

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT7005432

|                                                                                                                                                                                                 |                                 |
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| <b>SUBMISSION TYPE:</b>                                                                                                                                                                         | NEW ASSIGNMENT                  |
| <b>NATURE OF CONVEYANCE:</b>                                                                                                                                                                    | ASSIGNMENT                      |
| <b>CONVEYING PARTY DATA</b>                                                                                                                                                                     |                                 |
| <b>Name</b>                                                                                                                                                                                     | <b>Execution Date</b>           |
| GENERAL ELECTRIC COMPANY                                                                                                                                                                        | 11/01/2018                      |
| <b>RECEIVING PARTY DATA</b>                                                                                                                                                                     |                                 |
| <b>Name:</b>                                                                                                                                                                                    | GE GLOBAL SOURCING LLC          |
| <b>Street Address:</b>                                                                                                                                                                          | 901 MAIN AVENUE                 |
| <b>City:</b>                                                                                                                                                                                    | NORWALK                         |
| <b>State/Country:</b>                                                                                                                                                                           | CONNECTICUT                     |
| <b>Postal Code:</b>                                                                                                                                                                             | 06851                           |
| <b>PROPERTY NUMBERS Total: 1</b>                                                                                                                                                                |                                 |
| <b>Property Type</b>                                                                                                                                                                            | <b>Number</b>                   |
| Application Number:                                                                                                                                                                             | 16675008                        |
| <b>CORRESPONDENCE DATA</b>                                                                                                                                                                      |                                 |
| <b>Fax Number:</b>                                                                                                                                                                              | (314)584-4062                   |
| <i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i> |                                 |
| <b>Phone:</b>                                                                                                                                                                                   | 3145844080                      |
| <b>Email:</b>                                                                                                                                                                                   | docket@splglaw.com              |
| <b>Correspondent Name:</b>                                                                                                                                                                      | THE SMALL PATENT LAW GROUP, LLC |
| <b>Address Line 1:</b>                                                                                                                                                                          | 1423 STRASSNER DR, SUITE 100    |
| <b>Address Line 4:</b>                                                                                                                                                                          | BRENTWOOD, MISSOURI 63144       |
| <b>ATTORNEY DOCKET NUMBER:</b>                                                                                                                                                                  | WAB/P/11425/US/CON8             |
| <b>NAME OF SUBMITTER:</b>                                                                                                                                                                       | JOSEF L. HOFFMANN               |
| <b>SIGNATURE:</b>                                                                                                                                                                               | /Josef L. Hoffmann/             |
| <b>DATE SIGNED:</b>                                                                                                                                                                             | 11/03/2021                      |
| <b>Total Attachments: 13</b>                                                                                                                                                                    |                                 |
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| source=GE_to_GEGSLLC_Assignment_1_RecordSecond (General Electric Company assigns to GE Global Sourcing LLC#page2.tif                                                                            |                                 |
| source=GE_to_GEGSLLC_Assignment_1_RecordSecond (General Electric Company assigns to GE Global Sourcing LLC#page3.tif                                                                            |                                 |
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Sourcing LLC#page4.tif

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## INTELLECTUAL PROPERTY ASSIGNMENT AGREEMENT

This **INTELLECTUAL PROPERTY ASSIGNMENT AGREEMENT** ("Assignment"), effective as of November 1, 2018 ("Effective Date"), is by and between General Electric Company ("Assignor") and GE Global Sourcing LLC ("Assignee").

WHEREAS, pursuant to that certain Separation, Distribution and Sale Agreement, dated as of May 20, 2018 among Assignor, Transportation Systems Holdings Inc. ("SpinCo"), Westinghouse Air Brake Technologies Corporation, and Wabtec US Rail, Inc. (the "Separation Agreement"), Assignor agreed to Transfer, or cause certain of its affiliates to Transfer, and SpinCo agreed to receive, the SpinCo Assets, in each case on the terms and subject to the conditions contained in the Separation Agreement;

WHEREAS, the SpinCo Assets include all Registrable IP set forth on Exhibit A hereto (the "Assigned IP");

WHEREAS, Assignor hereby desires to deliver and transfer to Assignee the Assigned IP;

WHEREAS, with respect to any Registrable IP developed or identified after the Effective Date that constitutes SpinCo Assets and that is required to be transferred to SpinCo pursuant to the Separation Agreement ("Future Assigned IP"), Assignor will deliver and transfer to Assignee the Future Assigned IP pursuant to a separate intellectual property assignment agreement in substantially the same form as this Assignment which will be entered into on the Closing Date;

WHEREAS, in exchange for the transfer of the Assigned IP and Future Assigned IP, Assignee will deliver, and Assignor will receive, a cash payment of \$567,000,000 and the Promissory Note for \$567,000,000 between Assignor and Assignee dated November 1, 2018 (collectively, the "Consideration");

WHEREAS, Assignee desires to acquire the Assigned IP and Future Assigned IP from Assignor and Assignor desires to receive the Consideration; and

WHEREAS, in accordance with its obligations under the Separation Agreement, Assignor intends to Transfer, directly or indirectly, all of the outstanding equity interests of Assignee to SpinCo.

NOW, THEREFORE, for good and valuable consideration, the sufficiency and receipt of which is hereby acknowledged:

1. Unless otherwise defined herein, all capitalized terms used herein shall have the meanings ascribed to such terms in the Separation Agreement.
2. In exchange for the Consideration, Assignor hereby sells, assigns and transfers to Assignee its entire worldwide right, title and interest in, to and under the Assigned IP, together with any and all goodwill connected with and symbolized by the Assigned IP, the same to be held and enjoyed by Assignee for its own use and enjoyment and the use and enjoyment of its successors, assigns and other legal representatives as fully and entirely as the same would have been held and enjoyed by

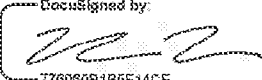
Assignor if this assignment and sale had not been made, as assignee of its respective entire right, title and interest therein, including, without limitation, all rights in and to all income, royalties, damages and payments now or hereafter due or payable with respect thereto, all causes of action (whether in law or in equity) with respect thereto, and the right to sue, counterclaim, and recover for past, present and future infringement of the rights assigned or to be assigned under this Assignment.

3. This Assignment is binding upon, and inures to the benefit of, the parties hereto and their respective legal representatives, successors and assigns. It is understood that any finding of invalidity of one assignment as effected hereby shall not affect the assignment of other Assigned IP. All questions concerning the construction, validity and interpretation of this Assignment and the performance of the obligations imposed by this Assignment shall be governed by, and construed in accordance with, the laws of the State of New York without regard to the choice of law principles thereof.
4. Upon reasonable request by Assignee, Assignor will execute additional documents and take other actions as may be necessary or desirable to record or memorialize the assignments of the Assigned IP set forth herein, and to vest in Assignee such right, title, and interest in and to the Assigned IP as sold, assigned and transferred to Assignee hereunder.
5. Assignor hereby authorizes and requests the officials of the United States Copyright Office and the United States Patent and Trademark Office, and the corresponding entities or agencies in any applicable foreign jurisdiction, to record Assignee as assignee and owner of the entire right, title and interest in, to and under the Assigned IP.
6. No waiver, modification or change of any of the provisions of this Assignment shall be valid unless in writing and signed by the party against whom such claimed waiver, modification or change is sought to be enforced.
7. This Assignment may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement. A signed copy of this Assignment delivered by facsimile, e-mail or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original signed copy of this Assignment.

IN WITNESS WHEREOF, the parties hereto, through their authorized representatives, have caused this Assignment to be duly executed and delivered as of the Effective Date.

**As Assignor:**

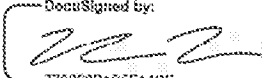
General Electric Company

DocuSigned by:  
  
By: 776060B1B5F14CE .....

Name: Victoria Vron  
Title: Authorized Signatory

**As Assignee:**

GE Global Sourcing LLC

DocuSigned by:  
  
By: 776060B1B5F14CE .....

Name: Victoria Vron  
Title: Vice President

**EXHIBIT A**  
**ASSIGNED IP**

1. Patents

See attachment titled Assigned IP Patents which is hereby incorporated herein by reference.

2. Trademarks

- See attachment titled Assigned IP Trademarks which is hereby incorporated herein by reference.

| Trademark                  | Registration No. | Status    |
|----------------------------|------------------|-----------|
| FAIRCHILD<br>INTERNATIONAL | 1176840          | Active    |
| FAIRCHILD<br>INTERNATIONAL | 1518652          | Cancelled |
| HAUL-MARK                  | 1248161          | Cancelled |
| LO-LOW                     | 1300187          | Cancelled |
| VORAX                      | 1319219          | Cancelled |
| VORTEX                     | 1016540          | Cancelled |
| WILCOX                     | 0731455          | Cancelled |

3. Copyrights

| Docket Number | Title                                          | Filing Description | Application Number | Application Date | Copyright Date | Copyright Number | Filing Status |
|---------------|------------------------------------------------|--------------------|--------------------|------------------|----------------|------------------|---------------|
| 283161        | DOCS<br>Common App<br>CMS Priv bin<br>Raildocs | CPY-<br>Copyright  | 1-1832700148       | 17-OCT-14        | NA             | TX0007976223     | Issued        |
| 283163        | DOCS-<br>common app<br>hos raildocs            | CPY-<br>Copyright  | 1-1827193121       | 17-OCT-14        | 17-OCT-14      | TX0007975727     | Issued        |
| 283164        | DOCS Raildocs                                  | CPY-<br>Copyright  | 1-1827193147       | 17-OCT-14        | 17-OCT-14      | TX0007975647     | Issued        |
| 283165        | DOCS<br>Common App<br>PMMS<br>Raildocs         | CPY-<br>Copyright  | 1-1832700441       | 10-DEC-14        | 10-DEC-14      | TX0008001822     | Issued        |
| 283166        | Train<br>Management<br>Software                | CPY-<br>Copyright  | 1-1607818761       | 22-JUL-14        | 22-JUL-14      | TX7942141        | Issued        |

|        |                                                                                  |                   |               |           |           |             |        |
|--------|----------------------------------------------------------------------------------|-------------------|---------------|-----------|-----------|-------------|--------|
| 283167 | TripOptimizer<br>PTC<br>Integration                                              | CPY-<br>Copyright | 1-2120294851  | 06-FEB-15 | 06-FEB-16 | TX8042226   | Issued |
| 285322 | Log File<br>Download                                                             | CPY-<br>Copyright | 1-2770332201  | 07-OCT-15 | 07-OCT-15 | TX8-211-117 | Issued |
| 285995 | Copyright<br>submission for<br>GHOST PC<br>application<br>source code.           | CPY-<br>Copyright | 1-31158559671 | 10-FEB-16 | NA        | NA          | Filed  |
| 315500 | Copyright for<br>Service<br>Program<br>Effectiveness<br>Tool (Data<br>Lake Tool) | CPY-<br>Copyright | 1-4041201801  | 30-SEP-16 | NA        | NA          | Filed  |

Assigned IP Patents

| Docket  | dash | CO | Title                                                                                             | Filing Description            | App Number | App Date           | Status |
|---------|------|----|---------------------------------------------------------------------------------------------------|-------------------------------|------------|--------------------|--------|
| 180373  | 1    | US | ENHANCED RECORDATION DEVICE FOR RAIL CAR INSPECTIONS                                              | ORD-UTILITY PATENT FILING     | 11/785904  | April 20, 2007     | Filed  |
| 182706  | 1    | US | WIRELESS MONITORING SYSTEM                                                                        | PRI-PRIORITY APPLICATION      | 11/275188  | December 16, 2005  | Filed  |
| 204173  | 6    | US | TRIP OPTIMIZATION SYSTEM AND METHOD FOR A TRAIN                                                   | ORD-UTILITY PATENT FILING     | 11/750716  | May 18, 2007       | Filed  |
| 226276A | 1    | US | LOCATION DETERMINATION SYSTEM                                                                     | CIP-CONTINUATION IN PART      | 15/439090  | February 22, 2017  | Filed  |
| 235133  | 1    | US | SYSTEM AND METHOD FOR OPERATING A TURBOCHARGED ENGINE                                             | ORD-UTILITY PATENT FILING     | 12/555043  | September 8, 2009  | Filed  |
| 238941  | 7    | US | METHOD AND SYSTEM FOR CONTROLLING ENGINE PERFORMANCE                                              | DIV-DIVISIONAL FILING         | 13/863258  | April 15, 2013     | Filed  |
| 243591  | 8    | US | EMISSIONS CONTROL SYSTEMS AND METHODS                                                             | CON-CONTINUATION              | 16/058625  | August 8, 2018     | Filed  |
| 245212  | 5    | US | APPARATUS AND SYSTEM FOR DIRECTING EXHAUST GAS FLOW                                               | CIP-CONTINUATION IN PART      | 14/952748  | November 25, 2015  | Filed  |
| 247489  | 9    | US | SYSTEMS AND METHODS FOR DIAGNOSING AN ENGINE                                                      | DIV-DIVISIONAL FILING         | 16/023302  | June 29, 2018      | Filed  |
| 247901  | 3    | US | DEVICE, METHOD, AND SYSTEM FOR EMISSIONS CONTROL                                                  | CON-CONTINUATION              | 15/354117  | November 17, 2016  | Filed  |
| 248398A | 2    | US | SYSTEMS AND METHODS FOR ENGINE CONTROL                                                            | DIV-DIVISIONAL FILING         | 16/023202  | June 29, 2018      | Filed  |
| 252746  | 7    | US | MULTI-FUEL SYSTEM AND METHOD                                                                      | CIP-CONTINUATION IN PART      | 15/095388  | April 11, 2016     | Filed  |
| 254902  | 12   | US | SYSTEM AND METHOD FOR A COMPRESSOR                                                                | CIP-CONTINUATION IN PART      | 15/704656  | September 14, 2017 | Filed  |
| 254902  | 2    | US | SYSTEM AND METHOD FOR A COMPRESSOR                                                                | ORD-UTILITY PATENT FILING     | 13/866435  | April 19, 2013     | Filed  |
| 255300A | 1    | US | METHOD FOR OPERATING AN ENGINE                                                                    | CIP-CONTINUATION IN PART      | 15/013432  | February 2, 2016   | Filed  |
| 257856  | 3    | US | APPARATUS AND METHOD FOR CONTROL OF MULTI-INVERTER POWER CONVERTER                                | PCT-PATENT COOPERATION TREATY | 15/319402  | December 16, 2016  | Filed  |
| 258059  | 6    | US | ADHESION CONTROL SYSTEM AND METHOD                                                                | DIV-DIVISIONAL FILING         | 15/662367  | July 28, 2017      | Filed  |
| 260472A | 1    | US | FUEL SELECTION METHOD AND RELATED SYSTEM FOR A MOBILE ASSET                                       | CIP-CONTINUATION IN PART      | 14/847899  | September 8, 2015  | Filed  |
| 261674  | 8    | US | SYSTEM AND METHOD FOR AUTOMATED ESTABLISHMENT OF A VEHICLE CONSIST                                | CIP-CONTINUATION IN PART      | 14/836063  | August 26, 2015    | Filed  |
| 262087A | 1    | US | METHODS AND SYSTEMS FOR DATA COMMUNICATIONS                                                       | CIP-CONTINUATION IN PART      | 14/193987  | February 28, 2014  | Filed  |
| 262214  | 3    | US | SYSTEM AND METHOD FOR CONTROLLING AT LEAST ONE OF TRACTIVE OR BRAKING EFFORTS OF A VEHICLE SYSTEM | DIV-DIVISIONAL FILING         | 15/811222  | November 13, 2017  | Filed  |
| 262655  | 4    | US | DEVICE FOR RULE-BASED DOCUMENT PARSING AND ANALYSIS                                               | CIP-CONTINUATION IN PART      | 15/002150  | January 20, 2016   | Filed  |
| 262657A | 1    | US | VEHICLE CONTROL SYSTEM                                                                            | CIP-CONTINUATION IN PART      | 15/411949  | January 20, 2017   | Filed  |
| 262663A | 1    | US | VEHICLE CONTROL SYSTEM                                                                            | PRI-PRIORITY APPLICATION      | 15/299844  | October 21, 2016   | Filed  |
| 262735A | 1    | US | VEHICLE CONTROL SYSTEM                                                                            | CIP-CONTINUATION IN PART      | 15/211104  | July 15, 2016      | Filed  |
| 262736A | 1    | US | EQUIPMENT CONTROL SYSTEM                                                                          | PRI-PRIORITY APPLICATION      | 15/294164  | October 14, 2016   | Filed  |
| 262737  | 4    | US | ROUTING DEVICE FOR NETWORK OPTIMIZATION                                                           | CIP-CONTINUATION IN PART      | 15/140679  | April 28, 2016     | Filed  |
| 263954  | 11   | US | WIRELESS SYSTEM AND METHOD FOR MEASURING AN OPERATIVE CONDITION OF A MACHINE                      | CON-CONTINUATION              | 15/678403  | August 16, 2017    | Filed  |
| 264985  | 4    | US | SYSTEM AND METHOD OF VEHICLE SYSTEM CONTROL                                                       | CON-CONTINUATION              | 15/674768  | August 11, 2017    | Filed  |
| 265063  | 1    | US | SYSTEM AND METHOD OF OPERATING AN INTERNAL COMBUSTION ENGINE                                      | PRI-PRIORITY APPLICATION      | 13/905691  | May 30, 2013       | Filed  |
| 265785  | 1    | US | METHODS AND SYSTEM FOR A TURBOCHARGER                                                             | PRI-PRIORITY APPLICATION      | 14/931906  | November 4, 2015   | Filed  |
| 267684  | 7    | US | SYSTEM AND METHOD FOR DETERMINING EFFECTIVENESS OF A FRICTION MODIFIER ALONG A ROUTE SEGMENT      | CIP-CONTINUATION IN PART      | 15/671100  | August 7, 2017     | Filed  |
| 268091  | 3    | US | SYSTEM AND METHOD FOR POWERING AN ENGINE-DRIVEN PLATFORM                                          | PCT-PATENT COOPERATION TREATY | 15/317507  | December 9, 2016   | Filed  |
| 268356  | 2    | US | AERODYNAMIC CONTROL SYSTEM AND METHOD                                                             | CON-CONTINUATION              | 15/357159  | November 21, 2016  | Filed  |
| 268790  | 2    | US | SYSTEMS AND METHODS FOR ROUTE EFFICIENCY MAPPING                                                  | ORD-UTILITY PATENT FILING     | 14/161747  | January 23, 2014   | Filed  |
| 268899  | 1    | US | SYSTEM AND METHOD FOR FULL RANGE CONTROL OF DUAL ACTIVE BRIDGE                                    | PRI-PRIORITY APPLICATION      | 14/547178  | November 19, 2014  | Filed  |
| 268912  | 5    | US | SYSTEM AND METHOD FOR DETERMINING VEHICLE ORIENTATION IN A VEHICLE CONSIST                        | CIP-CONTINUATION IN PART      | 15/421978  | February 1, 2017   | Filed  |
| 269548  | 3    | US | SYSTEM AND METHOD FOR CONTROLLING A VEHICLE                                                       | PCT-PATENT COOPERATION TREATY | 14/899261  | December 17, 2015  | Filed  |
| 270480  | 5    | US | SYSTEM AND METHOD INTEGRATING AN ENERGY MANAGEMENT SYSTEM AND YARD PLANNER SYSTEM                 | DIV-DIVISIONAL FILING         | 15/089574  | April 3, 2016      | Filed  |



|         |    |    |                                                                                                                       |                                 |                   |                    |       |
|---------|----|----|-----------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------|--------------------|-------|
| 270504  | 9  | US | ROUTE EXAMINING SYSTEM AND METHOD                                                                                     | DIV-DIVISIONAL FILING           | 15/075118         | March 19, 2016     | Filed |
| 270665  | 6  | US | METHOD AND SYSTEMS FOR EXHAUST GAS RECIRCULATION                                                                      | DIV-DIVISIONAL FILING           | 15/296556         | October 18, 2016   | Filed |
| 270801  | 3  | US | SYSTEMS FOR A MULTI-FUEL CAPABLE ENGINE                                                                               | DIV-DIVISIONAL FILING           | 15/683298         | August 22, 2017    | Filed |
| 270928A | 3  | US | VISUAL SCHEDULING SYSTEM AND METHOD OF VEHICLE MOVEMENT THROUGH YARDS                                                 | DDV-DESIGN DIVISIONAL           | 29/650438         | June 6, 2018       | Filed |
| 271046  | 1  | US | SYSTEM AND METHOD FOR CONTROLLING A DUAL FUEL ENGINE                                                                  | PRI-PRIORITY APPLICATION        | 14/138200         | December 23, 2013  | Filed |
| 271210  | 3  | US | BUS BAR AND POWER ELECTRONIC DEVICE WITH CURRENT SHAPING TERMINAL CONNECTOR AND METHOD OF MAKING A TERMINAL CONNECTOR | PCT-PATENT COOPERATION TREATY   | 15/524288         | May 4, 2017        | Filed |
| 271365  | 3  | US | DISPLAY SCREEN WITH GRAPHICAL USER INTERFACE                                                                          | DDV-DESIGN DIVISIONAL           | 29/603459         | May 10, 2017       | Filed |
| 271367  | 3  | US | DISPLAY SCREEN WITH GRAPHICAL USER INTERFACE                                                                          | DDV-DESIGN DIVISIONAL           | 29/595619         | March 1, 2017      | Filed |
| 271415  | 1  | US | OPTICAL ROUTE EXAMINATION SYSTEM AND METHOD                                                                           | PRI-PRIORITY APPLICATION        | 14/212672         | March 18, 2014     | Filed |
| 271462A | 2  | US | ROUTE EXAMINATION SYSTEM AND METHOD                                                                                   | DIV-DIVISIONAL FILING           | 15/922535         | March 15, 2018     | Filed |
| 271466  | 2  | US | PRESSURE RELIEF VALVE SYSTEM                                                                                          | ORD-UTILITY PATENT FILING       | 14/747748         | June 23, 2015      | Filed |
| 271784  | 1  | US | METHOD AND SYSTEMS FOR EXHAUST GAS CONTROL                                                                            | CIP-CONTINUATION IN PART        | 15/045616         | February 17, 2016  | Filed |
| 272316  | 2  | US | SYSTEMS AND METHOD FOR CONTROLLING AUTO-IGNITION                                                                      | DIV-DIVISIONAL FILING           | 15/889662         | February 6, 2018   | Filed |
| 272349A | 1  | US | DIFFERENTIAL FUELING BETWEEN DONOR AND NON-DONOR CYLINDERS IN ENGINES                                                 | CIP-CONTINUATION IN PART        | 15/150457         | May 10, 2016       | Filed |
| 272741  | 2  | US | VIDEO SYSTEM AND METHOD FOR DATA COMMUNICATION                                                                        | ORD-UTILITY PATENT FILING       | 14/541370         | November 14, 2014  | Filed |
| 272928  | 5  | US | ROUTE MONITORING SYSTEM AND METHOD                                                                                    | CON-CONTINUATION                | 15/345158         | November 7, 2016   | Filed |
| 273071  | 2  | US | VEHICLE IMAGING SYSTEM AND METHOD                                                                                     | ORD-UTILITY PATENT FILING       | 14/457353         | August 12, 2014    | Filed |
| 273456  | 1  | US | VEHICLE TRACTION CONTROL SYSTEM AND METHOD                                                                            | PRI-PRIORITY APPLICATION        | 14/496655         | September 25, 2014 | Filed |
| 273456  | 4  | US | VEHICLE CONTROL SYSTEM AND METHOD                                                                                     | CIP-CONTINUATION IN PART        | 15/907823         | February 28, 2018  | Filed |
| 273881  | 3  | US | SYSTEM AND METHOD FOR COOLING POWER ELECTRONICS                                                                       | PCT-PATENT COOPERATION TREATY   | 15/517195         | April 6, 2017      | Filed |
| 274210A | 2  | US | METHOD AND SYSTEMS FOR MANAGING CONDENSATE                                                                            | ORD-UTILITY PATENT FILING       | 15/096391         | April 12, 2016     | Filed |
| 274406  | 3  | US | SYSTEM FOR AN EXHAUST GAS AFTERTREATMENT SYSTEM AND SUPPORT STRUCTURE                                                 | CIP-CONTINUATION IN PART        | 15/140797         | April 28, 2016     | Filed |
| 274674  | 2  | US | SYSTEM AND METHOD FOR CONTROLLING ELECTRICALLY DRIVEN ACCESSORIES                                                     | ORD-UTILITY PATENT FILING       | 14/972739         | December 17, 2015  | Filed |
| 275592  | 1  | US | SUBSTITUTION RATE CONTROL SYSTEM FOR AN ENGINE AND AN ASSOCIATED METHOD THEREOF                                       | PRI-PRIORITY APPLICATION        | 14/477110         | September 4, 2014  | Filed |
| 275931  | 6  | US | METHOD AND SYSTEMS FOR EGR CONTROL                                                                                    | DIV-DIVISIONAL FILING           | 15/941291         | March 30, 2018     | Filed |
| 276096  | 1  | US | METHOD AND SYSTEMS FOR AIRFLOW CONTROL                                                                                | PRI-PRIORITY APPLICATION        | 14/520539         | October 22, 2014   | Filed |
| 276265A | 1  | US | SYSTEM AND METHOD FOR MANIPULATION PLATFORM                                                                           | CIP-CONTINUATION IN PART        | 15/216192         | July 21, 2016      | Filed |
| 276403  | 1  | US | SYSTEM FOR CONTROLLING INJECTION OF FUEL IN ENGINE                                                                    | PRI-PRIORITY APPLICATION        | 14/564158         | December 9, 2014   | Filed |
| 276577  | 2  | US | VEHICLE BUILDING SYSTEM AND METHOD                                                                                    | ORD-UTILITY PATENT FILING       | 15/142485         | April 29, 2016     | Filed |
| 276609  | 2  | US | SYSTEMS FOR DETECTING ELECTRICAL FAULTS IN A VEHICLE                                                                  | ORD-UTILITY PATENT FILING       | 14/993078         | January 11, 2016   | Filed |
| 276613  | 1  | US | COMMUNICATION SYSTEM AND METHOD FOR CORRELATING WIRELESS COMMUNICATION PERFORMANCE WITH VEHICLE SYSTEM CONFIGURATIONS | PRI-PRIORITY APPLICATION        | 14/521505         | October 23, 2014   | Filed |
| 276662  | 1  | US | BOGIE SIDE FRAME                                                                                                      | PDS-PRIORITY DESIGN APPLICATION | 29/510230         | November 26, 2014  | Filed |
| 276666  | 1  | US | POWER ASSIGNMENT SYSTEM AND METHOD FOR FORMING VEHICLE SYSTEMS                                                        | PRI-PRIORITY APPLICATION        | 14/492226         | September 22, 2014 | Filed |
| 276723  | 10 | US | SYSTEM CONTROLLER ENCLOSURE                                                                                           | DDV-DESIGN DIVISIONAL           | 29/624860         | November 3, 2017   | Filed |
| 276926  | 2  | US | MULTI-FUEL ENGINE SYSTEM                                                                                              | ORD-UTILITY PATENT FILING       | 14/967062         | December 11, 2015  | Filed |
| 276962  | 5  | US | METHOD FOR OPERATING AN INTERNAL COMBUSTION ENGINE                                                                    | PCT-PATENT COOPERATION TREATY   | 15/577834         | November 29, 2017  | Filed |
| 276972  | 4  | US | OIL FILTER SYSTEMS                                                                                                    | CON-CONTINUATION                | 15/687794         | August 28, 2017    | Filed |
| 277145  | 2  | WO | ARRANGEMENT FROM ONE HEAD AND A FUEL INJECTOR                                                                         | ORD-UTILITY PATENT FILING       | PCT/AT2016/000035 | April 8, 2016      | Filed |

|         |    |    |                                                                                                     |                                 |           |                    |       |
|---------|----|----|-----------------------------------------------------------------------------------------------------|---------------------------------|-----------|--------------------|-------|
| 277145  | 3  | US | ARRANGEMENT FROM ONE HEAD AND A FUEL INJECTOR                                                       | PCT-PATENT COOPERATION TREATY   | 15/564433 | October 5, 2017    | Filed |
| 277663  | 2  | US | VEHICLE COMMUNICATION SYSTEM                                                                        | CIP-CONTINUATION IN PART        | 15/377594 | December 13, 2016  | Filed |
| 277823  | 1  | US | System and Method for Controlling a Vehicle                                                         | CIP-CONTINUATION IN PART        | 15/149665 | May 9, 2016        | Filed |
| 277854  | 1  | US | INVERTER DRIVE SYSTEM, BUS BAR AND ASSEMBLY                                                         | PRI-PRIORITY APPLICATION        | 14/686939 | April 15, 2015     | Filed |
| 277931  | 1  | US | ENGINE CONTROL UNIT                                                                                 | PDS-PRIORITY DESIGN APPLICATION | 29/541062 | September 30, 2015 | Filed |
| 278009  | 5  | US | BUSBAR                                                                                              | DDV-DESIGN DIVISIONAL           | 29/625991 | November 14, 2017  | Filed |
| 278371  | 1  | US | Unidirectional high power buck converter with an add on circuit for very low power boost capability | PRI-PRIORITY APPLICATION        | 14/973740 | December 18, 2015  | Filed |
| 278442  | 1  | US | SYSTEMS FOR FUEL DELIVERY                                                                           | PRI-PRIORITY APPLICATION        | 14/811928 | July 29, 2015      | Filed |
| 278952  | 2  | US | VEHICLE CONSUMPTION MONITORING SYSTEM AND METHOD                                                    | ORD-UTILITY PATENT FILING       | 14/860782 | September 22, 2015 | Filed |
| 278973  | 3  | US | SYSTEM AND METHODS FOR OPTIMIZING FUEL CONSUMPTION                                                  | PCT-PATENT COOPERATION TREATY   | 15/520688 | April 20, 2017     | Filed |
| 278975  | 6  | US | SYSTEM AND METHOD FOR ENGINE CONTROL                                                                | DIV-DIVISIONAL FILING           | 16/107848 | August 21, 2018    | Filed |
| 279163  | 10 | US | SYSTEM AND METHOD FOR CONTROLLING A VEHICLE SYSTEM                                                  | CON-CONTINUATION                | 15/864518 | January 8, 2018    | Filed |
| 279174  | 2  | US | VEHICLE CONTROL SYSTEM AND METHOD                                                                   | ORD-UTILITY PATENT FILING       | 15/055567 | February 27, 2016  | Filed |
| 279528  | 5  | US | INTEGRATED MOTOR AND AXLE APPARATUS AND METHOD                                                      | PCT-PATENT COOPERATION TREATY   | 15/524904 | May 5, 2017        | Filed |
| 279728  | 1  | US | SYSTEMS AND METHODS FOR DISPLAYING TEST DETAILS OF AN ENGINE CONTROL TEST                           | PRI-PRIORITY APPLICATION        | 15/072455 | March 17, 2016     | Filed |
| 279783  | 3  | US | DUAL-FUEL-COMBUSTION ENGINE                                                                         | PCT-PATENT COOPERATION TREATY   | 15/736332 | December 14, 2017  | Filed |
| 279794A | 2  | US | DATA COMMUNICATION SYSTEM AND METHOD                                                                | CON-CONTINUATION                | 15/918267 | March 12, 2018     | Filed |
| 280223  | 1  | US | SYSTEM AND METHOD FOR PASSIVELY COOLING AN ENCLOSURE BACKGROUND                                     | PRI-PRIORITY APPLICATION        | 14/711405 | May 13, 2015       | Filed |
| 281014  | 1  | US | AERIAL CAMERA SYSTEM AND METHOD FOR IDENTIFYING ROUTE-RELATED HAZARDS                               | PRI-PRIORITY APPLICATION        | 15/061129 | March 4, 2016      | Filed |
| 281224  | 2  | US | TRANSPORTATION MONITORING SYSTEM AND METHOD                                                         | ORD-UTILITY PATENT FILING       | 14/990812 | January 8, 2016    | Filed |
| 281433  | 3  | US | DISPLAY SCREEN WITH SHIPMENT MANAGEMENT GRAPHICAL USER INTERFACE                                    | DDV-DESIGN DIVISIONAL           | 29/645296 | April 25, 2018     | Filed |
| 281508  | 1  | US | CONNECTED SPACER                                                                                    | PDS-PRIORITY DESIGN APPLICATION | 29/531226 | June 24, 2015      | Filed |
| 281777  | 1  | US | METHOD AND SYSTEMS FOR AIRFLOW CONTROL                                                              | PRI-PRIORITY APPLICATION        | 14/955106 | December 1, 2015   | Filed |
| 282064  | 1  | US | UNDERPLATFORM DAMPING MEMBERS AND METHODS FOR TURBOCHARGER ASSEMBLIES                               | PRI-PRIORITY APPLICATION        | 14/821234 | August 7, 2015     | Filed |
| 282080  | 6  | US | DISPLAY SCREEN WITH GRAPHICAL USER INTERFACE                                                        | DDV-DESIGN DIVISIONAL           | 29/654995 | June 29, 2018      | Filed |
| 282127  | 1  | US | BLOWER ASSEMBLY                                                                                     | PDS-PRIORITY DESIGN APPLICATION | 29/547139 | December 1, 2015   | Filed |
| 282158  | 2  | US | SYSTEMS AND METHOD FOR A VEHICLE NETWORK                                                            | ORD-UTILITY PATENT FILING       | 15/135180 | April 21, 2016     | Filed |
| 282379  | 2  | US | METHOD AND SYSTEM FOR CALIBRATING EXHAUST VALVES                                                    | CIP-CONTINUATION IN PART        | 15/343511 | November 4, 2016   | Filed |
| 282394A | 1  | US | ROUTE EXAMINING SYSTEM                                                                              | CIP-CONTINUATION IN PART        | 15/797086 | October 30, 2017   | Filed |
| 282409  | 1  | US | SYSTEMS AND METHODS FOR A PORTABLE TESTING DEVICE                                                   | PRI-PRIORITY APPLICATION        | 15/001814 | January 20, 2016   | Filed |
| 282442  | 2  | US | SYSTEMS AND METHODS FOR BLOWER CONTROL                                                              | ORD-UTILITY PATENT FILING       | 15/378754 | December 14, 2016  | Filed |
| 282747  | 2  | US | SYSTEMS AND METHOD FOR A TRACTION SYSTEM                                                            | PRI-PRIORITY APPLICATION        | 15/331135 | October 21, 2016   | Filed |
| 282830  | 3  | US | TURBOCHARGER TRANSITION SECTION                                                                     | DDV-DESIGN DIVISIONAL           | 29/644877 | April 20, 2018     | Filed |
| 283062  | 1  | US | TRACTION MOTOR BOOT MOUNT                                                                           | PDS-PRIORITY DESIGN APPLICATION | 29/563964 | May 10, 2016       | Filed |
| 283087  | 2  | US | COMMUNICATION SYSTEM AND METHOD OF A VEHICLE CONSIST                                                | CIP-CONTINUATION IN PART        | 15/226953 | August 3, 2016     | Filed |
| 283141  | 1  | US | SYSTEM AND METHOD FOR HANDLING AUTOMOBILES AT A DISTRIBUTION SITE                                   | PRI-PRIORITY APPLICATION        | 15/430734 | February 13, 2017  | Filed |

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|---------|---|----|--------------------------------------------------------------------------------------------|---------------------------------|-------------------|-------------------|-------|
| 283407  | 1 | US | SYSTEMS AND METHODS FOR A VEHICLE INVERTER CONNECTION BUS                                  | PRI-PRIORITY APPLICATION        | 15/140812         | April 28, 2016    | Filed |
| 283559  | 2 | US | AERIAL CAMERA SYSTEM, METHOD FOR IDENTIFYING ROUTE-RELATED HAZARDS, AND MICROSTRIP ANTENNA | CIP-CONTINUATION IN PART        | 15/819877         | November 21, 2017 | Filed |
| 283572  | 2 | US | TUBE SHEET APPARATUS AND HEAT EXCHANGER                                                    | ORD-UTILITY PATENT FILING       | 15/821741         | November 22, 2017 | Filed |
| 283612  | 1 | US | SYSTEM AND METHOD FOR ENGINE CONTROL                                                       | PRO-PROVISIONAL                 | 62/483037         | April 7, 2017     | Filed |
| 283612  | 2 | WO | SYSTEM AND METHOD FOR ENGINE CONTROL                                                       | ORD-UTILITY PATENT FILING       | PCT/US2018/026496 | April 6, 2018     | Filed |
| 283660  | 2 | US | INTERMODAL TRANSPORTATION TERMINAL CONTROL SYSTEM AND METHOD                               | ORD-UTILITY PATENT FILING       | 15/339060         | October 31, 2016  | Filed |
| 283910  | 1 | US | SYSTEMS FOR AN ENGINE                                                                      | PRI-PRIORITY APPLICATION        | 15/140252         | April 27, 2016    | Filed |
| 284111  | 1 | US | CENTRIFUGAL COMPRESSOR AND SYSTEM                                                          | PRI-PRIORITY APPLICATION        | 15/075339         | March 21, 2016    | Filed |
| 284162  | 2 | US | CONTROL SYSTEM AND METHOD FOR BRAKE BLEEDING                                               | ORD-UTILITY PATENT FILING       | 15/058494         | March 2, 2016     | Filed |
| 284238  | 1 | US | VEHICLE CONTROL SYSTEM                                                                     | PRI-PRIORITY APPLICATION        | 15/236789         | August 15, 2016   | Filed |
| 284238A | 1 | US | VEHICLE COMMUNICATION SYSTEMS AND CONTROL SYSTEMS                                          | CIP-CONTINUATION IN PART        | 15/237070         | August 15, 2016   | Filed |
| 284381  | 3 | US | ROUTE EXAMINATION SYSTEM                                                                   | ORD-UTILITY PATENT FILING       | 15/861383         | January 3, 2018   | Filed |
| 284493  | 1 | US | ELECTRIC GROUND FAULT DETECTION SYSTEM AND METHOD                                          | PRI-PRIORITY APPLICATION        | 15/232969         | August 10, 2016   | Filed |
| 284615  | 2 | US | CONTROL SYSTEM AND METHOD FOR APPLYING FORCE TO GRASP A BRAKE LEVER                        | ORD-UTILITY PATENT FILING       | 15/058560         | March 2, 2016     | Filed |
| 284656  | 1 | US | SYSTEMS AND METHODS FOR ROUTE MAPPING                                                      | PRI-PRIORITY APPLICATION        | 15/233105         | August 10, 2016   | Filed |
| 284656  | 2 | WO | SYSTEMS AND METHODS FOR ROUTE MAPPING                                                      | ORD-UTILITY PATENT FILING       | PCT/US2017/040656 | July 5, 2017      | Filed |
| 284724  | 1 | US | METHODS AND SYSTEM FOR A TURBOCHARGER                                                      | PRI-PRIORITY APPLICATION        | 15/015206         | February 4, 2016  | Filed |
| 284781  | 2 | US | SYSTEM AND METHOD FOR VEHICLE CONTROL BASED ON DETECTED WHEEL CONDITION                    | ORD-UTILITY PATENT FILING       | 15/486121         | April 12, 2017    | Filed |
| 284788  | 1 | US | METHOD AND SYSTEMS FOR DIAGNOSING AN ENGINE                                                | PRI-PRIORITY APPLICATION        | 15/063043         | March 7, 2016     | Filed |
| 284900  | 8 | US | SENSOR ASSEMBLY                                                                            | DDV-DESIGN DIVISIONAL           | 29/613171         | August 8, 2017    | Filed |
| 284901  | 9 | US | SENSOR ASSEMBLY                                                                            | DDV-DESIGN DIVISIONAL           | 29/589735         | January 4, 2017   | Filed |
| 284903  | 2 | US | VEHICLE SENSOR SYSTEM                                                                      | ORD-UTILITY PATENT FILING       | 15/372937         | December 8, 2016  | Filed |
| 284937  | 2 | US | SENSOR SIGNAL PROCESSING SYSTEM AND METHOD                                                 | ORD-UTILITY PATENT FILING       | 15/365980         | December 1, 2016  | Filed |
| 284939  | 7 | US | ENGINE CONTROL SYSTEM FOR REDUCING PARTICULATE MATTER                                      | ORD-UTILITY PATENT FILING       | 15/370749         | December 6, 2016  | Filed |
| 285016  | 1 | US | METHOD AND SYSTEMS FOR A RADIATOR FAN                                                      | PRI-PRIORITY APPLICATION        | 15/061522         | March 4, 2016     | Filed |
| 285279  | 1 | US | VEHICLE SENSOR ASSEMBLY                                                                    | PRI-PRIORITY APPLICATION        | 15/073844         | March 18, 2016    | Filed |
| 285480  | 7 | US | SYSTEM AND METHOD FOR DETERMINING GRADE ERRORS OF A ROUTE                                  | ORD-UTILITY PATENT FILING       | 15/370505         | December 6, 2016  | Filed |
| 285511  | 2 | US | POWER CONTROL SYSTEM FOR A VEHICLE SYSTEM                                                  | CON-CONTINUATION                | 15/959264         | April 22, 2018    | Filed |
| 285534  | 2 | US | CONTROL SYSTEM FOR COORDINATING ROBOTIC MACHINES TO COLLABORATE ON TASKS                   | ORD-UTILITY PATENT FILING       | 15/461548         | March 17, 2017    | Filed |
| 285610  | 1 | US | CONTROL SYSTEM FOR COORDINATING ROBOTIC MACHINES TO COLLABORATE ON TASKS                   | PRI-PRIORITY APPLICATION        | 15/198673         | June 30, 2016     | Filed |
| 285610A | 1 | US | LOCOMOTIVE CONTROL SYSTEM WITH TASK MANAGER                                                | CIP-CONTINUATION IN PART        | 16/114318         | August 28, 2018   | Filed |
| 285612  | 1 | US | SYSTEM AND METHOD FOR CONTROLLING ROBOTIC MACHINE ASSEMBLES TO PERFORM TASKS ON VEHICLES   | PRI-PRIORITY APPLICATION        | 15/183850         | June 16, 2016     | Filed |
| 285774  | 1 | US | SYSTEMS AND METHODS FOR FUEL INJECTOR CONTROL                                              | PRI-PRIORITY APPLICATION        | 15/197038         | June 29, 2016     | Filed |
| 285784  | 1 | US | METHOD AND SYSTEMS FOR AN EGR COOLER INCLUDING COOLING TUBES WITH A COMPLIANT REGION       | PRI-PRIORITY APPLICATION        | 15/077287         | March 22, 2016    | Filed |
| 285854  | 1 | US | METHODS AND SYSTEM FOR ADJUSTING ENGINE AIRFLOW                                            | PRI-PRIORITY APPLICATION        | 15/377049         | December 13, 2016 | Filed |
| 285869  | 2 | US | SYSTEMS AND METHOD FOR EXHAUST GAS RECIRCULATION                                           | DIV-DIVISIONAL FILING           | 16/043321         | July 24, 2018     | Filed |
| 285937  | 2 | US | VEHICLE HANDLING SYSTEM AND METHOD                                                         | CIP-CONTINUATION IN PART        | 15/918366         | March 12, 2018    | Filed |
| 285952  | 2 | US | ELECTRONICS ENCLOSURE                                                                      | DDV-DESIGN DIVISIONAL           | 29/614800         | August 23, 2017   | Filed |
| 285993  | 1 | US | HEAT TRANSFER CHASSIS AND METHOD FOR FORMING THE SAME                                      | CIP-CONTINUATION IN PART        | 15/222478         | July 28, 2016     | Filed |
| 285994  | 1 | US | ELECTRONICS ENCLOSURE                                                                      | PDS-PRIORITY DESIGN APPLICATION | 29/574118         | August 12, 2016   | Filed |
| 285995  | 1 | US | GHOST PC Application Source Code                                                           | CPY-COPYRIGHT                   | 1-31158559671     | February 10, 2016 | Filed |
| 286114  | 1 | US | METHOD AND SYSTEMS FOR DRAINING FLUID FROM AN ENGINE                                       | PRI-PRIORITY APPLICATION        | 15/210453         | July 14, 2016     | Filed |

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|---------|---|----|------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------|--------------------|-------|
| 286154  | 1 | US | BUSBAR CLEAT                                                                                                           | PDS-PRIORITY DESIGN APPLICATION | 29/571707         | July 21, 2016      | Filed |
| 286168  | 2 | US | DEPLOYABLE STEP                                                                                                        | DDV-DESIGN DIVISIONAL           | 29/649299         | May 29, 2018       | Filed |
| 287141  | 1 | US | DIFFERENTIAL CYLINDER BALANCING FOR INTERNAL COMBUSTION ENGINE                                                         | PRI-PRIORITY APPLICATION        | 15/282094         | September 30, 2016 | Filed |
| 287151  | 1 | US | SYSTEM FOR CONTROLLING OR MONITORING A VEHICLE SYSTEM ALONG A ROUTE                                                    | PRI-PRIORITY APPLICATION        | 15/231078         | August 8, 2016     | Filed |
| 287151  | 2 | WO | MODULATED TURBINE COMPONENT COOLING                                                                                    | ORD-UTILITY PATENT FILING       | PCT/US2017/042516 | July 18, 2017      | Filed |
| 287165  | 1 | US | MULTIPLE VEHICLE CONTROL SYSTEM                                                                                        | PRI-PRIORITY APPLICATION        | 15/086403         | March 31, 2016     | Filed |
| 287206  | 1 | US | METHOD AND SYSTEMS FOR A TURBOCHARGER                                                                                  | PRI-PRIORITY APPLICATION        | 15/190496         | June 23, 2016      | Filed |
| 287281  | 1 | US | METHODS AND SYSTEM FOR DIAGNOSING FUEL INJECTORS OF AN ENGINE                                                          | PRI-PRIORITY APPLICATION        | 15/248715         | August 26, 2016    | Filed |
| 287405  | 3 | US | CABLE CONNECTOR                                                                                                        | DDV-DESIGN DIVISIONAL           | 29/655039         | June 29, 2018      | Filed |
| 287434  | 1 | US | SYSTEMS AND METHODS FOR REDUCED OIL CARRYOVER                                                                          | PRI-PRIORITY APPLICATION        | 15/085724         | March 30, 2016     | Filed |
| 310870  | 1 | US | METHODS AND SYSTEM FOR A FUEL SYSTEM                                                                                   | PRI-PRIORITY APPLICATION        | 15/215620         | July 21, 2016      | Filed |
| 310871  | 2 | WO | SYSTEM AND METHOD FOR INDEXING VEHICLES OF A VEHICLE SYSTEM                                                            | ORD-UTILITY PATENT FILING       | PCT/US2018/017870 | February 12, 2018  | Filed |
| 310875  | 3 | US | VEHICLE CONTROL SYSTEM                                                                                                 | CON-CONTINUATION                | 15/705752         | September 15, 2017 | Filed |
| 310950  | 1 | US | MOVEABLE NOZZLE ASSEMBLY AND METHOD FOR A TURBOCHARGER                                                                 | PRI-PRIORITY APPLICATION        | 15/155823         | May 16, 2016       | Filed |
| 311179  | 1 | US | SYSTEMS AND METHOD FOR AN ENGINE BYPASS VALVE                                                                          | PRI-PRIORITY APPLICATION        | 15/245212         | August 24, 2016    | Filed |
| 311180  | 1 | US | METHOD AND SYSTEMS FOR AN ENERGY RECOVERY AND ENERGY CONVERTING UNIT FOR AN ENGINE                                     | PRI-PRIORITY APPLICATION        | 15/199260         | June 30, 2016      | Filed |
| 311199  | 1 | US | AFTER TREATMENT BYPASS FOR INTERNAL COMBUSTION ENGINE DURING COLD START AND IDLE OPERATION                             | PRI-PRIORITY APPLICATION        | 15/367569         | December 2, 2016   | Filed |
| 311214  | 2 | US | MULTISENSORY DATA FUSION SYSTEM AND METHOD FOR AUTONOMOUS ROBOTIC OPERATION                                            | ORD-UTILITY PATENT FILING       | 15/399313         | January 5, 2017    | Filed |
| 311234  | 1 | US | VEHICLE CONTROL SYSTEMS AND METHODS                                                                                    | PRI-PRIORITY APPLICATION        | 15/359909         | November 23, 2016  | Filed |
| 311235  | 1 | US | COOLING CONTROL SYSTEMS                                                                                                | PRI-PRIORITY APPLICATION        | 15/276122         | September 26, 2016 | Filed |
| 311347  | 1 | US | SYSTEM AND METHOD FOR ADJUSTING TORQUE DISTRIBUTION                                                                    | PRI-PRIORITY APPLICATION        | 15/265848         | September 15, 2016 | Filed |
| 311361  | 1 | US | SYSTEMS FOR DIAGNOSING A CONDITION OF AN ENGINE                                                                        | PRI-PRIORITY APPLICATION        | 15/278049         | September 28, 2016 | Filed |
| 311417A | 1 | US | SYSTEM, METHOD AND APPARATUS FOR FASTENING COMPONENTS                                                                  | PRI-PRIORITY APPLICATION        | 15/277571         | September 27, 2016 | Filed |
| 312723A | 1 | US | TURBOCHARGER BEARING ASSEMBLY AND METHOD FOR PROVIDING THE SAME                                                        | CIP-CONTINUATION IN PART        | 15/336890         | October 28, 2016   | Filed |
| 312796  | 1 | US | FAN APPARATUS                                                                                                          | PRI-PRIORITY APPLICATION        | 15/133520         | April 19, 2016     | Filed |
| 312829  | 1 | US | VEHICLE PROPULSION SYSTEM AND METHOD OF CONTROLLING THE SAME                                                           | PRI-PRIORITY APPLICATION        | 15/192586         | June 24, 2016      | Filed |
| 312891  | 1 | US | VEHICLE PROPULSION SYSTEM AND METHOD                                                                                   | PRI-PRIORITY APPLICATION        | 15/172730         | June 3, 2016       | Filed |
| 313090  | 2 | US | DISTRIBUTED VEHICLE SYSTEM CONTROL SYSTEM AND METHOD                                                                   | ORD-UTILITY PATENT FILING       | 15/460431         | March 16, 2017     | Filed |
| 313199  | 1 | US | SYSTEM, METHOD AND APPARATUS FOR ALTERNATOR FOR ELECTRIC MACHINE                                                       | PRI-PRIORITY APPLICATION        | 15/378117         | December 14, 2016  | Filed |
| 313213  | 1 | US | BATTERY MODULE                                                                                                         | PDS-PRIORITY DESIGN APPLICATION | 29/595064         | February 24, 2017  | Filed |
| 313246  | 1 | US | METHODS AND SYSTEM FOR DIAGNOSING AN ENGINE COMPONENT BASED ON AN ENGINE SPEED PROFILE DURING AN ENGINE SHUTDOWN EVENT | PRI-PRIORITY APPLICATION        | 15/267521         | September 16, 2016 | Filed |
| 313282  | 2 | US | CONTROL SYSTEM AND METHOD FOR ROBOTIC MOTION PLANNING AND CONTROL                                                      | ORD-UTILITY PATENT FILING       | 15/282102         | September 30, 2016 | Filed |
| 313339  | 2 | US | SYSTEMS AND METHODS FOR CONTROL OF ROBOTIC MANIPULATION                                                                | ORD-UTILITY PATENT FILING       | 15/293905         | October 14, 2016   | Filed |
| 313342  | 2 | US | INTEGRATED ROBOTIC SYSTEM AND METHOD FOR AUTONOMOUS VEHICLE MAINTENANCE                                                | ORD-UTILITY PATENT FILING       | 15/292605         | October 13, 2016   | Filed |
| 313399  | 1 | US | OIL CARRYOVER REDUCTION SYSTEM                                                                                         | PRI-PRIORITY APPLICATION        | 15/334416         | October 26, 2016   | Filed |
| 313402  | 1 | US | RIPPLE CURRENT REDUCTION SYSTEM                                                                                        | PRI-PRIORITY APPLICATION        | 15/279460         | September 29, 2016 | Filed |
| 313446  | 1 | US | SYSTEMS AND METHOD FOR EXHAUST GAS RECIRCULATION                                                                       | PRI-PRIORITY APPLICATION        | 15/241255         | August 19, 2016    | Filed |
| 313456  | 1 | US | VEHICLE CONTROL SYSTEM                                                                                                 | PRI-PRIORITY APPLICATION        | 15/397209         | January 3, 2017    | Filed |
| 313617  | 1 | US | SYSTEM AND METHOD FOR CONTROLLING A VEHICLE                                                                            | PRI-PRIORITY APPLICATION        | 15/342774         | November 3, 2016   | Filed |

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|---------|---|----|-----------------------------------------------------------------------------------|---------------------------------|-------------------|--------------------|-------|
| 313740  | 1 | US | METHOD AND SYSTEMS FOR AN EXHAUST GAS RECIRCULATION COOLER INCLUDING TWO SECTIONS | PRI-PRIORITY APPLICATION        | 15/241152         | August 19, 2016    | Filed |
| 313870  | 1 | US | COMMUNICATION SYSTEMS                                                             | PRI-PRIORITY APPLICATION        | 15/360118         | November 23, 2016  | Filed |
| 313957  | 2 | US | SYSTEMS FOR VEHICLE PARTICULATE FILTER REGENERATION                               | ORD-UTILITY PATENT FILING       | 15/670063         | August 7, 2017     | Filed |
| 314133  | 2 | US | DISPLAY WITH CONNECTOR AND COVER                                                  | DDV-DESIGN DIVISIONAL           | 29/635456         | January 31, 2018   | Filed |
| 314208  | 1 | US | CURRENT REDUCTION SYSTEM FOR INVERTERS CONNECTED TO A COMMON BUS                  | PRO-PROVISIONAL                 | 62/484773         | April 12, 2017     | Filed |
| 314208  | 2 | US | CURRENT REDUCTION SYSTEM FOR INVERTERS CONNECTED TO A COMMON BUS                  | ORD-UTILITY PATENT FILING       | 15/921299         | March 14, 2018     | Filed |
| 314208  | 3 | WO | CURRENT REDUCTION SYSTEM FOR INVERTERS CONNECTED TO A COMMON BUS                  | ORD-UTILITY PATENT FILING       | PCT/US2018/026399 | April 6, 2018      | Filed |
| 314367  | 1 | US | RIBBED CONVOLUTION MUFFLER                                                        | PDS-PRIORITY DESIGN APPLICATION | 29/593368         | February 8, 2017   | Filed |
| 314410  | 1 | US | METHOD AND SYSTEMS FOR A MULTISTAGE EXHAUST GAS COOLER                            | PRO-PROVISIONAL                 | 62/482303         | April 6, 2017      | Filed |
| 314410  | 2 | US | METHOD AND SYSTEMS FOR A MULTISTAGE EXHAUST GAS COOLER                            | ORD-UTILITY PATENT FILING       | 15/973299         | May 7, 2018        | Filed |
| 314410  | 3 | WO | METHOD AND SYSTEMS FOR A MULTISTAGE EXHAUST GAS COOLER                            | ORD-UTILITY PATENT FILING       | PCT/US2018/026395 | April 6, 2018      | Filed |
| 314410  | 4 | US | METHOD AND SYSTEMS FOR A MULTISTAGE EXHAUST GAS COOLER                            | CON-CONTINUATION                | 15/973299         | May 7, 2018        | Filed |
| 314710  | 2 | US | SYSTEM AND METHOD FOR SENSING LUBRICANT AND ENGINE HEALTH                         | CIP-CONTINUATION IN PART        | 15/884889         | January 31, 2018   | Filed |
| 314829  | 1 | US | A POWER SYSTEM AND AN ASSOCIATED METHOD THEREOF                                   | PRI-PRIORITY APPLICATION        | 15/675845         | August 14, 2017    | Filed |
| 314831  | 1 | US | METHODS AND SYSTEM FOR A FUEL SYSTEM                                              | PRO-PROVISIONAL                 | 62/451843         | January 30, 2017   | Filed |
| 314831  | 2 | US | METHODS AND SYSTEM FOR DIAGNOSING A HIGH-PRESSURE FUEL PUMP IN A FUEL SYSTEM      | ORD-UTILITY PATENT FILING       | 15/839670         | December 12, 2017  | Filed |
| 315036  | 1 | US | VEHICLE MONITORING SYSTEM                                                         | PRO-PROVISIONAL                 | 62/486059         | April 17, 2017     | Filed |
| 315036  | 2 | US | VEHICLE MONITORING SYSTEM                                                         | ORD-UTILITY PATENT FILING       | 15/916823         | March 9, 2018      | Filed |
| 315039  | 1 | US | SYSTEM AND METHOD FOR CONTROLLING A VEHICLE                                       | PRO-PROVISIONAL                 | 62/480590         | April 3, 2017      | Filed |
| 315039  | 2 | US | SYSTEM AND METHOD FOR CONTROLLING A VEHICLE                                       | ORD-UTILITY PATENT FILING       | 15/796960         | October 30, 2017   | Filed |
| 315039  | 3 | WO | SYSTEM AND METHOD FOR CONTROLLING A VEHICLE                                       | ORD-UTILITY PATENT FILING       | PCT/US2017/059440 | November 1, 2017   | Filed |
| 315128  | 1 | US | POWER SYSTEM AND ASSOCIATED SYSTEM                                                | PRI-PRIORITY APPLICATION        | 15/643537         | July 7, 2017       | Filed |
| 315183  | 1 | US | EXHAUST GAS RECIRCULATION SYSTEM AND METHOD                                       | CIP-CONTINUATION IN PART        | 15/428318         | February 9, 2017   | Filed |
| 315330  | 2 | WO | A POWER SYSTEM AND AN ASSOCIATED METHOD THEREOF                                   | ORD-UTILITY PATENT FILING       | PCT/US2018/025935 | April 3, 2018      | Filed |
| 315474  | 1 | US | METHODS AND SYSTEM FOR SKIP-FIRING OF AN ENGINE                                   | PRO-PROVISIONAL                 | 62/459799         | February 16, 2017  | Filed |
| 315474  | 2 | WO | METHODS AND SYSTEM FOR SKIP-FIRING OF AN ENGINE                                   | ORD-UTILITY PATENT FILING       | PCT/US2018/018463 | February 16, 2018  | Filed |
| 315499  | 2 | US | ROUTE INSPECTION SYSTEM                                                           | ORD-UTILITY PATENT FILING       | 15/651067         | July 17, 2017      | Filed |
| 315500  | 1 | US | Copyright for Service Program Effectiveness Tool (Data Lake Tool)                 | CPV-COPRIGHT                    | 1-4041201801      | September 30, 2016 | Filed |
| 315664  | 1 | US | METHOD AND SYSTEMS FOR A MULTI-NEEDLE FUEL INJECTOR                               | PRO-PROVISIONAL                 | 62/454401         | February 3, 2017   | Filed |
| 315664  | 2 | US | METHOD AND SYSTEMS FOR A MULTI-NEEDLE FUEL INJECTOR                               | ORD-UTILITY PATENT FILING       | 15/875787         | January 19, 2018   | Filed |
| 315829A | 1 | US | THERMAL MANAGEMENT SYSTEM AND METHOD                                              | CIP-CONTINUATION IN PART        | 15/821729         | November 22, 2017  | Filed |
| 316169  | 1 | US | MONITORING SYSTEM FOR DETECTING DEGRADATION OF A PROPULSION SUBSYSTEM             | PRO-PROVISIONAL                 | 62/491765         | April 28, 2017     | Filed |
| 316169  | 3 | WO | MONITORING SYSTEM FOR DETECTING DEGRADATION OF A PROPULSION SUBSYSTEM             | ORD-UTILITY PATENT FILING       | PCT/US2018/030231 | April 30, 2018     | Filed |
| 316546  | 2 | US | VEHICLE CONTROL SYSTEM                                                            | ORD-UTILITY PATENT FILING       | 15/883856         | January 30, 2018   | Filed |
| 316546  | 3 | WO | VEHICLE CONTROL SYSTEM                                                            | ORD-UTILITY PATENT FILING       | PCT/US18/17304    | February 7, 2018   | Filed |
| 316567  | 1 | US | RAIL CLEANER                                                                      | PDS-PRIORITY DESIGN APPLICATION | 29/601691         | April 25, 2017     | Filed |
| 316738  | 3 | US | BUSBAR                                                                            | DDV-DESIGN DIVISIONAL           | 29/643127         | April 4, 2018      | Filed |
| 317154  | 1 | US | BUSBAR                                                                            | PDS-PRIORITY DESIGN APPLICATION | 29/602699         | May 2, 2017        | Filed |
| 317177  | 1 | US | INVERTER SYSTEMS                                                                  | PRO-PROVISIONAL                 | 62/665169         | May 1, 2018        | Filed |
| 317429  | 2 | US | ROUTE EXAMINING SYSTEM                                                            | ORD-UTILITY PATENT FILING       | 15/7717207        | September 27, 2017 | Filed |
| 317559  | 1 | US | VEHICLE CONTROL SYSTEM                                                            | PRO-PROVISIONAL                 | 62/491234         | April 27, 2017     | Filed |

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| 317559  | 2 | US | VEHICLE CONTROL SYSTEM                                                                                         | ORD-UTILITY PATENT FILING       | 15/918002      | March 12, 2018    | Filed |
| 317600  | 1 | US | METHODS AND SYSTEMS FOR A DUAL FUEL ENGINE                                                                     | PRO-PROVISIONAL                 | 62/692530      | June 29, 2018     | Filed |
| 317784  | 1 | US | CONTROL SYSTEM AND METHOD FOR VEHICLES WITH DYNAMIC BRAKING                                                    | PRO-PROVISIONAL                 | 62/663761      | April 27, 2018    | Filed |
| 318134  | 3 | US | BUSBAR                                                                                                         | DDV-DESIGN DIVISIONAL           | 29/658897      | August 3, 2018    | Filed |
| 318138  | 1 | US | GEARBOX ASSEMBLY                                                                                               | PRO-PROVISIONAL                 | 62/657469      | April 13, 2018    | Filed |
| 318159  | 1 | US | BUS BAR ASSEMBLY                                                                                               | PDS-PRIORITY DESIGN APPLICATION | 29/649331      | May 29, 2018      | Filed |
| 318230  | 1 | US | VEHICLE HEALTH EVALUATION SYSTEM                                                                               | PRO-PROVISIONAL                 | 62/608594      | December 21, 2017 | Filed |
| 318357  | 1 | US | BATTERY EXCHANGE SYSTEM FOR BATTERY-POWERED VEHICLES USING AUXILIARY BATTERY                                   | PRO-PROVISIONAL                 | 62/549526      | August 24, 2017   | Filed |
| 318357  | 2 | US | TBD                                                                                                            | ORD-UTILITY PATENT FILING       | 16/100375      | August 10, 2018   | Filed |
| 318454  | 1 | US | ENGINE CONTROL SYSTEM                                                                                          | PRO-PROVISIONAL                 | 62/689304      | June 25, 2018     | Filed |
| 318468  | 1 | US | VEHICLE HEALTH EVALUATION SYSTEM                                                                               | PRO-PROVISIONAL                 | 62/608730      | December 21, 2017 | Filed |
| 318832  | 2 | WO | VEHICLE COMMUNICATION SYSTEM                                                                                   | ORD-UTILITY PATENT FILING       | PCT/US18/18689 | February 20, 2018 | Filed |
| 318850  | 1 | US | RAIL VEHICLE TRACTION PIN                                                                                      | PDS-PRIORITY DESIGN APPLICATION | 29/640103      | March 12, 2018    | Filed |
| 319228  | 1 | US | HIGH VOLTAGE CHOPPER PANEL BUSBAR                                                                              | PDS-PRIORITY DESIGN APPLICATION | 29/650744      | June 8, 2018      | Filed |
| 319380  | 2 | US | SYSTEM AND METHOD FOR ARRANGING TRANSPORTATION SYSTEMS FOR TRAVEL                                              | ORD-UTILITY PATENT FILING       | 15/923461      | March 16, 2018    | Filed |
| 319517  | 1 | US | METHODS AND SYSTEMS FOR MITIGATING KNOCK TO ENGINE CYLINDERS BASED ON INDIVIDUAL CYLINDER KNOCK SENSOR OUTPUTS | PRO-PROVISIONAL                 | 62/670567      | May 11, 2018      | Filed |
| 319756  | 1 | US | MODULAR EXHAUST OUTLET                                                                                         | PDS-PRIORITY DESIGN APPLICATION | 29/649613      | May 31, 2018      | Filed |
| 320110  | 1 | US | MOTOR SUSPENSION ASSEMBLY                                                                                      | PRO-PROVISIONAL                 | 62/526557      | June 29, 2017     | Filed |
| 320110  | 2 | US | MOTOR SUSPENSION ASSEMBLY                                                                                      | ORD-UTILITY PATENT FILING       | 15/981657      | May 16, 2018      | Filed |
| 320304  | 1 | US | METHOD AND SYSTEMS FOR PARTICULATE MATTER CONTROL                                                              | PRO-PROVISIONAL                 | 62/669245      | May 9, 2018       | Filed |
| 320568  | 1 | US | ELECTRICAL SYSTEM TESTER                                                                                       | PDS-PRIORITY DESIGN APPLICATION | 29/637185      | February 14, 2018 | Filed |
| 320924  | 1 | US | POWER GENERATION SYSTEM AND ASSOCIATED METHOD                                                                  | PRI-PRIORITY APPLICATION        | 15991255       | May 29, 2018      | Filed |
| 321051  | 1 | US | CERAMIC PERMANENT MAGNET PROTECTION                                                                            | PRI-PRIORITY APPLICATION        | 15/859908      | January 2, 2018   | Filed |
| 323107  | 1 | US | HYBRID VEHICLE CONTROL SYSTEM                                                                                  | PRI-PRIORITY APPLICATION        | 15/899216      | February 19, 2018 | Filed |
| 323187  | 1 | US | ADAPTIVE NETWORK MESSAGE TRANSMISSION SCHEDULING DEVICE                                                        | PRO-PROVISIONAL                 | 62/646189      | March 21, 2018    | Filed |
| 323378  | 1 | US | VEHICLE BATTERY CHARGING SYSTEM                                                                                | PRI-PRIORITY APPLICATION        | 15/860214      | January 2, 2018   | Filed |
| 323382  | 1 | US | MULTIVARIABLE DYNAMIC CONTROL SYSTEM OF A MULTI-FUEL ENGINE                                                    | PRI-PRIORITY APPLICATION        | 15/899068      | February 19, 2018 | Filed |
| 324031  | 1 | US | LOCOMOTIVE POSITIONING DATA VERIFICATION SYSTEM                                                                | PRO-PROVISIONAL                 | 62/715096      | August 6, 2018    | Filed |
| 324050  | 1 | US | SOOT REDUCTION ASSEMBLIES FOR ENGINES                                                                          | PRO-PROVISIONAL                 | 62/616702      | January 12, 2018  | Filed |
| 324050  | 2 | US | TBD                                                                                                            | ORD-UTILITY PATENT FILING       | 16/059730      | August 9, 2018    | Filed |
| 324050A | 1 | US | SOOT REDUCTION ASSEMBLIES FOR ENGINES                                                                          | PRO-PROVISIONAL                 | 62/623194      | January 29, 2018  | Filed |
| 324161  | 1 | US | MODULAR CAM SHAFT                                                                                              | PDS-PRIORITY DESIGN APPLICATION | 29/649945      | June 4, 2018      | Filed |
| 324618  | 1 | US | PRESSURE REGULATOR BLOCK                                                                                       | PDS-PRIORITY DESIGN APPLICATION | 29/653083      | June 12, 2018     | Filed |
| 324618A | 1 | US | PRESSURE REGULATOR AND PISTON                                                                                  | PDS-PRIORITY DESIGN APPLICATION | 29/653090      | June 12, 2018     | Filed |
| 324621  | 1 | US | OIL FILTER HOUSING                                                                                             | PDS-PRIORITY DESIGN APPLICATION | 29/649583      | May 31, 2018      | Filed |
| 325076  | 1 | US | EXHAUST STACK                                                                                                  | PDS-PRIORITY DESIGN APPLICATION | 29/653323      | June 14, 2018     | Filed |
| 325628  | 1 | US | Locomotive Control to Reduce Derailment Risk                                                                   | PRO-PROVISIONAL                 | 62/715859      | August 8, 2018    | Filed |
| 326052  | 1 | US | LOCOMOTIVE CONTROL SYSTEM                                                                                      | CIP-CONTINUATION IN PART        | 15/958831      | April 20, 2018    | Filed |

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| 326053 | 1 | US | LOCOMOTIVE CONTROL SYSTEM            | PRI-PRIORITY APPLICATION | 15/958872 | April 20, 2018    | Filed |
| 326189 | 1 | US | LOCOMOTIVE CONTROL SYSTEM            | CIP-CONTINUATION IN PART | 15/958839 | April 20, 2018    | Filed |
| 326190 | 1 | US | LOCOMOTIVE CONTROL SYSTEM            | PRI-PRIORITY APPLICATION | 15/958860 | April 20, 2018    | Filed |
| 326566 | 1 | US | LOCOMOTIVE CONTROL SYSTEM AND METHOD | PRO-PROVISIONAL          | 62/726526 | September 4, 2018 | Filed |
| 326657 | 1 | US | LOCOMOTIVE PROPULSION SYSTEM         | PRI-PRIORITY APPLICATION | 16/050361 | July 31, 2018     | Filed |

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RECORDED: 11/03/2021