Brianna J. Lacy/<br/>Brianna J. Lacy, paralegal</p> |
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The following papers are filed in response to the Non-Final Office Action mailed September 30, 2020. A **LISTING OF CLAIMS** begins at page 2 and **REMARKS** begin at page 8.

As this response is filed within three months of the mailing date of the Non-Final Office Action, no additional fees are believed to be due. Please charge any fee deficiency to Deposit Account 19-4076.

**LISTING OF CLAIMS**

**Claim 1 (currently amended)** A cooling system for an electronic image assembly, the cooling system comprising:

a housing for the electronic image assembly;

a ~~transparent cover~~ panel forming a ~~front forward~~ portion of the housing, wherein the ~~transparent cover~~ panel is located forward of, and at least some distance from, the electronic image assembly ~~and is configured to permit viewing of images displayed at the electronic image assembly through said cover panel;~~

~~a closed loop an~~-airflow pathway passing through the housing, ~~wherein at least a portion of said closed loop airflow pathway extends~~ between said electronic image assembly and said ~~transparent cover~~ panel;

~~an at least one~~ air circulation device positioned to force air through the ~~closed loop airflow pathway when activated;~~ and

at least one polarizer located at ~~an inward facing surface of said transparent cover panel and configured to reduce prevent at least some solar energysunlight striking said cover panel from traveling beyond said at least one polarizer.~~

**Claim 2 (cancelled)**

**Claim 3 (currently amended)** The cooling system of claim 1 further comprising:

at least one film having anti-reflection properties located at said ~~transparent cover~~ panel.

**Claim 4 (currently amended)** The cooling system of claim 1 wherein:

said closed loop airflow pathway encircles said electronic image assembly and is configured to accommodate circulating gas.

**Claim 5 (currently amended)** The cooling system of claim 4 further comprising:

an open loop airflow pathway for ambient air passing through said housing and behind said electronic image assembly.

**Claim 6 (currently amended)** The cooling system of claim 5 further comprising:

a heat exchanger located rearward of the electronic image assembly, wherein a first portion of said heat exchanger forms part of said open loop airflow pathway, and wherein a second portion of said heat exchanger forms part of said closed loop airflow pathway.

**Claim 7 (original)** The cooling system of claim 6 further comprising:

an inlet located at a first portion of said housing for ingesting ambient air into said open loop airflow pathway; and

an exhaust located at a second portion of said housing for exhausting ambient air from said open loop airflow pathway.

**Claims 8-9 (cancelled)**

**Claim 10 (original)** The cooling system of claim 1 wherein:

said at least one polarizer comprises a linear polarizer.

**Claim 11 (original)** A cooling system for an electronic image assembly, the cooling system comprising:

a housing for the electronic image assembly;

a transparent cover panel forming a front portion of the housing, the transparent cover panel located forward of, and at least some distance from, the electronic image assembly;

an open loop airflow pathway passing through the housing behind the electronic image assembly;

a closed loop gas circulation pathway contained within the housing, wherein a portion of said closed loop gas circulation pathway passes between said transparent cover panel and said electronic image assembly;

an inlet located at a first portion of said housing for ingesting ambient air into said open loop airflow pathway;

an exhaust located at a second portion of said housing for exhausting ambient air from said open loop airflow pathway;

an air circulation device positioned along said open loop airflow pathway between said inlet and said exhaust, wherein said air circulation device is configured to force ambient air through the open loop air flow pathway;

a gas circulation device positioned along said closed loop gas circulation pathway to force circulating gas around the closed loop pathway;

a heat exchanger located rearward of the electronic image assembly, wherein a first portion of said heat exchanger forms part of said open loop airflow pathway, and wherein a second portion of said heat exchanger forms part of said closed loop gas circulation pathway; and

one or more solar energy reduction layers located at said transparent panel, wherein each of said one or more solar energy reduction layers is configured to prevent a portion of solar energy entering said transparent cover from thermally interacting with circulating gas at said portion of said closed loop gas circulation pathway passing between said transparent panel and said electronic image assembly or thermally interacting with said electronic image assembly.

**Claim 12 (original)** The cooling system of claim 11 wherein:

said air circulation device comprises one or more fan assemblies; and  
said gas circulation device comprises one or more fan assemblies.

**Claim 13 (original)** The cooling system of claim 11 wherein:

at least one of said one or more solar energy reduction layers comprise a polarizer.

**Claim 14 (original)** The cooling system of claim 13 wherein:

said polarizer comprises a linear polarizer.

**Claim 15 (original)** The cooling system of claim 11 wherein:

at least one of said one or more solar energy reduction layers comprise a film having anti-reflection properties.

**Claim 16 (original)** The cooling system of claim 11 wherein:

at least a first one of said one or more solar energy reduction layers comprise a polarizer; and

at least a second one of said one or more solar energy reduction layers comprise a film having anti-reflection properties.

**Claim 17 (currently amended)** A method for cooling an electronic image assembly, said method comprising the steps of:

placing said the electronic image assembly within a housing;

forcing circulating air through a closed loop an-airflow pathway within said housing, wherein at least a portion of said closed loop airflow pathway extends between an electronic image assembly and a transparent-cover panel forming a front portion of said housing and spaced apart from said electronic image assembly, wherein said cover panel is configured to permit viewing of images displayed at the electronic image assembly though said cover panel; and

forcing ambient air through a second airflow pathway within said housing,  
wherein said second airflow pathway extends behind said electronic image assembly;  
and

providing one or more solar energy reduction layers at an inward facing surface of said transparent-cover panel, wherein each of said one or more solar energy

reduction layers is configured to reduce the amount of solar energy transferred to said circulating air in at least said portion of said first airflow pathway.

**Claim 18 (original)** The cooling method of claim 17 wherein:

at least one of said one or more solar energy reduction layers comprise a polarizer.

**Claim 19 (original)** The cooling method of claim 18 wherein:

at least one of said one or more solar energy reduction layers comprise a film having anti-reflection properties.

**Claim 20 (currently amended)** The cooling method of claim 17 further comprising the steps of:

~~forcing ambient air through a second airflow pathway within said housing, wherein said second airflow pathway extends behind said electronic image assembly; and~~

thermally transferring heat between said circulating air in said closed loop airflow pathway and said ambient air in said second airflow pathway at a heat exchanger common to said closed loop airflow pathway and said second airflow pathway, ~~wherein said airflow pathway defines a closed loop and said air in said airflow pathway comprises circulating gas.~~

**REMARKS**

In response to the Office Action mailed September 30, 2020, Applicant respectfully requests that Examiner enter the above amendments and consider the following remarks. Unless expressly stated otherwise, the amendments and remarks made herein are irrelevant to any claims in any other patent applications. The failure to expressly address any reason for any rejection should not be understood to be agreement with such reason. Additionally, some arguments may be made collectively herein in the interests of brevity and compact prosecution and should not be understood as an admission that such claims rise and fall together.

Claims 1, 3-6, 17, and 20 are amended. Claims 2 and 8-9 are cancelled. No claims are added or withdrawn. As a result, claims 1, 3-7, and 10-20 remain pending in the application. Applicant respectfully requests further examination and reconsideration of the application in light of the accompanying remarks.

**Claim Amendments<sup>1</sup>**

Claim 1 is amended to clarify the claimed subject matter and to incorporate at least some of the limitations of now cancelled claims 2 and 8-9. Support for this amendment can be found in one or more of figures 1-4 as well as paragraphs [0014]-[0017], [0023], and [0025]-[0031].

Claims 3-6 are amended for clarity and/or consistency with amended claim 1.

Claim 17 is amended to clarify the claimed subject matter and to incorporate at least some of the limitations deleted from claim 20. Support for this amendment can be

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<sup>1</sup> Citations are made herein with reference to the corresponding published application.

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found in one or more of figures 1-4 as well as paragraphs [0014]-[0017], [0023], and [0025]-[0031].

No new matter is added.

Allowable Subject Matter

Applicant thanks Examiner for allowing claims 11-16. Applicant thanks Examiner for noting that claim 20 would be allowable if re-written in independent form to include all limitations of the base claim and any intervening claims. Claim 17 is amended to incorporate some of the limitations of now cancelled claim 20 herewith understood to result in allowability based on Examiner's comments. See OA of 9/30/20 at pg. 12-13. Therefore, Applicant respectfully submits that claim 17 is in condition for allowance with claims 18-19 being allowable as proper dependents therefrom. Applicant notes that further amendments are made to claim 17 herewith for clarity which are not believed to affect allowability of claim 17.

Initial Remarks

Examiner's comments regarding the submitted information disclosure statements (IDS) are noted. Applicant respectfully notes that at least MPEP § 609 and 37 CFR 1.97 requires the Examiner to consider all references submitted in an IDS. Without commenting on the particular relevance of such documents, Applicant respectfully submits that the Present Application is a continuation of U.S. Application Serial No. 16/708,260 filed December 9, 2019 and the following references were specifically cited in a rejection in one or more office actions in the '260 Application:

- No such references.

The '260 Application is a continuation of U.S. Application Serial No. 15/789,331 filed on October 20, 2017 and the following references were specifically cited in a rejection in one or more office actions in the '331 Application (please note, repetitive or equivalent references may be omitted):

- US 2004/0135482 Thielemans et al.

The '331 Application is a continuation of U.S. Application Serial No. 14/834,034 filed on August 24, 2015 and the following references were specifically cited in a rejection in one or more office actions in the '034 Application (please note, repetitive or equivalent references may be omitted):

- US 5,657,641 Cunningham et al.
- US 2005/0229630 Richter et al.
- US 2006/0260790 Theno et al.
- US 2007/0230167 McMahon et al.
- US 2009/0251650 Fukagawa et al.

The '034 Application is a continuation of U.S. Application Serial No. 14/050,464 filed on October 10, 2013 and the following references were specifically cited in a rejection in one or more office actions in the '464 Application (please note, repetitive or equivalent references may be omitted):

- US 2006/0012958 Tomioka et al.
- US 2009/0154096 Iyengar et al.
- US 2011/0058326 Idems et al.
- US 2011/0090630 Bergeron et al.

The '464 Application is a continuation of U.S. Application Serial No. 12/641,468 filed on December 18, 2009 and the following references were specifically cited in a rejection in one or more office actions in the '468 Application (please note, repetitive or equivalent references may be omitted):

- US 6,493,440 Gromatzky
- US 2006/0012985 Archie et al.
- US 2006/0283579 Ghosh et al.

The '468 Application is a continuation-in-part of U.S. Application Serial No. 12/411,925 filed on March 26, 2009 and the following references were specifically cited in a rejection in one or more office actions in the '925 Application (please note, repetitive or equivalent references may be omitted):

- US 5,991,153 Heady et al.
- US 6,428,198 Saccomanno
- US 2006/0092348 Park
- US 2006/0177587 Ishizuka et al.

The '468 Application is a continuation-in-part of U.S. Application Serial No. 12/556,029 filed on September 9, 2009 and the following references were specifically cited in a rejection in one or more office actions in the '029 Application (please note, repetitive or equivalent references may be omitted):

- JP 2001-209126A Fujimori

The '468 Application is a continuation-in-part of U.S. Application Serial No. 12/234,307 filed on September 19, 2008 and the following references were specifically

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cited in a rejection in one or more office actions in the '307 Application (please note, repetitive or equivalent references may be omitted):

- US 2003/0104210 Azumi
- US 2005/0012722 Chon
- US 2006/0082271 Lee
- US 2007/0103866 Park
- US 2007/0212211 Chlyoda et al.
- JP 9307257 Noto

The '468 Application is a continuation-in-part of U.S. Application Serial No. 12/234,360 filed on September 19, 2008 and the following references were specifically cited in a rejection in one or more office actions in the '360 Application (please note, repetitive or equivalent references may be omitted):

- US 8,767,165 Dunn
- US 2009/0279240 Karppanen
- JP 2005/134849 Mizuno

The '468 Application is a continuation-in-part of U.S. Application Serial No. 12/237,365 filed on September 24, 2008 and the following references were specifically cited in a rejection in one or more office actions in the '365 Application (please note, repetitive or equivalent references may be omitted):

- GB 2402205 Densitron Technologies PLC
- US 5,869,919 Sato et al.
- US 6,504,713 Pandolfi
- US 2001/0001459 Savant et al.

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- US 2001/0019454 Tadic-Galeb et al.
- US 2002/0033919 Sanelle et al.
- US 2002/0149714 Anderson et al.
- US 2002/0154255 Gromatzky
- US 2004/0105159 Saccomanno et al.
- US 2005/0073632 Dunn et al.
- US 2005/0286131 Saxena et al.
- US 2007/0206158 Kinoshita et al.
- WO 2005/079129 Inssimainos Oy

The '468 Application is a continuation-in-part of U.S. Application Serial No. 12/235,200 filed on September 22, 2008 and the following references were specifically cited in a rejection in one or more office actions in the '200 Application (please note, repetitive or equivalent references may be omitted):

- US 5,748,269 Harris

The '468 Application is a continuation-in-part of U.S. Application Serial No. 12/620,330 filed on November 17, 2009 and the following references were specifically cited in a rejection in one or more office actions in the '330 Application (please note, repetitive or equivalent references may be omitted):

- No such references not already listed.

The '468 Application is a continuation-in-part of U.S. Application Serial No. 12/556,209 filed on September 9, 2009 and the following references were specifically cited in a rejection in one or more office actions in the '209 Application (please note, repetitive or equivalent references may be omitted):