PTO/AIA/123 (08-12)
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# CHANGE OF CORRESPONDENCE ADDRESS
## *Patent*

Address to:
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| | |
|---|---|
| Patent Number | 8816651 |
| Issue Date | 08/26/2014 |
| Application Number | 13777900 |
| Filing Date | 02/26/2013 |
| First Named Inventor | George Fell |
| Attorney Docket Number | MQ113 |

Please change the Correspondence Address for the above-identified patent to:

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I am the:

☐ Patentee.

☐ If the Patentee was not the applicant for patent (37 CFR 1.42), then a Statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is enclosed or was filed on _____. See 37 CFR 3.71.

☑ Attorney or agent of record. Registration Number 28072.

☐ Patent practitioner acting in a representative capacity whose correspondence address is the correspondence address of record. Notice has been given to the patentee or owner. Registration Number 28072.

Signature /Frank J. Dykas/

Typed or Printed Name Frank J. Dykas

Date 03/21/2016 | Telephone 208-327-8900

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 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: Mail Stop Post Issue, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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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.
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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.
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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.
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# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 25263100 |
| **Application Number:** | 13777900 |
| **International Application Number:** | |
| **Confirmation Number:** | 9204 |
| **Title of Invention:** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM |
| **First Named Inventor/Applicant Name:** | George Fell |
| **Customer Number:** | 21658 |
| **Filer:** | Frank J Dykas/Dicsie Gullick |
| **Filer Authorized By:** | Frank J Dykas |
| **Attorney Docket Number:** | MQ113 |
| **Receipt Date:** | 21-MAR-2016 |
| **Filing Date:** | 26-FEB-2013 |
| **Time Stamp:** | 21:40:35 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

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

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Change of Address | Change_of_Corr_MQ113.pdf | 240687<br>e1bd89b3f6532b931b9e50469128cd060998e381 | no | 2 |

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| **Warnings:** | |
| **Information:** | |

EXHIBIT 1002

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| **Total Files Size (in bytes):** | 240687 |

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

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

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

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United States Patent and Trademark Office
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www.uspto.gov

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 13/777,900 | 02/26/2013 | George Fell | MQ113 |

**CONFIRMATION NO. 9204**

**PUBLICATION NOTICE**

21658
DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

*OC000000070445592*

**Title:**ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

**Publication No.**US-2014-0239921-A1
**Publication Date:**08/28/2014

## NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

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Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



EXHIBIT 1002

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UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

| APPLICATION NO. | ISSUE DATE | PATENT NO. | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/777,900 | 08/26/2014 | 8816651 | MQ113 | 9204 |

21658 7590 08/06/2014

DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

# 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):

George Fell, Carson, CA;
MULTIQUIP, INC., Carson, CA

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EXHIBIT 1002

# PART B - FEE(S) TRANSMITTAL

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**P.O. Box 1450**
**Alexandria, Virginia 22313-1450**
**or Fax (571)-273-2885**

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

21658 7590 04/21/2014
DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

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 facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

| | |
|---|---|
| AMY HENNIG | (Depositor's name) |
| /AMY HENNIG/ | (Signature) |
| 07/21/2014 | (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/777,900 | 02/26/2013 | George Fell | MQ113 | 9204 |

TITLE OF INVENTION: ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $960 | $0 | $0 | $960 | 07/21/2014 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| PONOMARENKO, NICHOLAS | 2833 | 322-021000 |

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 03-02 or more recent) attached. **Use of a Customer Number is required.**

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

1 FRANK J. DYKAS
2 DYKAS & SHAVER, LLP
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 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.

(A) NAME OF ASSIGNEE: MULTIQUIP, INC.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): CARSON, CA

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

4a. The following fee(s) are submitted:
- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

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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.

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Authorized Signature /FRANK J. DYKAS/ Date 07/21/2014

Typed or printed name FRANK J. DYKAS Registration No. 28072



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EXHIBIT 1002
Multiquip0000007

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 13777900 |
| **Filing Date:** | 26-Feb-2013 |
| **Title of Invention:** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM |
| **First Named Inventor/Applicant Name:** | George Fell |
| **Filer:** | Frank J Dykas/Amy Hennig |
| **Attorney Docket Number:** | MQ113 |

Filed as Large Entity

## Utility under 35 USC 111(a) Filing Fees

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| Utility Appl Issue Fee | 1501 | 1 | 960 | 960 |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| | | | **Total in USD ($)** | **960** |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 19635908 |
| **Application Number:** | 13777900 |
| **International Application Number:** | |
| **Confirmation Number:** | 9204 |
| **Title of Invention:** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM |
| **First Named Inventor/Applicant Name:** | George Fell |
| **Customer Number:** | 21658 |
| **Filer:** | Frank J Dykas/Amy Hennig |
| **Filer Authorized By:** | Frank J Dykas |
| **Attorney Docket Number:** | MQ113 |
| **Receipt Date:** | 21-JUL-2014 |
| **Filing Date:** | 26-FEB-2013 |
| **Time Stamp:** | 16:22:30 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Credit Card |
| Payment was successfully received in RAM | $960 |
| RAM confirmation Number | 3163 |
| Deposit Account | |
| Authorized User | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | Issue Fee Payment (PTO-85B) | issue_fee_trans_2014_07_21_mq113.pdf | 172380<br>1a6bbf0c23ffef77f1c6ad1bec1b548d118d4fd4 | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Fee Worksheet (SB06) | fee-info.pdf | 30489<br>808641e42a0578a334be5fbba6f53e74ccfe7bd7 | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | | **Total Files Size (in bytes):** | 202869 | |

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**<u>New Applications Under 35 U.S.C. 111</u>**
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**<u>National Stage of an International Application under 35 U.S.C. 371</u>**
**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.**

**<u>New International Application Filed with the USPTO as a Receiving Office</u>**
**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.**

Doc Code: Oath

Document Description: Oath or declaration filed

PTO/AIA/08 (06-12)
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# DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☐ Declaration Submitted With Initial Filing OR ■ Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(f)) required)

| | |
|---|---|
| Attorney Docket Number | MQ113 |
| First Named Inventor | GEORGE FELL |
| *COMPLETE IF KNOWN* | |
| Application Number | 13/777,900 |
| Filing Date | 02/26/2013 |
| Art Unit | 3618 |
| Examiner Name | |

ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

*(Title of the Invention)*

As a below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application,

OR

■ United States Application Number or PCT International application number 13/777,900 filed on 02/26/2013.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

## Authorization To Permit Access To Application by Participating Office

✓ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.



This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 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.**

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Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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# DECLARATION — Utility or Design Patent Application

| | | | | | |
|---|---|---|---|---|---|
| Direct all correspondence to: | ■ | The address associated with Customer Number: | 21658. | OR ☐ | Correspondence address below |

| | | |
|---|---|---|
| Name | | |
| Address | | |
| City | State | Zip |
| Country | Telephone | Email |

**WARNING:**

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. Petitioner/applicant is advised that documents which form the record of a patent application (such as the PTO/SB/01) are placed into the Privacy Act system of records DEPARTMENT OF COMMERCE, COMMERCE-PAT-7, System name: *Patent Application Files* . Documents not retained in an application file (such as the PTO-2038) are placed into the Privacy Act system of COMMERCE/PAT-TM-10, System name: *Deposit Accounts and Electronic Funds Transfer Profiles* .

**LEGAL NAME OF SOLE OR FIRST INVENTOR:**

(*E.g.*, Given Name (first and middle (if any)) and Family Name or Surname)

George Fell

| | |
|---|---|
| Inventor's Signature: George Fell | Date (Optional): 5-5-2014 |

| | | |
|---|---|---|
| Residence: City: Carson | State: CA | Country: US |

Mailing Address: 18910 Wilmington Ave.

| | | | |
|---|---|---|---|
| City: Carson | State: CA | Zip: 90746 | Country: US |

☐ Additional inventors are being named on the _____ supplemental sheet(s) PTO/AIA/10 attached hereto



EXHIBIT 1002

# 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

| | |
|---|---|
| **EFS ID:** | 19000620 |
| **Application Number:** | 13777900 |
| **International Application Number:** | |
| **Confirmation Number:** | 9204 |
| **Title of Invention:** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM |
| **First Named Inventor/Applicant Name:** | George Fell |
| **Customer Number:** | 21658 |
| **Filer:** | Frank J Dykas/Amy Hennig |
| **Filer Authorized By:** | Frank J Dykas |
| **Attorney Docket Number:** | MQ113 |
| **Receipt Date:** | 12-MAY-2014 |
| **Filing Date:** | 26-FEB-2013 |
| **Time Stamp:** | 12:47:20 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

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

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Oath or Declaration filed | dec_2014_05_12_mq113.pdf | 192635<br>809a09783f7068cbd389424e973e1ce5c9702d52 | no | 3 |

| | |
|---|---|
| **Warnings:** | |
| **Information:** | |

EXHIBIT 1002

| | |
|---|---|
| **Total Files Size (in bytes):** | 192635 |

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

**New Applications Under 35 U.S.C. 111**
**If a new application is being filed and the application includes the necessary components for 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.**

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

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

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

# NOTICE OF ALLOWANCE AND FEE(S) DUE

21658 7590 04/21/2014

DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

| EXAMINER |
|---|
| PONOMARENKO, NICHOLAS |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2833 | |

DATE MAILED: 04/21/2014

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/777,900 | 02/26/2013 | George Fell | MQ113 | 9204 |

TITLE OF INVENTION: ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $960 | $0 | $0 | $960 | 07/21/2014 |

**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: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**





EXHIBIT 1002

Multiquip0000017

## PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail** **Mail Stop ISSUE FEE**
**Commissioner for Patents**
**P.O. Box 1450**
**Alexandria, Virginia 22313-1450**
**or Fax (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)

21658 7590 04/21/2014
DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

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 facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

| |
|---|
| (Depositor's name) |
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/777,900 | 02/26/2013 | George Fell | MQ113 | 9204 |

TITLE OF INVENTION: ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

| APPLN. TYPE | ENTITY STATUS | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|---|---|---|---|---|---|---|
| nonprovisional | UNDISCOUNTED | $960 | $0 | $0 | $960 | 07/21/2014 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|---|---|---|
| PONOMARENKO, NICHOLAS | 2833 | 322-021000 |

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 03-02 or more recent) attached. **Use of a Customer Number is required.**

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

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document 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.

(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. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

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. _____



PTOL-85 Part B (10-13) Approved for use through 10/31/2013. OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

EXHIBIT 1002
Multiquip0000018

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

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 13/777,900 | 02/26/2013 | George Fell | MQ113 | 9204 |

21658 7590 04/21/2014
DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

| EXAMINER | |
|---|---|
| PONOMARENKO, NICHOLAS | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2833 | |

DATE MAILED: 04/21/2014

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

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 Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.





EXHIBIT 1002

Multiquip0000019

| *Notice Requiring Inventor's Oath or Declaration* | Application No.<br>13/777,900 | Applicant(s)<br>George Fell | |
|---|---|---|---|
| | Examiner<br>PONOMARENKO, NICHOLAS | Art Unit<br>2833 | |

This notice is an attachment to the Notice of Allowability (PTOL-37), or the Notice of Allowability For A Design Application (PTOL-37D).

An inventor's oath or declaration in compliance with 37 CFR 1.63 or 1.64 executed by or with respect to each inventor has not yet been submitted.

An oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each inventor (for any inventor for which a compliant oath, declaration, or substitute statement has not yet been submitted) MUST be filed no later than the date on which the issue fee is paid. See 35 U.S.C. 115(f). Failure to timely comply will result in ABANDONMENT of this application.

A properly executed inventor's oath to declaration has not been received for the following inventor(s):

If applicant previously filed one or more oaths, declarations, or substitute statements, applicant may have received an informational notice regarding deficiencies therein.

The following deficiencies are noted:

INFORMAL ACTION PROBLEMS

- A properly executed inventor's oath or declaration has not been received for the following inventor(s): **George Fell**.
  Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

Questions relating to this Notice should be directed to the Application Assistance Unit at 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 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, 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.

| Notice of Allowability | Application No. 13/777,900 | Applicant(s) FELL ET AL. | |
|---|---|---|---|
| | Examiner Nicholas PONOMARENKO | Art Unit 2833 | AIA (First Inventor to File) Status 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 *2/26/2013*.
   ☐ 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 *1-38*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   **Certified copies:**

   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

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

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

   **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

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

/Nicholas PONOMARENKO/
Primary Examiner, Art Unit 2833



EXHIBIT 1002

## DETAILED ACTION

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

### *Reasons for Allowance*

2. Claims 1-38 are allowed.

**3. Examiner's Statement of Reasons for Allowance:**

Applicant(s) invention relates to an engine-generator system, and more specifically, to a structure of such system.

The system of an engine-generator and load bank has an engine mechanically connected to and capable of driving an alternator; said engine having an engine control module and a particulate filter; said alternator in electrical communication with an output bus and a load bank bus; at least one load monitoring device in electrical communication with said output and load bank buses; a generator controller comprising a load dump output and a load enable output, said generator controller in electrical communication with said engine control module; a load bank controller comprising a load enable input, a load dump input, a load sensor, and at least one load step output; said load dump output in electrical communication with said load dump input; said load enable output in electrical communication with said load enable input; said load monitoring device in electrical communication with said load sensor; at least one load

step contactor in electrical communication with said at least one load step output; and at least one load step resistor in electrical communication with said load bank bus by way of said at least one load step contactor; wherein said generator controller provides a control signal via said load enable output in at least one of the following cases: neglect and regeneration; and wherein said generator controller provides a control signal via said load dump output in case of a load spike.

There are inventions in the field that provide similar functionality and/or have similar features, as prior art of record shows. Applicant(s) invention differs from the prior art of record by the combination of its functional features, which examiner's search failed to find.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

## *Conclusion*

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas Ponomarenko whose telephone number is (571) 272- 2033, Fax: (571) 273-2033, or to his SPE Tulsidas Patel – (571) 272-2098.

6. Any inquiry of a general nature should be directed to the following places: 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.

/Nicholas Ponomarenko/
Primary Examiner, Art Unit 2833
April 16, 2014

| Notice of References Cited | Application/Control No. 13/777,900 | Applicant(s)/Patent Under Reexamination FELL ET AL. | |
|---|---|---|---|
| | Examiner Nicholas PONOMARENKO | Art Unit 2833 | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification |
|---|---|---|---|---|---|
| * | A | US-2008/0157594 A1 | 07-2008 | Peterson et al. | 307/10.1 |
| * | B | US-8,513,925 B2 | 08-2013 | Ayana et al. | 322/44 |
| * | C | US-7,479,756 B2 | 01-2009 | Kasunich et al. | 318/732 |
| * | D | US-5,587,647 A | 12-1996 | Bansal et al. | 322/45 |
| * | E | US-5,285,147 A | 02-1994 | Rashid, Abdul | 322/28 |
| * | F | US-5,168,208 A | 12-1992 | Schultz et al. | 322/25 |
| * | G | US-4,996,646 | 02-1991 | Farrington, Ronald L. | 700/293 |
| | H | US- | | | |
| | I | US- | | | |
| | J | US- | | | |
| | K | US- | | | |
| | L | US- | | | |
| | M | US- | | | |

**FOREIGN PATENT DOCUMENTS**

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | Classification |
|---|---|---|---|---|---|---|
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**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.

| Issue Classification | Application/Control No. 13/777,900 | Applicant(s)/Patent under Reexamination FELL ET AL. |
|---|---|---|
| | Examiner Nicholas PONOMARENKO | Art Unit 2833 |

# ISSUE CLASSIFICATION

| ORIGINAL | | INTERNATIONAL CLASSIFICATION | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLASS | SUBCLASS | CLAIMED | | | | | NON-CLAIMED | | | | | | |
| 322 | 21 | H | 2 | P | 11 | /00 | | | | | / | | |
| CROSS REFERENCES | | | | | | / | | | | | / | | |
| CLASS | SUBCLASS (ONE SUBCLASS PER BLOCK) | | | | | | | | | | | | |
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|---|---|---|
| ---------- (Assistant Examiner) (Date) | /Nicholas Ponomarenko/ Primary Examiner April 16, 2014 (Primary Examiner) (Date) | **Total Claims Allowed: 38** |
| (Legal Instruments Examiner) (Date) | | O.G. Print Claim(s): 1 / O.G. Print Fig.: 1A |

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

| Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original | Final | Original |
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| | 4 | | 34 | | 64 | | 94 | | 124 | | 154 | | 184 |
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| | 6 | | 36 | | 66 | | 96 | | 126 | | 156 | | 186 |
| | 7 | | 37 | | 67 | | 97 | | 127 | | 157 | | 187 |
| | 8 | | 38 | | 68 | | 98 | | 128 | | 158 | | 188 |
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| | 30 | | 60 | | 90 | | 120 | | 150 | | 180 | | 210 |



EXHIBIT 1002

Multiquip0000027

UNITED STATES PATENT AND TRADEMARK OFFICE

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www.uspto.gov

# BIB DATA SHEET

**CONFIRMATION NO. 9204**

| SERIAL NUMBER | FILING or 371(c) DATE<br>RULE | CLASS | GROUP ART UNIT | ATTORNEY DOCKET NO. |
|---|---|---|---|---|
| 13/777,900 | 02/26/2013 | 322 | 2833 | MQ113 |

**APPLICANTS**
MULTIQUIP, INC., Carson, CA

**INVENTORS**
George FELL, Carson, CA;

** CONTINUING DATA **********

** FOREIGN APPLICATIONS **********

** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **
03/18/2013

| Foreign Priority claimed | ☐ Yes ☑ No | ☐ Met after Allowance | STATE OR COUNTRY | SHEETS DRAWINGS | TOTAL CLAIMS | INDEPENDENT CLAIMS |
|---|---|---|---|---|---|---|
| 35 USC 119(a-d) conditions met | ☐ Yes ☑ No | | | | | |
| Verified and Acknowledged | /NI PONOMARENKO/ Examiner's Signature | Initials | CA | 4 | 38 | 3 |

**ADDRESS**

DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877
UNITED STATES

**TITLE**

ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

| FILING FEE RECEIVED | | |
|---|---|---|
| 2516 | FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following: | ☐ All Fees<br>☐ 1.16 Fees (Filing)<br>☐ 1.17 Fees (Processing Ext. of time)<br>☐ 1.18 Fees (Issue)<br>☐ Other _____<br>☐ Credit |



EXHIBIT 1002

**EAST Search History**

**EAST Search History (Prior Art)**

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L1 | 0 | ((George) near2 (FELL)).INV. | US-PGPUB; USPAT | OR | OFF | 2014/04/15 15:43 |
| L2 | 18079 | "322".clas. or "H02P.CPC" | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2014/04/15 15:44 |
| L3 | 2800 | 2 and engine and generator and load | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2014/04/15 15:45 |
| L4 | 159 | 3 and control and module and bus | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2014/04/15 15:45 |
| L5 | 23 | 4 and controller and contactor | US-PGPUB; USPAT; USOCR; EPO; JPO | OR | ON | 2014/04/15 15:46 |
| L6 | 68 | ("20020044422" \| "20040036295" \| "20040057212" \| "20040084965" \| "20050052027" \| "20060005736" \| "20060109701" \| "20080100298" \| "20080157593" \| "20080157594" \| "20100320949" \| "3571693" \| "4063162" \| "4182960" \| "4208693" \| "4245182" \| "4262212" \| "4443828" \| "4574340" \| "4589052" \| "4661769" \| "4728806" \| "4835405" \| "4855664" \| "4912382" \| "4961403" \| "4996646" \| "5006781" \| "5028804" \| "5029120" \| "5117174" \| "5168208" \| "5305185" \| "5315229" \| "5390068" \| "5406495" \| "5433175" \| "5587647" \| "5587917" \| "5592021" \| "5592393" \| "5701070" \| "5784267" \| "5890097" \| "5909656" \| "6037768" \| "6038267" \| "6088226" \| "6144092" \| "6173216" \| "6392371" \| "6483708" \| "6545870" \| "6549410" \| "6654250" \| "6765157" \| "6782941" \| "6801019" \| "6965818" \| "6969922" \| "6972972" \| "6984897" \| "6994360" \| "7002259" \| "7034427" \| "7479756" \| "7573145" \| | US-PGPUB; USPAT; USOCR | OR | OFF | 2014/04/15 15:55 |



EXHIBIT 1002

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EXHIBIT 1002
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## Search Notes

| Application/Control No. | Applicant(s)/Patent under Reexamination | |
|---|---|---|
| 13/777,900 | FELL ET AL. | |
| **Examiner** | **Art Unit** | |
| Nicholas PONOMARENKO | 2833 | |

| SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| 322 | 21 | 4/16/14 | NP |
| | 22 | 4/16/14 | NP |
| | 23 | 4/16/14 | NP |
| | 37 | 4/16/14 | NP |
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| INTERFERENCE SEARCHED | | | |
|---|---|---|---|
| Class | Subclass | Date | Examiner |
| **322** | **21, 37** | **4/16/14** | **NP** |
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| SEARCH NOTES (INCLUDING SEARCH STRATEGY) | | |
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| | DATE | EXMR |
| US PTO APS<br>EAST<br>CPC<br>(Text search incl.interf.encl.) | 4/16/14 | NP |
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EXHIBIT 1002

Doc Code: Oath
Document Description: Oath or declaration filed

PTO/AIA/08 (06-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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# DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☐ Declaration Submitted With Initial Filing OR ■ Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(f)) required)

| | |
|---|---|
| Attorney Docket Number | MQ113 |
| First Named Inventor | GEORGE FELL |
| *COMPLETE IF KNOWN* | |
| Application Number | 13/777,900 |
| Filing Date | 02/26/2013 |
| Art Unit | 3618 |
| Examiner Name | N/A |

ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

*(Title of the Invention)*

As a below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application,

OR

■ United States Application Number or PCT International application number 13/777,900 filed on 02/26/2013.

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

## Authorization To Permit Access To Application by Participating Office

☒ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.



This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 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.**

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# DECLARATION — Utility or Design Patent Application

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| | | |
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| Name | | |
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## WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. Petitioner/applicant is advised that documents which form the record of a patent application (such as the PTO/SB/01) are placed into the Privacy Act system of records DEPARTMENT OF COMMERCE, COMMERCE-PAT-7, System name: *Patent Application Files*. Documents not retained in an application file (such as the PTO-2038) are placed into the Privacy Act system of COMMERCE/PAT-TM-10, System name: *Deposit Accounts and Electronic Funds Transfer Profiles*.

**LEGAL NAME OF SOLE OR FIRST INVENTOR:**

(*E.g.*, Given Name (first and middle (if any)) and Family Name or Surname)

GEORGE ROLLAN FELL III

| | |
|---|---|
| Inventor's Signature | Date (Optional) 4-5-2013 |

| | | |
|---|---|---|
| Residence: City | State | Country |
| CARSON | CA | US |

Mailing Address

18910 WILMINGTON AVE.

| | | | |
|---|---|---|---|
| City | State | Zip | Country |
| CARSON | CA | 90746 | US |

☐ Additional inventors are being named on the _____ supplemental sheet(s) PTO/AIA/10 attached hereto



EXHIBIT 1002

# 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

| | |
|---|---|
| **EFS ID:** | 17886539 |
| **Application Number:** | 13777900 |
| **International Application Number:** | |
| **Confirmation Number:** | 9204 |
| **Title of Invention:** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM |
| **First Named Inventor/Applicant Name:** | George FELL |
| **Customer Number:** | 21658 |
| **Filer:** | Frank J Dykas/Amy Hennig |
| **Filer Authorized By:** | Frank J Dykas |
| **Attorney Docket Number:** | MQ113 |
| **Receipt Date:** | 10-JAN-2014 |
| **Filing Date:** | 26-FEB-2013 |
| **Time Stamp:** | 18:39:03 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

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

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|
| 1 | Oath or Declaration filed | dec_2014_01_10_for_refiling_mq113.pdf | 591044<br>34f3b474cbdb6081e973e5edebd1b447ac7c5112 | no | 3 |

**Warnings:**

**Information:**

EXHIBIT 1002

| Total Files Size (in bytes): | 591044 |
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**New Applications Under 35 U.S.C. 111**
**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.**

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

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

## PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/777,900

### APPLICATION AS FILED - PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY FEE($) |
|---|---|---|---|---|---|---|---|
| BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | | | N/A | 280 |
| SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | | | N/A | 600 |
| EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | | | N/A | 720 |
| TOTAL CLAIMS (37 CFR 1.16(i)) | 38 minus 20= | * 18 | | | OR | x 80 = | 1440 |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | 3 minus 3 = | * | | | | x 420 = | 0.00 |
| 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). | | | | | | 0.00 |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | | | 0.00 |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | | | TOTAL | 3040 |

### APPLICATION AS AMENDED - PART II

AMENDMENT A

| | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY ADDITIONAL FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

AMENDMENT B

| | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE($) | ADDITIONAL FEE($) | | RATE($) | ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** 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 found in the appropriate box in column 1.

EXHIBIT 1002

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

| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 13/777,900 | 02/26/2013 | 3618 | 2516 | MQ113 | 38 | 3 |

**CONFIRMATION NO. 9204**

**UPDATED FILING RECEIPT**

21658
DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

*OC000000065241339*

Date Mailed: 11/29/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Inventor(s)**
George FELL, Carson, CA;

**Applicant(s)**
MULTIQUIP, INC., Carson, CA

**Assignment For Published Patent Application**
MULTIQUIP, INC., Carson, CA

**Power of Attorney:** None

**Domestic Applications for which benefit is claimed - None.**
*A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.*

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.*

**If Required, Foreign Filing License Granted:** 03/18/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/777,900**

**Projected Publication Date:** 08/28/2014

**Non-Publication Request:** No

**Early Publication Request:** No



EXHIBIT 1002

**Title**

ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

**Preliminary Class**

180

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:**

## PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).



EXHIBIT 1002

**Multiquip0000039**

## LICENSE FOR FOREIGN FILING UNDER

## Title 35, United States Code, Section 184

## Title 37, Code of Federal Regulations, 5.11 & 5.15

**GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

**NOT GRANTED**

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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

| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 13/777,900 | 02/26/2013 | George FELL | MQ113 |

**CONFIRMATION NO. 9204**

21658
DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

**NOTICE**

*OC000000065241341*

Date Mailed: 11/29/2013

## INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
  George FELL

  Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.



EXHIBIT 1002

Doc Code: Oath
Document Description: Oath or declaration filed

PTO/AIA/08 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
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.

# DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☐ Declaration Submitted With Initial Filing OR ☒ Declaration Submitted After Initial Filing (surcharge (37 CFR 1.16(f)) required)

| | |
|---|---|
| Attorney Docket Number | MQ119 |
| First Named Inventor | GEORGE FELL |
| *COMPLETE IF KNOWN* | |
| Application Number | 13/777,900 |
| Filing Date | 02/26/2013 |
| Art Unit | 3618 |
| Examiner Name | N/A |

ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

*(Title of the Invention)*

As a below named inventor, I hereby declare that:

This declaration is directed to:

☐ The attached application,

OR

☒ United States Application Number or PCT International application number 13/777,900 filed on 02/26/2013

The above-identified application was made or authorized to be made by me.

I believe I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

## Authorization To Permit Access To Application by Participating Office

☐ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified patent application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.



This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 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.

EXHIBIT 1002

Multiquip0000042

PTO/AIA/08 (06-12)
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# DECLARATION — Utility or Design Patent Application

Direct all correspondence to: ☒ The address associated with Customer Number: 21658 OR ☐ Correspondence address below

| Name | | |
|---|---|---|
| Address | | |
| City | State | Zip |
| Country | Telephone | Email |

**WARNING:**

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. Petitioner/applicant is advised that documents which form the record of a patent application (such as the PTO/SB/01) are placed into the Privacy Act system of records DEPARTMENT OF COMMERCE, COMMERCE-PAT-7, System name: *Patent Application Files* . Documents not retained in an application file (such as the PTO-2038) are placed into the Privacy Act system of COMMERCE/PAT-TM-10, System name: *Deposit Accounts and Electronic Funds Transfer Profiles* .

**LEGAL NAME OF SOLE OR FIRST INVENTOR:**

(*E.g.*, Given Name (first and middle (if any)) and Family Name or Surname)

GEORGE ROLLAN FELL III

| Inventor's Signature | Date (Optional) |
|---|---|
|  | 4-5-2013 |

| Residence: City | State | Country |
|---|---|---|
| CARSON | CA | US |

Mailing Address

18910 WILMINGTON AVE.

| City | State | Zip | Country |
|---|---|---|---|
| CARSON | CA | 90746 | US |

☐ Additional inventors are being named on the _____ supplemental sheet(s) PTO/AIA/10 attached hereto



EXHIBIT 1002

# 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.

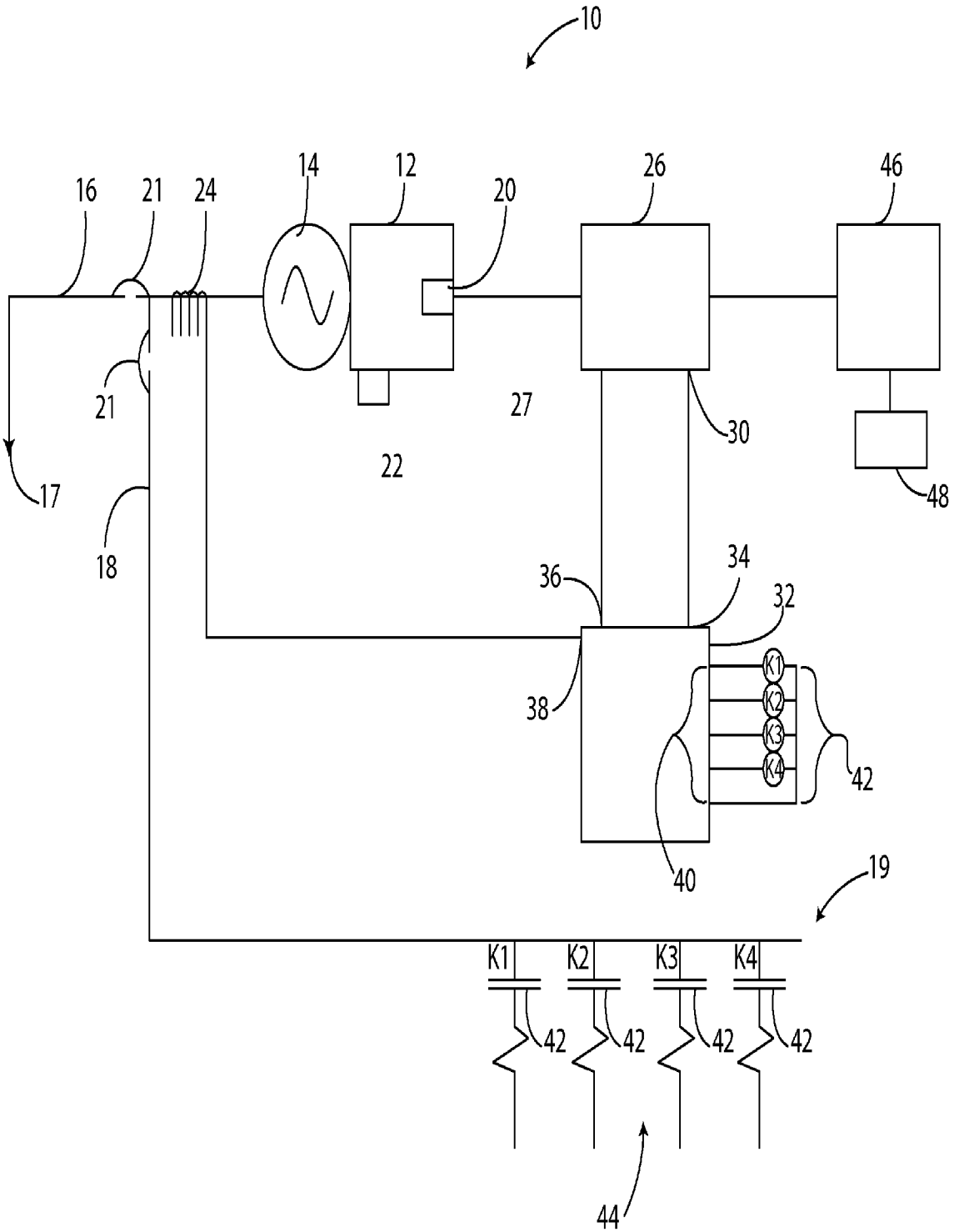

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FIG. 1A

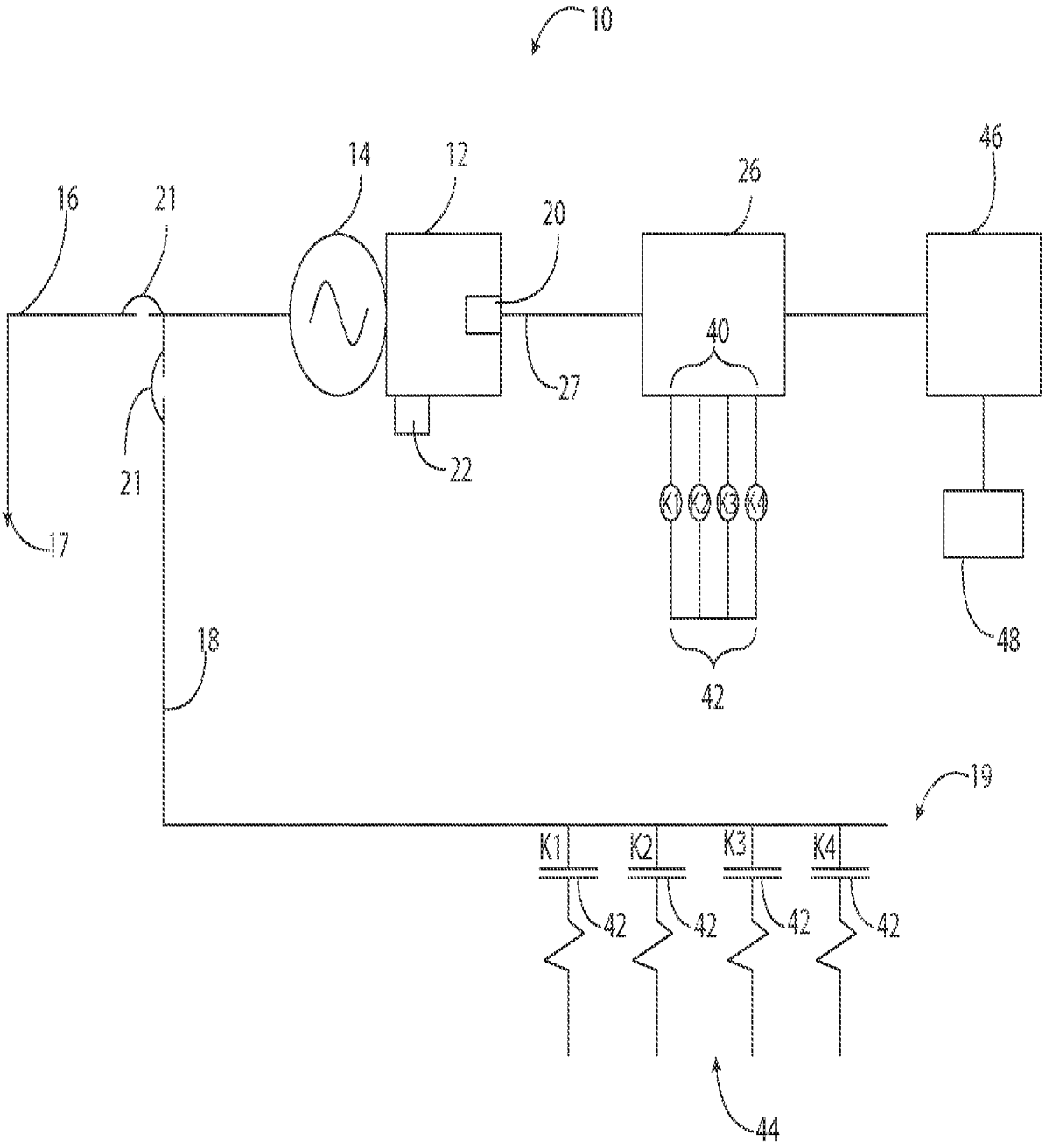

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K4
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FIG. 1B

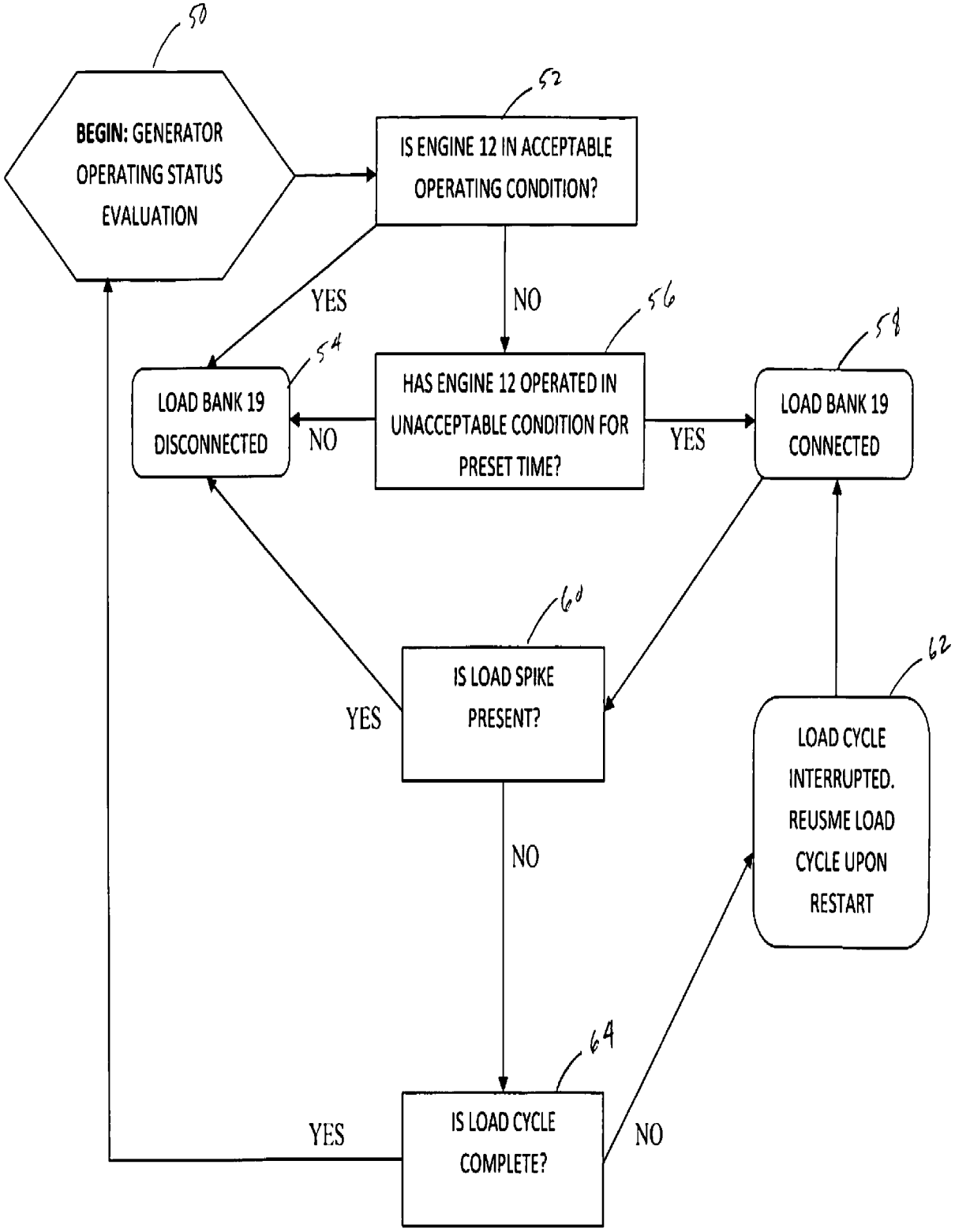

50
BEGIN: GENERATOR OPERATING STATUS EVALUATION
52
IS ENGINE 12 IN ACCEPTABLE OPERATING CONDITION?
YES
NO
54
LOAD BANK 19 DISCONNECTED
56
HAS ENGINE 12 OPERATED IN UNACCEPTABLE CONDITION FOR PRESET TIME?
NO
YES
58
LOAD BANK 19 CONNECTED
60
IS LOAD SPIKE PRESENT?
YES
62
LOAD CYCLE INTERRUPTED. REUSME LOAD CYCLE UPON RESTART
NO
64
IS LOAD CYCLE COMPLETE?
YES
NO

FIG. 2

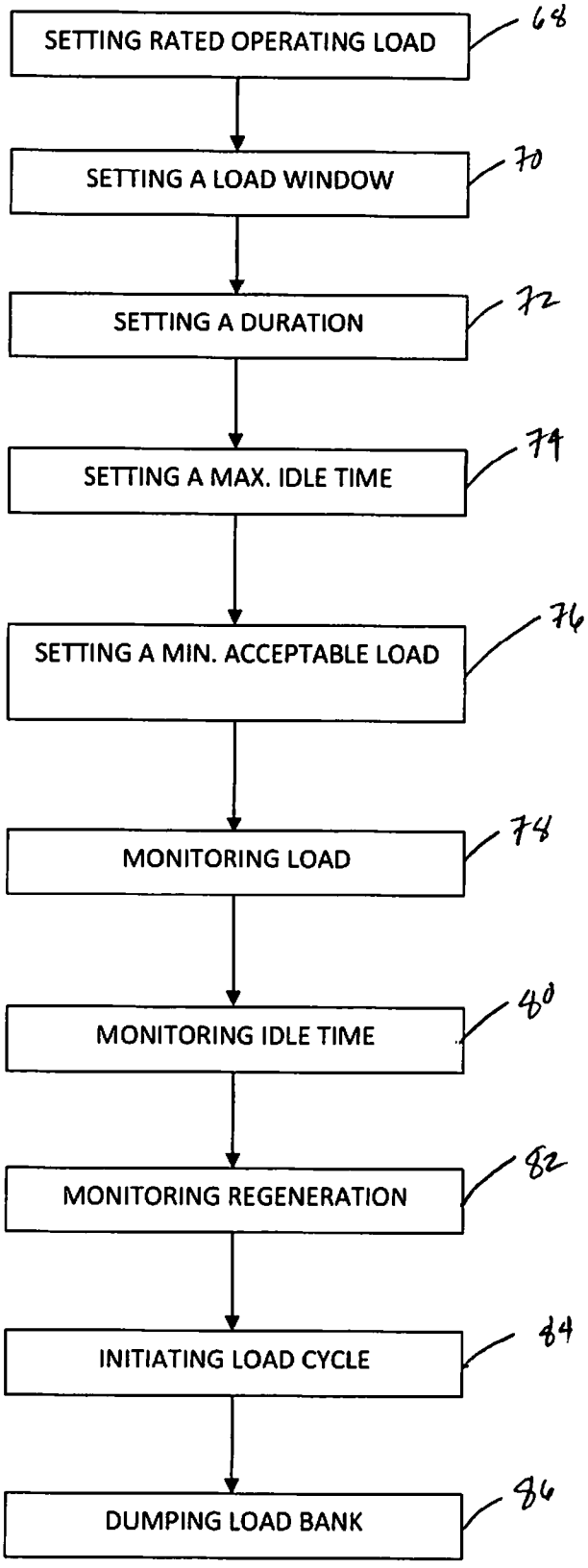

SETTING RATED OPERATING LOAD
68
SETTING A LOAD WINDOW
70
SETTING A DURATION
72
SETTING A MAX. IDLE TIME
74
SETTING A MIN. ACCEPTABLE LOAD
76
MONITORING LOAD
78
MONITORING IDLE TIME
80
MONITORING REGENERATION
82
INITIATING LOAD CYCLE
84
DUMPING LOAD BANK
86

FIG. 3

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | 13777900 |
| **Filing Date:** | 26-Feb-2013 |
| **Title of Invention:** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM |
| **First Named Inventor/Applicant Name:** | George FELL |
| **Filer:** | Frank J Dykas/Judy Hopkins |
| **Attorney Docket Number:** | MQ113 |

Filed as Large Entity

## Utility under 35 USC 111(a) Filing Fees

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| **Pages:** | | | | |
| **Claims:** | | | | |
| **Miscellaneous-Filing:** | | | | |
| Late Filing Fee for Oath or Declaration | 1051 | 1 | 140 | 140 |
| **Petition:** | | | | |
| **Patent-Appeals-and-Interference:** | | | | |
| **Post-Allowance-and-Post-Issuance:** | | | | |
| **Extension-of-Time:** | | | | |

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Miscellaneous:** | | | | |
| | | | **Total in USD ($)** | **140** |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 15496460 |
| **Application Number:** | 13777900 |
| **International Application Number:** | |
| **Confirmation Number:** | 9204 |
| **Title of Invention:** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM |
| **First Named Inventor/Applicant Name:** | George FELL |
| **Customer Number:** | 21658 |
| **Filer:** | Frank J Dykas/Judy Hopkins |
| **Filer Authorized By:** | Frank J Dykas |
| **Attorney Docket Number:** | MQ113 |
| **Receipt Date:** | 11-APR-2013 |
| **Filing Date:** | 26-FEB-2013 |
| **Time Stamp:** | 16:49:53 |
| **Application Type:** | Utility under 35 USC 111(a) |

## Payment information:

| | |
|---|---|
| Submitted with Payment | yes |
| Payment Type | Credit Card |
| Payment was successfully received in RAM | $140 |
| RAM confirmation Number | 3922 |
| Deposit Account | |
| Authorized User | |

## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | Oath or Declaration filed | mq113_2013_04_11_G_Fell_Declaration_as_filed.pdf | 449956<br>3936a110107a31e08ff0d23af9a8d92c7889937c | no | 3 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Drawings-only black and white line drawings | mq113_2013_04_11_repl_figs_as_filed.pdf | 1597201<br>7b43ee254a976442f928ea511388bab1b3202df0 | no | 4 |
| **Warnings:** | | | | | |
| The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing | | | | | |
| **Information:** | | | | | |
| 3 | Fee Worksheet (SB06) | fee-info.pdf | 30408<br>639263687542a1f631222092f403a34347558f5c | no | 2 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| | | **Total Files Size (in bytes):** | 2077565 | | |

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

**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.**

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

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

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

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| APPLICATION NUMBER | FILING OR 371(C) DATE | FIRST NAMED APPLICANT | ATTY. DOCKET NO./TITLE |
|---|---|---|---|
| 13/777,900 | 02/26/2013 | George FELL | MQ113 |

**CONFIRMATION NO. 9204**

21658
DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

**FORMALITIES LETTER**

*OC000000059944040*

Date Mailed: 03/26/2013

# NOTICE TO FILE CORRECTED APPLICATION PAPERS

***Filing Date Granted***

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given TWO MONTHS from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The drawings must be reasonably free from erasures and must be free from alterations, overwriting, interlineations, folds, and copy marks. See Figure(s) 1A, 1B.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- A surcharge (for late submission of the basic filing fee, search fee, examination fee or inventor's oath or declaration) as set forth in 37 CFR 1.16(f) of $ **140** for an undiscounted entity, must be submitted.

**SUMMARY OF FEES DUE:**

Total fee(s) required within **TWO MONTHS** from the date of this Notice is $ **140** for an undiscounted entity
- $ **140** Surcharge.

**Items Required To Avoid Processing Delays:**

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
  ALL



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Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

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/rerry/

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Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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**Multiquip0000054**

## PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 13/777,900

### APPLICATION AS FILED - PART I

| FOR | (Column 1) NUMBER FILED | (Column 2) NUMBER EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY FEE($) |
|---|---|---|---|---|---|---|---|
| BASIC FEE (37 CFR 1.16(a), (b), or (c)) | N/A | N/A | N/A | | | N/A | 280 |
| SEARCH FEE (37 CFR 1.16(k), (i), or (m)) | N/A | N/A | N/A | | | N/A | 600 |
| EXAMINATION FEE (37 CFR 1.16(o), (p), or (q)) | N/A | N/A | N/A | | | N/A | 720 |
| TOTAL CLAIMS (37 CFR 1.16(i)) | 38 minus 20= | * 18 | | | OR | x 80 = | 1440 |
| INDEPENDENT CLAIMS (37 CFR 1.16(h)) | 3 minus 3 = | * | | | | x 420 = | 0.00 |
| 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). | | | | | | 0.00 |
| MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j)) | | | | | | | 0.00 |
| * If the difference in column 1 is less than zero, enter "0" in column 2. | | | TOTAL | | | TOTAL | 3040 |

### APPLICATION AS AMENDED - PART II

AMENDMENT A

| | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | SMALL ENTITY RATE($) | SMALL ENTITY ADDITIONAL FEE($) | OR | OTHER THAN SMALL ENTITY RATE($) | OTHER THAN SMALL ENTITY ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

AMENDMENT B

| | (Column 1) CLAIMS REMAINING AFTER AMENDMENT | | (Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR | (Column 3) PRESENT EXTRA | RATE($) | ADDITIONAL FEE($) | | RATE($) | ADDITIONAL FEE($) |
|---|---|---|---|---|---|---|---|---|---|
| Total (37 CFR 1.16(i)) | * | Minus | ** | = | x = | | OR | x = | |
| Independent (37 CFR 1.16(h)) | * | Minus | *** | = | x = | | OR | x = | |
| Application Size Fee (37 CFR 1.16(s)) | | | | | | | | | |
| FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j)) | | | | | | | OR | | |
| | | | | | TOTAL ADD'L FEE | | OR | TOTAL ADD'L FEE | |

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** 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 found in the appropriate box in column 1.

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| APPLICATION NUMBER | FILING or 371(c) DATE | GRP ART UNIT | FIL FEE REC'D | ATTY.DOCKET.NO | TOT CLAIMS | IND CLAIMS |
|---|---|---|---|---|---|---|
| 13/777,900 | 02/26/2013 | 3618 | 2376 | MQ113 | 38 | 3 |

**CONFIRMATION NO. 9204**

21658
DYKAS & SHAVER LLP
P.O. BOX 877
BOISE, ID 83701-0877

**FILING RECEIPT**

*OC000000059944039*

Date Mailed: 03/26/2013

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

**Inventor(s)**
George FELL, Carson, CA;

**Applicant(s)**
MULTIQUIP, INC., Carson, CA

**Assignment For Published Patent Application**
MULTIQUIP, INC., Carson, CA

**Power of Attorney:** None

**Domestic Applications for which benefit is claimed - None.**
*A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.*

**Foreign Applications** for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.*

**If Required, Foreign Filing License Granted:** 03/18/2013

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/777,900**

**Projected Publication Date:** To Be Determined - pending completion of Corrected Papers

**Non-Publication Request:** No

**Early Publication Request:** No



EXHIBIT 1002

**Title**

ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

**Preliminary Class**

180

**Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications:**

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## Title 37, Code of Federal Regulations, 5.11 & 5.15

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TITLE

ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM

Inventor: George Fell

## TECHNICAL FIELD

**[0001]** The disclosed embodiments relate generally to systems of engine-generators with load banks.

## BACKGROUND

**[0002]** Electric generators, particularly portable engine-generator units, are often operated under variable load conditions. Such portable units are also often left unattended, which further causes them to be operated in sub-optimal conditions. It is well known that operating engine-generators under fluctuating load conditions can present a number of problems. As explained in U.S. Pat. No. 3,530,300 to Gunther, *et al.*, diesel-fueled engine-generators are especially susceptible to problems associated with light-load conditions. In particular, a lightly loaded, diesel-fueled engine-generator may cause the engine portion of the machine to operate such that fuel within the engine remains unburned. This unburned fuel forms tar or carbon deposits, or both, which can collect within various parts of the engine, including exhaust pipes. This condition has historically been referred to as "wet stacking."

**[0003]** Diesel engines also create soot during their combustion process. When an engine is operating under lightly load conditions, it tends to create more soot. Historically, the soot was exhausted from the engine to the atmosphere via exhaust pipes. More recently, however, increasing concern about, and regulation of particulate emissions has lead to changes in the manner in which diesel engines may legally operate. Modern diesel engines, including so-called



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Tier IV Interim and newer engines, are equipped with particulate filters that serve to capture and remove soot from engine exhaust. The problem is that these particulate filters, which are also called diesel engine particulate filters or DPF, tend to clog with the particulate that they filter. Those clogs inhibit engine exhaust, which may significantly or entirely decrease the operability of an engine. To combat this DPF-clogging issue, modern diesel engines are often equipped with a "regeneration" feature. Regeneration involves a process in which the engine doses a DPF with diesel and then ignites that diesel to burn-off accumulated soot. The soot is reduced to ash, which falls away from the DPF, thus clearing the DPF and the engine exhaust system.

**[0004]** Complicating DPF regeneration in engine-generator applications is the effect of generator loading on engine performance. Engine exhaust temperature is proportional to generator loading. Thus, a lightly loaded generator causes the engine to operate with lower exhaust temperature than a generator operating under greater loading conditions. The problem is that regeneration efficiency is inversely proportional to exhaust temperature. That is, regeneration works better when an engine is operating with higher exhaust temperatures. So, in engine-generator applications, regeneration is more efficient when a generator is operating under loaded conditions.

**[0005]** It is known in the art that wet stacking may be mitigated by connecting to the generator a "dummy" load in parallel with the actual, or "real," load. Such dummy loads often comprise banks of resistors that may be switched in steps, often automatically, in inverse proportion to the real load. In this way, a generator may be connected so that it always experiences some minimum demand. As Gunther, *et al.* explains, this is represented by the



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equation $P_G = P_{RL} + P_{DL}$, where $P_G$ is the total generator demand, $P_{RL}$ is the demand of the real load, and $P_{DL}$ is the demand of the dummy load. This same method of operation helps reduce soot in the engine.

**[0006]** But despite the benefits of the system of Gunther, *et al.*, and other similar configurations, such schemes tend to be wasteful because they cause the engine portion of the engine-generator to burn a set amount of fuel, at all times, in order to maintain $P_G$. This is because the engine must burn more fuel to maintain an increased generator output. So while the system is burning cleaner, it uses more fuel than necessary. In a world of rapidly decreasing oil supplies, and rapidly increasing fuel costs, it is desirable to balance the benefits of minimum generator loading with economic realities. Said differently, it is advantageous to decrease soot production and wet-stacking events with dummy loads (aka load banks), while at the same time being mindful of the fuel costs associated with operating dummy loads. Furthermore, load banks have not previously been employed to aid with DPF regeneration.

## SUMMARY OF THE DISCLOSURE

**[0007]** Disclosed here is a load bank that provides a dummy load to an electric generator, which allows an engine-generator unit to more efficiently operate by decreasing the frequency of regeneration cycles an engine must initiate, and, when regeneration occurs, ensures a minimum generator load to raise exhaust temperatures and thus increase regeneration efficiency.

**[0008]** In accordance with some embodiments of the disclosed technology, an engine-generator and load bank system comprises a plurality of load resistors and load step contactors for engaging the load resistors. The plurality of load resistors are configured to allow for



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variability, or "stepping," of the total resistance of the dummy load. In other words, when the load bank is engaged, or connected, the load bank is configured to add or remove load resistors in steps, as required by system parameters. The disclosed technology is operable to entirely disconnect, or "dump," the load bank from the generator within a specified time, which may be necessary when the real load of the generator rapidly increases.

**[0009]** In accordance with some embodiments of the disclosed technology, the system is equipped with a generator controller and a load bank controller, which could be physically combined, that are configured to monitor both the engine side and the generator load of an engine-generator and to operate the load bank. In according with some embodiments, the system is equipped with a single controller that is configured to monitor the engine side of an engine-generator and to operate the load bank.

**[0010]** In accordance with some embodiments of the disclosed technology, the generator and load bank controllers are configured to initiate the load bank when certain conditions exist. The load bank is initiated when there is a "neglect scenario" or "neglect case." The generator controller, via the load bank controller, monitors the load connected to the generator to ensure that the load is within a "window" or "load window" bounded by pre-set lower and upper load levels. If the load connected to the generator remains at or below some pre-set load condition—*i.e.*, below the window—for a pre-set duration, the generator controller signals the load bank controller to initiate the load bank. The load bank controller then increases or decreases the total resistance of the load bank by connecting or disconnecting load step resistors as necessary to maintain the load within window. If the load rises above the window, the steps of the load bank are disconnected as necessary. In this way, the total load on the



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generator—*i.e.*, the real load and the resistance of the load bank—remains within pre-set limits. The pre-set load corresponds to a power demand on the generator that provides for optimal operation, which minimizes wet stacking and soot build up.

**[0011]** Restricting the load bank to operation in a neglect case allows one to save fuel because the load bank will only draw power from the generator when necessary to prevent wet stacking and soot build up. The generator will thus be allowed to operate in a sub-optimal state until such time as wet stacking and soot build up are likely to occur. The load window and duration variables necessary for determining a neglect scenario will thus be based on manufacturer or user-defined values directed at pinpointing the time when wet stacking and soot build up is likely to begin.

**[0012]** In accordance with some embodiments of the disclosed technology, the duration variable for neglect is cumulative. The generator controller will constantly monitor load levels and will track the time period for which load levels are below the window. If the cumulative time the system is operated below the window reaches the pre-set duration, the generator controller signals the load bank controller to initiate the load bank. This cumulative timing of sub-optimal operation occurs even the system is operated for short periods of time at load levels within and above the window. If, however, the system operates for a pre-set time within the window, a neglect scenario may be avoided. The system thus accounts for the cumulative nature of soot build up in the engine. The problems associated with this soot accumulation can be avoided if the engine is operated under loaded conditions for a pre-determined duration. The generator controller therefore ensures the system is operated under a designated load for



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a pre-set duration. This operation for a pre-set duration under set load conditions at full engine speed is disclosed here a "load cycle."

**[0013]** In accordance with some embodiments of the disclosed technology, the generator controller is configured to signal the load bank controller to initiate the load bank when the engine control module initiates regeneration to clean the DPF. In such a "regeneration scenario" or "regeneration case," as it is referred to here, the generator controller will signal the load bank controller to initiate the load bank, thus providing a minimum load for the system in order to maintain an engine exhaust temperature necessary for the DPF regeneration to effectively clean the DPF.

**[0014]** In accordance with some embodiments of the disclosed technology, the generator controller will monitor engine idle time. In a configuration disclosed here as "excessive idle control," the generator controller may be configured with a pre-set maximum allowed idle time. If the maximum idle time is reached—a condition referred to here as an "excessive idle scenario" or an "excessive idle case"—the generator controller will signal the load bank controller to initiate the load bank. The system will then be required to complete a load cycle, as described above, before resuming idle speeds. If a user attempts to disrupt the load cycle, the generator controller will initiate a warning to the user. If a user nonetheless disrupts the load cycle, the generator controller will disable the system and will not allow operation until a load cycle has been completed at full engine speed. The load under which the generator operates during the load cycle could include any combination of real load and dummy load levels, as long as $P_G$ is maintained. In accordance with some embodiments, for every three (3) hour period of engine idle time, the engine must complete a load cycle of one (1) hour.



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**[0015]** In accordance with some embodiments of the disclosed technology, the generator controller may be configured with what is disclosed here as a "load dump" feature. In such a configuration, the generator controller signals the load bank controller to disconnect, or dump, the load bank if the generator controller and/or load bank recognizes a "load spike" of monitored load. Load spike, as used here, is a scenario in which the load connected to the engine-generator exceeds some pre-set value.

**[0016]** In accordance with some embodiments of the disclosed technology, the generator controller controls the load bank directly, thus obviating the need for a separate load bank controller.

**[0017]** In accordance with some embodiments of the disclosed technology, the system may be equipped with remote monitoring.

**[0018]** In accordance with some embodiments of the disclosed technology, the generator controller is configured with a manual setting. In the manual setting, the load bank may be engaged or disengaged by manual operation. In the manual setting, an operator may manually direct the controller to increase or decrease total resistance of the load bank.

**[0019]** In accordance with some embodiments of the disclosed technology, the load bank may be completely disabled and locked out of operation. In such a state, the total load of the generator is equal to the real load.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0020]** Fig. 1A is a single-line diagram of an embodiment of the disclosed system.

**[0021]** Fig. 1B is a single-line diagram of an embodiment of the disclosed system.



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**[0022]** Fig. 2 is a flow chart depicting an operating configuration of an embodiment of the disclosed system.

**[0023]** Fig. 3 is a block diagram depicting a method of operating embodiments of the disclosed system.



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## DETAILED DESCRIPTION

**[0024]** Reference will now be made in detail to embodiments, examples of which are illustrated in the accompanying drawings. In the following detailed description, numerous specific details are set forth in order to provide a thorough understanding of the disclosed concepts. It will, however, be apparent to one of ordinary skill in the art that the disclosed concepts may be practiced without these specific details. Well-known methods, procedures, components, circuits, and networks have not been described in detail so as not to unnecessarily obscure aspects of the embodiments.

**[0025]** Fig. 1A depicts an engine-generator and load bank system 10 comprising an engine 12 mechanically connected and configured to drive an alternator 14. This combination is referred to as an engine-generator. The generator portion of the engine-generator, or alternator 14, is connected to an output bus 16, which is connected to a real load 17, and a load bank bus 18, which is connected to a load bank 19. The output bus 16 and load bank bus 18 are connected to the alternator 14 by way of disconnects 21. The disconnects 21 could comprise circuit breakers or fused switches.

**[0026]** The alternator 14 may be sized and configured for a variety of rated output. In some embodiments, the alternator 14 is adjustable to provide a variety of voltage outputs as selected by a user. The alternator 14 may be single-phase or poly-phase; and it may be rated for a variety of operating frequencies. In one embodiment, the alternator 14 is rated 240Y/139 V, three-phase, four-wire, 60 Hz, and is adjustable for operation at 208Y/120 V. In one embodiment, the alternator 14 is rated 480Y/277 V, three-phase, four-wire, 60 Hz.



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**[0027]** The engine 12 is equipped with an engine control module 20 and a diesel particulate filter (DPF) 22. The system 10 also has at least one load monitoring device 24 that is in electrical communication with the output bus 16 and the load bank bus 18. The load monitoring device 24 could be any piece or combination of electrical metering equipment suitable for gathering and communicating data about system voltage, current, and/or power. In a preferred embodiment, the load monitoring device 24 comprises current transformers.

**[0028]** The system 10 comprises a generator controller 26 which is connected to the engine control module 20 via a communication means 27. The communication means 27 could be any communication bus suitable for communication between, and for diagnostics of engine components. In a preferred embodiment, the communication means 27 comprises SAE J1939-based protocol.

**[0029]** The generator controller 26 has a load dump output 28 and a load enable output 30. The system 10 also includes a load bank controller 32 which has a load enable input 34, a load dump input 36, and a load sensor 38. The load sensor 38 is connected to and accepts an input from the load monitoring device 24 for monitoring the combined load of the real load 17 and the load bank 19.

**[0030]** The load bank controller 32 is also equipped with at least one load step output 40. The load bank controller 32 could have one or a plurality of load step outputs 40. The at least one load step output 40 is connected to at least one load step contactor 42, which control(s) the electrical connection of at least one load step resistor 44 to the load bank bus 18. The output bus 16, load bank bus 18, and load step resistor(s) 44 may be single- or poly-phase, as required for operation with the configuration of the alternator 14. In a preferred embodiment, the load



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bank controller 32 is equipped with four load step outputs 40. In a preferred embodiment, there are four (4) load step resistors 44, each rated 25 kW at 480 V, such that the total rated resistance of the load bank 19 is 100 kW at 480 V, with a power factor of 1.0.

**[0031]** In one embodiment, the engine 12, which is equipped with a radiator, and alternator 14 are mounted within one enclosure, and the load bank 19 is mounted within a separate enclosure that is physically connected to the engine-generator enclosure adjacent to the radiator of the engine 12. In such an embodiment, the radiator of the engine 12 forces air over the load step resistor(s) 44. In another embodiment, the load bank 19 is remotely located, and it is physically connected to the engine 12 and alternator 14 only to the extent necessary to facilitate electrical communication and control. In another embodiment, the load bank 19, the engine 12, and the alternator 14 are configured on a common base, which could include a common trailer or skid, within a single enclosure.

**[0032]** The system 10 may also be equipped with a remote communications module 46 and an antenna 48. The remote communications module 46 could comprise terrestrial wireless or satellite communications technology, or a combination of both, in tandem or redundantly. The remote communications module 46 allows the system 10 to periodically, or on demand, transmit data that may be monitored. Such data may include the status of the engine 12, the DPF 22, and the load bank 19. The remote communications module 46 could also be equipped with means for transmitting a location via a global positioning system (GPS), or the like. The remote communications module 46 may also be equipped to receive data and relay it to the generator controller 26 for remote control of the system 10. In one embodiment of the system 10 equipped with a remote communications module 46, a fault condition in any portion of the



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system 10 will cause an alert to be sent to an operator via phone text message (SMS) or via electronic mail.

**[0033]** Specific data transmitted by the remote communications module 46 may include: the fuel level of the engine 12 in a range from 0 to 100%; the fuel consumption rate of the engine 12 in gallons per hour; oil pressure of the engine 12 in pounds per square inch; temperature of the coolant in the engine 12 in degrees Fahrenheit or degrees Celsius; the on/off status of the DPF 22; the soot level of the DPF 22; whether the DPF 22 regeneration function has been inhibited or disabled; the temperature of the exhaust of the engine 12 at various points within engine 12; the operating status of the load bank 19, and whether the load bank 19 has correctly responded to a demand request from the generator controller 26.

**[0034]** Fig. 1B depicts an embodiment of an engine-generator and load bank system 10 comprising an engine 12 mechanically connected and configured to drive an alternator 14. The alternator 14 is connected to an output bus 16, which is connected to a real load 17, and a load bank bus 18, which is connected to a load bank 19. The outputs bus 16 and load bank bus 18 are connected to the alternator by way of disconnects 21, which could comprise circuit breakers or fused switches. In such an embodiment, the alternator 14 may be sized and configured as described above.

**[0035]** In the embodiment of Fig. 1B, the engine 12 is equipped with an engine control module 20 and a DPF 22. The system 10 comprises a generator controller 26 that is connected to the engine 12 via a communication means 27, which could be any suitable communication bus as described above. The generator controller 26 is equipped with at least one load step output 40; it could have one or a plurality of load step outputs 40. The load step output(s) 40



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is/are connected to one or more load step contactor(s) 42, which control the electrical connection of at least one load step resistor 44 to the load bank bus 18. The electrical system of such an embodiment may be single- or poly-phase, as described above.

**[0036]** In the embodiment of Fig. 1B, the generator controller 26 monitors the loading of the alternator 14 by extrapolation. The generator controller 26 receives engine operation information from the engine control module 20 via the communication means 27, which information the generator controller 26 uses to determine loading conditions of alternator 14. The generator controller 26 then directly controls the load bank 19 by way of the load step output(s) 40 and load step contactor(s) 42 as necessary in cases of neglect, regeneration, and excessive idle.

**[0037]** Fig. 2 depicts a control system that the generator controller 26 may employ to control the system 10. The generator controller 26 first evaluates generator operating status 50 to determine if the engine 12 is in an acceptable operating condition 52. Whether the engine 12 is in an acceptable operating condition is a function of whether a neglect scenario or excessive idle scenario is present. Cases of neglect and excessive idle correspond to an engine 12 being in an unacceptable operating condition. Further, whether the engine 12 is in an acceptable operating condition depends on whether the exhaust temperature is sufficient to provide for effective regeneration. If the exhaust temperature is too low for effective regeneration, and if the engine 12 is in a regeneration scenario, the engine is not in an acceptable operating condition.

**[0038]** If the engine 12 is in an acceptable operating condition, the load bank 19 is or remains disconnected 54. If the engine 12 is not in an acceptable operating condition, the generator



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controller 26 determines whether the engine 12 has operated in an unacceptable state for a pre-set time 56. If the engine 12 has operated in an unacceptable condition for a pre-set time, the load bank 19 is connected 58. That is, the generator controller 26 signals the load bank controller 32 via the load enable output 30 and load enable input 34 to initiate the load bank 19 by way of the load step output 40 and the load step contactor(s) 42. Or, in an embodiment without a load bank controller 32, the generator controller 26 controls the load bank 19 directly. The load bank 19 is then operated as described *supra*. If the engine 12 has not operated in an unacceptable condition for a pre-set time, the load bank 19 is or remains disconnected 54.

**[0039]** Once the load bank 19 is connected, it remains connected for a pre-set time, as required for a load cycle. While the load bank 19 is connected, the generator controller 26 and/or the load bank controller 32 determine whether a load spike is present 60. If a load spike is present, the generator controller 26 effects a load dump by signaling the load bank controller 32, either directly or via load dump output 28 and load dump input 36, so that the load bank 19 is disconnected 54. If a load spike is not present, the generator controller 26 determines whether the load cycle is complete 64. If the load cycle is complete, the evaluation begins anew 50. If the load cycle is not complete, the load cycle will resume upon restarting 62 the system 10.

**[0040]** Fig. 3 depicts a method of operating the system 10 by configuring the generator controller 26. The method involves first setting a rated operating load 68. Then, it requires setting: a load window 70, a duration 72, a max idle time 74, and a minimum acceptable load 76 for DPF regeneration. Next, it involves monitoring: the load 78, idle time 80, and regeneration



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status 82. Then, it involves initiating a load cycle 84 when monitored conditions reach set points that correspond to cases of neglect, regeneration, or excessive idle. Finally, it involves dumping the load bank 86 in the presence of a load spike.

**[0041]** The foregoing description, for purpose of explanation, has been described with reference to specific embodiments. The illustrative discussion above, however, is not intended to be exhaustive or to limit the disclosed concepts to any particular form. The embodiments were chosen and described in order to best explain the principles of the disclosed concepts in order to enable others skilled in the art.



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CLAIMS

What is claimed is:

**1.** An engine-generator and load bank system comprising:

an engine mechanically connected to and capable of driving an alternator;

said engine having an engine control module and a particulate filter;

said alternator in electrical communication with an output bus and a load bank bus;

at least one load monitoring device in electrical communication with said output and load bank buses;

a generator controller comprising a load dump output and a load enable output, said generator controller in electrical communication with said engine control module;

a load bank controller comprising a load enable input, a load dump input, a load sensor, and at least one load step output;

said load dump output in electrical communication with said load dump input;

said load enable output in electrical communication with said load enable input;

said load monitoring device in electrical communication with said load sensor;

at least one load step contactor in electrical communication with said at least one load step output; and

at least one load step resistor in electrical communication with said load bank bus by way of said at least one load step contactor;



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wherein said generator controller provides a control signal via said load enable output in at least one of the following cases: neglect and regeneration; and

wherein said generator controller provides a control signal via said load dump output in case of a load spike.

**2.** The engine-generator and load bank system of claim 1 wherein the generator controller is further configured with excessive idle control.

**3.** The engine-generator and load bank system of claim 1 comprising one load step resistor.

**4.** The engine-generator and load bank system of claim 1 comprising a plurality of load step resistors.

**5.** The engine-generator and load bank system of claim 1 which further comprises a remote communication module and antenna.

**6.** The engine-generator and load bank system of claim 5 wherein the remote communications module communicates via satellite.

**7.** The engine-generator and load bank system of claim 5 wherein the remote communications module communicates via a terrestrial wireless network.

**8.** The engine-generator and load bank system of claim 1 wherein the engine is a diesel engine.

**9.** The engine-generator and load bank system of claim 1 wherein the engine is a Tier IV Interim or newer diesel engine.



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**10.** The engine-generator and load bank system of claim 1 wherein said alternator, output bus, load bank bus, and at least one load step resistor comprise a poly-phase electrical system.

**11.** The engine-generator and load bank system of claim 1 wherein said alternator, output bus, load bank bus, and at least one load step resistor comprise a three-phase electrical system.

**12.** The engine-generator and load bank system of claim 1 which further comprises a common base and enclosure.

**13.** The engine-generator and load bank system of claim 1 wherein said at least one load step resistor is physically located in an enclosure connected to the radiator of said engine.

**14.** The engine-generator and load bank system of claim 1 wherein said at least one load step resistor is located remotely from said engine-generator.

**15.** The engine-generator and load bank system of claim 1 wherein the generator controller and engine control module are configured to communicate via SAE J1939 protocol.

**16.** The engine-generator and load bank system of claim 1 wherein the generator controller is configured to provide said control signal to said load dump output within 10 seconds.

**17.** The engine-generator and load bank system of claim 1 wherein the generator controller is configured to provide said control signal to said load dump output within 1 second.

**18.** The engine-generator and load bank system of claim 1 wherein the generator controller is configured to provide said control signal to said load dump output within 0.1 second.

**19.** An engine-generator and load bank system comprising:



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an engine mechanically connected to and capable of driving an alternator;

said engine having an engine control module and a particulate filter;

said alternator in electrical communication with an output bus and a load bank bus;

a generator controller in electrical communication with said engine control module, said generator controller having at least one load step output;

at least one load step contactor in electrical communication with said at least one load step output; and

at least one load step resistor in electrical communication with said load bank bus by way of said at least one load step contactor;

wherein said generator controller is capable of operating said load step contactor to connect said load step resistor in at least one of the following cases: neglect and regeneration; and

wherein said generator controller is capable of operating said load step contactor to disconnect said load step resistor in case of a load spike.

**20.** The engine-generator and load bank system of claim 19 wherein the generator controller is further configured with excessive idle control.

**21.** The engine-generator and load bank system of claim 19 comprising one load step resistor.

**22.** The engine-generator and load bank system of claim 19 comprising a plurality of load step resistors.

**23.** The engine-generator and load bank system of claim 19 which further comprises a remote communication module and antenna.



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**24.** The engine-generator and load bank system of claim 23 wherein the remote communications module communicates via satellite.

**25.** The engine-generator and load bank system of claim 23 wherein the remote communications module communicates via a terrestrial wireless network.

**26.** The engine-generator and load bank system of claim 19 wherein the engine is a diesel engine.

**27.** The engine-generator and load bank system of claim 19 wherein the engine is a Tier IV Interim or newer diesel engine.

**28.** The engine-generator and load bank system of claim 19 wherein said alternator, output bus, load bank bus, and at least one load step resistor comprise a poly-phase electrical system.

**29.** The engine-generator and load bank system of claim 19 wherein said alternator, output bus, load bank bus, and at least one load step resistor comprise a three-phase electrical system.

**30.** The engine-generator and load bank system of claim 19 which further comprises a common base and enclosure.

**31.** The engine-generator and load bank system of claim 19 wherein said at least one load step resistor is physically located in an enclosure connected to the radiator of said engine.

**32.** The engine-generator and load bank system of claim 19 wherein said at least one load step resistor is located remotely from said engine-generator.



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**33.** The engine-generator and load bank system of claim 19 wherein the generator controller and engine control module are configured to communicate via SAE J1939 protocol.

**34.** The engine-generator and load bank system of claim 19 wherein the generator controller is configured to operate said load step contactor to disconnect said load step resistor within 10 seconds.

**35.** The engine-generator and load bank system of claim 19 wherein the generator controller is configured to operate said load step contactor to disconnect said load step resistor within 1 seconds.

**36.** The engine-generator and load bank system of claim 19 wherein the generator controller is configured to operate said load step contactor to disconnect said load step resistor within 0.1 seconds.

**37.** A method for operating an engine-generator and load bank system with a generator controller and an engine control module, the generator controller configured with logic and hardware to control the load bank, the method comprising the following steps:

a. setting a rated operating load;

b. setting a load window bounded by a low load and an upper load in said generator controller;

c. setting a duration in said generator controller;

d. setting a minimum acceptable load corresponding to optimal engine exhaust temperature for regeneration;

e. monitoring connected load of said engine-generator;



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f. monitoring regeneration of said engine-generator with said engine control module;

g. activating said load bank if said generator operates in a neglect scenario as defined by said window and said duration;

h. activating said load bank if said connected load is less than said minimum acceptable load and said engine-generator initiates regeneration; and

i. dumping said load bank if a load spike is detected.

**38.** The method of claim 37 that further comprises the steps of:

a. setting an maximum idle time;

b. monitoring idle time of said engine control module; and

c. initiating a load cycle if said idle time corresponds to maximum idle time.



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ABSTRACT

A load bank comprises one or more load resistors connected to an engine-generator and a control system for maintaining a minimum generator load when necessary for optimal operation. The control system operates the load bank to mitigate harmful effects of generator neglect and maintains loading for efficient DPF regeneration while allowing the generator to quickly dump the load bank when real load increases.



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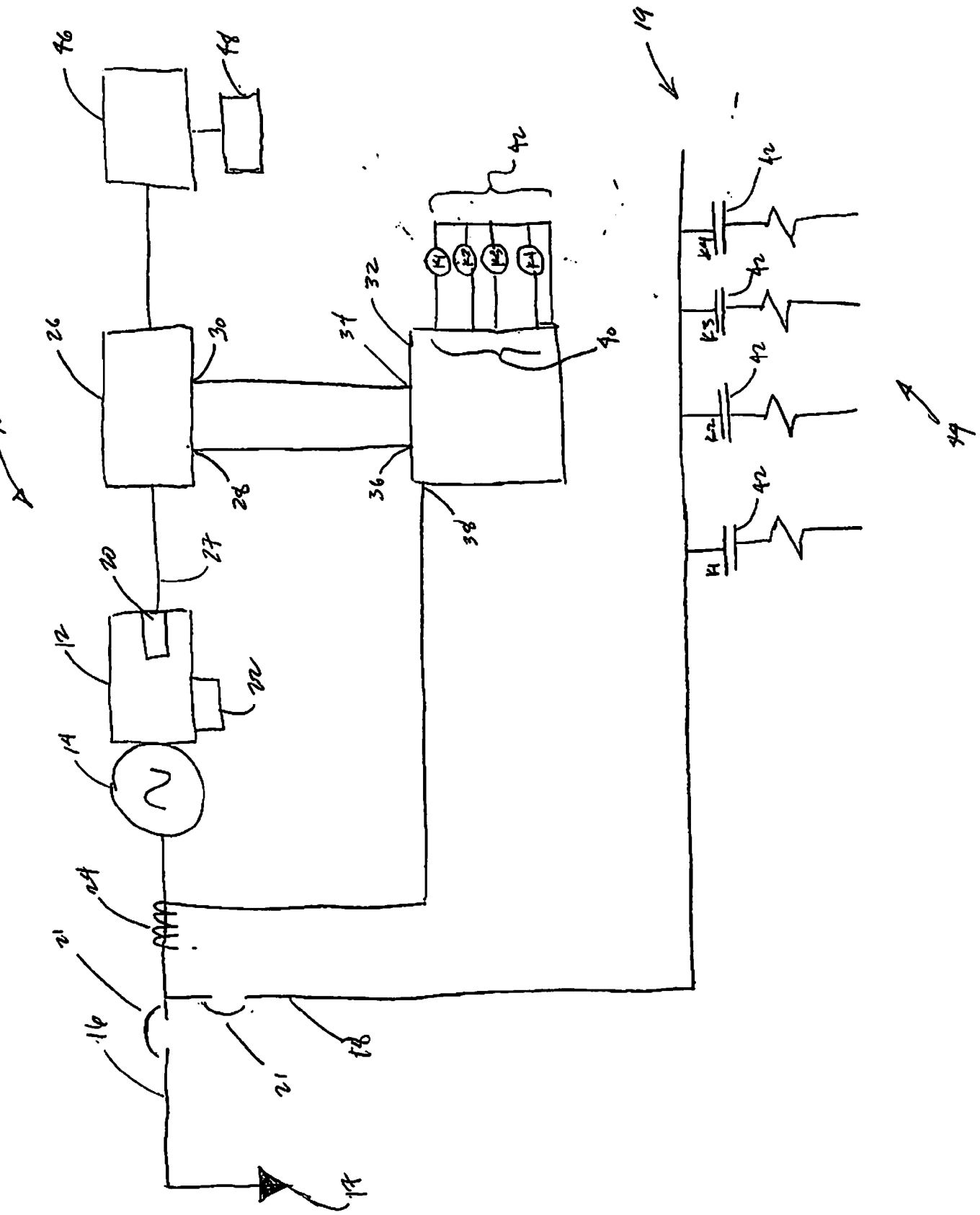



FIG. 1A

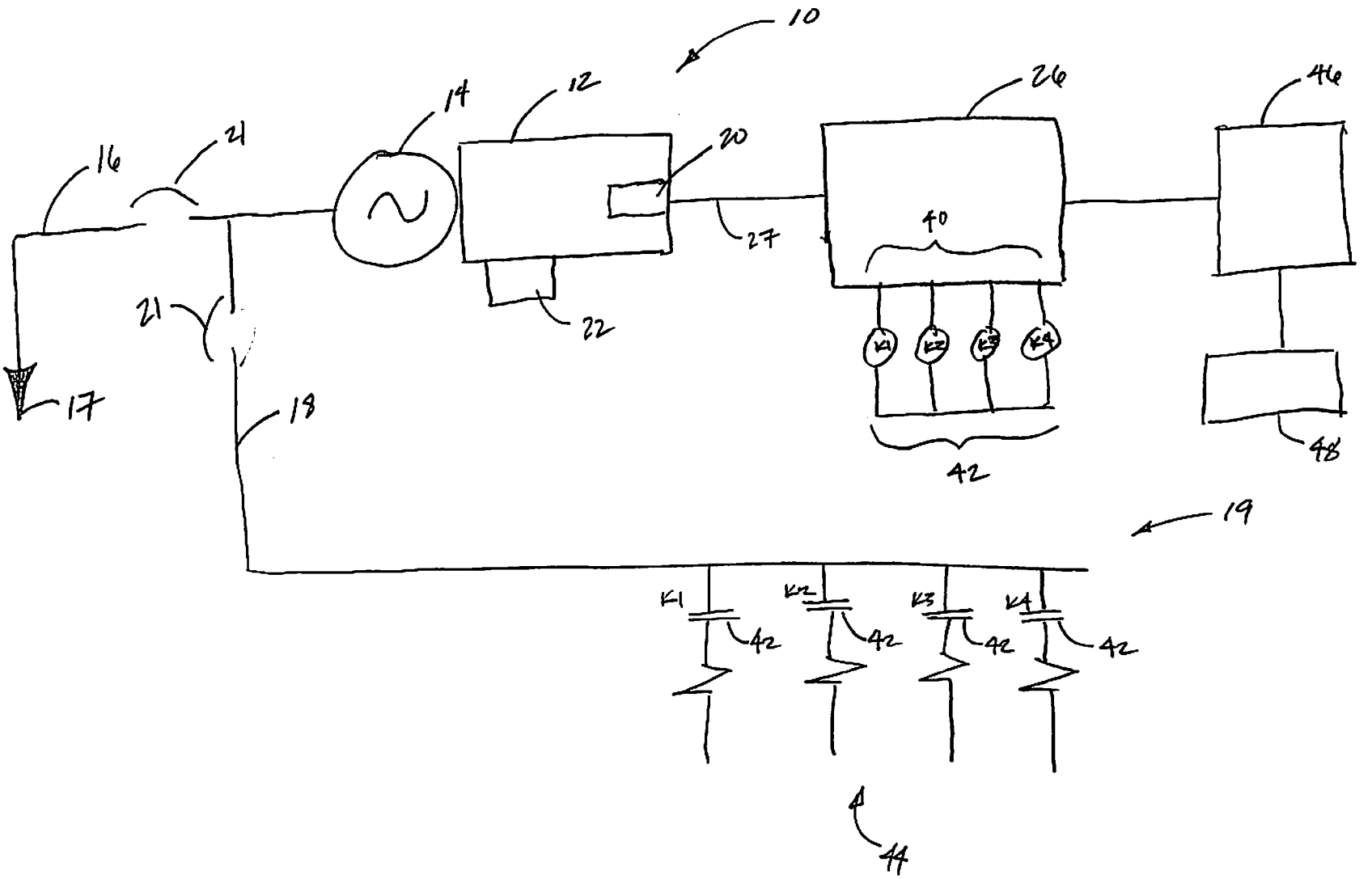



FIG. 1B

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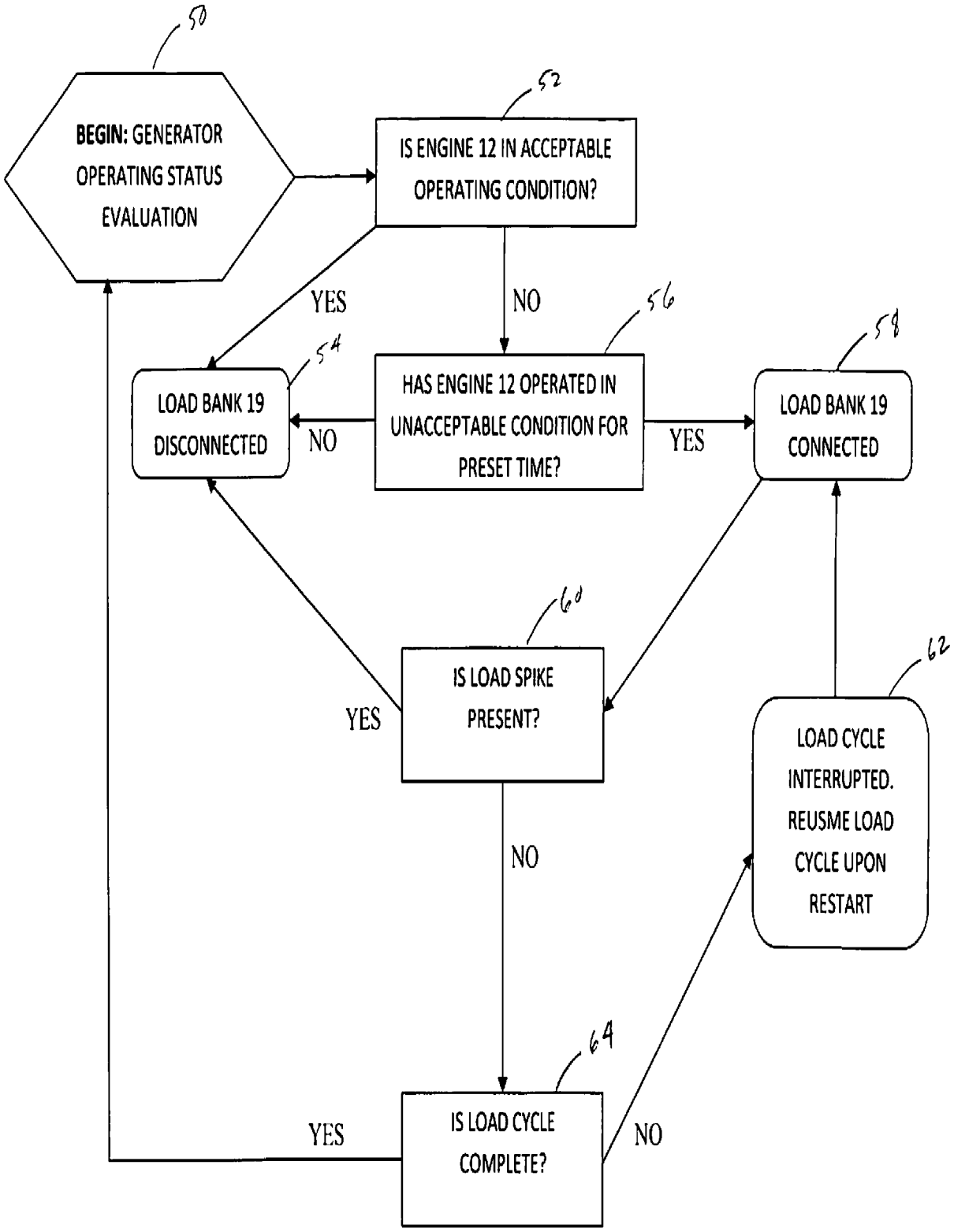



FIG. 2

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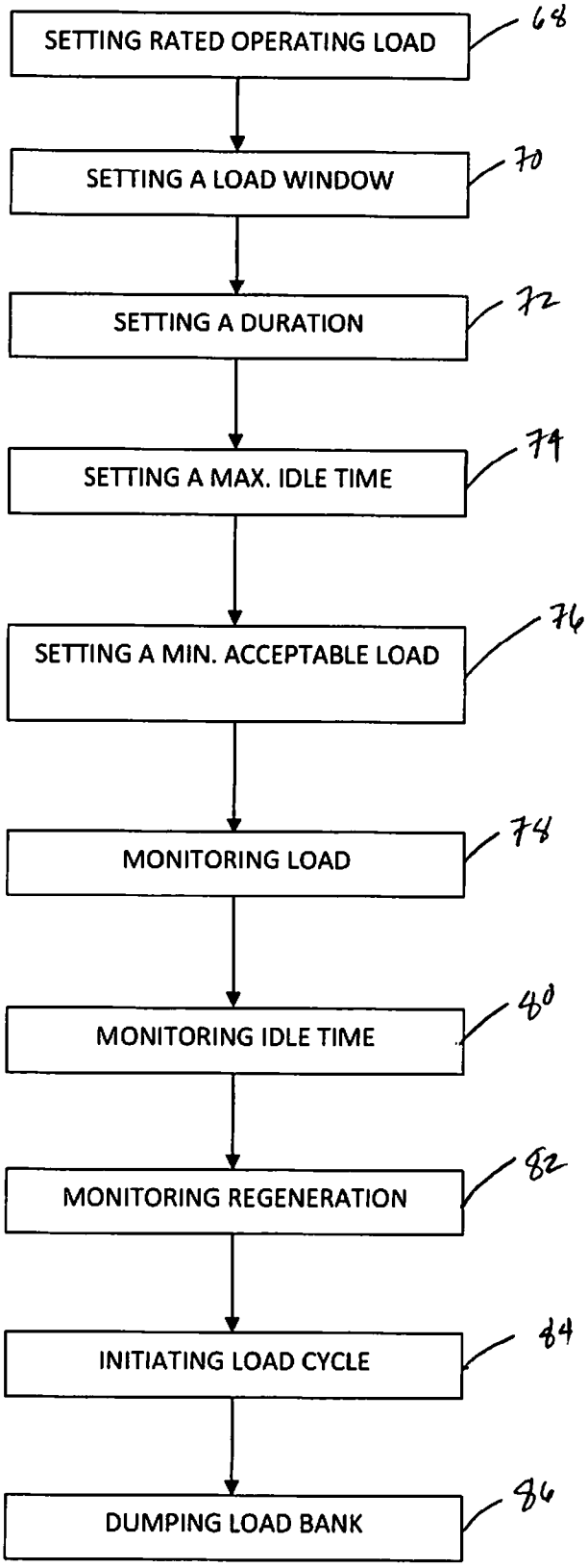



FIG. 3

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| Application Data Sheet 37 CFR 1.76 | Attorney Docket Number | MQ113 |
|---|---|---|
| | Application Number | |
| Title of Invention | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM | |

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

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## Inventor Information:

**Inventor 1** Remove

**Legal Name**

| Prefix | Given Name | Middle Name | Family Name | Suffix |
|---|---|---|---|---|
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**Residence Information (Select One)** ◉ US Residency ○ Non US Residency ○ Active US Military Service

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|---|---|---|---|---|---|

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| **Postal Code** | 90749 | **Country** | US |

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

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☐ **An Address is being provided for the correspondence Information of this application.**

| | | | |
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| **Customer Number** | 21658 | | |
| **Email Address** | frank@dykaslaw.com | Add Email | Remove Email |
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## Application Information:

| | | | |
|---|---|---|---|
| **Title of the Invention** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM | | |
| **Attorney Docket Number** | MQ113 | **Small Entity Status Claimed** ☐ | |
| **Application Type** | Nonprovisional | | |
| **Subject Matter** | Utility | | |
| **Suggested Class (if any)** | | **Sub Class (if any)** | |
| **Suggested Technology Center (if any)** | | | |
| **Total Number of Drawing Sheets (if any)** | 4 | **Suggested Figure for Publication (if any)** | |

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☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

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| | | | |
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| Prior Application Status | | | Remove |
|---|---|---|---|
| Application Number | Continuity Type | Prior Application Number | Filing Date (YYYY-MM-DD) |
| | | | |

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| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | MQ113 |
|---|---|---|
| | Application Number | |
| Title of Invention | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM | |

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

Remove

| Application Number | Country[1] | Filing Date (YYYY-MM-DD) | Priority Claimed |
|---|---|---|---|
| | | | (•) Yes ( ) No |

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If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

## Applicant Information:

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| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | MQ113 |
|---|---|---|
| | Application Number | |
| Title of Invention | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM | |

**Applicant 1**

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

| ○ Assignee | ○ Legal Representative under 35 U.S.C. 117 | ○ Joint Inventor |
|---|---|---|
| ◉ Person to whom the inventor is obligated to assign. | ○ Person who shows sufficient proprietary interest | |

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

| Name of the Deceased or Legally Incapacitated Inventor : | |
|---|---|

If the Applicant is an Organization check here. ☒

| Organization Name | MULTIQUIP, INC. |
|---|---|

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| **Country** | US | Postal Code | 90749 |
| Phone Number | | Fax Number | |
| Email Address | | | |

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| **Application Data Sheet 37 CFR 1.76** | Attorney Docket Number | MQ113 |
|---|---|---|
| | Application Number | |
| Title of Invention | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM | |

| Prefix | **Given Name** | Middle Name | **Family Name** | Suffix |
|---|---|---|---|---|
| | | | | |

| **Mailing Address Information:** | | | |
|---|---|---|---|
| **Address 1** | | | |
| Address 2 | | | |
| **City** | | **State/Province** | |
| **Country** i | | Postal Code | |
| Phone Number | | Fax Number | |
| Email Address | | | |

Additional Assignee Data may be generated within this form by selecting the Add button.

## Signature:

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

| **Signature** | /Frank J. Dykas/ | | | Date (YYYY-MM-DD) | 2013-02-26 |
|---|---|---|---|---|---|
| First Name | Frank | Last Name | Dykas | Registration Number | 28072 |

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EXHIBIT 1002

Multiquip0000091

# Electronic Patent Application Fee Transmittal

| | |
|---|---|
| **Application Number:** | |
| **Filing Date:** | |
| **Title of Invention:** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM |
| **First Named Inventor/Applicant Name:** | GEORGE FELL |
| **Filer:** | Frank J Dykas/Judy Hopkins |
| **Attorney Docket Number:** | MQ113 |

Filed as Large Entity

## Utility under 35 USC 111(a) Filing Fees

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| **Basic Filing:** | | | | |
| Utility application filing | 1011 | 1 | 390 | 390 |
| Utility Search Fee | 1111 | 1 | 620 | 620 |
| Utility Examination Fee | 1311 | 1 | 250 | 250 |
| **Pages:** | | | | |
| **Claims:** | | | | |
| Claims in excess of 20 | 1202 | 18 | 62 | 1116 |
| **Miscellaneous-Filing:** | | | | |
| **Petition:** | | | | |

EXHIBIT 1002

| Description | Fee Code | Quantity | Amount | Sub-Total in USD($) |
|---|---|---|---|---|
| Patent-Appeals-and-Interference: | | | | |
| Post-Allowance-and-Post-Issuance: | | | | |
| Extension-of-Time: | | | | |
| Miscellaneous: | | | | |
| | | | Total in USD ($) | 2376 |

# Electronic Acknowledgement Receipt

| | |
|---|---|
| **EFS ID:** | 15058236 |
| **Application Number:** | 13777900 |
| **International Application Number:** | |
| **Confirmation Number:** | 9204 |
| **Title of Invention:** | ENGINE-GENERATOR WITH LOAD BANK AND CONTROL SYSTEM |
| **First Named Inventor/Applicant Name:** | GEORGE FELL |
| **Customer Number:** | 21658 |
| **Filer:** | Frank J Dykas/Judy Hopkins |
| **Filer Authorized By:** | Frank J Dykas |
| **Attorney Docket Number:** | MQ113 |
| **Receipt Date:** | 26-FEB-2013 |
| **Filing Date:** | |
| **Time Stamp:** | 18:36:10 |
| **Application Type:** | Utility under 35 USC 111(a) |

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| Submitted with Payment | yes |
| Payment Type | Credit Card |
| Payment was successfully received in RAM | $2376 |
| RAM confirmation Number | 7916 |
| Deposit Account | |
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## File Listing:

| Document Number | Document Description | File Name | File Size(Bytes)/ Message Digest | Multi Part /.zip | Pages (if appl.) |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1 | | MQ113_nppa_2013_02_26_as_filed.pdf | 100451<br>c391bddc642cc1fdc492f4808d6f2cefb2083fe2 | yes | 23 |

| | Multipart Description/PDF files in .zip description | | |
|---|---|---|---|
| | **Document Description** | **Start** | **End** |
| | Specification | 1 | 15 |
| | Claims | 16 | 22 |
| | Abstract | 23 | 23 |

| | | | | | |
|---|---|---|---|---|---|
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 2 | Drawings-only black and white line drawings | mq113_fig_1A_as_filed.pdf | 14484<br>751027997fefed8deb8dcd17bf81c18a36aed991 | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 3 | Drawings-only black and white line drawings | mq113_fig_1B_as_filed.pdf | 13004<br>2901c8475c3a88a58bd3ce8a2fa07ed08949c19d | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 4 | Drawings-only black and white line drawings | mq113_fig_2_as_filed.pdf | 16549<br>5a75cd4f1bd4c7cad39c3e36d2a1e4e5e9f4a3e6 | no | 1 |
| **Warnings:** | | | | | |
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| **Information:** | | | | | |
| 5 | Drawings-only black and white line drawings | mq113_fig_3_as_filed.pdf | 11593<br>265f5f9588de6c9a41a3afc06eacdead2b439a08 | no | 1 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| 6 | Application Data Sheet | mq113_app_data.pdf | 64419<br>322b07902ec1eb95e14ba15e25989eb7b2959ecc | no | 6 |
| **Warnings:** | | | | | |
| **Information:** | | | | | |
| This is not an USPTO supplied ADS fillable form | | | | | |
| 7 | Fee Worksheet (SB06) | fee-info.pdf | 36861<br>f61ece0fac133c0587472e337df8b2c12a24dfa1 | no | 2 |

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

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