UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.	: 10,221,780 B2
APPLICATION NO.	: 14/738060
DATED	: March 5, 2019
INVENTOR(S)	: Sarder et al.

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

On the Title Page

Item (71) Applicant: delete "Chmapion" and substitute therefore -- Champion --.

Signed and Sealed this
Eleventh Day of June, 2024

Katherine Kelly Vidal

Katherine Kelly Vidal
Director of the United States Patent and Trademark Office

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.
14/738,060	06/12/2015	Mark J. Sarder	CET1090.019	9670

26629 7590 06/11/2024

ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

EXAMINER
LATHERS, KEVIN ANTHONY

ART UNIT	PAPER NUMBER
3747	

NOTIFICATION DATE	DELIVERY MODE
06/11/2024	ELECTRONIC

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

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

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

info@zpatents.com
jmf@zpatents.com
lje@zpatents.com

APPLICATION NO.	ISSUE DATE	PATENT NO.
14/738,060	11-Jun-2024	10221780

ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

ELECTRONIC CERTIFICATE OF CORRECTION NOTIFICATION

Your electronic certificate of correction is now available, and can be accessed via Patent Center at https://patentcenter.uspto.gov.

The electronic certificate of correction is the official certificate of correction under 35 U.S.C. 254 or 255. For more information, please visit https://www.uspto.gov/electronicgrants.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Number	:	10,221,780 B2
Issued	:	March 5, 2019
Name of Patentee	:	Sarder et al.
Title of Invention	:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT FOR OFFICE'S MISTAKE (37 CFR 1.322)

1. It is noted that errors appear in this patent of a clerical nature or characterized as more fully described below and would not constitute new matter or would not require re-examination. A Certificate of Correction is requested.

2. Attached hereto is Form PTO-1050 which should be suitable for printing.

3. The errors to be corrected are as follows:

On the Title Page

Item (71) Applicant: delete "Chmapion" and substitute therefore -- Champion --.

4. Please send the Certificate to:

Timothy J. Ziolkowski
Ziolkowski Patent Solutions Group, SC
136 South Wisconsin Street
Port Washington, WI 53074

Date: May 15, 2024

/Timothy J. Ziolkowski/
Timothy J. Ziolkowski
Registration No. 38,368
Telephone: (262) 268-8100

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.	:	10,221,780 B2
APPLICATION NO.	:	14/738,060
ISSUE DATE	:	March 5, 2019
INVENTOR(S)	:	Sarder et al.

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(Also Form PTO-1050)

MAILING ADDRESS OF SENDER:

Timothy J. Ziolkowski
Ziolkowski Patent Solutions Group, SC
136 South Wisconsin Street
Port Washington, WI 53074

PATENT NO: 10,221,780 B2

Burden Hour Statement: This form is estimated to take 1.0 hour to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
14/738,060	**05/15/2024 12:33:58 PM Z ET**	**CET1090.019**

Title of Invention

DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	10221780
CONFIRMATION #	9670	FILED BY	Robyn Templin
PATENT CENTER #	65535201	FILING DATE	06/12/2015
CUSTOMER #	26629	FIRST NAMED INVENTOR	Mark J. Sarder
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Timothy Ziolkowski

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2024.05.15 Req for COC.pdf	2	Request for Certificate of Correction	77 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2024.05.15 Req for COC.pdf	667FB47FFC7A84EB3C98230F1BD2E13D3E06458285DD4D582FDD7A62A96A6101DD6D9ABCA14376DDA21C7C4CEA789576AD9CAB71ED3B14092634646ACC386DC8

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized

by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/738,060	03/05/2019	10221780	CET1090.019	9670

26629 7590 02/13/2019

ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

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 605 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):

Mark J. Sarder, Waukesha, WI;
Champion Engine Technology, LLC, Sussex, WI;
Aleko D. Sotiriades, Cedarburg, WI;
James J. Dehn, Brookfield, WI;
Leigh Jenison, Hartland, WI;

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

Champion - EX2093, Page 8 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

PART B - FEE(S) TRANSMITTAL

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

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

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

OPAP JAN 11 2019 PATENT & TRADEMARK OFFICE

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)

26629 7590 12/11/2018
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

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

Certificate of Mailing or Transmission

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

Robyn L. Templin	(Typed or printed name)
Robyn L. Templin	(Signature)
1/11/19	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/738,060	06/12/2015	Mark J. Sarder	CPT1090.019	9670

TITLE OF INVENTION: DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	03/11/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
LATHERS, KEVIN ANTHONY	3747	123-575000

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

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

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively.
(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 Ziolkowski Patent Solutions Group, SC
2
3

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

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

(A) NAME OF ASSIGNEE: Champion Power Equipment, Inc.

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Santa Fe Springs, 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. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

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

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☒ Non-electronic payment by credit card (Attach form PTO-2038)

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

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature _____ Date 1/11/19

Typed or printed name Timothy J. Ziolkowski Registration No. 38,368

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PAGE 1/2 * RCVD AT 1/11/2019 10:48:51 AM [Eastern Standard Time] * SVR:W-PTOFAX-002/2 * DNIS:2732885 * CSID:2622688185 * DURATION (mm-ss):03-01

Champion - EX2003, Page 9 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

United States Patent and Trademark Office

- Sales Receipt -

01/15/2019 SSANDAR1 00000017 14738060

01 FC:2501 500.00 OP

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

26629 7590 12/11/2018

ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

EXAMINER	
LATHERS, KEVIN ANTHONY	
ART UNIT	PAPER NUMBER
3747	

DATE MAILED: 12/11/2018

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/738,060	06/12/2015	Mark J. Sarder	CET1090.019	9670

TITLE OF INVENTION: DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	03/11/2019

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

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

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

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

Champion - EX2093, Page 11 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

PART B - FEE(S) TRANSMITTAL

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

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

26629 7590 12/11/2018
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

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(Typed or printed name)

(Signature)

(Date)

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EXAMINER	ART UNIT	CLASS-SUBCLASS
LATHERS, KEVIN ANTHONY	3747	123-575000

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

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(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 _____

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

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

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

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

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

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

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

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❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

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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. _____

Champion - EX2093, Page 12 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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26629 7590 12/11/2018

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136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

EXAMINER	
LATHERS, KEVIN ANTHONY	
ART UNIT	**PAPER NUMBER**
3747	

DATE MAILED: 12/11/2018

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

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

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

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

Champion - EX2093, Page 13 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

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

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

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

Privacy Act Statement

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

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

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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. 14/738,060	Applicant(s) Sarder et al.	
	Examiner KEVIN A LATHERS	Art Unit 3747	AIA Status Yes

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

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

1. ☑ This communication is responsive to amendments filed 11/05/2018.
   ☐ 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 1-2,4-8,19 and 21-27 . 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 areply 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 _____.

/KEVIN A LATHERS/
Primary Examiner, Art Unit 3747

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Allowable Subject Matter

2. Claims 1, 2, 4-8, 19, and 21-27 are allowed.

3. The following is an examiner's statement of reasons for allowance: The closest prior art fails to disclose or make obvious the use of a dual fuel lockout switch on a dual fuel internal combustion engine wherein when the lockout switch is in one position it prevents the fuel source from coupling to the fuel system lines of the engine.

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

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN A LATHERS whose telephone number is (571)272-1050. The examiner can normally be reached on M-F 10a-6p.

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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lindsay Low can be reached on 5712721196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/KEVIN A LATHERS/
Primary Examiner, Art Unit 3747

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/738,060	Sarder et al.
	Examiner	Art Unit
	KEVIN A LATHERS	3747

CPC - Searched*		
Symbol	Date	Examiner
F02D19/0613, 16/0605, 19/0647	07/28/2017	/K.L./
Y02T10/36	07/28/2017	/K.L./

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

Search Notes		
Search Notes	Date	Examiner
EAST including inventor and assignee search.	07/28/2017	/K.L./
Google key word search (e.g. "dual fuel generator").	07/28/2017	/K.L./
EAST and google search.	02/15/2018	/K.L./
Google Search performed	08/29/2018	/K.L./
EAST and google, interference search.	11/20/2018	/K.L./

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
F02D19	19/0613, 19/0605, 19/0647	11/20/2018	/K.L./
Y02T	10/36	11/20/2018	/K.L./

/KEVIN A LATHERS/ Primary Examiner, Art Unit 3747	

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/738,060	Sarder et al.
	Examiner	Art Unit
	KEVIN A LATHERS	3747

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	07/28/2017	02/15/2018	08/29/2018	11/20/2018					
1	1	✓	✓	✓	=					
2	2	✓	O	O	=					
	3	✓	O	O	-					
3	4	O	O	O	=					
4	5	O	O	O	=					
5	6	O	O	O	=					
6	7	✓	✓	✓	=					
7	8	✓	✓	✓	=					
	9	✓	✓	✓	-					
	10	✓	O	O	-					
	11	O	O	O	-					
	12	O	O	O	-					
	13	O	O	O	-					
	14	✓	✓	✓	-					
	15	✓	✓	✓	-					
	16	✓	✓	✓	-					
	17	✓	✓	✓	-					
	18	✓	✓	✓	-					
8	19	✓	✓	✓	=					
	20	✓	O	O	-					
9	21	✓	O	O	=					
10	22	✓	✓	✓	=					
11	23	✓	✓	✓	=					
12	24	✓	✓	✓	=					
13	25	✓	✓	✓	=					
14	26	✓	✓	✓	=					
15	27				=					

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/738,060	Sarder et al.
	Examiner	**Art Unit**
	KEVIN A LATHERS	3747

CPC								
Symbol							**Type**	**Version**
F02D	/	19	/	0613			F	2013-01-01
F02D	/	19	/	0605			I	2013-01-01
F02D	/	19	/	0647			I	2013-01-01
F02D	/	19	/	0673			I	2013-01-01
Y02T	/	10	/	36			A	2013-01-01

CPC Combination Sets								
Symbol							**Type**	**Set**	**Ranking**	**Version**
	/		/							

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	15	
/KEVIN A LATHERS/ Primary Examiner, Art Unit 3747	20 November 2018	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4B

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/738,060	Sarder et al.
	Examiner	Art Unit
	KEVIN A LATHERS	3747

INTERNATIONAL CLASSIFICATION				
CLAIMED				
F02D	/	19	/	06

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	15	
/KEVIN A LATHERS/ Primary Examiner, Art Unit 3747	20 November 2018	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	4B

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/738,060	Sarder et al.
	Examiner	**Art Unit**
	KEVIN A LATHERS	3747

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

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		10	8	19										
2	2		11		20										
	3		12	9	21										
3	4		13	10	22										
4	5		14	11	23										
5	6		15	12	24										
6	7		16	13	25										
7	8		17	14	26										
	9		18	15	27										

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 15	
/KEVIN A LATHERS/ Primary Examiner, Art Unit 3747 (Primary Examiner)	20 November 2018 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 4B

Bibliographic Data

Application No: 14/738,060

Foreign Priority claimed: ○ Yes ◉ No

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

Verified and Acknowledged: /Kevin Lathers/ (Examiner's Signature) | (Initials)

Title: DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
06/12/2015	123	3747	CET1090.019
RULE			

APPLICANTS

Champion Engine Technology, LLC, Sussex, WI, UNITED STATES

INVENTORS

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James J. Dehn Brookfield, WI, UNITED STATES

Leigh Jenison Hartland, WI, UNITED STATES

CONTINUING DATA

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

06/22/2015

** SMALL ENTITY **

STATE OR COUNTRY

UNITED STATES

ADDRESS

ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
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FILING FEE RECEIVED

$970

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	445	F02D19/0613.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S2	1204	F02D19/0605.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S3	3408	F02D19/0647.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S4	15258	Y02T10/36.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S5	808	(S1 S2 S3 S4) and (switch valve) near20 (propane natural adj gas gaseous lng cng) near20 (gasoline liquid diesel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:28
S6	79	(S1 S2 S3 S4) and (switch valve) near20 (propane natural adj gas gaseous lng cng) near20 (gasoline liquid diesel) and (second secondary auxiliary) near5 (regulat$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:29
S7	64	(S1 S2 S3 S4) and (switch valve) near20 (propane natural adj gas gaseous lng cng) near20 (gasoline liquid diesel) and (second secondary auxiliary) adj (regulat$3 pressure)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:44
S8	28	("5450832" | "20130220274" | "5325835"	USPAT	OR	OFF	2017/07/27

Champion - EX2093, Page 24 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

		| "5320078" | "4619240" | "6082323" | "6453877" | "5171487" | "6223730" | "6213083" | "4489699" | "5287839" | "8590510" | "5673670" | "4450821" | "5816224" | "6276345" | "4502453" | "20130047964" | "4372276" | "6401685" | "7905469" | "2722208" | "4895124" | "5161496" | "5379740" | "5438968" | "5419291" | "6914342" | "8342158").PN.				14:45
S9	124	("5450832" | "20130220274" | "5325835" | "5320078" | "4619240" | "6082323" | "6453877" | "5171487" | "6223730" | "6213083" | "4489699" | "5287839" | "8590510" | "5673670" | "4450821" | "5816224" | "6276345" | "4502453" | "20130047964" | "4372276" | "6401685" | "7905469" | "2722208" | "4895124" | "5161496" | "5379740" | "5438968" | "5419291" | "6914342" | "8342158").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:45
S10	421	(duel dual) near5 fuel near20 (engine generator) same (switch valve) near20 between	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:46
S11	0	dual adj fuel near20 engine same "switchover valve"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:17
S12	44	dual adj fuel near20 engine same (switch switchover) near5 valve	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:19
S13	49	"6591817"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:19
S14	63	("3799125" | "4150645" | "4265208" | "4303049" | "4305350" | "4323046" | "4353345" | "4391251" | "4398517" | "4524033" | "4671243" | "5450832" | "5524582" | "5623907" | "5720266" | "5816224" | "6035837").PN. OR ("6591817").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:20
S15	80	dual adj fuel near20 engine same (switch switchover select$3) near5 valve	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:21

S16	30	(("SARDER") near3 ("Mark")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S17	28	(("SOTIRIADES") near3 ("Aleko")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S18	41	(("DEHN") near3 ("James")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S19	15	(("JENISON") near3 ("Leigh")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S20	16	(("CHAMPION") near3 ("ENGINE") near3 ("TECHNOLOGY") near3 ("LLC")).AANM.	USPAT	OR	OFF	2017/07/27 15:25
S21	19	(("CHAMPION") near3 ("ENGINE") near3 ("TECHNOLOGY") near3 ("LLC")).as.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:26
S22	5	("20040240141" | "20060169238" | "20130098349" | "20130122439" | "4489699").PN. OR ("9435273").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:42
S23	41	("1973142" | "2315882" | "2381304" | "4068639" | "4227497" | "4335697").PN. OR ("4489699").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:43
S24	97	(dual multi multiple plural plurality) adj fuel near20 engine same (switch switchover changeover change switch$3) near5 (valve switch)	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 16:02
S25	1	(09/813622).APP.	USPAT; USOCR	OR	OFF	2017/07/27 16:03
S26	63	("3799125" | "4150645" | "4265208" | "4303049" | "4305350" | "4323046" | "4353345" | "4391251" | "4398517" | "4524033" | "4671243" | "5450832" | "5524582" | "5623907" | "5720266" | "5816224" | "6035837").PN. OR ("6591817").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 16:03
S27	64	("4335697" | "4393848" | "4430978" | "4606322" | "4683864" | "4825842" | "4922862" | "5379740" | "5474047" | "5479906" | "5755211" | "5775282").PN. OR ("6035837").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 16:34
S28	27	("5999888" | "6543395" | "4619240" | "20140366577" | "20120168023" | "20140202430" | "4463735" | "5668310" | "5224457").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 10:32
S29	0	(14/156204).APP.	USPAT; USOCR	OR	OFF	2017/07/28 11:33
S30	5	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (quick-connect connect$3) near20 (cover flange)	USPAT; USOCR	OR	OFF	2017/07/28 11:47
S31	109	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (quick-connect connect$3) near20 (cover flange)	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2017/07/28 11:47

			EPO; JPO; DERWENT; IBM_TDB			
S32	280	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (cover flange)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 11:48
S33	171	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (cover flange) not S31	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 11:48
S34	5	"9435273"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 14:35
S35	1	"20070137591"	USPAT	OR	OFF	2018/02/12 15:56
S37	34	(champion near3 engine).as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/02/12 15:59
S38	95	dual adj fuel near20 valve near10 switch	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:19
S39	48	"4489699"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30
S40	5	"20070137591"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30
S41	29	"3412258"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30

S42	3	"20100258099"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30
S43	53	"5611312"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30
S44	138	(S39 S40 S41 S42 S43)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:31
S45	1	(10/591304).APP.	USPAT; USOCR	OR	OFF	2018/02/12 16:45
S46	6	("6332433" | "7146962").PN. OR ("7325519").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/02/12 16:46
S47	35	(US-20020014077-$ or US-20030168024-$ or US-20110168133-$ or US-20120204835-$ or US-20030010320-$ or US-20160363099-$ or US-20170037796-$ or US-20020134362-$ or US-20140202430-$ or US-20160221518-$ or US-20070137591-$).did. or (US-5320078-$ or US-5450832-$ or US-5816224-$ or US-6591817-$ or US-5524582-$ or US-4570605-$ or US-4712516-$ or US-9435273-$ or US-4489699-$ or US-4305350-$ or US-4353345-$ or US-6035837-$ or US-6904873-$ or US-7045916-$ or US-5092305-$).did. or (US-2558884-$ or US-2470747-$ or US-3022425-$ or US-3451424-$).did. or (JP-2004278332-$).did. or (US-20080290531-$ or US-20130047964-$ or US-4463735-$ or CN-203796423-$).did.	US-PGPUB; USPAT; USOCR; JPO; DERWENT	OR	OFF	2018/02/12 17:19
S48	35	(US-20020014077-$ or US-20030168024-$ or US-20110168133-$ or US-20120204835-$ or US-20030010320-$ or US-20160363099-$ or US-20170037796-$ or US-20020134362-$ or US-20140202430-$ or US-20160221518-$ or US-20070137591-$).did. or (US-5320078-$ or US-5450832-$ or US-5816224-$ or US-6591817-$ or US-5524582-$ or US-4570605-$ or US-4712516-$ or US-9435273-$ or US-4489699-$ or US-4305350-$ or US-4353345-$ or US-6035837-$ or US-6904873-$ or US-7045916-$ or US-5092305-$).did. or (US-2558884-$ or US-2470747-$ or US-3022425-$ or US-3451424-$).did. or (JP-2004278332-$).did. or (US-20080290531-	US-PGPUB; USPAT; USOCR; JPO; DERWENT	OR	OFF	2018/02/13 17:40

		$ or US-20130047964-$ or US-4463735-$ or CN-203796423-$).did.				
S50	17	S48 and regulator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/02/13 17:40

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	(engine and lockout and fuel and first adj fuel and second adj fuel and source and switch).clm.	US-PGPUB; USPAT	OR	OFF	2018/11/20 15:47
S51	88	F02D19/0613.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/20 12:06
S52	273	F02D19/0605.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/20 12:06
S53	747	F02D19/0647.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/20 12:06
S54	3711	Y02T10/36.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/20 12:06

11/ 20/ 2018 3:47:39 PM
C:\ Users\ klathers\ Documents\ EAST\ Workspaces\ 14738060.wsp

Customer No. 26629
Confirmation No. 9670

Patent
Attorney Docket No. CET1090.019

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Sarder et al.
Serial No.	:	14/738,060
Filed	:	June 12, 2015
For	:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
Group Art No.	:	3747
Examiner	:	Kevin A. Lathers

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

I hereby certify that, on the date shown below, this correspondence is being:

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☐ deposited with the US Postal Service in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

37 CFR 1.8(a) ☐ with sufficient postage as first class mail

37 CFR 1.10 ☐ As "Express Mail Post Office to Addressee" Mailing Label No.

Transmission

☐ transmitted by facsimile to Fax No.: 571-273-8300 addressed to **Examiner Kevin A. Lathers** at the Patent and Trademark Office.

■ transmitted by EFS-WEB addressed to **Examiner Kevin A. Lathers** at the Patent and Trademark Office.

Date: November 5, 2018

/Robyn L. Templin/
Signature

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

AFTER-FINAL
AMENDMENT/RESPONSE TO FINAL OFFICE ACTION
MAILED FEBRUARY 22, 2018

Dear Sir:

Responsive to the Final Office Action mailed September 5, 2018, please amend the Application as follows:

OK TO ENTER: /K.A.L/

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/738,060	Filing Date 06/12/2015	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ 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).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 11/05/2018

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 15	Minus	** 26	= 0	X $50 =	0
Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	X $230 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** 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 number found in the appropriate box in column 1.

LIE
TAMARA HARRELL

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Customer No. 26629
Confirmation No. 9670

Patent
Attorney Docket No. CET1090.019

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Sarder et al.
Serial No.	:	14/738,060
Filed	:	June 12, 2015
For	:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
Group Art No.	:	3747
Examiner	:	Kevin A. Lathers

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

I hereby certify that, on the date shown below, this correspondence is being:

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Transmission

☐ transmitted by facsimile to Fax No.: 571-273-8300 addressed to **Examiner Kevin A. Lathers** at the Patent and Trademark Office.

■ transmitted by EFS-WEB addressed to **Examiner Kevin A. Lathers** at the Patent and Trademark Office.

Date: November 5, 2018

/Robyn L. Templin/
Signature

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

AFTER-FINAL
AMENDMENT/RESPONSE TO FINAL OFFICE ACTION
MAILED FEBRUARY 22, 2018

Dear Sir:

Responsive to the Final Office Action mailed September 5, 2018, please amend the Application as follows:

In the Claims

1. (Currently Amended) A mechanical fuel lockout switch for a dual fuel engine comprising:

a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line; and

a fuel lockout apparatus coupled to the mechanical fuel valve;

wherein the mechanical fuel lockout switch:

communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and

communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position; and

wherein the fuel lockout apparatus is configured to:

prevent the second fuel source from coupling to the second fuel line while the mechanical fuel valve is in the first position; and

permit the second fuel source to couple to the second fuel line while the mechanical fuel valve is in the second position.

2. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source communicates with the dual fuel engine

3. (Canceled)

4. (Currently Amended) The mechanical fuel lockout switch for a dual fuel engine of claim ~~3~~ 1, wherein the fuel lockout apparatus comprises a flange rigidly coupled to the mechanical fuel valve that covers an inlet of the second fuel line while the mechanical fuel valve is in the first position and uncovers the inlet of the second fuel line while the mechanical fuel valve is in the second position

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5. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 4, wherein the mechanical fuel valve rotates between the first position and the second position and the flange rotates transversely across the inlet of the second fuel line.

6. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 4, further comprising;

a first end of a quick-disconnect hose coupling attached to the inlet of the second fuel line; and

a second end of the quick-disconnect hose coupling attached to the second fuel source to mate with the first end of the quick-disconnect hose coupling to couple the second fuel source to the second fuel line.

7. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the mechanical fuel valve and the fuel lockout apparatus operate together to ensure that fuel from the first fuel source and fuel from the second fuel source are not simultaneously delivered to the dual fuel engine.

8. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 7, wherein the first fuel source provides liquid fuel from a liquid fuel tank to the dual fuel engine and the second fuel source provides gaseous fuel from a pressurized fuel container to the dual fuel engine.

9-18. (Canceled)

19. (Currently Amended) A method of assembling a mechanical fuel lockout switch for an internal combustion engine comprising:

providing an internal combustion engine configured to operate on a fuel from a first fuel source and a different fuel from a second fuel source;

coupling a mechanical fuel valve to the internal combustion engine actuateable between a first position and a second position to selectively control fuel flow to the internal combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line; and

coupling a fuel lockout apparatus to the mechanical fuel valve;

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Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
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wherein when the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the first fuel source to the internal combustion engine and prevents the second fuel source from coupling to the internal combustion engine, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the second fuel source to couple to the internal combustion engine, and interrupts the first fuel source communication with the internal combustion engine; and

wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source is coupled to the internal combustion engine.

20. (Canceled)

21. (Currently Amended) The method of claim ~~20~~19, wherein the fuel lockout apparatus is further configured to:

prevent coupling of the second fuel source to the second fuel line while the mechanical fuel valve is in the first position; and

permit coupling of the second fuel source to the second fuel line while the mechanical fuel valve is in the second position.

22. (Original) The method of claim 19, wherein the fuel lockout apparatus comprises a fuel inlet cover configured to actuate in unison with the mechanical fuel valve to cover a fuel inlet on the internal combustion engine for the second fuel source when the mechanical fuel valve is in the first position and uncover the fuel inlet when the mechanical fuel valve is in the second position.

23. (Original) The method of claim 19, further comprising coupling a fuel regulator system to the second fuel source to reduce fuel pressure therefrom and deliver fuel to the second fuel line at a pressure required for operation of the internal combustion engine.

24. (Original) The method of claim 23, further comprising mounting the fuel regulator system to the second fuel source located off-board the internal combustion engine.

25. (Original) The method of claim 23, further comprising:

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coupling one end of a quick-disconnect hose coupling to an inlet on the internal combustion engine for the second fuel source; and

coupling a mating end of the quick-disconnect hose coupling to an outlet of the fuel regulator system.

26. (Original) The method of claim 19, further comprising providing gasoline in a liquid fuel tank as the first fuel source and LPG in a pressurized fuel container as the second fuel source.

27. (New) A mechanical fuel lockout switch for a dual fuel engine comprising:

a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line; and

a fuel lockout apparatus coupled to the mechanical fuel valve;

wherein the mechanical fuel lockout switch:

communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and

communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position; and

wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source communicates with the dual fuel engine.

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REMARKS

Claims 1-26 are pending in the present application. In the Final Office Action mailed September 5, 2018, the Examiner rejected claims 1 and 7 under 35 U.S.C. §102(a)(1) as being anticipated by Sugimoto et al. (US Pub. 2007/0137591). The Examiner next rejected claims 1, 7, 8, 19, 22, and 26 under 35 U.S.C. §102(a)(1) as being anticipated by Pursifull et al. (US Pub. 2011/0168133). Claims 9, 14-18, and 23-25 were rejected under 35 U.S.C. §103 as being unpatentable over Pursifull et al. in view of Sugimoto et al.

Claims 2-6, 10-13, 20, and 21 were indicated as containing allowable subject matter. Such indication is appreciated.

Rejection under 35 U.S.C. §102(a)(1) as being anticipated by Sugimoto et al.

Claim 1

The Examiner rejected claim 1 under 35 U.S.C. §102(a)(1) as being anticipated by Sugimoto et al. (US Pub. 2007/0137591). Without acquiescing to the rejection, Applicant has amended claim 1 in the present response in order to incorporate the allowable subject matter of claim 3.

As amended, claim 1 calls for a mechanical fuel lockout switch for a dual fuel engine comprising: a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line; and a fuel lockout apparatus coupled to the mechanical fuel valve; wherein the mechanical fuel lockout switch: communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position; and wherein the fuel lockout apparatus is configured to: prevent the second fuel source from coupling to the second fuel line while the mechanical fuel valve is in the first position; and permit the second fuel source to couple to the second fuel line while the mechanical fuel valve is in the second position.

In light of the incorporation of the allowable subject matter of claim 3 into claim 1, Applicant believes claim 1 to be in condition for allowance. Applicant therefore respectfully requests withdrawal of the rejection of claim 1 under 35 U.S.C. §102(a)(1) as being anticipated by Sugimoto et al., along with the rejection of all claims dependent therefrom.

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Rejection under 35 U.S.C. §102(a)(1) as being anticipated by Pursifull et al.

Claims 1 and 19

The Examiner next rejected claims 1 and 19 under 35 U.S.C. §102(a)(1) as being anticipated by Pursifull et al. (US Pub. 2011/0168133).

Regarding claim 1, as set forth above, Applicant has amended claim 1 to incorporate the allowable subject matter of claim 3. Thus, claim 1 is believed to be in condition for allowance.

Regarding claim 19, without acquiescing to the rejection, Applicant has amended claim 19 in the present response in order to incorporate the allowable subject matter of claim 20.

As amended, claim 19 calls for a method of assembling a mechanical fuel lockout switch for an internal combustion engine comprising: providing an internal combustion engine configured to operate on a fuel from a first fuel source and a different fuel from a second fuel source; coupling a mechanical fuel valve to the internal combustion engine actuateable between a first position and a second position to selectively control fuel flow to the internal combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line; and coupling a fuel lockout apparatus to the mechanical fuel valve; wherein when the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the first fuel source to the internal combustion engine and prevents the second fuel source from coupling to the internal combustion engine, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the second fuel source to couple to the internal combustion engine, and interrupts the first fuel source communication with the internal combustion engine; and wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source is coupled to the internal combustion engine.

In light of the incorporation of the allowable subject matter of claim 3 into claim 1 and the incorporation of the allowable subject matter of claim 20 into claim 19, Applicant believes claims 1 and 19 to be in condition for allowance. Applicant therefore respectfully requests withdrawal of the rejection of claims 1 and 19 under 35 U.S.C. §102(a)(1) as being anticipated by Pursifull et al., along with the rejection of all claims dependent therefrom.

Rejection under 35 U.S.C. §103 over Pursifull et al. in view of Sugimoto et al.

Claim 9

The Examiner rejected claim 9 under 35 U.S.C. §103 as being unpatentable over Pursifull et al. in view of Sugimoto et al.

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Without acquiescing to the rejection, Applicant has elected to cancel claims 9-18 in the present response. Applicant therefore believes the rejection to be moot.

Canceled & Newly Presented Claims

In the present Response, claims 3, 9-18, and 20 have been canceled and claim 27 has been newly added. New claim 27 combines the allowable subject matter of claim 2 with original claim 1. Accordingly, Applicant believes new claim 27 to be in condition for allowance.

Conclusion

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1, 2, 4-8, 19, and 21-27.

No fees are deemed due for entering the claim newly presented herein, as a greater number of claims have been canceled and the total number of independent claims is still three.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

/Kevin R. Rosin/

Kevin R. Rosin
Registration No. 55,584
Phone 262-268-8100 ext. 16
krr@zpspatents.com

Dated: November 5, 2018
Attorney Docket No.: CET1090.019

P.O. ADDRESS:
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136 South Wisconsin Street
Port Washington, WI 53074
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Champion - EX2093, Page 39 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

General Authorization and Extension of Time

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-2623. Should no proper payment be enclosed herewith, as by credit card authorization being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-2623. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extensions under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-2623. Please consider this a general authorization to charge any fee that is due in this case, if not otherwise timely paid, to Deposit Account No. 50-2623.

/Kevin R. Rosin/

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Dated: November 5, 2018
Attorney Docket No.: CET1090.019

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Champion - EX2093, Page 40 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

Electronic Acknowledgement Receipt

EFS ID:	34206596
Application Number:	14738060
International Application Number:	
Confirmation Number:	9670
Title of Invention:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
First Named Inventor/Applicant Name:	Mark J. Sarder
Customer Number:	26629
Filer:	Kevin Roger Rosin./Robyn Templin
Filer Authorized By:	Kevin Roger Rosin.
Attorney Docket Number:	CET1090.019
Receipt Date:	05-NOV-2018
Filing Date:	12-JUN-2015
Time Stamp:	10:10:05
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		Response.pdf	133213 53dc24c1b9d763395269130 17fec5a2d5b8 11d0f	yes	9

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	9
Warnings:			
Information:			
	Total Files Size (in bytes):	133213	

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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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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/738,060	06/12/2015	Mark J. Sarder	CET1090.019	9670

26629 7590 09/05/2018

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EXAMINER	
LATHERS, KEVIN ANTHONY	

ART UNIT	PAPER NUMBER
3747	

NOTIFICATION DATE	DELIVERY MODE
09/05/2018	ELECTRONIC

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

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

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

info@zpspatents.com
sml@zpspatents.com

Office Action Summary	Application No. 14/738,060	Applicant(s) Sarder et al.	
	Examiner KEVIN A LATHERS	Art Unit 3747	AIA Status Yes

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 05/15/2018.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ 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.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-26 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1,7-9,14-19 and 22-26 is/are rejected.

8) ☑ Claim(s) 2-6,10-13 and 20-21 is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, 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.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ 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)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 102

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

> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

2. **Claim(s) 1 and 7 is/are rejected under 35 U.S.C. 102(a)(1) as being clearly anticipated by Sugimoto (US 2007/0137591).**

3. **Regarding claim 1,** Champion discloses mechanical fuel lockout switch (Fig. 1, shown switch system) for a dual fuel engine (Fig. 1, shown engine 30) comprising:

a mechanical fuel valve 12 actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source 61 through a first fuel line A1 and a second fuel source 71 through a second fuel line A5 (Fig. 1, shown lines and valve); and

a fuel lockout apparatus 63 (a fuel cutoff is coupled via the regulator 62 to the valve 12) coupled to the mechanical fuel valve;

wherein the mechanical fuel lockout switch:

communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position (Para. [0082], the switch

has multiple positions which allow valve 12 connect either of the lines A1 or A4 to line A2 and also activate lockout apparatus 63).

4. **Regarding claim 7,** the mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the mechanical fuel valve and the fuel lockout apparatus operate together to ensure that fuel from the first fuel source and fuel from the second fuel source are not simultaneously delivered to the dual fuel engine (Para. [0082], the system does not allow two fuels to be delivered simultaneously).

5. Claim(s) 1, 7, 8, 19, 22, and 26 is/are rejected under 35 U.S.C. 102(a)(1) as being clearly anticipated by Pursifull et al (US 2011/0168133)

6. **Regarding claims 1 and 19,** Pursifull discloses a mechanical fuel lockout switch for a dual fuel engine (Fig. 3, shown dual fuel engine with lockout switch) and method of constructing it comprising: a mechanical fuel valve 120 actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine 102 from a first fuel source 112 through a first fuel line 119 and a second fuel source 134 through a second fuel line 140 (Para. [0025], the valve 120 is a three-way mechanical selection valve); and

7. a fuel lockout apparatus (Controller 128, pumps 136 114, and solenoid valves 118 126) coupled to the mechanical fuel valve (Fig. 1, the lockout apparatus is coupled to the valve 120 via controller 128 and fuel lines 119/140);

8. wherein the mechanical fuel lockout switch: communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position (Para. [0025], [0028], and [0066], the three-way valve and lockout apparatus determine connection of the first or second fuel to the dual fuel engine 102).

9. The apparatus above having all the parts coupled together and therefore being "coupled" and "provided" as per the method in claim 19.

10. **Regarding claim 7,** Pursifull discloses the mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the mechanical fuel valve and the fuel lockout apparatus operate together to ensure that fuel from the first fuel source and fuel from the second fuel source are not simultaneously delivered to the dual fuel engine (Para. [0025], [0028], and [0066], the lockout apparatus cuts off the fuel supply between the lines).

11. **Regarding claims 8 and 26,** Pursifull discloses the mechanical fuel lockout switch for a dual fuel engine of claims 7 and 19, wherein the first fuel source provides gasoline as liquid fuel from a liquid fuel tank to the dual fuel engine and the second fuel source provides LPG fuel from a pressurized fuel container to the dual fuel engine (Para. [0040], the multi fuel system may be liquid propane (gaseous fuel) and gasoline (liquid fuel)).

12. **Regarding claim 22,** the modified Pursifull discloses the method of claim 19 as disclosed above, wherein the fuel lockout apparatus comprises a fuel inlet cover configured to actuate in unison with the mechanical fuel valve to cover a fuel inlet on the internal combustion engine for the second fuel source when the mechanical fuel valve is in the first position and uncover the fuel inlet when the mechanical fuel valve is in the second position (Para. [0025], [0028], and [0066], the lockout apparatus cuts off the fuel supply between the lines, by considering the line which connects to the lockout valve as a "fuel inlet" then the valve cutting off flow is then covering the inlet to disallow fuel flow).

Claim Rejections - 35 USC § 103

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

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the

claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 9, 14-18, and 23-25 is/are rejected under 35 U.S.C. 103 as being unpatentable over Pursifull et al (US 2011/0168133) in view of Sugimoto et al (US 2007/0137591).

15. **Regarding claim 9,** Pursifull discloses a dual fuel engine and fuel delivery system comprising:

a dual fuel engine (Fig. 1, shown) configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line (Para. [0040], the multi fuel system may be pressurized liquid propane (gaseous fuel) and gasoline (liquid fuel)); and a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line (Para. [0025], [0028], and [0066], the three-way valve and lockout apparatus determine connection of the first or second fuel to the dual fuel engine 102).

16. Pursifull fails to disclose a fuel regulator system located off board the dual fuel engine, the fuel regulator system comprising: a primary pressure regulator coupled to a service valve of the pressurized fuel source and configured to regulate the fuel supplied from the pressurized fuel source to a reduced pressure; and a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator.

17. Sugimoto discloses a dual fuel engine and delivery system (Fig. 1, as shown) wherein the system includes an off-board gaseous fuel system (Fb) which includes an off-board pressure regulator 72 which feeds fuel into an engine system 1 which includes another pressure regulator 62. The inclusion of pressure reduction devices for the gasification of liquid-held fuel allows for an effective cooling of the fuel system and systems (Para. [0010]) while allowing the dual fuel engine to be powered by an external fuel tank attached to it in an off board fashion such as in emergency situations (Para. [0002]).

18. Therefore, it would have been obvious to one of ordinary skill in the art before the filing date of the invention to modify the device of Pursifull with the pressure regulators and gaseous fuel system methods of Sugimoto in order to improve the cooling of the fuel system parts through pressure reduction as well as regulate the pressure from an external attached fuel tank which allows the dual fuel engine system to be used in varying situations such as emergency ones using an external fuel source.

19. Further, the inclusion of multiple pressure regulators in the off-board fuel system, while not disclosed in Pursifull as modified by Sugimotor, would have been an obvious modification of the system of Sugimoto which includes an off-board fuel regulation system including a single regulator 72. It would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the regulation system to have a dual-regulator off-board system since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8. Further, dual tank regulators are extremely old and well-known in the art to provide on off-board fuel tanks, particularly gaseous ones such as propane/natural gas tanks, as they are more efficient, durable, and effective in their regulation. These types of regulators are often called "dual-stage" or "double-stage" regulators.

20. **Regarding claim 14,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 9, further comprising: a first end of a quick-connect hose coupling coupled to an outlet of the secondary pressure regulator; and a second end of the quick-connect hose coupling coupled to an inlet of the gaseous fuel line to mate with the first end of the quick-connect hose coupling to couple the secondary pressure regulator to the gaseous fuel line (Fig. 1 of Sugimoto shows that the modification of Pursifull to includes an external source of gaseous fuel and regulators makes use of a connection hose coupling 14).

21. **Regarding claims 15,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 9, further comprising a regulator mounting device (a bracket as per applicant's

disclosure on in Para. [0024] of the disclosure) secured to the pressurized fuel source with at least the secondary pressure regulator mounted on the regulator mounting device (Fig. 1 of Sugimoto which discloses the regulator systems, the regulator 72 shown is attached to the fuel tank system 71).

22. The modified Pursifull fails to specifically note a bracket being used for the fixation of the regulator 72. However, it would have been obvious to one of ordinary skill in the art before the filing date of the invention to attach the regulator 72 using some device wherein a bracket is an extremely old and well-known fixation device and one of ordinary skill in the art would have known to apply a known device and technique of mounting a regulator on a fuel tank, such as a bracket, to yield the predictable results of fixing the regulator to its fuel system.

23. **Regarding claim 16,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 15, but fails to disclose wherein the primary pressure regulator is mounted on the regulator mounting device. The modified Pursifull fails to disclose the two regulators being located in positions where they would be mounted making use of the same mounting bracket.
However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to mount both regulators in a similar location on the same bracket since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

24. **Regarding claim 17,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 16, but fails to disclose wherein the pressurized fuel source comprises a pressurized fuel container having a collar; and wherein the regulator mounting device secures to the collar so that the primary and secondary pressure regulators are positioned adjacent each other along an outer periphery of the collar.

25. In this case the claim pertains to the routine and known art of using propane tanks as a fuel tank source as these devices are well-known in the art to have a "collar" piece which often has regulators attached to it. While the art of Pursifull and Sugimoto never make reference to this specific old and well-

known device, they do make use of fuel tanks that could easily be substituted with them. Therefore, examiner makes official notice that it is old and well-known to make use of standard-in-the-art propane tanks with regulators attached to their collars as this would have allowed the modified Pursifull to make use of the common, cheap, and easy-to-use propane tanks for its regulation and propane tank systems. Some examples of such tanks can be seen at: RVDoctor (Oct. 2010, http://www.rvdoctor.com/2012/10/disconcerting-propane-leaks-on-rv.html) which shows two propane tanks with a regulator attached to their collar; and Nooutage.com (Aug. 27th, 2006, https://web.archive.org/web/20060928183104/http://www.nooutage.com:80/images/BS-7KW_Power_Now_tanks.jpg) which shows propane tanks with regulators attached to their collars.

26. **Regarding claim 18,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 9, but fails to disclose wherein the primary and secondary pressure regulators are integral components of a dual stage pressure regulator.

27. However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the regulators into a two-stage regulator, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. Howard v. Detroit Stove Works, 150 U.S. 164 (1893).

28. Claims 23-25 are rejected using Pursifull as modified by Sugimoto in the same manner as applied to claim 9 and its dependent claims above.

29. **Regarding claim 23,** the modified Pursifull discloses the method of claim 19, further comprising coupling a fuel regulator system to the second fuel source to reduce fuel pressure therefrom and deliver fuel to the second fuel line at a pressure required for operation of the internal combustion engine (Fig. 1 of Sugimoto shows the regulators in series reducing pressure).

30. **Regarding claim 24,** the modified Pursifull discloses the method of claim 23, further comprising mounting the fuel regulator system to the second fuel source located off-board the internal combustion engine (Fig. 1 of Sugimoto as modified onto Pursifull and shown).

31. **Regarding claim 25,** the modified Pursifull discloses the method of claim 23, further comprising: coupling one end of a quick-disconnect hose coupling to an inlet on the internal combustion engine for the second fuel source; and coupling a mating end of the quick-disconnect hose coupling to an outlet of the fuel regulator system (Fig. 1 of Sugimoto as modified onto Pursifull and shown).

Allowable Subject Matter

32. Claims 2-6, 10-13, 20, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

33. Applicant's arguments filed 05/15/2018 have been fully considered but they are not persuasive.

34. Applicant argues in the remarks filed 05/15/2018 that the prior art of Suigmoto et al fails to disclose the limitations of claim 1. The argument is based on the construction of the fuel lockout apparatus and argues that Sugimoto fails to disclose a fuel lockout apparatus coupled to a mechanical fuel valve as they appear to be in separate locations. This argument is also presented as a reason why Pursifull et al fails to disclose the limitations of claims 1 and 19: it lacks a coupling between a fuel lockout apparatus and a mechanical fuel valve.

a. While it is true that the fuel lockout apparatus 63 is not *directly attached* to the selector valve 12, the fuel lockout apparatus 63 is clearly coupled to the valve 12 by way of other pieces. Applicant never specifies the term "couple" to take the meaning of "operationally coupled" or "directly mechanically coupled" and indeed the word "couple" simply means "something that joins or links two things together" (https://www.merriam-webster.com/dictionary/couple). In

this case the two parts are linked together via other parts of the construction, parts A2, A3, and 62 (Fig. 1, shown). A good example of this phrase's use would be a cylinder head *coupled to* a cylinder block even if there was a gasket between them; the two parts don't touch and instead are attached via a gasket/seal. Another example would be a "shaft coupling" which is a common term in the art that involves two shafts which never touch but are "coupled." In this way, two fuel system parts connected to one another via lines or other structures are coupled together.

b. With regards to Pursifull, in a manner similar to Sugimoto, a fuel lockout apparatus embodied in controller 128, pumps 136 114, and solenoids valves 118 126 is *coupled* to a mechanical fuel valve 120. The coupling takes place via the intervening parts of a fuel lines 119/140 as the term "couple" is never given a more specific meaning in the disclosure so a broadest reasonable definition (as quoted above) must be used. Therefore, while it's true the two structures are not in direct contact, they are *coupled.*

c. *Examiner notes that the claims can be amended to claim "directly coupled" or "operationally coupled" in order to fulfill the desired claim breadth as per the arguments.*

35. With regards to claim 9, applicant argues that the fuel regulator system is claimed to be located "off-board" and that the prior art of Purifull and Sugimoto fail to disclose the fuel regulator system being off board.

d. It is noted that the prior art of Sugimoto is used to remedy this deficiency in the prior art of Pursifull and will be relied upon for teaching of these claim limitations. The claim itself claims "a fuel regulator system located off board the dual fuel generator... comprising." Further, as applicant notes, Sugimoto only discloses a single off-board regulator in its system. However, the addition of another regulator or replacement with a dual-stage (two regulators in one housing) would have been exceedingly obvious and well-known to one of ordinary skill in the art. Therefore the claim remains rejected under Purisfull in view of Sugimoto.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN A LATHERS whose telephone number is (571)272-1050. The examiner can normally be reached on M-F 10a-6p.

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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lindsay Low can be reached on 5712721196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/KEVIN A LATHERS/
Primary Examiner, Art Unit 3747

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/738,060	Sarder et al.
	Examiner	Art Unit
	KEVIN A LATHERS	3747

CPC - Searched*		
Symbol	Date	Examiner
F02D19/0613, 16/0605, 19/0647	07/28/2017	/K.L./
Y02T10/36	07/28/2017	/K.L./

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

Search Notes		
Search Notes	Date	Examiner
EAST including inventor and assignee search.	07/28/2017	/K.L./
Google key word search (e.g. "dual fuel generator").	07/28/2017	/K.L./
EAST and google search.	02/15/2018	/K.L./
Google Search performed	08/29/2018	/K.L./

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/738,060	Sarder et al.
	Examiner	Art Unit
	KEVIN A LATHERS	3747

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

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

CLAIM		DATE								
Final	Original	07/28/2017	02/15/2018	08/29/2018						
	1	✓	✓	✓						
	2	✓	O	O						
	3	✓	O	O						
	4	O	O	O						
	5	O	O	O						
	6	O	O	O						
	7	✓	✓	✓						
	8	✓	✓	✓						
	9	✓	✓	✓						
	10	✓	O	O						
	11	O	O	O						
	12	O	O	O						
	13	O	O	O						
	14	✓	✓	✓						
	15	✓	✓	✓						
	16	✓	✓	✓						
	17	✓	✓	✓						
	18	✓	✓	✓						
	19	✓	✓	✓						
	20	✓	O	O						
	21	✓	O	O						
	22	✓	✓	✓						
	23	✓	✓	✓						
	24	✓	✓	✓						
	25	✓	✓	✓						
	26	✓	✓	✓						

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Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	14738060
Filing Date	2015-06-12
First Named Inventor	Mark J. Sarder et al.
Art Unit	3747
Examiner Name	Kevin A. Lathers
Attorney Docket Number	CET1090.019

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	3384059		1968-05-21	Kopa	
	2	3412258		1968-11-19	Satter	
	3	3659574		1972-05-02	Reschke et al.	
	4	3718000		1973-02-27	Walker	
	5	3783849		1974-01-08	Bramfitt	
	6	3888223		1975-06-10	Mondt	
	7	4335697		1982-06-22	McLean	
	8	4373493		1983-02-15	Welsh	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.A.L/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	First Named Inventor	Mark J. Sarder et al.
	Art Unit	3747
	Examiner Name	Kevin A. Lathers
	Attorney Docket Number	CET1090.019

	9	4480595		1984-11-06	Hobby et al.	
	10	4628871		1986-12-16	Glass	
	11	4708094		1987-11-24	Helmich et al.	
	12	4979480		1990-12-25	Daikoku et al.	
	13	5092305		1992-03-03	King	
	14	5228423		1993-07-20	Oikawa et al.	
	15	5611312		1997-03-18	Swanson et al.	
	16	6591817	B2	2003-07-15	Deutsch	

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U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20020134362	A1	2002-09-26	Deutsch	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.A.L/

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	Art Unit	3747
	Examiner Name	Kevin A. Lathers
	Attorney Docket Number	CET1090.019

	2	20040139943	A1	2004-07-22	Kern et al.	
	3	20100258099	A1	2010-10-14	Andersson et al.	
	4	20110253102	A1	2011-10-20	Watanabe	
	5	20140238340	A1	2014-08-28	Dunn et al.	
	6	20140373531	A1	2014-12-25	Wong	
	7	20150122230	A1	2015-05-07	Sarder et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.A.L/

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	Attorney Docket Number	CET1090.019

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Examiner Signature	/KEVIN A LATHERS/	Date Considered	08/29/2018

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	14738060
Filing Date	2015-06-12
First Named Inventor	Mark J. Sarder et al.
Art Unit	3747
Examiner Name	Kevin A. Lathers
Attorney Docket Number	CET1090.019

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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See attached certification statement.

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A certification statement is not submitted herewith.

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Signature	/Kevin R. Rosin/	Date (YYYY-MM-DD)	2018-05-15
Name/Print	Kevin R. Rosin	Registration Number	55584

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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	1	2060477	CN	U	1990-08-15	Zhao Yunying		

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Examiner Signature	/KEVIN A LATHERS/	Date Considered	08/29/2018

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Signature	/Stephanie M. Laundre/	Date (YYYY-MM-DD)	2018-02-22
Name/Print	Stephanie M. Laundre	Registration Number	65124

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
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☒ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Kevin R. Rosin/	Date (YYYY-MM-DD)	2018-06-01
Name/Print	Kevin R. Rosin	Registration Number	55584

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Customer No. 26629
Confirmation No. 9670

Patent
Attorney Docket No. CET1090.019

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Sarder et al.
Serial No.	:	14/738,060
Filed	:	June 12, 2015
For	:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
Group Art No.	:	3747
Examiner	:	Kevin A. Lathers

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

I hereby certify that, on the date shown below, this correspondence is being:

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Date: June 1, 2018

/Robyn L. Templin/
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INFORMATION DISCLOSURE STATEMENT
CERTIFICATION STATEMENT UNDER 37 CFR 1.704(D)(1)

Dear Sir:

Each item of information contained in this information disclosure statement was first cited in any communication from a patent office in a counterpart foreign or international application or from the Office, and this communication was not received by an individual designated under 37 CFR 1.56(c) more than thirty (30) days prior to the filing of this information disclosure statement.

Dated: June 1, 2018
Attorney Docket No.: CET1090.019

Respectfully submitted,

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Bibliographic data: CN1981121 (A) — 2007-06-13

Engine generator

Inventor(s): KATSUHIRO SUGIMOTO YASUHIRO KO [JP] ± (SUGIMOTO YASUHIRO,KOJIMA HIROAKI,TAKEMURA KAZUHITO,NAKAGAWA KATSUHIRO, ; SUGIMOTO YASUHIRO, ; KOJIMA HIROAKI, ; TAKEMURA KAZUHITO, ; NAKAGAWA KATSUHIRO)

Applicant(s): HONDA MOTOR CO LTD [JP] ± (HONDA MOTOR CO., LTD, ; HONDA GIKEN KOGYO K. K)

Classification: - international: ***F01P5/06; F02B63/04; F02M21/02; F02M21/06***
- cooperative: **F02B43/00**; **F02B63/04**; **F02D19/022**; **F02D19/027**; **F02D19/0615**; **F02D19/0647**; **F02D19/0676**; **F02D29/06**; **F02M21/0224**; **F02M21/0287**; **F02M21/029**; **F02M21/06**; F01P5/06; F01P9/02; F02B63/044; F02M21/047; Y02T10/32; Y02T10/36

Application number: CN2005822860 20050920

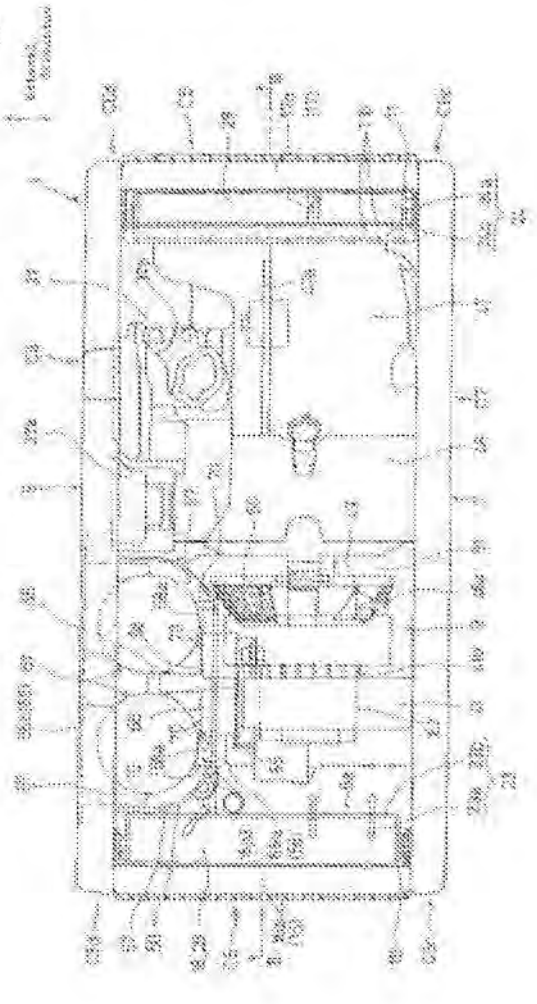
Priority number(s): JP20040285036 20040929

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Abstract of CN1981121 (A)

An engine generator (1), comprising an engine (30), a generator (40) driven by the engine (30), and a power control unit (41) controlling a power generated by the generator (40). A gas fuel stored, in a liquefied state, in cassette cylinders (61) stored in the case (C) of the engine generator (1) is supplied to the engine (30) through a fuel pressure regulator (62). The cassette cylinders (61) and the fuel pressure regulator (62) are disposed in proximity to the power control unit (41) so that the heat exchange thereof with the power control unit (41) with an inverter can be performed. As a result, heat can be mutually utilized between at least one of the cassette cylinders (61) as fuel containers and the fuel pressure regulator (62) and the power control unit (41) in the engine generator (1).

Fig.4



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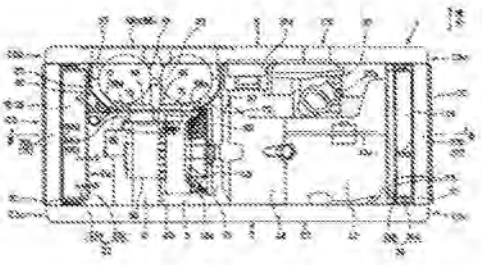
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[54] 发明名称

发动机发电机

[57] 摘要

本发明提供一种发动机发电机(1)，其具有：发动机(30)；发电机(40)，其由发动机(30)驱动；和电力控制单元(41)，其控制发电机(40)产生的电力。在容纳于发动机发电机(1)的箱体(C)内的盒式高压储气瓶(61)中，以液化状态储存有气体燃料，该气体燃料通过燃料压力调节器(62)而被供给发动机(30)。盒式高压储气瓶(61)和燃料压力调节器(62)接近电力控制单元(41)来进行配置，以便能够与具有变流器的电力控制单元(41)进行热交换。从而，在发动机发电机(1)中，在作为燃料容器的盒式高压储气瓶(61)和燃料压力调节器(62)中的至少一方与电力控制单元(41)之间，相互利用热量。



1．一种发动机发电机，该发动机发电机具有：燃料容器，其将气体燃料以液化状态储存；发动机，其被供给来自该燃料容器的气体燃料；燃料压力调节器，其调节从所述燃料容器供给到所述发动机的气体燃料的压力；发电机，其由所述发动机驱动；和电力控制单元，其控制所述发电机所产生的电力，所述发动机发电机的特征在于，

所述燃料容器和所述燃料压力调节器中的至少一方接近所述电力控制单元来进行配置，以便能够与所述电力控制单元进行热交换。

2．如权利要求 1 所述的发动机发电机，其特征在于，

所述发动机发电机具有容纳所述燃料容器的容纳室；所述燃料容器与所述容纳室的室壁通过由热的良导体构成的传热部件进行热连接；所述室壁接近所述电力控制单元来进行配置，以便能够与所述电力控制单元进行热交换。

3．如权利要求 2 所述的发动机发电机，其特征在于，

所述传热部件是以与所述燃料容器和所述容纳室的室壁相接触的方式介于所述传热部件与所述容纳室的室壁之间的多个柱状部件。

4．如权利要求 1 所述的发动机发电机，其特征在于，

所述燃料容器和所述燃料压力调节器中的至少一方与所述电力控制单元通过由热的良导体构成的传热部件进行热连接，或者直接进行热连接。

5．如权利要求 1 至 4 中任一项所述的发动机发电机，其特征在于，

所述电力控制单元具有变流器。

6．如权利要求 1 至 4 中任一项所述的发动机发电机，其特征在于，

所述发动机发电机具有箱体，所述箱体形成容纳所述燃料容器、所述发动机以及所述发电机的内部空间，

被导入所述内部空间的冷却风以顺次冷却所述燃料容器和所述电力控制单元后，冷却所述发电机和所述发动机的方式形成冷却风通路。

7．如权利要求 6 所述的发动机发电机，其特征在于，

相对于所述容纳室的室壁，在所述容纳室的相反侧，配置有所述燃料

压力调节器和所述电力控制单元，并且，所述电力控制单元位于所述燃料压力调节器的下侧。

8. 如权利要求 7 所述的发动机发电机，其特征在于，

所述箱体沿其一侧壁的上部具有空气导入口；所述燃料压力调节器设于所述空气导入口的下游。

发动机发电机

技术领域

本发明涉及一种发动机发电机，该发动机发电机具有发动机和由该发动机驱动的发电机，以液化状态储存在燃料容器中的气体燃料被供给所述发动机。

背景技术

发动机发电机被广泛用作室外的临时电源，或是紧急情况下的电源。而且，发动机发电机例如在用作休闲用品或防灾用品的情况下，大多使用以储存在小型燃料容器例如盒式高压储气瓶中的气体燃料来作为燃料的燃气发动机。

可是，气体燃料以液化状态储存在燃料容器中，当向燃气发动机供给时，是以气化的状态进行供给。因此，当燃气发动机运转从而开始向该发动机供给气体燃料时，在燃料容器中，由于为了维持液相和气相的平衡状态，伴随着气体压力的降低，液态的气体燃料气化，所以夺取了大量的气化热，使得燃料容器的温度降低。此外，即使在调节气体燃料压力的燃料压力调节器中，也会由于刚气化后的被冷却了的气体燃料的流入或气体燃料的减压而使其温度降低。

而且，当燃料容器等的温度过度降低时，由于气体燃料的气化变得不充分等而使压力降低，从而气体燃料的供给不能顺利进行。为了防止这样的状况，就要根据燃料容器的温度或气体压力来加热燃料容器，这已为大家所知（例如，参照专利文献1、2）。

另一方面，在发动机发电机中，对发电机所产生的电力进行控制的电力控制单元由于其动作引起的发热量很大，所以公知有各种用于冷却电力控制单元的结构。例如，在专利文献3中公开有这样的技术：发动机发电机具有隔音罩，该隔音罩中容纳有发动机、发电机和控制电路单元（相当

于电力控制单元），在该发动机发电机中，在收纳控制电路单元的箱体上设置散热翼片，该散热翼片面对着取入冷却风的进风口，并与形成有进风口的端壁抵接。

专利文献 1：日本国特开平 10-131810 号公报；

专利文献 2：日本国特许第 2671015 号公报；

专利文献 3：日本国实开昭 63-171632 号公报。

在通过加热器来对储存有气体燃料的燃料容器进行加热的情况下，存在要对加热器的设计方法或加热方法进行设计等的问题、以及结构和控制方法的复杂化所带来的问题。进一步讲，在通过冷却风来冷却电力控制单元的情况下，存在着电力控制单元及其周边部件的配置受到制约或结构复杂化所带来的问题。

发明内容

本发明是鉴于如上状况，着眼于伴随着发动机发电机的运转，以液化状态储存的气体燃料的燃料容器处于温度降低的倾向，而相反，电力控制单元却处于温度上升的倾向而完成的，本发明的主要目的在于，在发动机发电机中，在燃料容器和燃料压力调节器中的至少一方与电力控制单元之间，相互利用彼此的热。本发明的再一目的在于，能够高效地进行通过燃料容器对电力控制单元的冷却和通过电力控制单元对燃料容器的加热，以及增大燃料容器和电力控制单元的配置自由度。本发明的另一目的在于，进一步提高燃料容器和燃料压力调节器中的至少一方对电力控制单元的冷却效果、以及电力控制单元对燃料容器和燃料压力调节器中的至少一方的加热效果；提高冷却风对电力控制单元、发电机以及发动机的冷却效果；在对切换损失大且发热量大的变流器进行冷却的同时，利用电力控制单元的变流器的热量来高效地加热燃料容器和燃料压力调节器中的至少一方。

为达成上述目的，本发明的发动机发电机具有：燃料容器，其将气体燃料以液化状态储存；发动机，其被供给来自该燃料容器的气体燃料；燃料压力调节器，其调节从所述燃料容器供给到所述发动机的气体燃料的压力；发电机，其由所述发动机驱动；和电力控制单元，其控制所述发电机

所产生的电力，所述发动机发电机的特征在于，所述燃料容器和所述燃料压力调节器中的至少一方接近所述电力控制单元来进行配置，以便能够与所述电力控制单元进行热交换。

根据这样的结构，由于在发动机发电机的运转中，通过燃料的气化等而成为低温的燃料容器和燃料压力调节器中的至少一方接近配置在可与电力控制单元进行热交换的位置，所以，从电力控制单元的散热量增加，换言之，通过燃料容器和燃料压力调节器中的至少一方促进了电力控制单元的冷却，从而抑制了电力控制单元的温度上升。同时，燃料容器和燃料压力调节器中的至少一方被电力控制单元加热，从而抑制了其温度降低。

在本发明的发动机发电机中，也可采用这样的结构，即：所述发动机发电机具有容纳所述燃料容器的容纳室；所述燃料容器与所述容纳室的室壁通过由热的良导体构成的传热部件进行热连接；所述室壁接近所述电力控制单元来进行配置，以便能够与所述电力控制单元进行热交换。

根据这样的结构，由于燃料容器中的从电力控制单元的受热，以及电力控制单元的散热都通过燃料容器的能传递热量的室壁进行，所以，为了在燃料容器与电力控制单元之间进行热交换，燃料容器和电力控制单元的配置就很少受到制约。此外，通过加大室壁或使室壁接近电力控制单元等的室壁的形状或配置，能够增加燃料容器与电力控制单元之间的传热量，从而能够提高燃料容器和电力控制单元相互之间的热利用率。

优选所述电热部件是以与所述燃料容器和所述容纳室的室壁相接触的方式介于所述传热部件与所述容纳室的室壁之间的多个柱状部件。

在本发明的发动机发电机中，所述燃料容器和所述燃料压力调节器中的至少一方与所述电力控制单元通过由热的良导体构成的传热部件进行热连接，或者直接进行热连接。

根据这样的结构，燃料容器和燃料压力调节器中的至少一方与电力控制单元之间的传热通过传热部件利用热传导进行，因此，能够进一步提高相互之间的热的利用率。

所述电力控制单元可以具有变流器。

根据这样的结构，由于变流器的切换损失大，发热量大，所以，通过

其动作而成为高温的变流器被燃料容器和燃料压力调节器中的至少一方高效地冷却，从而抑制了其温度上升；燃料容器和燃料压力调节器中的至少一方被高温的变流器高效地加热，从而抑制了其温度降低。

优选所述发动机发电机具有箱体，所述箱体形成容纳所述燃料容器、所述发动机以及所述发电机的内部空间；被导入所述内部空间的冷却风以顺次冷却所述燃料容器和所述电力控制单元后，冷却所述发电机和所述发动机的方式形成冷却风通路。

根据这样的结构，被导入箱体内部空间的冷却风被燃料容器冷却而成为更低的温度，该成为低温的冷却风首先冷却电力控制单元，然后冷却发电机和发动机。此外，电力控制单元通过与燃料容器和燃料压力调节器中的至少一方进行热的相互利用，与不进行热的相互利用的情况相比，由于成为低温，所以比冷却电力控制单元后的冷却风的温度还低。

优选采用这样的结构：相对于所述容纳室的室壁，在所述容纳室的相反侧，配置有所述燃料压力调节器和所述电力控制单元，并且，所述电力控制单元位于所述燃料压力调节器的下侧。

此外，可以使所述箱体沿其一侧壁的上部具有空气导入口；所述燃料压力调节器设于所述空气导入口的下游。

发明效果

根据本发明，可以达到如下的效果。即，通过在燃料容器和燃料压力调节器中的至少一方与电力控制单元之间相互利用彼此的热，来抑制电力控制单元的温度上升，因此，能够使电力控制单元的散热结构小型化；此外，由于抑制燃料容器和燃料压力调节器中的至少一方的温度降低，所以，或者可以不需要加热装置来加热燃料容器或燃料压力调节器，或者可以使加热装置的加热量减少，从而能够利用较低温度的加热源等，增加了加热源的选择项，此外，在加热源是电加热器的情况下，能够使其消耗电力减少。

根据本发明的优选实施方式，除了上述效果，还可达成如下的效果。即，通过室壁使燃料容器和电力控制单元的热被相互利用，在此基础上，使燃料容器和电力控制单元的配置自由度变大，此外，可以提高燃料容器

和电力控制单元相互之间的热的利用率，从而能够进一步高效地进行燃料容器对电力控制单元的冷却，以及电力控制单元对燃料容器的加热。

在本发明的实施方式中，还可进一步达成如下的效果。即，由于可以进一步提高燃料容器和燃料压力调节器中的至少一方与电力控制单元的相互之间的热的利用率，所以能够进一步提高燃料容器和燃料压力调节器中的至少一方对电力控制单元的冷却效果，以及电力控制单元对燃料容器和燃料压力调节器中的至少一方的加热效果。

在本发明的实施方式中，还可进一步达成如下的效果。即，通过温度更低的冷却风能够更高效地冷却电力控制单元，同时，发电机和发动机也能够获得更高的冷却效果。

在本发明的实施方式中，还可进一步达成如下的效果。即，能够高效地冷却发热量大的变流器，并且，能够通过变流器高效地加热燃料容器和燃料压力调节器中的至少一方。

附图说明

图 1 表示本发明的第一实施方式，是应用了本发明的发动机发电机的结构示意图。

图 2 是图 1 的发动机发电机的立体图。

图 3 是在图 2 的发动机发电机中，拆下左盖后的左侧视图，对于前盖、后盖和上盖，是沿图 4 的III-III线的截面图。

图 4 是在图 2 的发动机发电机中，拆下上盖后的俯视图。

图 5 是图 2 的发动机发电机的主视图。

图 6 是图 2 的发动机发电机的燃料切换阀和加热装置中的电路图。

图 7 是表示图 2 的发动机发电机的燃料切换阀的操作位置、燃料供给装置和点火装置之间的关系的表格。

图 8 表示本发明的第二实施方式，是相当于图 3 的图。

图 9 是在本发明的第二实施方式中，相当于图 4 的图。

图 10 表示本发明的其它实施方式，是相当于图 3 的部分的图。

标号说明

1 … 发动机发电机
3 … 下盖
4 … 上盖
5 … 前盖
6 … 后盖
7 … 左盖
8 … 右盖
9 … 内部空间
12 … 燃料切换阀
16、17、90 … 把持部
18、19、92 … 导入口
20 … 排出口
23、24、91 … 凹部
28、29、93 … 把持用空间
30 … 发动机
40 … 发电机
41 … 电力控制单元
42 … 火花塞
44 … 点火线圈
45 … 冷却风扇
46 … 反冲起动器
47 … 护罩
48 … 风扇罩
49 … 起动器罩
50、51 … 流入口
60 … 容纳部
61 … 盒式高压储气瓶
62 … 燃料压力调节器
63 … 燃料截止阀

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65 … 容纳室

66 … 室壁

68 … 安装传感器

70 … 传热部件

71 … 外部高压气瓶

73 … 燃料压力传感器

74 … 切断开关

75 … 主开关

80 … 加热装置

89 … ECU

C … 箱体

Fa … 燃料供给装置

具体实施方式

以下，参照图 1～图 10 说明本发明的实施方式。

图 1～图 7 表示第一实施方式。参照图 1，应用了本发明的便携式发动机发电机 1 可适当地与设置在该发动机发电机 1 外部的外部燃料系统 Fb 连接。

一并参照图 2、图 3，发动机发电机 1 具有：箱体 C，该箱体 C 大体为长方体的箱状；搬运用的一对把持部 16、17，该把持部 16、17 设置在箱体 C 上，供搬运发动机发电机 1 时把持；发动机 30，该发动机 30 由作为内燃机的燃气发动机构成；燃料供给装置 Fa，该燃料供给装置 Fa 将气体燃料供给到发动机 30；发电机 40，该发电机 40 是由发动机 30 驱动的工作机械；电力控制单元 41，该电力控制单元 41 对发电机 40 所产生的电力进行控制；电子控制单元 89（以下，称为 ECU 89），该 ECU 89 是控制发动机 30 和燃料供给装置 Fa 的控制装置。发动机 30、燃料供给装置 Fa、发电机 40、电力控制单元 41 以及 ECU 89 被箱体 C 包围，从而被容纳在由该箱体 C 形成的内部空间 9 中。由此，箱体 C 构成抑制发动机 30 的运转噪声泄漏到外部的隔音式的箱体 C。

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并且，在说明书和权利要求书中，所谓对把持部 16、17 进行把持，包括用手握住把持部 16、17 的情况和将手按在把持部 16、17 上的情况。

参照图 2～图 5，箱体 C 具有：下盖 3 和上盖 4，该下盖 3 和上盖 4 在作为基准方向的上下方向上相对；前盖 5 和后盖 6，该前盖 5 和后盖 6 是在垂直于上下方向的第一方向上相对的一对侧部盖；左盖 7 和右盖 8，该左盖 7 和右盖 8 是在与上下方向和第一方向垂直的第二方向上或是横向上相对的一对侧部盖。这些盖 3～8 都是合成树脂制成的。

在本实施方式中，第一方向与前后方向一致，第一方向上的一个侧方或另一侧方是前方或后方；此外，第二方向与左右方向一致，第二方向上的一个侧方或另一侧方是左方或右方。

当从下方、上方、前方、后方、左方以及右方对箱体 C 进行观察时，此时的箱体 C 的下表面、上表面、前表面、后表面、左表面以及右表面分别是由上述盖 3～8 构成的箱体 C 中的箱体下部 C3、箱体上部 C4、箱体前部 C5、箱体后部 C6、箱体左部 C7 以及箱体右部 C8 的外表面。因此，下盖 3、上盖 4、前盖 5、后盖 6、左盖 7 和右盖 8 分别主要构成箱体下部 C3、箱体上部 C4、箱体前部 C5、箱体后部 C6、箱体左部 C7 以及箱体右部 C8。进而，前表面、后表面、左表面以及右表面是箱体 C 的四个侧面；箱体前部 C5、箱体后部 C6、箱体左部 C7 以及箱体右部 C8 是箱体 C 的四个箱体侧部。

前盖 5 和后盖 6 分别结合到一对作为加强部件的加强板 10、11 上，该加强板 10、11 由金属制成，且配置在内侧并与下盖 3 结合。然后，左盖 7 结合到各加强板 10、11 上；可开闭的右盖 8 在下端部 8b 被枢轴支撑在下盖 3 上，在上端部 8a 被卡止装置（未图示）卡止于上盖 4。此外，在各加强板 10、11 上，在比加强板 10、11 更位于内侧的前盖 5 或后盖 6 上形成一部分（例如凹部 23、24）贯通的孔（参照图 3）。此处，内侧和外侧的意思分别是指靠近内部空间 9 和靠近箱体 C 的外部。

参照图 3、图 5，在构成操作板部 5e 的前盖 5 上设置有：燃料切换阀 12；输出用插座 13，用于对电气的外部负载供给电流；外部燃料用连接器 14，用于与配置在发动机发电机 1 外部的外部高压储气瓶 71（参照图 1）

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进行连接；以及指示灯 15a、15b、15c 等。

参照图 2～图 5，在前盖 5 的上部所包括的上端部 5a 上，在设有第一把持部 16 的同时，还设有一个导入口 18，该导入口 18 在发动机 30 运转过程中将外部空气作为冷却风导入到箱体 C 的内部空间 9。另一方面，隔着发动机发电机 1 和电力控制单元 41 而在前后方向上与前盖 5 相对的后盖 6 上形成有：排出口 20，用于将对电力控制单元 41、发电机 40 和发动机 30 进行冷却后的冷却风排出到外部；排气口 21，用于将发动机 30 的废气排出到外部。

当提起发动机发电机 1 进行搬运时搬运者的手所把持的部分，即第一、第二把持部 16、17，分别设置在箱体前部 C5 和箱体后部 C6 的上部 C5a、C6a 所包括的上端部。第一把持部 16 被设置为第一拐角部件，其设置在与上盖 4 大体相同的高度位置，并设置在上盖 4 的前方且前盖 5 的上方；第二把持部 17 被设置为第二拐角部件，其设置在与上盖 4 大体相同的高度位置，并设置在上盖 4 的后方且后盖 6 的上方。设置在箱体 C 的前上角部和后上角部的上述两拐角部件的整体是形成第一把持部 16 和第二把持部 17 的把持部形成部件。

第一、第二把持部 16、17 都是合成树脂制的相同的部件，分别具有上部 16a、17a 和下垂部 16b、17b，该上部 16a、17a 通过密封部件 22（参照图 3）与上盖 4 相抵，并构成箱体上部 C4 的前后方向上的两端部；该下垂部 16b、17b 从上部 16a、17a 以与前盖 5 和后盖 6 相对的方式向下方延伸。下垂部 16b、17b 向下方延伸，使得在发动机发电机 1 被提起时，能够用手从外侧部分 16b1、17b1 经由最下端 16b2、17b2 直到内侧部分 16b3、17b3 进行把持。而且，两最下端 16b2、17b2 分别位于与前盖 5 和后盖 6 的上端部 5a、6a 在该上端部 5a、6a 的横向全长中在上下方向上重叠的位置，在本实施方式中，位于与前盖 5 和后盖 6 的后述的凹部 23、24 在该凹部 23、24 的横向整体中在上下方向重叠的位置。

第一把持部 16 被设置为到达箱体前部 C5 的横向上的两端部 C5c、C5d，并在横向上的两端部通过焊接等与前盖 5 结合为一体。而且，第二把持部 17 被设置为到达箱体后部 C6 的横向上的两端部 C6c、C6d，并在

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横向上的两端部通过焊接等与后盖 6 结合为一体。箱体前部 C5 的横向上的两端部 C5c、C5d 和箱体后部 C6 的横向上的两端部 C6c、C6d 分别是由左盖 7 和右盖 8 构成的部分，或者是在横向上与箱体左部 C7 和箱体右部 C8 相对应的部分。如图 4 所示，第一、第二把持部 16、17 整体在横向上的宽度（以下，将在横向上的宽度称为横宽）分别与前盖 5 的横宽和后盖 6 的横宽大体相等，此外，还与左盖 7 和左盖 7 在横向上的间隔大体相等。

第一把持部 16 与形成在前盖 5 的上端部 5a 上的凹部 23 一起形成导入口 18。凹部 23 位于比第一把持部 16 更靠近内部空间 9 的位置，并且进入内部空间 9 中。凹部 23 具有：倾斜部 23a，该倾斜部 23a 从操作板部 5e 起，越是向上方越是在前后方向上向内部空间 9 倾斜；里部 23b，该里部 23b 从倾斜部 23a 起大体与上下方向平行地向上方延伸。凹部 23 延伸成大体到达第一把持部 16 在横向上的两端部，并且该凹部 23 具有与第一把持部 16 的横宽相比，虽然稍小但大体相等的横宽。

而且，在最下端 16b2 与倾斜部 23a 之间形成导入口 18 的入口 18a（在图 3 中用双点划线表示），该入口 18a 朝前方并向斜下方敞开；在第一把持部 16 的上部 16a 与里部 23b 的上端部之间，形成导入口 18 的出口 18b（在图 3 中用双点划线表示）。此外，入口 18a 形成在第一把持部 16 的下方，导入口 18 被设置为大体到达箱体前部 C5 在横向上的两端部 C5c、C5d。导入口 18 的横宽大体与前盖 5 的横宽、以及左盖 7 和左盖 7 在左右方向上的间隔大体相等。从而，从入口 18a 流入的冷却风沿前后方向流向内部空间 9，然后沿下垂部 16b 的内侧部分 16b3 和里部 23b 偏向上方而流动，再通过上部 16a 在前后方向上向内部空间 9 偏转，然后从出口 18b 流出到内部空间 9 中。这样，第一把持部 16 和凹部 23 将导入口 18 形成为多处弯折的迷宫状的通路。

此外，在前盖 5 中，左右侧缘部 5c、5d 比操作板部 5e 向前方突出，第一把持部 16 比该左右侧缘部 5c、5d 还稍稍突出。而且，箱体前部 C5 的下部 C5b 位于比两侧缘部 5c、5d 更靠近内部空间 9 的位置。

在本实施方式中，加强板 10 的一部分被配置在导入口 18 中，从而构成冷却风的引导部 10a，以便使冷却风顺畅地流动并被导入内部空间 9。

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导入口 18 构成第一把持用空间 28，该第一把持用空间 28 为了在搬运发动机发电机 1 时用手把持第一把持部 16 而被使用。而且，导入口 18 形成在第一把持部 16 的下方，进而，主要由里部 23b 形成的导入口 18 的下游部分 18c 成为进入内部空间 9 的空间。从而，该把持用空间 28 的一部分与箱体上部 C4 相比位于下方，并且是进入内部空间 9 的空间。

另一方面，第二把持部 17 与在后盖 6 的上端部 6a 形成的凹部 24 一起形成第二把持用空间 29，该第二把持用空间 29 为了在搬运发动机发电机 1 时用手把持第二把持部 17 而与第一把持用空间 28 一起被使用。凹部 24 位于比第二把持部 17 更靠近内部空间 9 的位置，并且进入内部空间 9，该凹部 24 具有：倾斜部 24a，该倾斜部 24a 从排出口 20 起，越是向上方越是在前后方向上向内部空间 9 倾斜；里部 24b，该里部 24b 从倾斜部 24a 起大体与上下方向平行地向上方延伸。凹部 24 延伸成大体到达第二把持部 17 在横向上的两端部，并且该凹部 24 具有与第二把持部 17 的横宽相比，虽然稍小但大体相等的横宽。

加强板 11 的一部分延伸到与上盖 4 接触的位置，从而构成封闭部 11b，该封闭部 11b 在前后方向上对第二把持用空间 29 在前后方向上靠近内部空间 9 的部分进行大体地封闭。因此，实质上，外部空气不会通过第二把持用空间 29 而作为冷却风导入到内部空间 9。

而且，第一把持部 16 和第二把持部 17 被配置成在箱体 C 中具有垂直于前后方向的作为对称面的平面；凹部 23 和凹部 24、以及第一把持用空间 28 和第二把持用空间 29 被配置成关于该对称面大体面对称。

参照图 1 和图 3，发动机 30 是单气缸、OHC（顶置凸轮轴）型的四冲程空冷发动机，该发动机 30 具有发动机主体 30a，该发动机主体 30a 包括：气缸 31，其与可以往复移动的活塞 35 配合；曲轴箱 32，其结合在气缸 31 的下端部；气缸盖 33，其与气缸 31 一体成形，从而与活塞 35 之间形成燃烧室；以及气缸盖罩 34，其结合在气缸盖 33 的上端部；发动机主体 30a 被固定在下盖 3 上。气缸 31 和曲轴箱 32 支撑曲轴 36，且该曲轴 36 可旋转并被配置成具有平行于前后方向的旋转中心线，该曲轴 36 在活塞 35 的驱动下旋转。

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一并参照图 2 和图 4，发动机 30 具有进气装置 37，该进气装置 37 具有化油器 37b 和进气管 37c，该进气管 37c 与气缸盖 33 连接以便将进气导入到燃烧室。化油器 37b 是一个混合气形成装置，用于形成空气与气体燃料的混合气，所述空气来自空气滤清器 37a，该空气滤清器设有取入口 37a1，用于将从导入口 18 导入到内部空间 9 的冷却风的一部分取入；所述气体燃料是从燃料供给装置 Fa 或外部燃料系统 Fb 供给的。设置在化油器 37b 中的节气门 37b1 由步进电动机 37d 驱动，该步进电动机 37d 由具有微型计算机的 ECU 89 控制，该节气门 37b1 控制发动机 30 的输出，使得曲轴 36 以预先设定的旋转速度旋转。

发动机 30 具有排气装置 38，该排气装置 38 具有：排气管 38a，该排气管 38a 连接在气缸盖 33 上，以便来自燃烧室的废气流入管中；和消声器 38b，该消声器 38b 与排气管 38a 连接。

此外，混合气经过设置在气缸盖 33 上并由气门装置开闭的进气门 39a 而流入燃烧室，该混合气通过保持在支架 44（参照图 3）上的火花塞 42 来点火并燃烧，然后通过产生的燃烧压驱动活塞 35，从而使曲轴 36 被旋转驱动。燃烧气体作为废气，经过由气门装置开闭的排气门 39b 后，通过排气管 38a 流入消声器 38b，由消声器 38b 降低排气音量之后，经过与形成在后盖 6 上的排气口 21 相面对的排气尾管 38c 而排放到外部大气中。

参照图 1 和图 3，被发动机 30 旋转驱动的发电机 40 具有转子 40a 和定子，所述转子 40a 具有磁体，并且该转子 40a 被固定在作为发动机 30 的输出轴的曲轴 36 的轴端部；所述定子具有线圈，并且该定子被配置在转子 40a 的径向内侧并固定在曲轴箱 32 上。具有火花塞 42 的点火装置具有点火线圈 44（参照图 6），由发电机 40 产生的电力对电容器充电后，供给该点火线圈 44 的初级侧；响应于在曲轴 36 的特定的旋转位置产生的点火信号，使点火线圈 44 中产生的高电压施加给火花塞 42。

此外，被曲轴 36 旋转驱动的冷却风扇 45 结合在转子 40a 上而与转子 40a 一体旋转，从而在发动机 30 的运转中，经由导入口 18 将外部空气作为冷却风吸引到箱体 C 内。此外，发动机 30 通过作为起动装置的反冲起动器 46 的动作而被起动。反冲起动器 46 与冷却风扇 45 相连接，从而，

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通过用与反冲起动器 46 的起动绳 46a 相连接的旋钮拉动起动绳 46a 的操作来驱动曲轴 36 旋转。

参照图 2～图 4，为了提高对运转噪声的隔音效果和冷却风的冷却效果，发动机主体 30a 和排气管 38a 被护罩 47 所覆盖，该护罩 47 在发动机主体 30a 和排气管 38a 之间形成冷却风的导风通路。合成树脂制的护罩 47 被固定在发动机主体 30a 上，同时，在与护罩 47 一体成形的托架 47a 中，被固定在上盖 4 上。此外，冷却风扇 45 被结合在护罩 47 前端部的合成树脂制的风扇罩 48 所覆盖；反冲起动器 46 被结合在风扇罩 48 前端部的起动器罩 49 所覆盖。冷却风扇 45 从形成在起动器罩 49 上的流入口 50 及形成在起动器罩 49 与风扇罩 48 之间的流入口 51 吸引内部空间 9 的空气，并将冷却风输送到护罩 47 内。

配置在冷却风扇 45 和反冲起动器 46 的前方以对发电机 40 产生的电力进行控制的电力控制单元 41 具有：变流器 41a，用于控制该电力的电压和频率（参照图 6）；以及散热翼片 41b，其作为散热器，用于散发包括变流器 41a 在内的电气部件所产生的热量。

而且，在箱体 C 的内部空间 9 中，电力控制部件 41、反冲起动器 46、冷却风扇 45、发电机 40、发动机主体 30a 以及消声器 38b 以该顺序，作为整体向后方，也是在从导入口 18 朝向排出口 20 的冷却风的流动方向上，串连配置在曲轴 36 的旋转中心线上。

参照图 1，燃料系统 F 向发动机 30 供给作为燃料的气体燃料，该燃料系统 F 具有：燃料供给装置 Fa，其配置在箱体 C 或箱体 C 的内部空间 9 中，是发动机发电机 1 所具有的内部燃料系统；和外部燃料系统 Fb，其配置在箱体 C 的外部。

参照图 1～图 4，燃料供给装置 Fa 具有盒式高压储气瓶 61 和燃料压力调节器 62，所述盒式高压储气瓶 61 被配置在设于箱体 C 内的作为燃料容器设置部的容纳部 60 中，是单个或多个作为第一燃料源（或主体侧燃料源）的第一燃料容器。在本实施方式中，燃料压力调节器 62 对从两个盒式高压储气瓶 61 和后述的外部高压储气瓶 71 流出的气体燃料的压力进行减压，同时，调节气体燃料的压力，以便向化油器 18b 供给与发动机 30

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的负载相对应的燃料量。燃料供给装置 Fa 还具有：加热装置 80，用于对盒式高压储气瓶 61 和燃料压力调节器 62 进行加热；燃料切换阀 12，其作为燃料切换装置，设置在操作板部 5e 上；燃料配管组，其包括连接器 14，并且在箱体 C 的内部空间 9 中将盒式高压储气瓶 61、燃料压力调节器 62 以及化油器 18b 等相互连接；以及燃料截止阀 63，其使从燃料系统 F 向发动机 30 的气体燃料的供给停止。

在盒式高压储气瓶 61 中，以液化状态储存沸点较高的气体燃料，例如丁烷。此外，通过将盒式高压储气瓶 61 的燃料供给部插入在设于容纳部 60 的连接器 64（参照图 2）中，盒式高压储气瓶 61 就被可装拆地支撑在容纳部 60 中。

外部燃料系统 Fb 具有外部高压储气瓶 71、连接外部高压储气瓶 71 和连接器 14 的配管 A5、以及减压器 72，所述外部高压储气瓶 71 设置在发动机发电机 1 的外部，是作为第二燃料源（或者外部燃料源）的第二燃料容器。在比盒式高压储气瓶 61 具有更大燃料容量（即，所储存的燃料量多）的外部高压储气瓶 71 中，以液化状态储存有比第一气体燃料沸点更低的第二气体燃料，例如丙烷。该外部高压储气瓶 71 例如是家庭用丙烷高压气瓶。

容纳部 60 由形成容纳室 65 的室壁 66 构成，该容纳室 65 用于容纳两个盒式高压储气瓶 61。室壁 66 包括：第一侧壁 66a，其由热的良导体，例如铝等金属构成；第二侧壁 66b，其由右盖 8 的一部分构成；以及底壁 66c，容纳室 66 的上部在内部空间 9 敞开。两个盒式高压储气瓶 61 和容纳部 60 在沿前后方向与电力控制单元 41、燃料压力调节器 62 以及流入口 50、51 重叠的位置上，被设置得靠近右盖 8。配置在盒式高压储气瓶 61 与电力控制单元 41 及燃料压力调节器 62 之间的第一侧壁 66a 被设置成，其上部根据冷却风来讲位于导入口 18 的出口 18b 的下游，并且，位于在上下方向与出口 18b 重叠的位置。而且，第一侧壁 66a 的上端部位于内部空间 9 的大体最上部。此外，盒式高压储气瓶 61、第一侧壁 66a、燃料压力调节器 62 以及电力控制单元 41 位于在左右方向上与出口 18b 重叠的位置。

在第一、第二侧壁 66a、66b 上，为了防止或抑制由发动机 30 的运转

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引起的振动传递到盒式高压储气瓶 61 上而导致盒式高压储气瓶 61 振动，设置由弹性材料构成的作为防振部件的支撑体 67，使其与盒式高压储气瓶 61 的外周面接触。

在容纳部 60 中设置有安装传感器 68，该安装传感器 68 用于检测盒式高压储气瓶 61 的有无或安装状态。安装传感器 68 被安装在设于容纳室 65 外部的安装部件 69 上，并贯通第一侧壁 66a 而位于容纳室 65 内。安装传感器 68 例如由具有接触片 68a 的微动开关构成，其通过使接触片 68a 接触盒式高压储气瓶 61 来检测盒式高压储气瓶 61 已被正确地安装。

各盒式高压储气瓶 61 接近电力控制单元 41 来进行配置，以便能够与电力控制单元 41 进行热交换。更具体地讲，盒式高压储气瓶 61 通过由热的良导体，例如铝等金属构成的传热部件 70 来与第一侧壁 66a 进行热连接。多个是柱状部件的传热部件 70 在其一端部接触盒式高压储气瓶 61，在另一端部接触第一侧壁 66a。而且，第一侧壁 66a 以邻接的状态与电力控制单元 41 接近配置，以便通过在内部空间 9 中的经由冷却风的热传导能够与电力控制单元 41 进行热交换。因此，各盒式高压储气瓶 61 被配置成经由用传热部件 70 热连接的第一侧壁 66a 能够进行与电力控制单元 41 的热交换。

以液化状态向燃料压力调节器 62 供给来自盒式高压储气瓶 61 的第一气体燃料，并且以气体状态向燃料压力调节器 62 供给来自外部高压储气瓶 71 的第二气体燃料，该燃料调压器 62 被配置在电力控制单元 41 和流入口 50、51 的正上方，并与两个盒式高压储气瓶 61、容纳部 60 的第一侧壁 66a、电力控制单元 41 以及流入口 50、51 在前后方向上重叠。而且，燃料压力调节器 62 以与电力控制单元 41 邻接的状态而接近配置，以便通过在内部空间 9 中的经由冷却风的热传导能够与电力控制单元 41 进行热交换。（在图 4 中，为了方便，燃料压力调节器 62 用双点划线表示。）进而，燃料压力调节器 62 具有使以液化状态流入的第一气体燃料气化的作为蒸发器的功能。

参照图 1，在燃料供给装置 Fa 中，由两个盒式高压储气瓶 61、连接两个盒式高压储气瓶 61 和燃料切换阀 12 的配管 A1、连接燃料切换阀 12 和燃料压力调节器 62 的配管 A2、燃料压力调节器 62、连接燃料压力调节

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器 62 和化油器 18b 的配管 A3、以及设置在配管 A3 上的燃料截止阀 63 构成从盒式高压储气瓶 61 向发动机 30 供给第一气体燃料的第一燃料系统；此外，由连接连接器 14 和燃料切换阀 12 的配管 A4、连接燃料切换阀 12 和燃料压力调节器 62 的配管 A2、燃料压力调节器 62、连接燃料压力调节器 62 和化油器 18b 的配管 A3、以及燃料截止阀 63 构成从外部高压储气瓶 71 向发动机 30 供给第二气体燃料的第二燃料系统。

因此，箱体 C 内的配管 A1～A4 构成燃料配管组。此外，燃料压力调节器 62、配管 A3 以及燃料截止阀 63 在第一、第二燃料系统中是公共的公共燃料系统。

作为燃料切断装置的燃料截止阀 63，例如由在没有驱动电流被供给时为开阀状态的常开电磁阀构成，其根据第一气体燃料的压力由 ECU 89 进行开闭控制。更具体地讲，为了检测来自盒式高压储气瓶 61 的压力，在燃料压力调节器 62 上设置燃料压力传感器 73，该燃料压力传感器 73 用于检测从盒式高压储气瓶 61 到达燃料压力调节器 62 的第一气体燃料的压力。然后，当由燃料压力传感器 73 检测出压力超过上限压力 P1 的压力时，ECU 89 使燃料截止阀 63 闭阀以切断公共燃料系统。该上限压力 P1 是根据如下观点预先设定的，该观点是，在盒式高压储气瓶 61 处于过热状态时等，盒式高压储气瓶 61 内的第一燃料气体的压力成为过大的状态下，避免发动机 30 的运转，从而安全地使用发动机发电机 1。

燃料切换阀 12 将供给发动机 30 的气体燃料在通过第一燃料系统供给的第一气体燃料和通过第二燃料系统供给的第二气体燃料之间进行切换。燃料切换阀 12 可以在以下位置间进行操作：第一位置，燃料切换阀 12 在该位置将第一燃料系统与发动机 30 连接起来，以便将第一气体燃料供给发动机 30（在图 5 中，是“盒式”的位置，用单点划线表示。）；第二位置，燃料切换阀 12 在该位置将第二燃料系统与发动机 30 连接起来，以便将第二气体燃料供给发动机 30（在图 5 中，是“外部”的位置，用双点划线表示。）；停止位置，燃料切换阀 12 在该位置切断第一燃料系统和第二燃料系统与发动机 30，从而停止向发动机 30 供给气体燃料（在图 5 中，是“关断”的位置，用实线表示。），并且，第一位置与第二位置之间的切换总是

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经过停止位置而进行。

一并参照图 6，此外，燃料切换阀 12 进行第一气体燃料与第二气体燃料间的燃料的切换，同时，还兼用作控制发动机 30 的运转和停止的发动机运转开关、和控制点火装置及加热装置 80 的动作和非动作的控制开关。因此，燃料切换阀 12 根据其操作位置对控制点火装置的动作和非动作的断流开关 74 进行开闭，并对控制加热装置 80 的动作和非动作的主开关 75 进行开闭。

加热装置 80 具有：电加热器 81a、81b，其作为加热源，对应每个盒式高压储气瓶 61 而设置在容纳部 60 中；电加热器 82，其作为加热源，设置在燃料压力调节器 62 中；温度传感器 83a、83b、84，其分别检测各盒式高压储气瓶 61 的温度和燃料压力调节器 62 的温度；温度传感器 85a、85b、86，其分别检测电加热器 81a、81b、82 的温度；继电器 87a、87b、88，其根据由温度传感器 83a、83b、84 和温度传感器 85a、85b、86 所检测出的温度，根据 ECU 89 的指令，开闭电加热器 81a、81b、82 的加热电路；指示灯 15a、15b（也参照图 5），其显示电加热器 81a、81b 的动作状态。

电加热器 81a、81b、82 分别加热两个盒式高压储气瓶 61 和燃料压力调节器 62，以促进液化状态的第一气体燃料的气化。由此，能够防止由第一气体燃料气化等引起的盒式高压储气瓶 61 和燃料压力调节器 62 的温度的过度降低，从而防止第一气体燃料的压力的过度降低，使得第一气体燃料稳定地供给发动机 30。

一并参照图 7，当燃料切换阀 12 位于第一位置或第二位置时，处于能够向发动机 30 供给第一气体燃料或第二气体燃料的状态，而且，从断流开关 74 断开时起，点火装置就处于可动作状态，发动机 30 处于可运转状态。（即，燃料切换阀 12 作为发动机运转开关，成为接通状态。）此外，当燃料切换阀 12 处于停止位置时，则停止向发动机 30 供给第一气体燃料或第二气体燃料，而且，从断流开关 74 闭合时起，点火装置就处于非动作状态，发动机 30 停止。（即，燃料切换阀 12 作为发动机运转开关，成为关断状态。）

另一方面，加热装置 80 只在燃料切换阀 12 位于第一位置时，由于主

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开关 75 闭合而成为可动作状态，于是，通过对盒式高压储气瓶 61 和燃料压力调节器 62 进行加热的各电加热器 81a、81b、82，根据盒式高压储气瓶 61 和燃料压力调节器 62 的温度来进行加热控制。此外，当燃料切换阀 12 位于第二位置和停止位置时，由于第一气体燃料不供给发动机 30，所以，主开关 75 断开，从而加热装置 80 成为非动作状态，于是盒式高压储气瓶 61 和燃料压力调节器 62 的加热被停止。

下面，对如上构成的实施方式的作用和效果进行说明。

将燃料切换阀 12 从停止位置操作到第一位置，从而第一气体燃料处于可供给发动机 30 的状态，在该状态下，操作反冲起动机 46，从而发动机 30 起动，然后开始自力运转。然后，由发动机 30 驱动的发电机 40 所产生的电力被电力控制单元 41 控制，并被供给到插座 13 上所连接的电气设备。同时，由发动机 30 驱动的冷却风扇 45 通过流入口 50、51 吸引内部空间 9 的空气。通过该冷却风扇 45 的吸引作用，外气通过导入口 18 而被作为冷却风导入到内部空间 9。

来自导入口 18 的冷却风从内部空间 9 的最上部流入内部空间 9，其一部分通过热传导与第一侧壁 66a 和燃料压力调节器 62 进行了热交换后，流到下方以冷却电力控制 41b，进而，在与第一侧壁 66a 和燃料压力调节器 62 进行了热交换后，通过流入口 50、51 而被冷却风扇 45 吸引。然后，冷却风被冷却风扇 45 输送到护罩 47 内，在护罩 47 内对发动机主体 30a 和排气管 38a 进行了冷却后，冷却消声器 38b，并从排出口 20 被排放到外部。

当通过发动机 30 的运转，盒式高压储气瓶 61 的第一气体燃料的剩余量变得很少等，从而需要切换到外部高压储气瓶 71 的第二气体燃料时，将燃料切换阀 12 临时操作到停止位置，从而发动机 30 被停止。此时，通过断流开关 74 的动作能够使发动机 30 快速地停止。接着，将燃料切换阀 12 操作到第二位置。由此，第二气体燃料成为可供给发动机 30 的状态，然后通过反冲起动机 46 的操作使发动机 30 起动。

此处，在发动机发电机 1 的前盖 5 上形成有凹部 23，该凹部 23 位于比第一把持部 16 更靠近内部空间 9 的位置，第一把持部 16 和凹部 23 共同形成导入口 18，导入口 18 构成第一把持用空间 28，进而，在后盖 6 上

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形成有凹部 24，该凹部 24 位于比第二把持部 17 更靠近内部空间 9 的位置，第二把持部 17 和凹部 24 共同构成第二把持用空间 29。

从而，由于冷却风的导入口 18 还兼用作把持用空间 28，所以第一把持用空间 28 被形成为形成内部空间 9 的前盖 5 本身，而且，由于形成第一、第二把持用空间 28、29 的一方的部分就是进入箱体 C 的内部空间 9 的凹部 23、24，所以，与将整个把持用空间形成在发动机发电机的箱体外部的情况相比，能够防止或抑制第一、第二把持部 16、17 从箱体 C 的前盖 5 和后盖 6 突出，从而第一、第二把持部 16、17 并不占用特别大的空间，因此能够使发动机发电机 1 小型化，使保管空间小。而且，由于第一、第二把持部 16、17 的存在不明显，所以第一、第二把持部 16、17 很少使发动机发电机 1 的美观受损，从而能够提高发动机发电机 1 的外观性。再者，由于冷却风的导入口 18 还兼用作第一把持用空间 28，所以不必分别设置导入口 18 和第一把持用空间 28，因此，与将把持用空间与导入口分开设置的情况相比，能够减少对箱体 C 的外观设计的制约。另外，由于第一、第二把持用空间 28、29 位于作为箱体侧部的前盖 5 和后盖 6 上，所以使发动机发电机的搬运变得容易。

此外，在发动机 30 的运转中，由于第一把持部 16 被通过导入口 18 的冷却风吹拂而冷却，所以在把持第一、第二把持部 16、17 以搬运运转中的发动机发电机 1 时，把持部不会被过分加热，从而在发动机发电机 1 的运转过程中也能够会把持部 16、17 进行把持。

第一、第二把持部 16、17 具有向下方延伸的下垂部 16b、17b，以便能够从外侧部分 16b1、17b1 经由最下端 16b2、17b2 直到内侧部分 16b3、17b3 进行握持，从而能够握住下垂部 16b、17b，因此，第一、第二把持部 16、17 的把持变得容易，从而发动机发电机 1 的搬运变得容易。

此外，通过利用具有下垂部 16b 的第一把持部 16 和凹部 23，使导入口 18 形成迷宫状的通路，因此不会因使导入口 18 成为迷宫状而使结构复杂化。而且，由于内部空间 9 通过迷宫状的导入口 18 连通到外部，所以能够能够大幅降低运转噪声的泄漏量。其结果是，不使成本增加就能够减轻通过导入口 18 泄漏到外部的运转噪声。

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第一把持部 16 设置在箱体前部 C5 上；导入口 18 的入口 18a 形成在第一把持部 16 的下方；第一把持部 16 和导入口 18 被设置为到达箱体前部 C5 在横向上的两端部。从而，由于在横向上把持第一把持部 16 的位置的自由度增大，所以能够选择易于把持的位置，以使发动机发电机 1 的搬运变得容易。此外，不损害外观上的美观性就能够加大导入口 18 中的冷却风的吸气面积，而且，通过跨过横向宽范围而流入内部空间 9 的冷却风能够抑制空气在内部空间 9 中的滞留，因此能够提高发动机 30、发电机 40 和电力控制单元 41 的冷却效果。

通过使导入口 18 设置在前盖 5 的上部，当发动机刚停止后处于热浸（hot soak）时，发动机 30、发电机 40 和电力控制单元 41 周围的热气通过对流而上升到内部空间 9 的上部。因此，热气易于从导入口 18 流出，从而促进箱体 C 的内部空间 9 的自然换气，由此能够促进发动机刚停止后的发动机 30、发电机 40 和电力控制单元 41 的冷却。

在前盖 5 中，左右侧缘部 5c、5d 比操作板部 5e 向前方突出，第一把持部 16 比该左右侧缘部 5c、5d 还稍稍突出，而且，箱体前部 C5 的下部 C5b 位于比两侧缘部 5c、5d 更靠近内部空间 9 的位置。因此，发动机发电机 1 即使以前盖 5 接触墙壁等的外部部件的状态被放置时，也由于在左右侧缘部 5c、5d 之间，向下方敞开的空间和下垂部 16b、17b 比两侧缘 5c、5d 突出而在侧缘部 5c、5d 与上述外部部件之间形成间隙，所以能够将充分量的外部空气作为冷却风导入至导入口 18 中。

盒式高压储气瓶 61 和燃料压力调节器 62 被配置成接近电力控制单元 41，以便与电力控制单元 41 进行热交换。因此，在发动机发电机 1 的运转中，由于燃料的气化等而变成低温的盒式高压储气瓶 61 和燃料压力调节器 62 通过经由冷却风的热传递能够与电力控制单元 41 进行热交换。因此，从电力控制单元 41 的散热量增加，换言之，通过盒式高压储气瓶 61 和燃料压力调节器 62 来促进电力控制单元 41 的冷却，以抑制电力控制单元 41 的温度上升。同时，盒式高压储气瓶 61 和燃料压力调节器 62 被电力控制单元 41 加热，以抑制其温度降低。其结果是，在盒式高压储气瓶 61 及燃料压力调节器 62 与电力控制单元 41 之间，通过相互利用彼此的热量，能够

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抑制电力控制单元 41 的温度上升，因此能够使作为电力控制单元 41 的散热结构的散热翼片 41b 小型化。此外，由于抑制了盒式高压储气瓶 61 和燃料压力调节器 62 的温度降低，所以能够使加热装置 80 的加热量减少，从而能够使作为加热源的电加热器 81a、81b、82 的消耗电力减少。

盒式高压储气瓶 61 与形成容纳室 65 的第一侧壁 66a 通过传热部件 70 热连接；第一侧壁 66a 接近电力控制单元 41 而配置，以便能够与电力控制单元 41 进行热交换，从而盒式高压储气瓶 61 中的从电力控制单元 41 的受热，以及电力控制单元 41 的散热都通过传递盒式高压储气瓶 61 的热量的第一侧壁 66a 进行。因此，由于在盒式高压储气瓶 61 与电力控制单元 41 之间进行热交换，所以能够减小对盒式高压储气瓶 61 和电力控制单元 41 的配置的制约。此外，通过加大第一侧壁 66a、或者使第一侧壁 66a 与电力控制单元 41 更加接近等的第一侧壁 66a 的形状或配置，能够使盒式高压储气瓶 61 与电力控制单元 41 之间的传热量增加，从而能够提高盒式高压储气瓶 61 与电力控制单元 41 之间的相互的热量的利用率。其结果是，能够在通过第一侧壁 66a 而相互利用盒式高压储气瓶 61 和电力控制单元 41 之间的热量的基础上，加大盒式高压储气瓶 61 和电力控制单元 41 的配置的自由度，此外能够提高盒式高压储气瓶 61 和电力控制单元 41 的相互的热量的利用率，从而能够更加高效地进行盒式高压储气瓶 61 对电力控制单元 41 的冷却，以及电力控制单元 41 对盒式高压储气瓶 61 的加热。

经过导入口 18 被导入内部空间 9 的冷却风的至少一部分通过第一侧壁 66a 依次冷却了盒式高压储气瓶 61、燃料压力调节器 62 以及电力控制单元 41 后，对发电机 40 和发动机 30 进行冷却，从而，被导入内部空间 9 的冷却风被盒式高压储气瓶 61 和燃料压力调节器 62 冷却为更低的温度，该成为低温的冷却风首先冷却电力控制单元 41，然后冷却发电机 40 和发动机 30。因此，能够更加有效地冷却电力控制单元 41，并且发电机 40 和发动机 30 也能够得到更高的冷却效果。

由于变流器 41a 的切换损失大，发热量大，所以，由于其动作而成为高温的变流器 41a 被盒式高压储气瓶 61 和燃料压力调节器 62 有效地冷却，从而抑制了变流器 41a 的升温；盒式高压储气瓶 61 和燃料压力调节器 62

被高温的变流器 41a 有效地加热，从而抑制了其温度降低。其结果是，发热量大的变流器 41a 被有效地冷却，且盒式高压储气瓶 61 和燃料压力调节器 62 被变流器 41a 有效地加热。

燃料压力调节器 62 在上下方向和左右方向上处于与导入口 18 重叠的位置，并且配置在电力控制单元 41 的正上方，从而，从导入口 18 流入内部空间 9 的冷却风由于燃料压力调节器 62 而朝向电力控制单元 41 偏转方向，因此，通过从导入口 18 刚流入内部空间 9 的冷却风，能够进一步促进电力控制单元 41 的冷却。

流入口 50、51 在前后方向上位于与第一侧壁 66a 和燃料压力调节器 62 重叠的位置，从而，通过与第一侧壁 66a 和燃料压力调节器 62 的热交换而被冷却了的冷却风从流入口 50、51 流入，因此，促进了发动机主体 30a 和消声器 38b 的冷却。

下面，参照图 8、图 9 对本发明的第二实施方式进行说明。该第二实施方式在第二把持部 17 形成冷却风的导入口这一点上与第一实施方式不同，其它基本具有相同的结构。因此，对相同部分的说明加以省略或简化，以不同点为中心进行说明。并且，对与第一实施方式的部件相同的部件或对应的部件，根据需要使用了相同的标号。

第二把持部 17 与凹部 24 共同形成作为第二导入口的导入口 19。在下垂部 17b 的最下端 17b2 与倾斜部 24a 之间，形成朝向后方并与后方平行敞开的导入口 19 的入口 19a；在第二把持部 17 的上部 17a 与里部 24b 的上端部之间形成导入口 19 的出口 19b。此外，入口 19a 形成在第二把持部 17 的下方，导入口 19 被设置为大体到达箱体后部 C6 在横向上的两端部 C6c、C6d。导入口 19 的横宽与作为第一导入口的导入口 18 的横宽相等，进而与后盖 6 的横宽大体相等。

因此，从入口 19a 流入的冷却风沿前后方向朝内部空间 9 流动后，沿下垂部 17b 的内侧部分 17b3 和里部 24b 偏向上方流动，进而，通过上部 17a 而沿前后方向朝内部空间 9 偏转方向后，从出口 19b 流出到内部空间 9 中。这样，第二把持部 17 与凹部 24 形成使第二导入口 19 在多个部位弯曲的迷宫状的通路。

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此外，加强板 11 的一部分配置在导入口 19 中，从而构成冷却风的引导部 11a，以使冷却风顺畅地流动并被导入内部空间 9。

而且，导入口 19 构成第二把持用空间 29，该第二把持用空间 29 在搬运发动机发电机 1 时，为了用手把持第二把持部 17 而被使用。导入口 19 形成在第二把持部 17 的下方，并且，主要由里部 24b 形成的导入口 19 的下游部分 19c 进一步成为进入内部空间 9 的空间，因此，第二把持用空间 29 的一部分是比箱体上部 C4 位于下方，并且进入内部空间 9 的空间。

根据该第二实施方式，除了能够达到与第一实施方式相同的效果外，还能够达到如下的作用和效果。

即，第一、第二把持部 16、17 分别设置于在箱体 C 中隔着发电机 40 和发动机 30 而相对的前盖 5 和后盖 6 上，第一、第二把持部 16、17 与前盖 5 的凹部 23 及后盖 6 的凹部 24 共同分别形成一对导入口 18、19，从而，冷却风从两侧夹持发动机 30 和发电机 40 而流入内部空间 9 内，因此，与只有一个导入口的情况相比，由于刚流入内部空间 9 后的较低温度的冷却风流过发动机 30 和发电机 40 的周围，所以能够促进发动机 30 和发电机 40 的冷却。此外，在发动机刚停止后处于热浸时等，由于发动机 30、发电机 40 以及电力控制单元 41 周围的热气通过对流而上升到内部空间 9 的上部，所以，易于从分别位于箱体前部 C5 和箱体后部 C6 的上部 C5a、C6a 的两导入口 18、19 流出到外部，而且，与导入口只有一个的情况相比，更易于流出，从而能够进一步促进箱体 C 的内部空间 9 的自然换气。其结果是，通过来自一对导入口 18、19 的冷却风，能够提高发动机 30、发电机 40 以及电力控制单元 41 的冷却效果，而且能够促进发动机刚停止后的发动机 30、发电机 40 和电力控制单元 41 的冷却。

两导入口 18、19 在电力控制单元 41、发电机 40、发动机主体 30a 和消声器 38b 串行排列的方向上相对设置，从而，来自靠近电力控制单元 41 的导入口 18 的冷却风，与第一实施方式相同，顺次冷却电力控制单元 41、发电机 40、发动机主体 30a 和消声器 38b；另一方面，来自靠近发动机 30 的导入口 19 的冷却风的大部分流过护罩 47 的周围而从流入口 50、51 被冷却风扇 45 吸引后，被输送到护罩 47 内，以顺次冷却发电机 40、发动机

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主体 30a 和消声器 38b。其结果是，由于发电机 40 和发动机 30 通过几乎没有被电力控制单元 41 加热的冷却风来进行冷却，所以能够提高发电机 40、发动机主体 30a 和消声器 38b 的冷却效果。

以下，针对变更上述实施方式的一部分结构后的实施方式，对其变更后的结构进行说明。

第一把持用空间 28 并不是如上述实施方式那样，基本上只由导入口 18 构成，如图 10 所示，也可以由内部空间 9 的一部分和第一导入口 92 来构成第一把持用空间 93。更具体地讲，第一把持部 90 与前盖 5 的凹部 91 共同形成第一导入口 92，同时，与构成前盖 5 或箱体 C 的其它盖 4 等同样地，也形成内部空间 9。即，作为用手把持的部分的下垂部 90b 的内侧部分 90b1 形成内部空间 9。此时，由第二把持部和后盖形成的第二把持用空间既可以与第一实施方式同样地被封闭，也可以与第一把持用空间 93 同样地，由内部空间 9 的一部分、和由第二把持部及后盖的凹部共同形成的第二导入口来构成。此外，在图 10 中，如双点划线例示的那样，也可以不在前盖 5 和后盖上分别形成用于形成第一导入口和第二导入口的凹部。

如果这样，由于冷却风的导入口 92 兼用作第一把持用空间 93，所以，第一把持用空间 93 被形成为形成内部空间 9 的前盖 5 本身，进而，将箱体 C 的内部空间 9 作为第一把持用空间 93 的一部分来利用，因此，与将把持用空间的整体形成在箱体 C 的外部的情况相比，能够防止或抑制第一把持部 90 从箱体 C 的前盖 5 突出。其结果是，以发动机发电机 1 的小型化和保管空间的缩小这点为首，在减少对箱体 C 的外观设计的制约等方面上，也与第一实施方式起到同样的效果。

在上述实施方式中，箱体 C 主要由 6 个盖构成，但也可以由 6 个以外的数量的盖构成。

第一、第二把持部 16、17 和导入口 18、19、92 也可以在箱体前部 C5 或箱体后部 C6 中设置在上端部以外的上部、下部、或设置在上下方向的上部与下部的中间部，此外也可以设置在箱体上部 C4 中。导入口 18、19、92 也可以以形成第一、第二把持用空间 28、29、93 为前提，沿横向被分割为多个。

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在上述实施方式中，第一、第二把持部由把持部形成部件的整体构成，但各把持部也可以将构成箱体 C 的箱体结构部件，例如前盖 5、后盖 6 或上盖 4 作为把持部形成部件，来一体地成型为把持部形成部件，并由其一部分构成，或者由与上述箱体结构部件不同的其它部件来构成，并一体地结合在该箱体结构部件上。第一、第二把持部也可以是能用手按住的形状。

盒式高压储气瓶 61、室壁 66 或燃料压力调节器 62 中的至少一个也可以通过由热的良导体构成的传热部件，或者直接地热连接到电力控制单元 41 的散热翼片 41b 上。从而，由于盒式高压储气瓶 61 和燃料压力调节器 62 中的至少一方与电力控制单元 41 之间的传热是通过传热部件利用热传导而进行，所以能够进一步提高相互的热量利用率。其结果是，由于盒式高压储气瓶 61 和燃料压力调节器 62 中的至少一方与电力控制单元 41 之间的相互的热量利用率进一步提高，所以，由盒式高压储气瓶 61 和燃料压力调节器 62 中的至少一方对电力控制单元 41 的冷却效果、以及由电力控制单元 41 对盒式高压储气瓶 61 和燃料压力调节器 62 中的至少一方的加热效果进一步提高。

盒式高压储气瓶 61 和燃料压力调节器 62 中的任何一个也可以对应电力控制单元 41 以能够与电力控制单元 41 进行热交换的方式进行配置。

用于配置盒式高压储气瓶 61 的燃料配置部也可以不必由容纳部 60 构成，因此，在与电力控制单元 41 之间也可以不设置室壁 66。

第一气体燃料也可以以气化状态供给燃料压力调节器 62。第 2 气体燃料也可以是丙烷以外的气体燃料，例如也可以是城市煤气，此外，第二燃料源也可以是供给第二气体燃料的管道。

加热装置 80 的加热源也可以是电加热器以外的热源，例如，也可以利用发动机废气的热等，发动机的余热。此外，由于在盒式高压储气瓶 61 及燃料压力调节器 62 与电力控制单元 41 之间相互利用彼此的热，所以通过电力控制单元 41 的热量抑制盒式高压储气瓶 61 和燃料压力调节器 62 的降温，因此能够利用较低温度的加热源等，从而增加了加热源的选择项，甚至不需要对盒式高压储气瓶 61 或燃料压力调节器 62 加热的加热装置。

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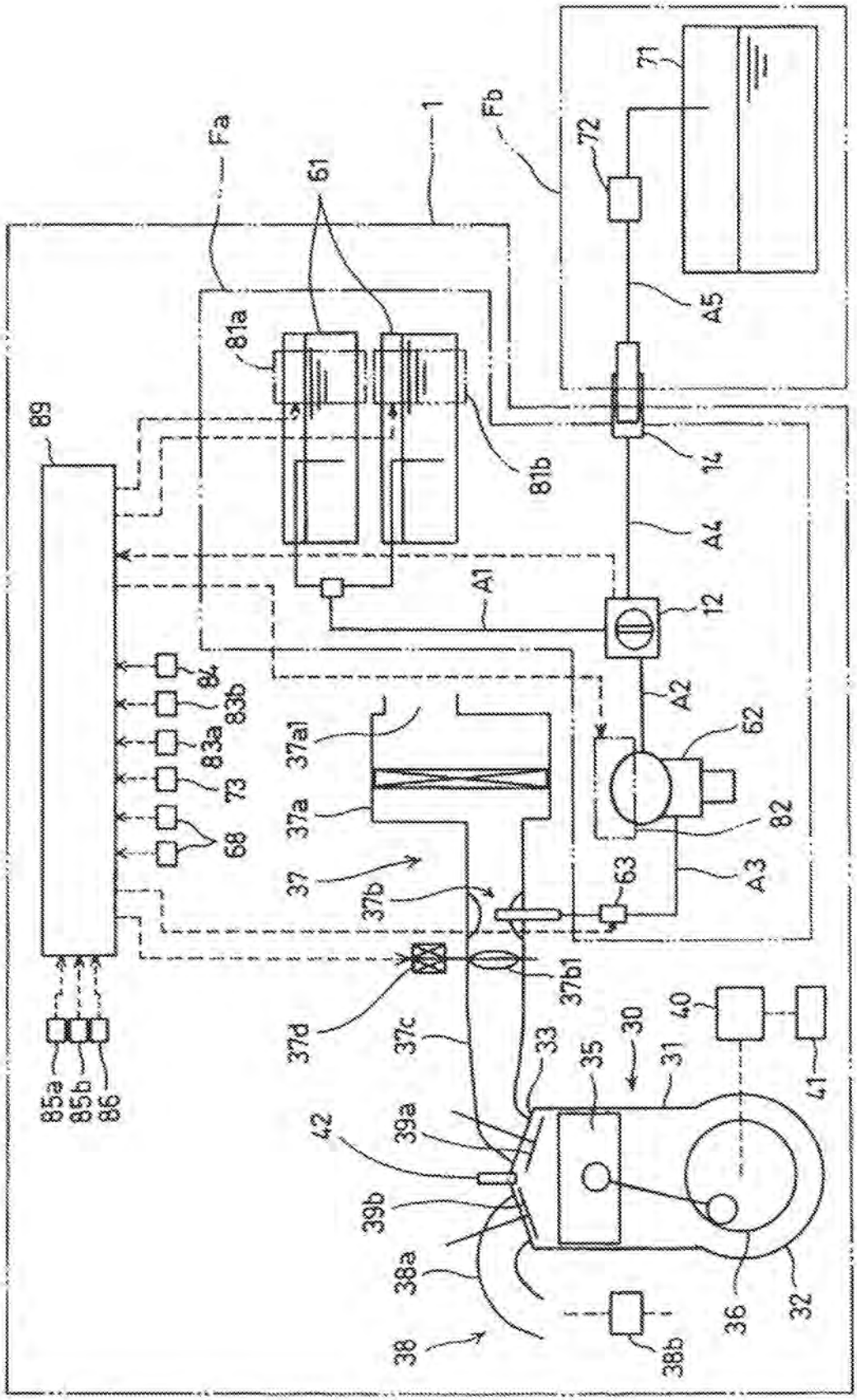

Fa
1
Fb
71
72
61
81a
81b
A5
14
A4
A1
12
A2
62
82
A3
63
89
84
83b
83a
73
68
37a1
37a
37
37b
37b1
37d
37c
33
35
30
31
40
41
42
39a
39b
38a
38
38b
36
32
85a
85b
86

图 1

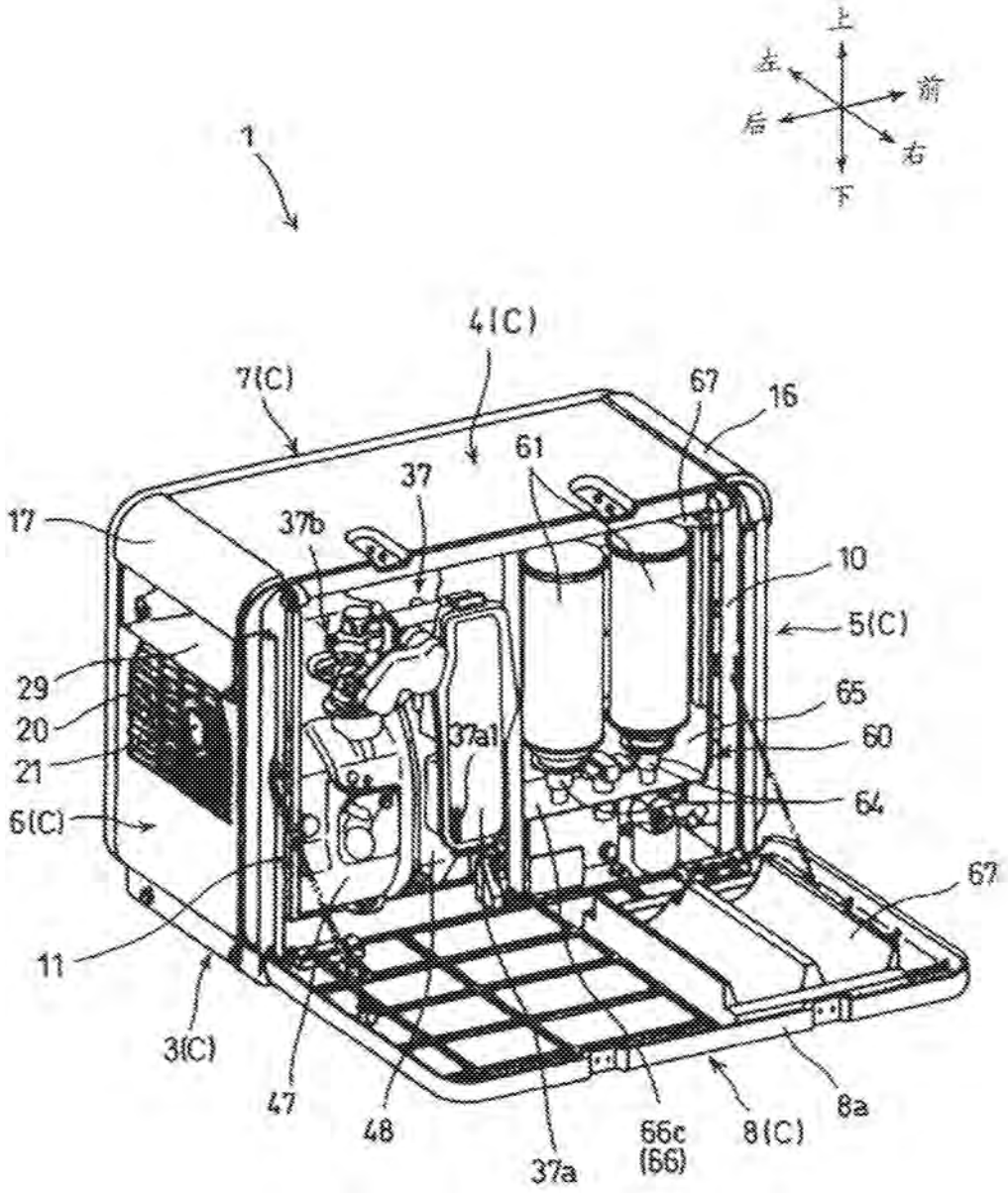


图 2

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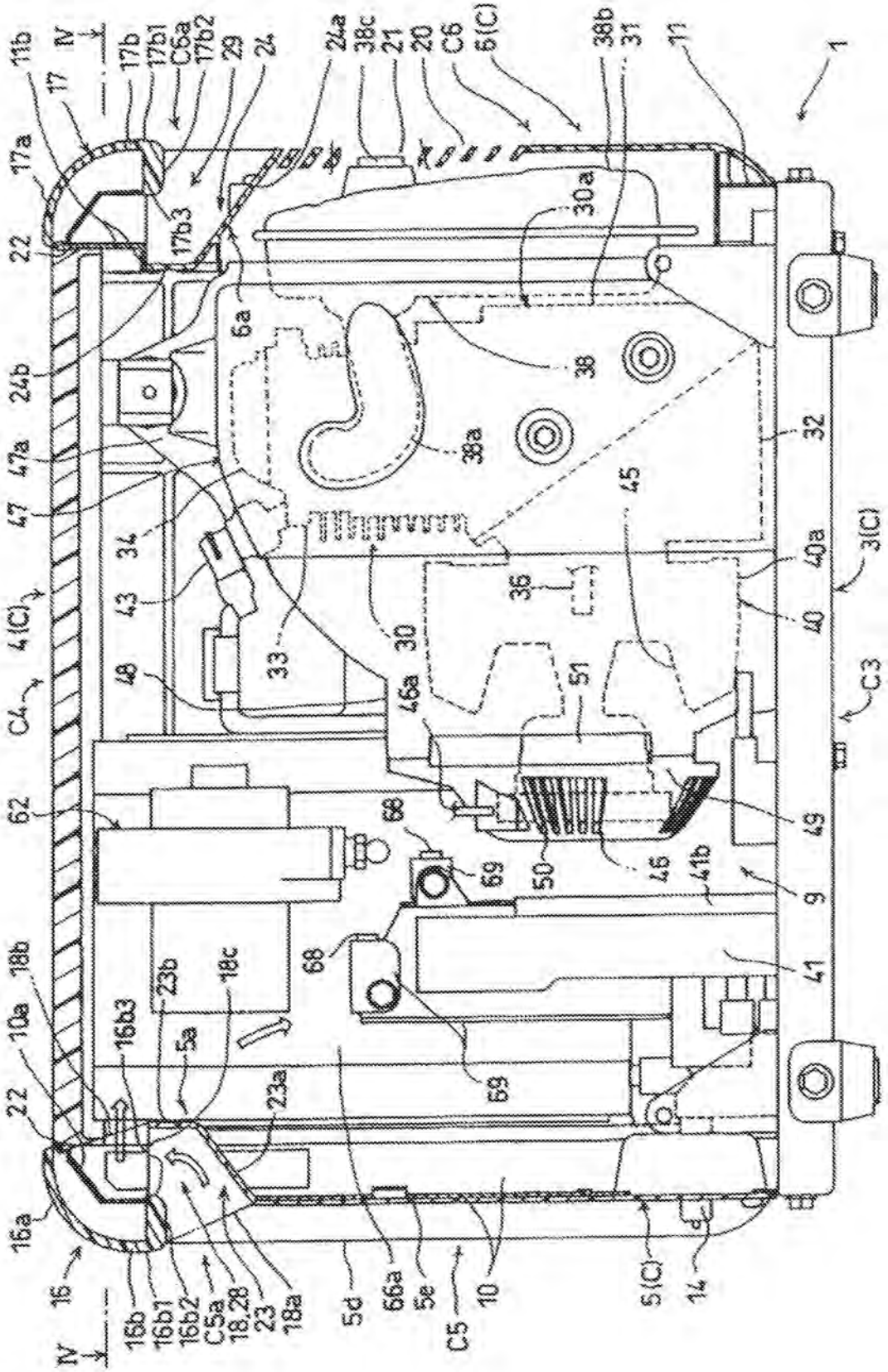

11b
IV
17
17b
17b1
C6a
17b2
29
24
24a
38c
21
20
C6
6(C)
38b
31
11
1
17a
22
17b3
30a
6a
38
24b
38a
32
47a
47
45
34
3(C)
40a
43
35
40
4(C)
33
30
48
46a
51
C3
C4
62
68
49
69
50
46
41b
9
68
41
18b
10a
16b3
23b
18c
5a
22
23a
69
16a
16
16b
16b1
16b2
C5a
18,28
23
18a
5d
66a
5e
C5
10
5(C)
14
IV

图 3

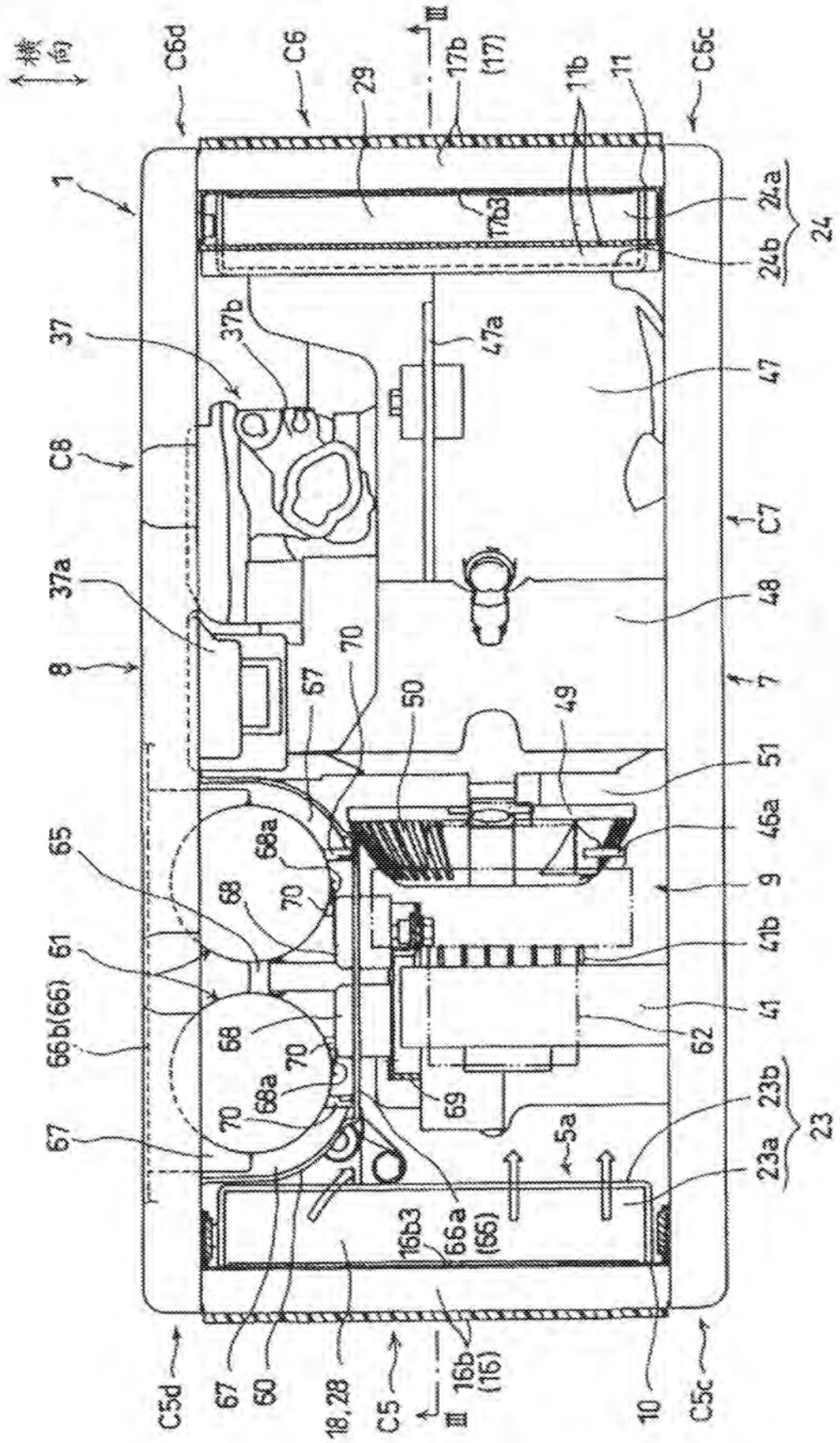


图 4

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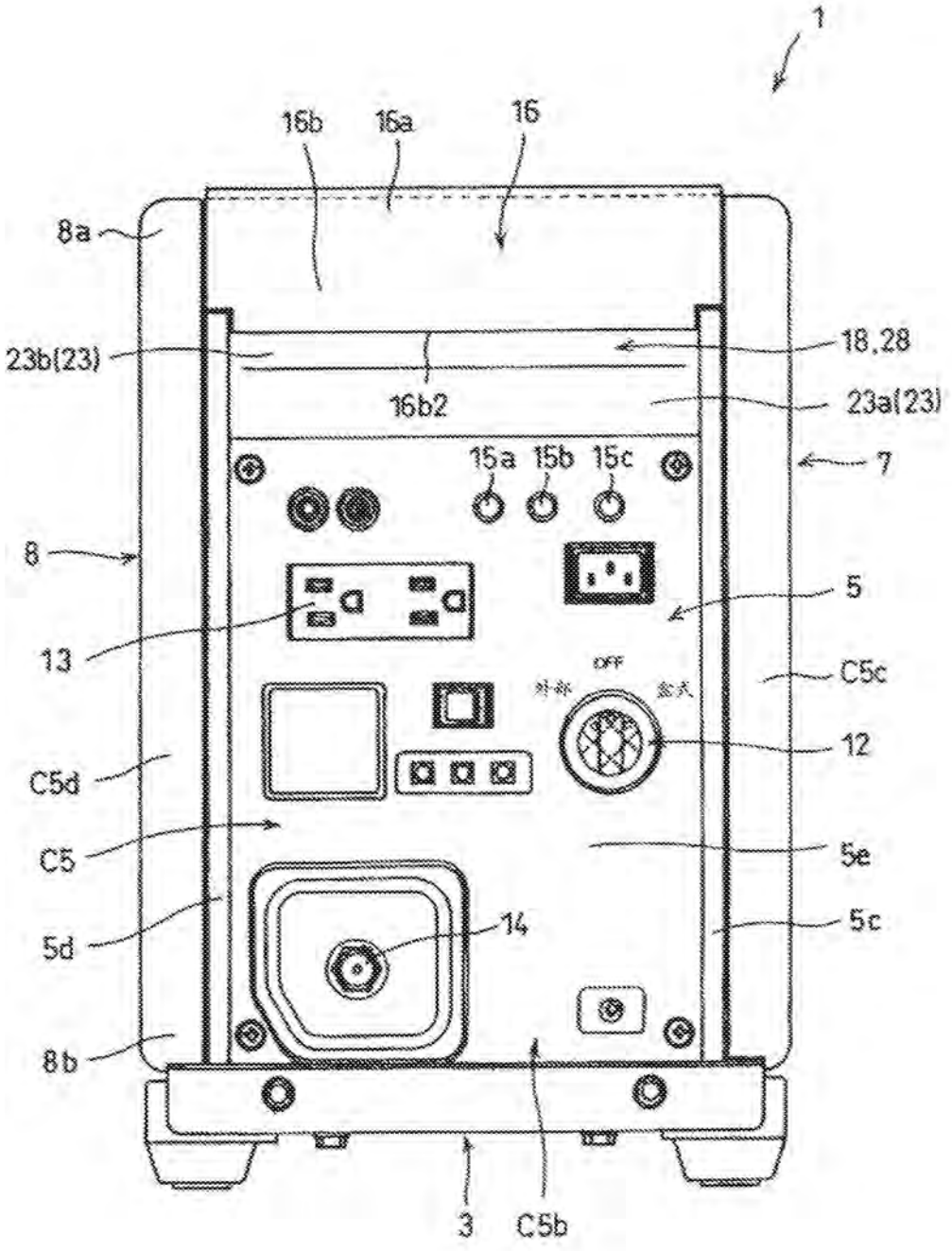


图 5

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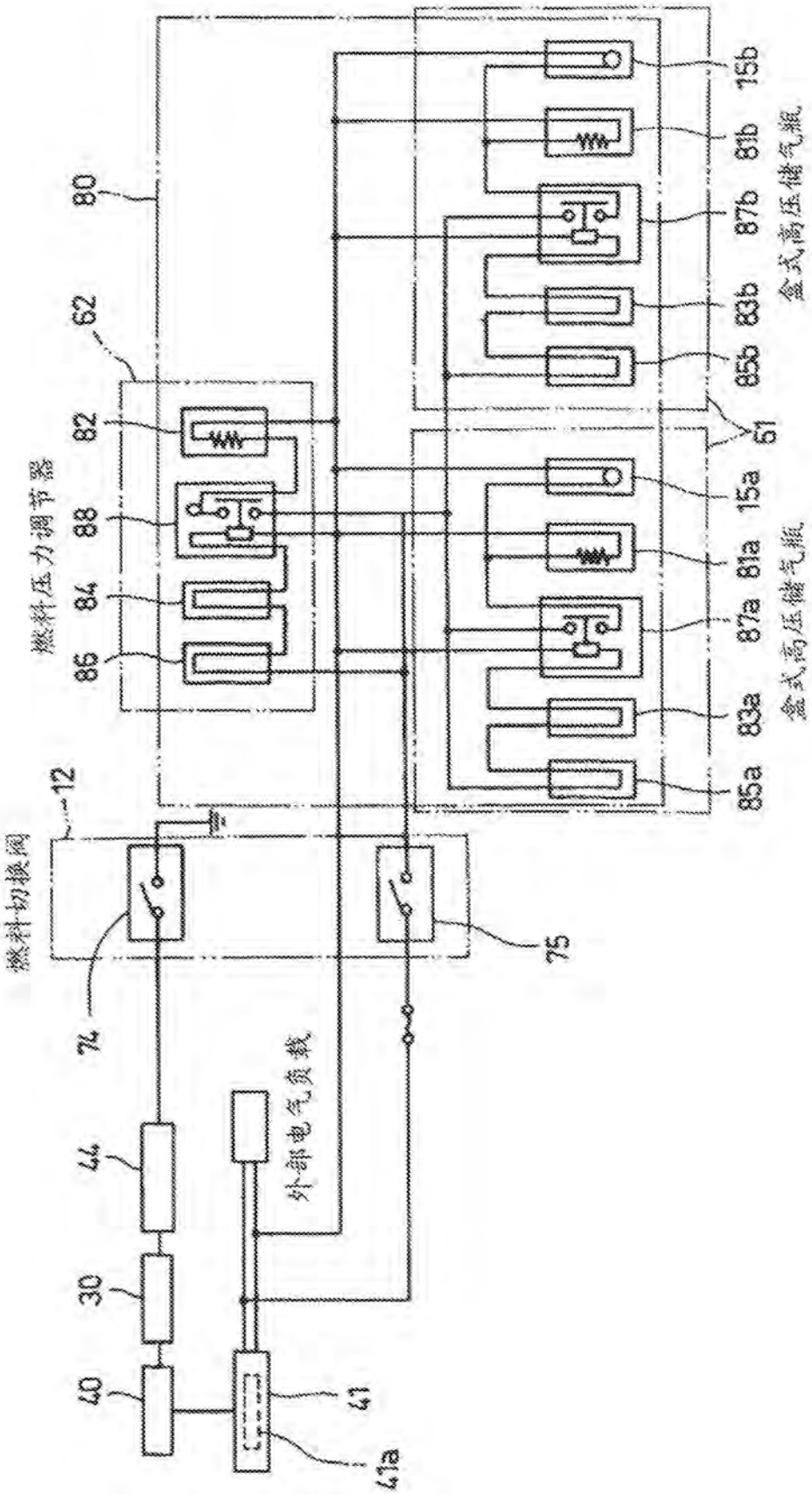


图 6

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	燃料切换阀		
	第1位置	停止位置	第2位置
向发动机的气体燃料供给状态	盒式高压储气瓶的气体燃料（丁烷）的供给	供给停止	外部气体容器的气体燃料（丙烷）的供给
点火装置的动作状态	动作（断流开关断开）	非动作（断流开关接通）	动作（断流开关断开）
加热装置的动作状态	动作（加热器的主开关接通）	非动作（加热器的主开关断开）	非动作（加热器的主开关断开）

图 7

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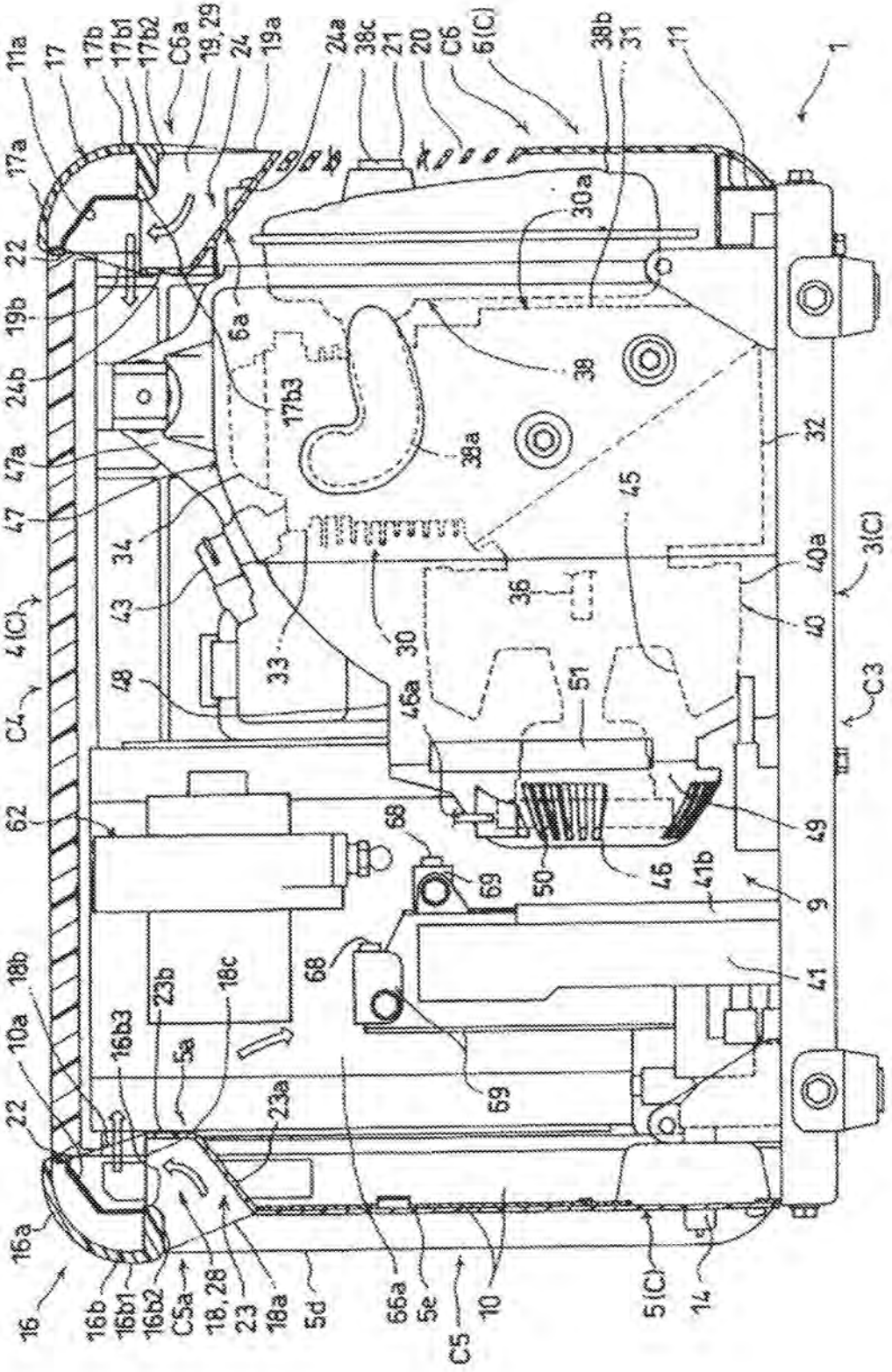


图 8

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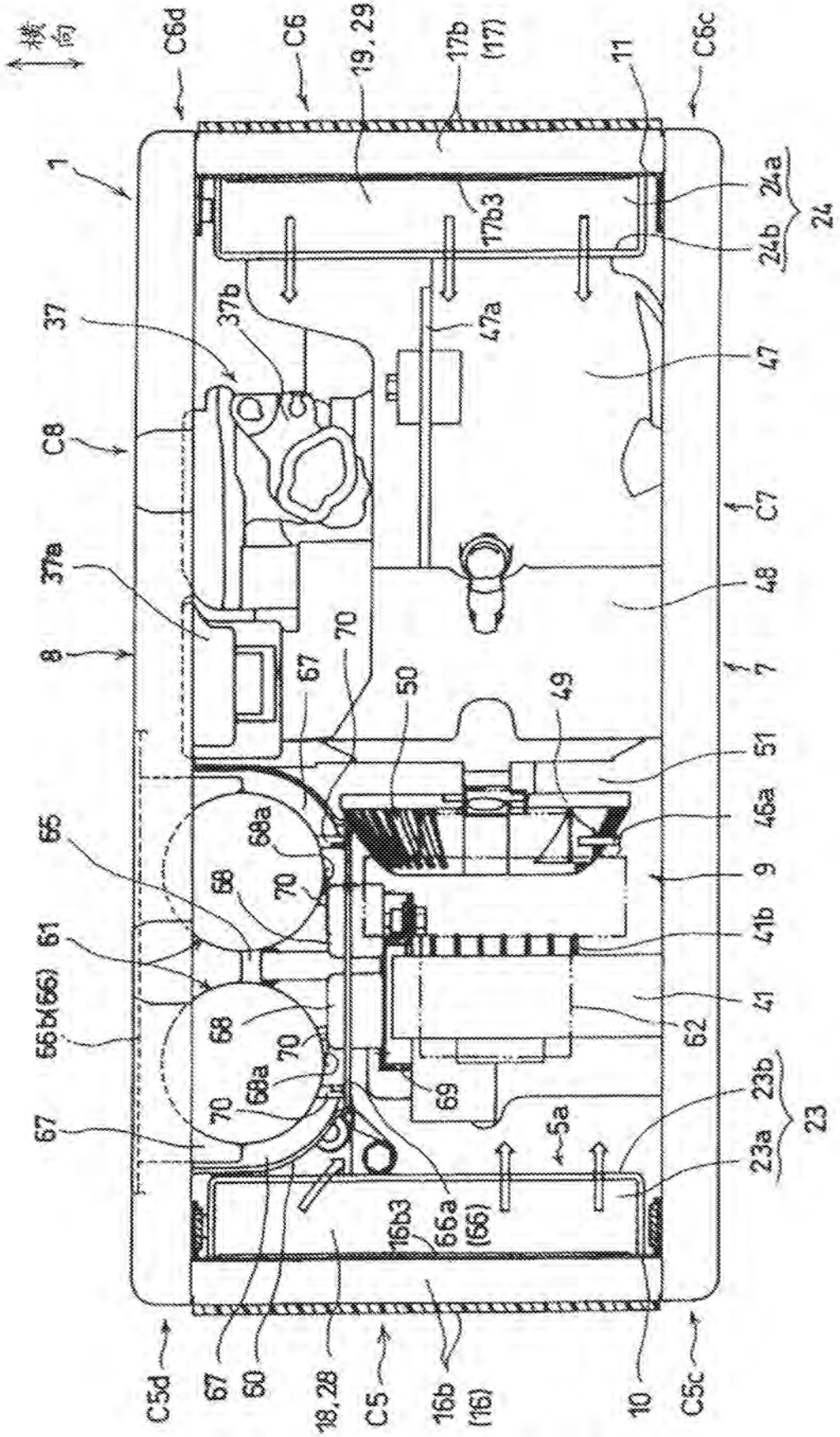


图 9

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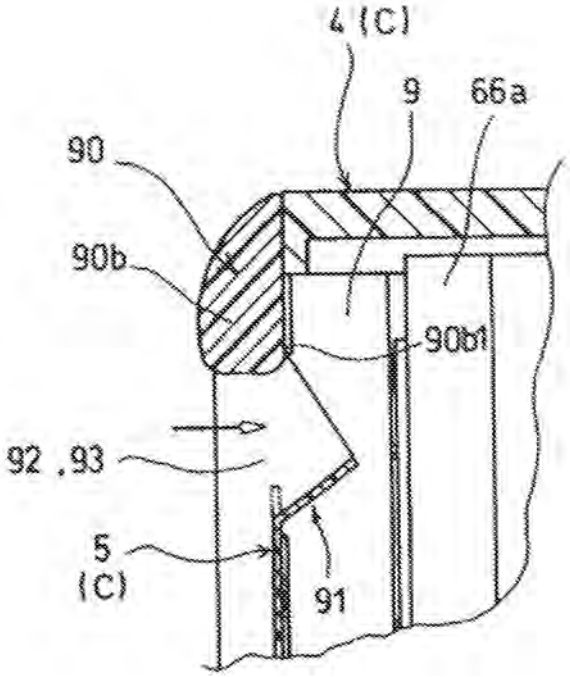


图 10

Electronic Acknowledgement Receipt

EFS ID:	32782612
Application Number:	14738060
International Application Number:	
Confirmation Number:	9670
Title of Invention:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
First Named Inventor/Applicant Name:	Mark J. Sarder
Customer Number:	26629
Filer:	Kevin Roger Rosin./Robyn Templin
Filer Authorized By:	Kevin Roger Rosin.
Attorney Docket Number:	CET1090.019
Receipt Date:	01-JUN-2018
Filing Date:	12-JUN-2015
Time Stamp:	14:38:52
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	Information Disclosure Statement (IDS) Form (SB08)	SuppIDS.pdf	1034258 ccb55398a06e191d450e5a5b2d27d2f94af273a4	no	4

Warnings:

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A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
2	Transmittal Letter	IDSCertificationStatement.pdf	101310 e9l6cb5fe8bade27a7f1ba7ae8e78b4e0f2c b9eb	no	1
Warnings:					
Information:					
3	Foreign Reference	FPD1-CN1981121A.pdf	7320128 79588455ac3c209daabda6566d34902d733 ecf316	no	40
Warnings:					
Information:					
		Total Files Size (in bytes):	8455696		

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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.

Customer No. 26629
Confirmation No. 9670

Patent
Attorney Docket No. CET1090.019

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Sarder et al.
Serial No.	:	14/738,060
Filed	:	June 12, 2015
For	:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
Group Art No.	:	3747
Examiner	:	Kevin A. Lathers

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

I hereby certify that, on the date shown below, this correspondence is being:

Mailing

☐ deposited with the US Postal Service in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

37 CFR 1.8(a) ☐ with sufficient postage as first class mail

37 CFR 1.10 ☐ As "Express Mail Post Office to Addressee" Mailing Label No.

Transmission

☐ transmitted by facsimile to Fax No.: 571-273-8300 addressed to **Examiner Kevin A. Lathers** at the Patent and Trademark Office.

■ transmitted by EFS-WEB addressed to **Examiner Kevin A. Lathers** at the Patent and Trademark Office.

Date: May 15, 2018

/Robyn L. Templin/
Signature

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

RESPONSE TO OFFICE ACTION MAILED FEBRUARY 22, 2018

Dear Sir:

Responsive to the Office Action mailed February 22, 2018, please consider the following remarks:

In the Claims

1. (Original) A mechanical fuel lockout switch for a dual fuel engine comprising:

a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line; and

a fuel lockout apparatus coupled to the mechanical fuel valve;

wherein the mechanical fuel lockout switch:

communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and

communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position.

2. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source communicates with the dual fuel engine.

3. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the fuel lockout apparatus is configured to:

prevent the second fuel source from coupling to the second fuel line while the mechanical fuel valve is in the first position; and

permit the second fuel source to couple to the second fuel line while the mechanical fuel valve is in the second position.

4. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 3, wherein the fuel lockout apparatus comprises a flange rigidly coupled to the mechanical fuel valve that covers an inlet of the second fuel line while the mechanical fuel valve is in the first position and uncovers the inlet of the second fuel line while the mechanical fuel valve is in the second position.

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5. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 4, wherein the mechanical fuel valve rotates between the first position and the second position and the flange rotates transversely across the inlet of the second fuel line.

6. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 4, further comprising;

a first end of a quick-disconnect hose coupling attached to the inlet of the second fuel line; and

a second end of the quick-disconnect hose coupling attached to the second fuel source to mate with the first end of the quick-disconnect hose coupling to couple the second fuel source to the second fuel line.

7. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the mechanical fuel valve and the fuel lockout apparatus operate together to ensure that fuel from the first fuel source and fuel from the second fuel source are not simultaneously delivered to the dual fuel engine.

8. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 7, wherein the first fuel source provides liquid fuel from a liquid fuel tank to the dual fuel engine and the second fuel source provides gaseous fuel from a pressurized fuel container to the dual fuel engine.

9. (Original) A dual fuel generator and fuel delivery system comprising:

a dual fuel generator configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line;

a fuel regulator system located off board the dual fuel generator, the fuel regulator system comprising:

a primary pressure regulator coupled to a service valve of the pressurized fuel source and configured to regulate the fuel supplied from the pressurized fuel source to a reduced pressure; and

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a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator; and

a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line.

10. (Original) The dual fuel generator and fuel delivery system of claim 9 further comprising a fuel lockout apparatus coupled to the mechanical fuel valve; and

wherein when the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the liquid fuel source to the dual fuel generator and prevents the pressurized fuel source from coupling to the dual fuel generator, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the pressurized fuel source to couple to the dual fuel generator, and interrupts the liquid fuel source communication with the dual fuel generator.

11. (Original) The dual fuel generator and fuel delivery system of claim 9, wherein mechanical fuel valve opens and closes the liquid fuel line to selectively control fuel flow from the liquid fuel source to the dual fuel generator; and further comprises:

a fuel lockout apparatus coupled to the mechanical fuel valve and configured to prevent the pressurize fuel source from coupling to the gaseous fuel line while the mechanical fuel valve opens the liquid fuel line, and permit the pressurized fuel source to couple to the gaseous fuel line while the mechanical fuel valve closes the liquid fuel line.

12. (Original) The dual fuel generator and fuel delivery system of claim 11, wherein the fuel lockout apparatus is further configured to prevent the mechanical fuel valve from opening the liquid fuel line while the dual fuel generator receives fuel from the pressurized fuel source.

13. (Original) The dual fuel generator and fuel delivery system of claim 11, wherein the fuel lockout apparatus further comprises a fuel inlet cover that actuates with the mechanical fuel valve to cover an inlet of the gaseous fuel line while the mechanical fuel valve opens the liquid fuel line and to uncover mechanical fuel lockout switch the inlet of the gaseous fuel line when the mechanical fuel valve closes the liquid fuel line.

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14. (Original) The dual fuel generator and fuel delivery system of claim 9, further comprising:

a first end of a quick-connect hose coupling coupled to an outlet of the secondary pressure regulator; and

a second end of the quick-connect hose coupling coupled to an inlet of the gaseous fuel line to mate with the first end of the quick-connect hose coupling to couple the secondary pressure regulator to the gaseous fuel line.

15. (Original) The dual fuel generator and fuel delivery system of claim 9, further comprising a regulator mounting device secured to the pressurized fuel source with at least the secondary pressure regulator mounted on the regulator mounting device.

16. (Original) The dual fuel generator and fuel delivery system of claim 15, wherein the primary pressure regulator is mounted on the regulator mounting device.

17. (Original) The dual fuel generator and fuel delivery system of claim 16, wherein the pressurized fuel source comprises a pressurized fuel container having a collar; and

wherein the regulator mounting device secures to the collar so that the primary and secondary pressure regulators are positioned adjacent each other along an outer periphery of the collar.

18. (Original) The dual fuel generator and fuel delivery system of claim 9, wherein the primary and secondary pressure regulators are integral components of a dual stage pressure regulator.

19. (Original) A method of assembling a mechanical fuel lockout switch for an internal combustion engine comprising:

providing an internal combustion engine configured to operate on a fuel from a first fuel source and a different fuel from a second fuel source;

coupling a mechanical fuel valve to the internal combustion engine actuateable between a first position and a second position to selectively control fuel flow to the internal

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combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line; and

coupling a fuel lockout apparatus to the mechanical fuel valve;

wherein when the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the first fuel source to the internal combustion engine and prevents the second fuel source from coupling to the internal combustion engine, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the second fuel source to couple to the internal combustion engine, and interrupts the first fuel source communication with the internal combustion engine.

20. (Original) The method of claim 19, wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source is coupled to the internal combustion engine.

21. (Original) The method of claim 20, wherein the fuel lockout apparatus is further configured to:

prevent coupling of the second fuel source to the second fuel line while the mechanical fuel valve is in the first position; and

permit coupling of the second fuel source to the second fuel line while the mechanical fuel valve is in the second position.

22. (Original) The method of claim 19, wherein the fuel lockout apparatus comprises a fuel inlet cover configured to actuate in unison with the mechanical fuel valve to cover a fuel inlet on the internal combustion engine for the second fuel source when the mechanical fuel valve is in the first position and uncover the fuel inlet when the mechanical fuel valve is in the second position.

23. (Original) The method of claim 19, further comprising coupling a fuel regulator system to the second fuel source to reduce fuel pressure therefrom and deliver fuel to the second fuel line at a pressure required for operation of the internal combustion engine.

24. (Original) The method of claim 23, further comprising mounting the fuel regulator system to the second fuel source located off-board the internal combustion engine.

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25. (Original) The method of claim 23, further comprising:

coupling one end of a quick-disconnect hose coupling to an inlet on the internal combustion engine for the second fuel source; and

coupling a mating end of the quick-disconnect hose coupling to an outlet of the fuel regulator system.

26. (Original) The method of claim 19, further comprising providing gasoline in a liquid fuel tank as the first fuel source and LPG in a pressurized fuel container as the second fuel source.

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REMARKS

Claims 1-26 are pending in the present application. In the Office Action mailed February 22, 2018, the Examiner rejected claims 1 and 7 under 35 U.S.C. §102(a)(1) as being anticipated by Sugimoto et al. (US Pub. 2007/0137591). The Examiner next rejected claims 1, 7, 8, 19, 22, and 26 under 35 U.S.C. §102(a)(1) as being anticipated by Pursifull et al. (US Pub. 2011/0168133). Claims 9, 14-18, and 23-25 were rejected under 35 U.S.C. §103 as being unpatentable over Pursifull et al. in view of Sugimoto et al.

Claims 2-6, 10-13, 20, and 21 were indicated as containing allowable subject matter. Such indication is appreciated.

Rejection under 35 U.S.C. §102(a)(1) as being anticipated by Sugimoto et al.

Claim 1

The Examiner rejected claim 1 under 35 U.S.C. §102(a)(1) as being anticipated by Sugimoto et al. (US Pub. 2007/0137591) – hereinafter "Sugimoto."

Claim 1 calls for a mechanical fuel lockout switch for a dual fuel engine provides for the selection of a desired fuel to operate the engine. The mechanical fuel lockout switch includes a mechanical fuel valve and a fuel lockout apparatus. The mechanical fuel valve actuates between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line. The fuel lockout apparatus couples to the mechanical fuel valve ensuring individual communication of the fuel sources to the engine. The mechanical fuel lockout switch communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position.

In rejecting claim 1, the Examiner asserted that Sugimoto discloses "a mechanical fuel valve 12 actuatable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source 61 through a first fuel line A1 and a second fuel source 71 through a second fuel line A5 (Fig. 1, shown lines and valve)" and "a fuel lockout apparatus 63 (a fuel cutoff is coupled via the regulator 62 to the valve 12) coupled to the mechanical fuel valve." *Office Action*, February 22, 2018, p. 3-4. The Examiner further asserted that Sugimoto teaches that "mechanical fuel lockout switch: communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual

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fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position (Para. [0082], the switch has multiple positions which allow valve 12 connect either of the lines A1 or A4 to line A2 and also activate lockout apparatus 63)." *Id.* at 4.

Applicant respectfully disagrees with the rejection. Specifically, Sugimoto does not anticipate that which is called for in claim 1, as anticipation under pre-AIA 35 U.S.C. §102(a)(2) requires that "[t]he identical invention must be shown [in the reference] in as complete detail as is contained in the ... claim." *MPEP §2131* (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). As will be set forth in detail here below, Sugimoto does not disclose each and every element of claim 1 and thus does not anticipate the claim, as "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *MPEP §2131* (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987)).

Sugimoto discloses an engine operated generator 1 that includes an engine 30 that powers an electric generator 40. *Sugimoto*, ¶¶[0041], [0042]. A fuel system F for supplying the fuel gas to the engine 30 has an internal fuel system Fa (fuel bottles 61) and an external fuel system Fb (external fuel bottle 71) disposed outside the case C of the generator. *Sugimoto*, ¶[0070]. The fuel supply system Fa includes a fuel pressure regulator 62, a fuel system selector valve 12, a connector 14, and a fuel cutoff valve 63. *Sugimoto*, ¶[0071]. The fuel pressure regulator 62 reduces the pressure of the fuel gas supplied from fuel bottles 61 and the external fuel bottle 71 and regulates the pressure of the fuel gas so that the fuel gas may be supplied to a carburetor 18b at fuel supply rate varying in proportion to load on the engine 30. *Sugimoto*, ¶[0071]. The fuel system selector valve 12 is placed on the operating panel 5e and is operated to select a fuel supply line. *Sugimoto*, ¶[0071]. The fuel pipes interconnect the fuel bottles 61, the fuel pressure regulator 62 and the carburetor 18b. The fuel cutoff valve 63 stops the flow of the fuel gas from the fuel system F to the engine 30. *Sugimoto*, ¶[0071].

In the fuel supply system Fa, a first fuel system for supplying the first fuel gas from the fuel bottles 61 to the engine 30 is constituted by the fuel bottles 61, a pipe A1 connecting the fuel bottles 61 to the fuel system selector valve 12, a pipe A2 connecting the fuel system selector valve 12 to the fuel pressure regulator 62, the fuel pressure regulator 62, a pipe connecting the fuel pressure regulator 62 to the carburetor 18b, and the fuel cut-off valve 63 placed in the pipe A3. *Sugimoto*, ¶[0079]. A second fuel system for supplying the second fuel gas from the

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external fuel bottle 71 to the engine 30 is constituted by a pipe A4 connecting the connector 14 to the fuel cutoff valve 12, the pipe A2 connecting the fuel system selector valve 12 to the fuel pressure regulator 62, the fuel pressure regulator, the pipe A3 connecting the fuel pressure regulator 62 to the carburetor 18b, and the fuel cutoff valve 63. *Sugimoto*, ¶[0079].

The fuel cutoff valve 63, namely, a fuel cutoff means, is, for example, a normally-open solenoid valve which closes when energized. *Sugimoto*, ¶[0081]. The ECU 89 controls the fuel cutoff valve 63 on the basis of the pressure of the first fuel gas. *Sugimoto*, ¶[0081]. More specifically, the fuel pressure regulator 62 is provided with a pressure sensor 73 for measuring the pressure of the first fuel gas flowing from the fuel bottle 61 to the fuel pressure regulator 62. *Sugimoto*, ¶[0081]. When the pressure of the first fuel gas measured by the pressure sensor 73 is higher than an upper limit pressure P1, the ECU 89 closes the fuel cutoff valve 63 to disconnect the common fuel system from the fuel bottle 61. *Sugimoto*, ¶[0081]. The fuel system selector valve 12 connects either the first fuel system that supplies the first fuel gas to the engine 30 or the second fuel system that supplies the second gas to the engine 30 selectively to the fuel pressure regulator 62. *Sugimoto*, ¶[0082]. The fuel system selector valve 12 can be set in a first position, where the knob of the fuel system selector valve 12 is at a first position marked with "Internal fuel" to connect the first fuel system to the engine 30 to supply the first fuel gas to the engine 30, and in a second position, where the knob of the fuel system selector valve 12 is at a second position marked with "External fuel" to connect the second fuel system to the engine 30 to supply the second fuel gas to the engine 30. *Sugimoto*, ¶[0082].

However, there is no disclosure provided in Sugimoto of a fuel lockout apparatus *coupled to* the mechanical fuel valve, as called for in claim 1. That is, while the Examiner has asserted that Sugimoto discloses "a fuel lockout apparatus 63 (a fuel cutoff is coupled via the regulator 62 to the valve 12) coupled to the mechanical fuel valve," *Office Action*, supra at 4, such an assertion distorts what is disclosed in Sugimoto. Instead, Sugimoto only discloses fuel system selector valve 12 positioned at a junction of pipes A1 and A4 and fuel cut-off valve 63 placed in the pipe A3, *Sugimoto*, ¶[0079], and that fuel cutoff valve 63 is a normally-open solenoid valve that is controlled by ECU 89 on the basis of the pressure of the first fuel gas. *Sugimoto*, ¶[0081]. This positioning of fuel cut-off valve 63 and fuel system selector valve 12 at separate locations along/on pipes A1, A2, A3, A4 can be clearly seen in FIG. 1 of Sugimoto, as fuel cut-off valve 63 is shown therein as being separated from fuel system selector valve 12. Additionally, the control/operation of the fuel cut-off valve 63 and fuel system selector valve 12 are separate from one another, as fuel cutoff valve 63 is opened/closed by ECU 89 based solely on the basis of the

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pressure of the first fuel gas – without any regard to the position of fuel system selector valve 12. *Sugimoto*, ¶[0081]. Accordingly, fuel cut-off valve 63 and fuel system selector valve 12 are neither mechanically coupled or operationally coupled, such that there is simply no disclosure in Sugimoto that fuel cut-off valve 63 is *coupled to* fuel system selector valve 12 as called for in claim 1.

As Sugimoto fails to disclose a fuel lockout apparatus coupled to the mechanical fuel valve, Sugimoto cannot be said to anticipate that which is called for in claim 1, as anticipation under pre-AIA 35 U.S.C. §102(a)(2) requires that "[t]he identical invention must be shown [in the reference] in as complete detail as is contained in the ... claim." *MPEP §2131* (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). Applicant therefore respectfully requests withdrawal of the rejection of claim 1 and the claims dependent therefrom.

Rejection under 35 U.S.C. §102(a)(1) as being anticipated by Pursifull et al.

Claims 1 and 19

The Examiner rejected claims 1 and 19 under 35 U.S.C. §102(a)(1) as being anticipated by Pursifull et al. (US Pub. 2011/0168133) – hereinafter "Pursifull."

In rejecting claims 1 and 19, the Examiner asserted that Pursifull discloses "a mechanical fuel valve 120 actuatable between a first position and a second position to selectively control fuel flow to the dual fuel engine 102 from a first fuel source 112 through a first fuel line 119 and a second fuel source 134 through a second fuel line 140 (Para. [0025], the valve 120 is a three-way mechanical selection valve)" and "a fuel lockout apparatus (Controller 128, pumps 136 114, and solenoid valves 118 126) coupled to the mechanical fuel valve (Fig. 1, the lockout apparatus is coupled to the valve 120 via controller 128 and fuel lines 119/140)." *Office Action*, supra at 5. The Examiner further asserted that Pursifull teaches that "mechanical fuel lockout switch: communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position (Para. [0025], [0028], and [0066], the three-way valve and lockout apparatus determine connection of the first or second fuel to the dual fuel engine 102)." *Id.*

Applicant respectfully disagrees with the rejection. Specifically, Pursifull does not anticipate that which is called for in claims 1 and 19, as anticipation under pre-AIA 35 U.S.C.

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§102(a)(2) requires that "[t]he identical invention must be shown [in the reference] in as complete detail as is contained in the ... claim." *MPEP §2131* (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). As will be set forth in detail here below, Pursifull does not disclose each and every element of claims 1 and 19 and thus does not anticipate the claims, as "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *MPEP §2131* (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987)).

Pursifull discloses an engine system 100 that includes an internal combustion engine 102 having one or more cylinders 104 that may receive fuel from one or more fuel injectors 106 that inject fuel in proportion to a pulse width of a signal received from a controller 128. *Pursifull*, ¶[0021]. Fuel may be delivered to the fuel injector 106 from a fuel rail 108 by a fuel system 110. *Pursifull*, ¶[0021]. The fuel system 110 may include a fuel tank 112 and a fuel pump 114 operable by controller 128 to pump fuel from the fuel tank 112 to the fuel rail 108. *Pursifull*, ¶[0022]. A delivery check valve 116 may be positioned downstream of the fuel pump 114 to force fuel pumped from the fuel pump at a predetermined pressure to the fuel rail 108 so that fuel does not return along the same path to the fuel pump. *Pursifull*, ¶[0023]. A first solenoid valve 118 may be positioned downstream of delivery check valve 116 to control the flow of fuel to fuel rail 108 or from the fuel rail to a return line 119. *Pursifull*, ¶[0023]. In some embodiments, fuel system 110 may be what is known as a multi-fuel system that selectively provides a plurality of different types of fuel to the fuel rail 108 based on the mode of operation, such as gasoline and/or liquid propane. *Pursifull*, ¶[0024]. A three-way valve 120 may be positioned upstream of the fuel rail 108 and downstream of the first solenoid valve 118 and the return line 119 to selectively control the flow of a desired type of fuel to the fuel rail 108. *Pursifull*, ¶[0025]. The state of the three-way valve 120 may be controlled by controller 128 to vary which type of fuel is delivered to the fuel rail 108. *Pursifull*, ¶[0025]. Fuel in the fuel rail 108 may be returned to the fuel tank 112 via the return line 119, with an ejector 124 positioned in the return line 119 to provide a single fuel rail evacuation stage. *Pursifull*, ¶[0026]. A return check valve 122 is positioned in the return line 119 downstream of the ejector 124 to force fuel returning from the fuel rail 108 at a predetermined pressure to ejector 124 so that fuel is evacuated from the fuel rail 108. *Pursifull*, ¶[0027]. A second solenoid valve 126 is positioned upstream of the outlet of the ejector 124 and downstream of the fuel tank 112 that may be controlled by controller 128 evacuate the fuel rail 108. *Pursifull*, ¶[0028].

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In a method for controlling for controlling a multi-fuel system as described in Pursifull, the method may include operating in the fuel rail pressurization mode where a determination is made if a first fuel from a first fuel stage or a second fuel from a second fuel is selected for delivery to the fuel rail 108. *Pursifull*, ¶[0066]. If the first fuel is selected, operating in the fuel rail pressurization mode may include, switching the three-way valve 120 to the first fuel stage, opening the solenoid valve 118 positioned downstream of the fuel pump 114 and upstream of the fuel rail 108, closing the solenoid valve 126 positioned upstream of the ejector 124 and downstream of the fuel tank 112, and operating the fuel pump 114 to deliver the first fuel from the fuel tank to the fuel rail. *Pursifull*, ¶[0066]. If the second fuel is selected, operating in the fuel rail pressurization mode may include switching the three-way valve 120 to the second fuel stage, and, operating the fuel pump 136 to deliver the second fuel from the fuel tank 134 to the fuel rail 108. *Pursifull*, ¶[0066].

However, there is no disclosure provided in Pursifull of a fuel lockout apparatus *coupled to* the mechanical fuel valve, as called for in claims 1 and 19. That is, while the Examiner has asserted that Pursifull discloses "a fuel lockout apparatus (Controller 128, pumps 136 114, and solenoid valves 118 126) coupled to the mechanical fuel valve (Fig. 1, the lockout apparatus is coupled to the valve 120 via controller 128 and fuel lines 119/140)," *Office Action*, supra at 5, such an assertion distorts what is disclosed in Pursifull. Instead, Pursifull only discloses that controller 128 functions to control pumps 136, 114, solenoid valves 118, 126, and three-way valve 120 based on whether a first or second fuel is selected for use by the engine. *See Pursifull*, ¶[0066]. This controlling of various valves/pumps by controller 128 does **not** teach a coupling of a fuel lockout apparatus and mechanical fuel valve, as called for in claims 1 and 19 – as a control/operation of these components by a common controller is not a "coupling" as would be understood by one skilled in the art. Accordingly, there is simply no disclosure in Pursifull that three-way valve 120is *coupled to* any fuel lockout apparatus – however defined by the Examiner – as called for in claims 1 and 19.

As Pursifull fails to disclose a fuel lockout apparatus coupled to the mechanical fuel valve, Pursifull cannot be said to anticipate that which is called for in claims 1 and 19, as anticipation under pre-AIA 35 U.S.C. §102(a)(2) requires that "[t]he identical invention must be shown [in the reference] in as complete detail as is contained in the ... claim." *MPEP §2131* (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). Applicant therefore respectfully requests withdrawal of the rejection of claims 1 and 19 and the claims dependent therefrom.

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Rejection under 35 U.S.C. §103 over Pursifull et al. in view of Sugimoto et al.

Claim 9

The Examiner rejected claim 9 under 35 U.S.C. §103 as being unpatentable over Pursifull in view of Sugimoto. In rejecting claim 9, the Examiner relied on Pursifull as disclosing the claimed "dual fuel generator configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line" and "mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line." *Office Action*, supra at 7. The Examiner admitted that Pursifull does not disclose the claimed fuel regulator system located off board the dual fuel generator, and thus relied on Sugimoto as disclosing a fuel regulator system including "a primary pressure regulator coupled to a service valve of the pressurized fuel source and configured to regulate the fuel supplied from the pressurized fuel source to a reduced pressure" and "a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator." *Id.* at 7.-8. Applicant respectfully disagrees with the rejection.

Claim 9 specifically calls for a fuel regulator system located *off board* the dual fuel generator, with the fuel regulator system including a primary pressure regulator coupled to a service valve of the pressurized fuel source and a secondary pressure regulator coupled to the primary pressure regulator. Thus, according to claim 9, each of the primary pressure regulator and the secondary pressure regulator is located *off board* the dual fuel generator. Sugimoto – alone or in combination with Pursifull – fails to teach a fuel regulator system where both a primary pressure regulator and secondary pressure regulator are located off board the dual fuel generator. That is, while pressure reducing device 72 is included as part of external fuel system Fb that is off-board generator 1, *Sugimoto*, ¶[0073], the fuel pressure regulator 62 referenced by the Examiner is *on-board* generator 1 - as the fuel pressure regulator 62 is located between pipe A2 and pipe A3 on generator 1.

In light of the above, Sugimoto – alone or in combination with Pursifull – fails to teach or suggest a fuel regulator system located *off board* the dual fuel generator, with the fuel regulator system including a primary pressure regulator coupled to a service valve of the pressurized fuel source and a secondary pressure regulator coupled to the primary pressure regulator, i.e., each of the primary pressure regulator and the secondary pressure regulator is located *off board* the dual

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fuel generator, as called for in claim 9. Claim 9 is therefore patentably distinct from that which is disclosed in Sugimoto and Pursifull and Applicant respectfully requests withdrawal of the rejection of claim 9 and the claims dependent therefrom.

Conclusion

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-26.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

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Dated: May 15, 2018
Attorney Docket No.: CET1090.019

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General Authorization and Extension of Time

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-2623. Should no proper payment be enclosed herewith, as by credit card authorization being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-2623. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extensions under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-2623. Please consider this a general authorization to charge any fee that is due in this case, if not otherwise timely paid, to Deposit Account No. 50-2623.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	14738060
Filing Date	2015-06-12
First Named Inventor	Mark J. Sarder et al.
Art Unit	3747
Examiner Name	Kevin A. Lathers
Attorney Docket Number	CET1090.019

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	1	3384059		1968-05-21	Kopa	
	2	3412258		1968-11-19	Satter	
	3	3659574		1972-05-02	Reschke et al.	
	4	3718000		1973-02-27	Walker	
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	7	4335697		1982-06-22	McLean	
	8	4373493		1983-02-15	Welsh	

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	Art Unit	3747
	Examiner Name	Kevin A. Lathers
	Attorney Docket Number	CET1090.019

	9	4480595		1984-11-06	Hobby et al.	
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	2	20040139943	A1	2004-07-22	Kern et al.	
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	Attorney Docket Number	CET1090.019

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

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See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Kevin R. Rosin/	Date (YYYY-MM-DD)	2018-05-15
Name/Print	Kevin R. Rosin	Registration Number	55584

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

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Electronic Patent Application Fee Transmittal

Application Number:	14738060
Filing Date:	12-Jun-2015
Title of Invention:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
First Named Inventor/Applicant Name:	Mark J. Sarder
Filer:	Kevin Roger Rosin./Robyn Templin
Attorney Docket Number:	CET1090.019

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
			Total in USD ($)	**120**

Electronic Acknowledgement Receipt

EFS ID:	32623422
Application Number:	14738060
International Application Number:	
Confirmation Number:	9670
Title of Invention:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
First Named Inventor/Applicant Name:	Mark J. Sarder
Customer Number:	26629
Filer:	Kevin Roger Rosin./Robyn Templin
Filer Authorized By:	Kevin Roger Rosin.
Attorney Docket Number:	CET1090.019
Receipt Date:	15-MAY-2018
Filing Date:	12-JUN-2015
Time Stamp:	10:07:51
Application Type:	Utility under 35 USC 111(a)

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Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$120
RAM confirmation Number	051518INTEFSW10100400
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response.pdf	192042 d6db05d9301bc94c093d66a0a688b79982 3dd365	yes	16
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	7	
	Applicant Arguments/Remarks Made in an Amendment		8	16	
Warnings:					
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2	Information Disclosure Statement (IDS) Form (SB08)	SuppIDS.pdf	1035121 09a9695f5080dc62a53d031bedd630ce6 6a24b	no	6
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30716 0717eeee0d3170922806924376b9763cc8 6a82d	no	2
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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.

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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.

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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.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/738,060	Filing Date 06/12/2015	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ 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).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 05/15/2018

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	- 26	Minus	** 26	= 0	X $50 =	0
Independent (37 CFR 1.16(h))	- 3	Minus	***3	= 0	X $230 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** 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 number found in the appropriate box in column 1.

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This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/738,060	06/12/2015	Mark J. Sarder	CET1090.019	9670

26629 7590 02/22/2018
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

EXAMINER	
LATHERS, KEVIN ANTHONY	

ART UNIT	PAPER NUMBER
3747	

NOTIFICATION DATE	DELIVERY MODE
02/22/2018	ELECTRONIC

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

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

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

info@zpspatents.com
sml@zpspatents.com

Office Action Summary	Application No. 14/738,060	Applicant(s) SARDER ET AL.	
	Examiner KEVIN A. LATHERS	Art Unit 3747	AIA (First Inventor to File) Status Yes

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11/03/2017*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ 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.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-26* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1,7-9,14-19 and 22-26* is/are rejected.

8)☐ Claim(s) *2-6,10-13,20 and 21* is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, 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.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ 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)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

4) ☐ Other: _____.

Champion - EX2093, Page 148 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

DETAILED ACTION

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Interpretation

The following is a quotation of 35 U.S.C. 112(f):

> (f) Element in Claim for a Combination. – An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

1. This application includes one or more claim limitations that do not use the word "means," but are nonetheless being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because the claim limitation(s) uses a generic placeholder that is coupled with functional language without reciting sufficient structure to perform the recited function and the generic placeholder is not preceded by a structural modifier. Such claim limitation(s) is/are: "regulator mounting device" in claims 15-17. A "device" is a generic term for any structure, therefore this limitation amounts to "a means for mounting a regulator."

Because this/these claim limitation(s) is/are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, it/they is/are being interpreted to

cover the corresponding structure described in the specification as performing the claimed function, and equivalents thereof.

If applicant does not intend to have this/these limitation(s) interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, applicant may: (1) amend the claim limitation(s) to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph (e.g., by reciting sufficient structure to perform the claimed function); or (2) present a sufficient showing that the claim limitation(s) recite(s) sufficient structure to perform the claimed function so as to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph.

Claim Rejections - 35 USC § 102

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

> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

3. **Claim(s) 1 and 7 is/are rejected under 35 U.S.C. 102(a)(1) as being clearly anticipated by Sugimoto (US 2007/0137591).**

4. **Regarding claim 1,** Champion discloses mechanical fuel lockout switch (Fig. 1, shown switch system) for a dual fuel engine (Fig. 1, shown engine 30) comprising:

a mechanical fuel valve 12 actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source 61 through a first fuel line A1 and a second fuel source 71 through a second fuel line A5 (Fig. 1, shown lines and valve); and

a fuel lockout apparatus 63 (a fuel cutoff is coupled via the regulator 62 to the valve 12) coupled to the mechanical fuel valve;

wherein the mechanical fuel lockout switch:

communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position (Para. [0082], the switch has multiple positions which allow valve 12 connect either of the lines A1 or A4 to line A2 and also activate lockout apparatus 63).

5. **Regarding claim 7,** the mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the mechanical fuel valve and the fuel lockout apparatus operate together to ensure that fuel from the first fuel source and fuel from the second fuel source are not simultaneously delivered to the dual fuel engine (Para. [0082], the system does not allow two fuels to be delivered simultaneously).

6. Claim(s) 1, 7, 8, 19, 22, and 26 is/are rejected under 35 U.S.C. 102(a)(1) as being clearly anticipated by Pursifull et al (US 2011/0168133)

7. **Regarding claims 1 and 19,** Pursifull discloses a mechanical fuel lockout switch for a dual fuel engine (Fig. 3, shown dual fuel engine with lockout switch) and method of constructing it comprising: a mechanical fuel valve 120 actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine 102 from a first fuel source 112 through a first fuel line 119 and a second fuel source 134 through a second fuel line 140 (Para. [0025], the valve 120 is a three-way mechanical selection valve); and

8. a fuel lockout apparatus (Controller 128, pumps 136 114, and solenoid valves 118 126) coupled to the mechanical fuel valve (Fig. 1, the lockout apparatus is coupled to the valve 120 via controller 128 and fuel lines 119/140);

9. wherein the mechanical fuel lockout switch: communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position (Para. [0025], [0028], and [0066], the three-way valve and lockout apparatus determine connection of the first or second fuel to the dual fuel engine 102).

10. The apparatus above having all the parts coupled together and therefore being "coupled" and "provided" as per the method in claim 19.

11. **Regarding claim 7,** Pursifull discloses the mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the mechanical fuel valve and the fuel lockout apparatus operate together to ensure that fuel from the first fuel source and fuel from

the second fuel source are not simultaneously delivered to the dual fuel engine (Para. [0025], [0028], and [0066], the lockout apparatus cuts off the fuel supply between the lines).

12. **Regarding claims 8 and 26,** Pursifull discloses the mechanical fuel lockout switch for a dual fuel engine of claims 7 and 19, wherein the first fuel source provides gasoline as liquid fuel from a liquid fuel tank to the dual fuel engine and the second fuel source provides LPG fuel from a pressurized fuel container to the dual fuel engine (Para. [0040], the multi fuel system may be liquid propane (gaseous fuel) and gasoline (liquid fuel)).

13. **Regarding claim 22,** the modified Pursifull discloses the method of claim 19 as disclosed above, wherein the fuel lockout apparatus comprises a fuel inlet cover configured to actuate in unison with the mechanical fuel valve to cover a fuel inlet on the internal combustion engine for the second fuel source when the mechanical fuel valve is in the first position and uncover the fuel inlet when the mechanical fuel valve is in the second position (Para. [0025], [0028], and [0066], the lockout apparatus cuts off the fuel supply between the lines, by considering the line which connects to the lockout valve as a "fuel inlet" then the valve cutting off flow is then covering the inlet to disallow fuel flow).

Claim Rejections - 35 USC § 103

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

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have

been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 9, 14-18, and 23-25 is/are rejected under 35 U.S.C. 103 as being unpatentable over Pursifull et al (US 2011/0168133) in view of Sugimoto et al (US 2007/0137591).

16. **Regarding claim 9,** Pursifull discloses a dual fuel engine and fuel delivery system comprising:

a dual fuel engine (Fig. 1, shown) configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line (Para. [0040], the multi fuel system may be pressurized liquid propane (gaseous fuel) and gasoline (liquid fuel)); and a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line (Para. [0025], [0028], and [0066], the three-way valve and lockout apparatus determine connection of the first or second fuel to the dual fuel engine 102).

17. Pursifull fails to disclose a fuel regulator system located off board the dual fuel engine, the fuel regulator system comprising: a primary pressure regulator coupled to a service valve of the pressurized fuel source and configured to regulate the fuel supplied from the pressurized fuel source to a reduced pressure; and a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator.

18. Sugimoto discloses a dual fuel engine and delivery system (Fig. 1, as shown) wherein the system includes an off-board gaseous fuel system (Fb) which includes an off-board pressure regulator 72 which feeds fuel into an engine system 1 which includes another pressure regulator 62. The inclusion of pressure reduction devices for the gasification of liquid-held fuel allows for an effective cooling of the fuel system and systems (Para. [0010]) while allowing the dual fuel engine to be powered by an external fuel tank attached to it in an off board fashion such as in emergency situations (Para. [0002]).

19. Therefore, it would have been obvious to one of ordinary skill in the art before the filing date of the invention to modify the device of Pursifull with the pressure regulators and gaseous fuel system methods of Sugimoto in order to improve the cooling of the fuel system parts through pressure reduction as well as regulate the pressure from an external attached fuel tank which allows the dual fuel engine system to be used in varying situations such as emergency ones using an external fuel source.

20. **Regarding claim 14,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 9, further comprising: a first end of a quick-connect hose coupling coupled to an outlet of the secondary pressure regulator; and a second end of the quick-connect hose coupling coupled to an inlet of the gaseous fuel line to mate with the first end of the quick-connect hose coupling to couple the secondary pressure regulator to the gaseous fuel line (Fig. 1 of Sugimoto shows that the modification of Pursifull to includes an external source of gaseous fuel and regulators makes use of a connection hose coupling 14).

21. **Regarding claims 15,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 9, further comprising a regulator mounting device (a bracket as per applicant's disclosure on in Para. [0024] of the disclosure) secured to the pressurized fuel source with at least the secondary pressure regulator mounted on the regulator mounting device (Fig. 1 of Sugimoto which discloses the regulator systems, the regulator 72 shown is attached to the fuel tank system 71).

22. The modified Pursifull fails to specifically note a bracket being used for the fixation of the regulator 72. However, it would have been obvious to one of ordinary skill in the art before the filing date of the invention to attach the regulator 72 using some device wherein a bracket is an extremely old and well-known fixation device and one of ordinary skill in the art would have known to apply a known device and technique of mounting a regulator on a fuel tank, such as a bracket, to yield the predictable results of fixing the regulator to its fuel system.

23. **Regarding claim 16,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 15, but fails to disclose wherein the primary pressure regulator is mounted on the regulator mounting device. The modified Pursifull fails to disclose the two regulators being located in positions where they would be mounted making use of the same mounting bracket.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to mount both regulators in a similar location on the same bracket since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

24. **Regarding claim 17,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 16, but fails to disclose wherein the pressurized fuel source comprises a pressurized fuel container having a collar; and wherein the regulator mounting device secures to the collar so that the primary and secondary pressure regulators are positioned adjacent each other along an outer periphery of the collar.

25. In this case the claim pertains to the routine and known art of using propane tanks as a fuel tank source as these devices are well-known in the art to have a "collar" piece which often has regulators attached to it. While the art of Pursifull and Sugimoto never make reference to this specific old and well-known device, they do make use of fuel tanks that could easily be substituted with them. Therefore, examiner makes official notice that it is old and well-known to make use of standard-in-the-art propane tanks with regulators attached to their collars as this would have allowed the modified Pursifull to make use of the common, cheap, and easy-to-use propane tanks for its regulation and propane tank systems. Some examples of such tanks can be seen at: RVDoctor (Oct. 2010, http://www.rvdoctor.com/2012/10/disconcerting-propane-leaks-on-rv.html) which shows two propane tanks with a regulator attached to their collar; and Nooutage.com (Aug. 27th, 2006, https://web.archive.org/web/20060928183104/http://www.nooutage.com:80/images/BS-7KW_Power_Now_tanks.jpg) which shows propane tanks with regulators attached to their collars.

26. **Regarding claim 18,** the modified Pursifull discloses the dual fuel generator and fuel delivery system of claim 9, but fails to disclose wherein the primary and secondary pressure regulators are integral components of a dual stage pressure regulator.

27. However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the regulators into a two-stage regulator, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. Howard v. Detroit Stove Works, 150 U.S. 164 (1893).

28. Claims 23-25 are rejected using Pursifull as modified by Sugimoto in the same manner as applied to claim 9 and its dependent claims above.

29. **Regarding claim 23,** the modified Pursifull discloses the method of claim 19, further comprising coupling a fuel regulator system to the second fuel source to reduce fuel pressure therefrom and deliver fuel to the second fuel line at a pressure required for operation of the internal combustion engine (Fig. 1 of Sugimoto shows the regulators in series reducing pressure).

30. **Regarding claim 24,** the modified Pursifull discloses the method of claim 23, further comprising mounting the fuel regulator system to the second fuel source located off-board the internal combustion engine (Fig. 1 of Sugimoto as modified onto Pursifull and shown).

31. **Regarding claim 25,** the modified Pursifull discloses the method of claim 23, further comprising: coupling one end of a quick-disconnect hose coupling to an inlet on the internal combustion engine for the second fuel source; and coupling a mating end of

the quick-disconnect hose coupling to an outlet of the fuel regulator system (Fig. 1 of Sugimoto as modified onto Pursifull and shown).

Allowable Subject Matter

32. Claims 2-6, 10-13, 20, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

33. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art fails to disclose or make obvious the lockout apparatus prevents actuation of the mechanical fuel valve between its two positions and therefore prevents communication of the fuel source with their respective lines and the engine. Further, the closest prior art fails to disclose or make obvious the fuel lockout apparatus preventing the second fuel source from coupling to the second fuel line, wherein this means that not only are the two not in fluid communication but they are not physically connected in any manner.

34. Champion discloses a dual fuel system as discussed above, but its lockout switch does not prevent the hose of the propane tank from even coupling to the engine fuel system lines.

Response to Arguments

35. Applicant's arguments with respect to claims 1-26 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN A. LATHERS whose telephone number is (571)272-1050. The examiner can normally be reached on 10:00 am-7:00 pm EST, Monday to Thursday.

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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lindsay Low can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/KEVIN A LATHERS/
Primary Examiner, Art Unit 3747

Notice of References Cited	Application/Control No. 14/738,060	Applicant(s)/Patent Under Reexamination SARDER ET AL.	
	Examiner KEVIN A. LATHERS	Art Unit 3747	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2007/0137591 A1	06-2007	Sugimoto; Yasuhiro	F02B43/00	123/41.7
*	B	US-2011/0168133 A1	07-2011	Pursifull; Ross Dykstra	F02M37/0064	123/495
	C	US-				
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

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	O					
	P					
	Q					
	R					
	S					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14738060	SARDER ET AL.
	Examiner	Art Unit
	KEVIN A LATHERS	3747

CPC- SEARCHED		
Symbol	Date	Examiner
F02D19/0613, 16/0605, 19/0647	07/28/2017	/K.L./
Y02T10/36	07/28/2017	/K.L./

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

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

SEARCH NOTES		
Search Notes	Date	Examiner
EAST including inventor and assignee search.	07/28/2017	/K.L./
Google key word search (e.g. "dual fuel generator").	07/28/2017	/K.L./
EAST and google search.	02/15/2018	/K.L./

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

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Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14738060	SARDER ET AL.
	Examiner	Art Unit
	KEVIN A LATHERS	3747

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	07/28/2017	02/15/2018							
	1	✓	✓							
	2	✓	O							
	3	✓	O							
	4	O	O							
	5	O	O							
	6	O	O							
	7	✓	✓							
	8	✓	✓							
	9	✓	✓							
	10	✓	O							
	11	O	O							
	12	O	O							
	13	O	O							
	14	✓	✓							
	15	✓	✓							
	16	✓	✓							
	17	✓	✓							
	18	✓	✓							
	19	✓	✓							
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	21	✓	O							
	22	✓	✓							
	23	✓	✓							
	24	✓	✓							
	25	✓	✓							
	26	✓	✓							

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IPR2025-01121

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	445	F02D19/0613.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S2	1204	F02D19/0605.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S3	3408	F02D19/0647.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S4	15258	Y02T10/36.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S5	808	(S1 S2 S3 S4) and (switch valve) near20 (propane natural adj gas gaseous lng cng) near20 (gasoline liquid diesel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:28
S6	79	(S1 S2 S3 S4) and (switch valve) near20 (propane natural adj gas gaseous lng cng) near20 (gasoline liquid diesel) and (second secondary auxiliary) near5 (regulat$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:29
S7	64	(S1 S2 S3 S4) and (switch valve) near20 (propane natural adj gas gaseous lng cng) near20 (gasoline liquid diesel) and (second secondary auxiliary) adj (regulat$3 pressure)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:44
S8	28	("5450832" | "20130220274" | "5325835"	USPAT	OR	OFF	2017/07/27

		| "5320078" | "4619240" | "6082323" | "6453877" | "5171487" | "6223730" | "6213083" | "4489699" | "5287839" | "8590510" | "5673670" | "4450821" | "5816224" | "6276345" | "4502453" | "20130047964" | "4372276" | "6401685" | "7905469" | "2722208" | "4895124" | "5161496" | "5379740" | "5438968" | "5419291" | "6914342" | "8342158").PN.				14:45
S9	124	("5450832" | "20130220274" | "5325835" | "5320078" | "4619240" | "6082323" | "6453877" | "5171487" | "6223730" | "6213083" | "4489699" | "5287839" | "8590510" | "5673670" | "4450821" | "5816224" | "6276345" | "4502453" | "20130047964" | "4372276" | "6401685" | "7905469" | "2722208" | "4895124" | "5161496" | "5379740" | "5438968" | "5419291" | "6914342" | "8342158").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:45
S10	421	(duel dual) near5 fuel near20 (engine generator) same (switch valve) near20 between	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:46
S11	0	dual adj fuel near20 engine same "switchover valve"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:17
S12	44	dual adj fuel near20 engine same (switch switchover) near5 valve	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:19
S13	49	"6591817"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:19
S14	63	("3799125" | "4150645" | "4265208" | "4303049" | "4305350" | "4323046" | "4353345" | "4391251" | "4398517" | "4524033" | "4671243" | "5450832" | "5524582" | "5623907" | "5720266" | "5816224" | "6035837").PN. OR ("6591817").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:20
S15	80	dual adj fuel near20 engine same (switch switchover select$3) near5 valve	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:21

S16	30	(("SARDER") near3 ("Mark")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S17	28	(("SOTIRIADES") near3 ("Aleko")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S18	41	(("DEHN") near3 ("James")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S19	15	(("JENISON") near3 ("Leigh")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S20	16	(("CHAMPION") near3 ("ENGINE") near3 ("TECHNOLOGY") near3 ("LLC")).AANM.	USPAT	OR	OFF	2017/07/27 15:25
S21	19	(("CHAMPION") near3 ("ENGINE") near3 ("TECHNOLOGY") near3 ("LLC")).as.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:26
S22	5	("20040240141" | "20060169238" | "20130098349" | "20130122439" | "4489699").PN. OR ("9435273").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:42
S23	41	("1973142" | "2315882" | "2381304" | "4068639" | "4227497" | "4335697").PN. OR ("4489699").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:43
S24	97	(dual multi multiple plural plurality) adj fuel near20 engine same (switch switchover changeover change switch$3) near5 (valve switch)	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 16:02
S25	1	(09/813622).APP.	USPAT; USOCR	OR	OFF	2017/07/27 16:03
S26	63	("3799125" | "4150645" | "4265208" | "4303049" | "4305350" | "4323046" | "4353345" | "4391251" | "4398517" | "4524033" | "4671243" | "5450832" | "5524582" | "5623907" | "5720266" | "5816224" | "6035837").PN. OR ("6591817").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 16:03
S27	64	("4335697" | "4393848" | "4430978" | "4606322" | "4683864" | "4825842" | "4922862" | "5379740" | "5474047" | "5479906" | "5755211" | "5775282").PN. OR ("6035837").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 16:34
S28	27	("5999888" | "6543395" | "4619240" | "20140366577" | "20120168023" | "20140202430" | "4463735" | "5668310" | "5224457").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 10:32
S29	0	(14/156204).APP.	USPAT; USOCR	OR	OFF	2017/07/28 11:33
S30	5	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (quick-connect connect$3) near20 (cover flange)	USPAT; USOCR	OR	OFF	2017/07/28 11:47
S31	109	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (quick-connect connect$3) near20 (cover flange)	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2017/07/28 11:47

			EPO; JPO; DERWENT; IBM_TDB			
S32	280	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (cover flange)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 11:48
S33	171	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (cover flange) not S31	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 11:48
S34	5	"9435273"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 14:35
S35	1	"20070137591"	USPAT	OR	OFF	2018/02/12 15:56
S37	34	(champion near3 engine).as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/02/12 15:59
S38	95	dual adj fuel near20 valve near10 switch	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:19
S39	48	"4489699"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30
S40	5	"20070137591"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30
S41	29	"3412258"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30

S42	3	"20100258099"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30
S43	53	"5611312"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:30
S44	138	(S39 S40 S41 S42 S43)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/02/12 16:31
S45	1	(10/591304).APP.	USPAT; USOCR	OR	OFF	2018/02/12 16:45
S46	6	("6332433" | "7146962").PN. OR ("7325519").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/02/12 16:46
S47	35	(US-20020014077-$ or US-20030168024-$ or US-20110168133-$ or US-20120204835-$ or US-20030010320-$ or US-20160363099-$ or US-20170037796-$ or US-20020134362-$ or US-20140202430-$ or US-20160221518-$ or US-20070137591-$).did. or (US-5320078-$ or US-5450832-$ or US-5816224-$ or US-6591817-$ or US-5524582-$ or US-4570605-$ or US-4712516-$ or US-9435273-$ or US-4489699-$ or US-4305350-$ or US-4353345-$ or US-6035837-$ or US-6904873-$ or US-7045916-$ or US-5092305-$).did. or (US-2558884-$ or US-2470747-$ or US-3022425-$ or US-3451424-$).did. or (JP-2004278332-$).did. or (US-20080290531-$ or US-20130047964-$ or US-4463735-$ or CN-203796423-$).did.	US-PGPUB; USPAT; USOCR; JPO; DERWENT	OR	OFF	2018/02/12 17:19
S48	35	(US-20020014077-$ or US-20030168024-$ or US-20110168133-$ or US-20120204835-$ or US-20030010320-$ or US-20160363099-$ or US-20170037796-$ or US-20020134362-$ or US-20140202430-$ or US-20160221518-$ or US-20070137591-$).did. or (US-5320078-$ or US-5450832-$ or US-5816224-$ or US-6591817-$ or US-5524582-$ or US-4570605-$ or US-4712516-$ or US-9435273-$ or US-4489699-$ or US-4305350-$ or US-4353345-$ or US-6035837-$ or US-6904873-$ or US-7045916-$ or US-5092305-$).did. or (US-2558884-$ or US-2470747-$ or US-3022425-$ or US-3451424-$).did. or (JP-2004278332-$).did. or (US-20080290531-	US-PGPUB; USPAT; USOCR; JPO; DERWENT	OR	OFF	2018/02/13 17:40

		$ or US-20130047964-$ or US-4463735-$ or CN-203796423-$).did.				
S50	17	S48 and regulator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/02/13 17:40

EAST Search History (Interference)

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(Not for submission under 37 CFR 1.99)

Application Number	14738060
Filing Date	2015-06-12
First Named Inventor	Mark J. Sarder et al.
Art Unit	3747
Examiner Name	Kevin A. Lathers
Attorney Docket Number	CET1090.019

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	1	2060477	CN	U	1990-08-15	Zhao Yunying		

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	Application Number	14738060
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	First Named Inventor	Mark J. Sarder et al.
	Art Unit	3747
	Examiner Name	Kevin A. Lathers
	Attorney Docket Number	CET1090.019

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Application Number	14738060
	Filing Date	2015-06-12
	First Named Inventor	Mark J. Sarder et al.
	Art Unit	3747
	Examiner Name	Kevin A. Lathers
	Attorney Docket Number	CET1090.019

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☒ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Stephanie M. Laundre/	Date (YYYY-MM-DD)	2018-02-22
Name/Print	Stephanie M. Laundre	Registration Number	65124

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Espacenet

Bibliographic data: CN2060477 (U) — 1990-08-15

CARBURETTOR

Inventor(s): YUNYING ZHAO [CN] ± (ZHAO YUNYING)

Applicant(s): ZHAO YUNYING [CN] ± (ZHAO YUNYING)

Classification: **- international:** ***F02M3/05;*** (IPC1-7): F02M3/05
- cooperative:

Application number: CN1989217629U 19890927

Priority number(s): CN1989217629U 19890927

Abstract of CN2060477 (U)

The utility model relates to a carburetor used for a combustion engine. The carburetor used for a combustion engine is characterized in that a fuel oil switch is arranged at a fuel inlet of a carburetor, and a restoring spring is arranged on a valve core of the fuel oil switch. A torsional handle of the valve core is connected with an operation draw rod. When an automobile is put into gear to slide down a slope, the fuel oil switch is closed by a driver through the operation draw rod, and the purpose of oil saving is achieved. When the operation draw rod is released, the fuel oil switch is automatically restored. The structure of the carburetor used for a combustion engine is simple. The current carburetor is convenient to modify. The carburetor used for a combustion engine is particularly suitable for a vehicle which often runs in a mountain area.

(19)中华人民共和国专利局　　(11)公告号 CN 2060477U

(12)实用新型专利申请说明书

(21) 申请号 89217629.6　　(51) Int.Cl⁵ F02M 3/05

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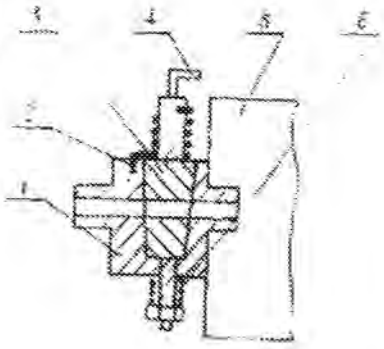
(74)专利代理机构 河北省专利事务所
代理人 朱振寨

说明书页数: 2　　附图页数: 2

(54)实用新型名称 一种汽化器

(57)摘要

供摩托发动机使用的汽化器，其特征是汽化器的燃气入口处设有一燃油开关或开关的阀芯上设有复位弹簧，阀芯拉把与操作拉杆连接。当汽车下坡连续行时，可拉起拉杆关闭燃油开关，达到节油目的。拉起拉杆，燃油开关自动复位。本实用新型结构简单，对现行汽化器改造方便，特别适用于经常在山区行驶的车辆。



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权 利 要 求 书

1、一种燃油发动机使用的汽化器，其特征在于所述的汽化器燃油入口处，有一燃油开关。

2、根据权利要求1所述的汽化器，其特征在于燃油开关由阀体1、复位弹簧2、阀芯3、扭把4和拉紧弹簧6组成。

3、根据权利要求1或2所述的汽化器，其特征在于所述阀体1与汽化器外壳5，可以设计为一体或分离式。

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说　　明　　书

一种汽化器

本实用新型属于一种供燃烧发动机使用的汽化器。

现有汽车发动机使用的汽化器，燃油入口都没有燃油开关，给操作规程规定，汽车下坡时，不得空挡滑行，以保证汽车发动机带动压气机工作，使制车有足够气压，而汽车下坡挂挡滑行时，发动机处于被驱动状态，发动机不需要汽化器供给可燃混合汽，现有技术决定了只要发动机工作，燃油泵就通过汽化器向发动机供给可燃混合汽，这样大量的燃油被浪费掉。

本实用新型的目的是，当汽车下坡挂挡滑行时，关闭汽化器燃油入口，使发动机在不能燃油的情况下，带动机油泵，压汽机工作，达到下坡节油的目的。

以下结合附图对本实用新型进行详细描述。

附图1为汽车发动系统示意图。

附图2为本实用新型燃油开关结构示意图。

参看附图1，发动机工作时，带动机油泵、燃油泵和压气机工作，机油泵向发动机供给润滑机油，燃油泵通过汽化器向发动机供给可燃混合汽，压气机供制车足够的气压，所以现有技术的缺点是，只要发动机工作，燃油泵就会通过汽化器向发动机供给可燃混合气。

当汽车下坡时，汽车可挂挡滑行，由于发动机处于被驱动状态，不需要汽化器供给可燃混合气，司机可通过拉杆关闭汽化器燃油入口开关，使燃油不能进入汽化器，同时关闭点火开关，发动机在不

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烧燃油的情况下，带动机油泵、压气机工作，这样即保证了发动机的润滑和制车气压，又达到节省燃油的目的，下坡终止，打开点火开关和汽化器燃油入口开关，汽车恢复正常运行。

参看图2，汽化器燃油进口，由阀体1，复位弹簧2，阀芯3，扭把4及拉簧弹簧6组成了燃油开关，阀体1与汽化器外壳5可是分离式，也可制成一体，需要关闭燃油进口时，司机通过拉杆旋动扭把4，使阀芯3上的孔与阀体1上的孔错开，使汽化器进口断开，释放拉杆阀芯3在复位弹簧2作用下复位，打开汽化器进油口，拉簧弹簧6将阀芯3与阀体1紧密接触，以防接触面漏油。

本实用新型结构简单，对经常行驶在山区的车辆，节油效果更显著，实现了车辆下坡连续安全滑行，可广泛用于各种汽油车和燃油车。

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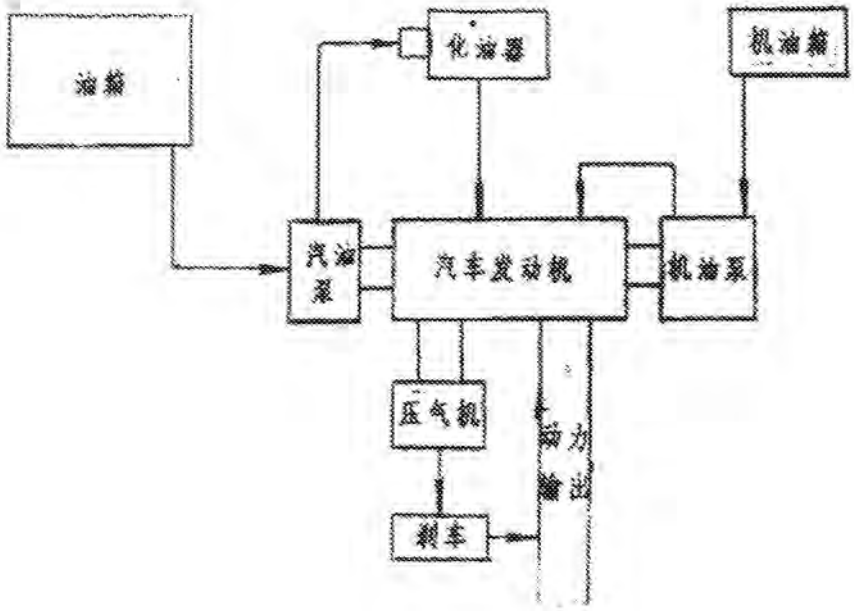


图1

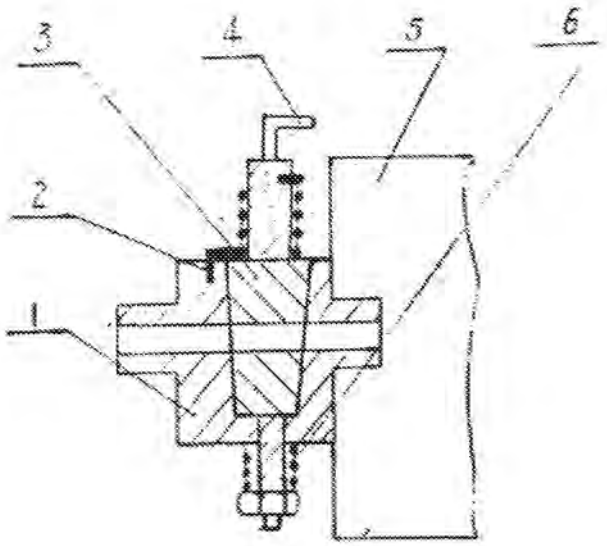


图2

Electronic Acknowledgement Receipt

EFS ID:	31860663
Application Number:	14738060
International Application Number:	
Confirmation Number:	9670
Title of Invention:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
First Named Inventor/Applicant Name:	Mark J. Sarder
Customer Number:	26629
Filer:	Stephanie Mueller Laundre/Robyn Templin
Filer Authorized By:	Stephanie Mueller Laundre
Attorney Docket Number:	CET1090.019
Receipt Date:	22-FEB-2018
Filing Date:	12-JUN-2015
Time Stamp:	14:47:42
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	Information Disclosure Statement (IDS) Form (SB08)	SuppIDS.pdf	1034613 08ef55cegeef84377c697394e0da01144dc e0c4	no	4

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2	Foreign Reference	FPD1-CN2060477U.pdf	451233 2141ee71ce689dab107045535acd6671165 25e46	no	7
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New International Application Filed with the USPTO as a Receiving Office

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Customer No. 26629
Confirmation No. 9670

Patent
Attorney Docket No. CET1090.019

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Sarder et al.
Serial No.	:	14/738,060
Filed	:	June 12, 2015
For	:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
Group Art No.	:	3747
Examiner	:	Kevin A. Lathers

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

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Date: November 3, 2017

/Robyn L. Templin/
Signature

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

AMENDMENT/RESPONSE TO OFFICE ACTION
MAILED AUGUST 3, 2017

Dear Sir:

Responsive to the Office Action mailed August 3, 2017, please consider the following remarks:

In the Claims

1. (Original) A mechanical fuel lockout switch for a dual fuel engine comprising:

a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line; and

a fuel lockout apparatus coupled to the mechanical fuel valve;

wherein the mechanical fuel lockout switch:

communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and

communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position.

2. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source communicates with the dual fuel engine.

3. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the fuel lockout apparatus is configured to:

prevent the second fuel source from coupling to the second fuel line while the mechanical fuel valve is in the first position; and

permit the second fuel source to couple to the second fuel line while the mechanical fuel valve is in the second position.

4. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 3, wherein the fuel lockout apparatus comprises a flange rigidly coupled to the mechanical fuel valve that covers an inlet of the second fuel line while the mechanical fuel valve is in the first position and uncovers the inlet of the second fuel line while the mechanical fuel valve is in the second position.

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5. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 4, wherein the mechanical fuel valve rotates between the first position and the second position and the flange rotates transversely across the inlet of the second fuel line.

6. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 4, further comprising;

a first end of a quick-disconnect hose coupling attached to the inlet of the second fuel line; and

a second end of the quick-disconnect hose coupling attached to the second fuel source to mate with the first end of the quick-disconnect hose coupling to couple the second fuel source to the second fuel line.

7. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the mechanical fuel valve and the fuel lockout apparatus operate together to ensure that fuel from the first fuel source and fuel from the second fuel source are not simultaneously delivered to the dual fuel engine.

8. (Original) The mechanical fuel lockout switch for a dual fuel engine of claim 7, wherein the first fuel source provides liquid fuel from a liquid fuel tank to the dual fuel engine and the second fuel source provides gaseous fuel from a pressurized fuel container to the dual fuel engine.

9. (Original) A dual fuel generator and fuel delivery system comprising:

a dual fuel generator configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line;

a fuel regulator system located off board the dual fuel generator, the fuel regulator system comprising:

a primary pressure regulator coupled to a service valve of the pressurized fuel source and configured to regulate the fuel supplied from the pressurized fuel source to a reduced pressure; and

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a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator; and

a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line.

10. (Original) The dual fuel generator and fuel delivery system of claim 9 further comprising a fuel lockout apparatus coupled to the mechanical fuel valve; and

wherein when the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the liquid fuel source to the dual fuel generator and prevents the pressurized fuel source from coupling to the dual fuel generator, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the pressurized fuel source to couple to the dual fuel generator, and interrupts the liquid fuel source communication with the dual fuel generator.

11. (Original) The dual fuel generator and fuel delivery system of claim 9, wherein mechanical fuel valve opens and closes the liquid fuel line to selectively control fuel flow from the liquid fuel source to the dual fuel generator; and further comprises:

a fuel lockout apparatus coupled to the mechanical fuel valve and configured to prevent the pressurize fuel source from coupling to the gaseous fuel line while the mechanical fuel valve opens the liquid fuel line, and permit the pressurized fuel source to couple to the gaseous fuel line while the mechanical fuel valve closes the liquid fuel line.

12. (Original) The dual fuel generator and fuel delivery system of claim 11, wherein the fuel lockout apparatus is further configured to prevent the mechanical fuel valve from opening the liquid fuel line while the dual fuel generator receives fuel from the pressurized fuel source.

13. (Original) The dual fuel generator and fuel delivery system of claim 11, wherein the fuel lockout apparatus further comprises a fuel inlet cover that actuates with the mechanical fuel valve to cover an inlet of the gaseous fuel line while the mechanical fuel valve opens the liquid fuel line and to uncover mechanical fuel lockout switch the inlet of the gaseous fuel line when the mechanical fuel valve closes the liquid fuel line.

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14. (Original) The dual fuel generator and fuel delivery system of claim 9, further comprising:

a first end of a quick-connect hose coupling coupled to an outlet of the secondary pressure regulator; and

a second end of the quick-connect hose coupling coupled to an inlet of the gaseous fuel line to mate with the first end of the quick-connect hose coupling to couple the secondary pressure regulator to the gaseous fuel line.

15. (Original) The dual fuel generator and fuel delivery system of claim 9, further comprising a regulator mounting device secured to the pressurized fuel source with at least the secondary pressure regulator mounted on the regulator mounting device.

16. (Original) The dual fuel generator and fuel delivery system of claim 15, wherein the primary pressure regulator is mounted on the regulator mounting device.

17. (Original) The dual fuel generator and fuel delivery system of claim 16, wherein the pressurized fuel source comprises a pressurized fuel container having a collar; and

wherein the regulator mounting device secures to the collar so that the primary and secondary pressure regulators are positioned adjacent each other along an outer periphery of the collar.

18. (Original) The dual fuel generator and fuel delivery system of claim 9, wherein the primary and secondary pressure regulators are integral components of a dual stage pressure regulator.

19. (Original) A method of assembling a mechanical fuel lockout switch for an internal combustion engine comprising:

providing an internal combustion engine configured to operate on a fuel from a first fuel source and a different fuel from a second fuel source;

coupling a mechanical fuel valve to the internal combustion engine actuateable between a first position and a second position to selectively control fuel flow to the internal

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combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line; and

coupling a fuel lockout apparatus to the mechanical fuel valve;

wherein when the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the first fuel source to the internal combustion engine and prevents the second fuel source from coupling to the internal combustion engine, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the second fuel source to couple to the internal combustion engine, and interrupts the first fuel source communication with the internal combustion engine.

20. (Original) The method of claim 19, wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source is coupled to the internal combustion engine.

21. (Original) The method of claim 20, wherein the fuel lockout apparatus is further configured to:

prevent coupling of the second fuel source to the second fuel line while the mechanical fuel valve is in the first position; and

permit coupling of the second fuel source to the second fuel line while the mechanical fuel valve is in the second position.

22. (Original) The method of claim 19, wherein the fuel lockout apparatus comprises a fuel inlet cover configured to actuate in unison with the mechanical fuel valve to cover a fuel inlet on the internal combustion engine for the second fuel source when the mechanical fuel valve is in the first position and uncover the fuel inlet when the mechanical fuel valve is in the second position.

23. (Original) The method of claim 19, further comprising coupling a fuel regulator system to the second fuel source to reduce fuel pressure therefrom and deliver fuel to the second fuel line at a pressure required for operation of the internal combustion engine.

24. (Original) The method of claim 23, further comprising mounting the fuel regulator system to the second fuel source located off-board the internal combustion engine.

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25. (Original) The method of claim 23, further comprising:

coupling one end of a quick-disconnect hose coupling to an inlet on the internal combustion engine for the second fuel source; and

coupling a mating end of the quick-disconnect hose coupling to an outlet of the fuel regulator system.

26. (Original) The method of claim 19, further comprising providing gasoline in a liquid fuel tank as the first fuel source and LPG in a pressurized fuel container as the second fuel source.

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REMARKS

Claims 1-26 are pending in the present application. In the Office Action mailed August 3, 2017, the Examiner rejected claims 19-26 under 35 U.S.C. §112(b) or 35 U.S.C. §112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. The Examiner next rejected claims 1-3, 7-10, 14-20, and 22-26 under 35 U.S.C. §102(a)(1) as being anticipated by Champion (Champion Power (2014, Dec. & Jan.) 100153 Manual, retrieved from http://www.championpowerequipment.com/media/2400/100153_manual-english_12-4-14.pdf. Claims 1-3, 7-10, and 14-18 were rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of U.S. Patent No. 9,435,273.

Claims 4-6 and 11-13 were indicated as containing allowable subject matter. Such indication is appreciated.

Rejection under 35 U.S.C. §112(b) or 35 U.S.C. §112 (pre-AIA), second paragraph

The Examiner rejected claims 19-26 under 35 U.S.C. §112(b) or 35 U.S.C. §112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

In setting forth the rejection, the Examiner asserted that "[c]laims 19-26 provides for the use of a mechanical fuel switch on an internal combustion engine, but, since the claim does not set forth any steps involved in the method process of assembling the engine as is set forth as the claim objective, it is unclear what method/process applicant is intending to encompass." *Office Action*, August 3, 2017, p. 2. Applicant respectfully disagrees with the rejection.

According to MPEP §2173.02, "[i]n reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph." *MPEP §2173.02*. That is, "[a] decision on whether a claim is indefinite under 35 U.S.C. 112(b) or pre-AIA 35 U.S.C. 112, second paragraph requires a determination of whether those skilled in the art would understand what is claimed when the claim is read in light of the specification." *Id.* MPEP §2173.02 further states that the Examiner "should allow claims which define the patentable subject matter with a reasonable degree of particularity and distinctness," and that "[s]ome latitude in the manner of expression and the aptness of terms should be permitted." *Id.* The standard for compliance with

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the definiteness requirement of 35 U.S.C. 112(b) "is whether the claim meets the threshold requirements of clarity and precision set forth in the statute, not whether more suitable language or modes of expression are available." *Id.*

Claim 19 calls for "[a] *method of assembling a mechanical fuel lockout switch* for an internal combustion engine," with the claim then setting forth steps for providing such an assembly of a mechanical fuel lockout switch. The claimed steps include "coupling a mechanical fuel valve to the internal combustion engine" and "coupling a fuel lockout apparatus to the mechanical fuel valve." That claim 19 does not also set forth "any steps involved in the method/process of assembling the engine," as asserted by the Examiner, is immaterial as to whether the claim is definite under 35 U.S.C. §112, second paragraph, as the claim makes clear that the claimed method is one of "*assembling a mechanical fuel lockout switch* for an internal combustion engine," and not of assembling an internal combustion engine itself. As claim 19 calls for a step of "providing an internal combustion engine" and then calls for detailed steps of "coupling a mechanical fuel valve to the internal combustion engine" and "coupling a fuel lockout apparatus to the mechanical fuel valve," Applicant believes that those skilled in the art would understand what is called for in claim 19 and that claim 19 meets the threshold requirements of clarity and precision, such that claim 19 is definite under 35 U.S.C. §112, second paragraph.

In light of at least the above, Applicant contends that claim 19 and all claims depending therefrom are definite, and therefore respectfully requests withdrawal of the rejection of claims 19-26 under 35 U.S.C. §112, second paragraph.

Rejection under 35 U.S.C. §102(a)(1) as being anticipated by Champion 100153 Manual

Claims 1, 9, and 19

The Examiner rejected claims 1-3, 7-10, 14-20, and 22-26 - including independent claims 1, 9, and 19 - under 35 U.S.C. §102(a)(1) as being anticipated by Champion (Champion Power (2014, Dec. & Jan.) 100153 Manual.

In setting forth a collective rejection of claims 1-3, 7-10, 14-20, and 22-26, the Examiner asserted that:

> Regarding claims 1-3, 7-10, 14-20, and 22-26, the manual of Champion clearly anticipates the entirety of the claim limitations. The manual discloses a dual fuel generator internal combustion engine (Title page) which makes use [of] a fuel selector switch and valves (shown in picture on title page and elaborated upon through the text) to selectively allow gasoline or propane into the engine,

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> the propane being using a hose and passing through two regulators, one on the line and one within as per part #102 and the "fuel metering system" regulator disclosed on the last page.

Office Action, supra at 3. Applicant respectfully disagrees with the rejection and believes each of independent claims 1, 9, and 19 to be patentably distinct from that which is disclosed in Champion. That is, Champion does not anticipate that which is called for in independent claims 1, 9, and 19, as anticipation under pre-AIA 35 U.S.C. §102(a)(1) requires that "[t]he identical invention must be shown [in the reference] in as complete detail as is contained in the ... claim." *MPEP §2131* (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). As will be set forth in detail here below, Champion does not disclose each and every element of any of independent claims 1, 9, and 19 and thus does not anticipate the claims, as "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *MPEP §2131* (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987)).

Initially, Applicant believes that the present rejection of independent claims 1, 9, and 19 (and more generally all of claims 1-3, 7-10, 14-20, and 22-26), on its face, is deficient. According to MPEP § 706, "[t]he goal of examination is to clearly articulate any rejection early in the prosecution process so that the Applicant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity." *MPEP* §706. With respect to the rejection of the pending claims, the Examiner merely made blanket statements that Champion discloses the claimed elements, without giving any indication where the elements were allegedly taught in Champion. *See Office Action*, supra at 3. That is, the Examiner has not indicated "the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate," as required under MPEP §706.02(j). Accordingly, the Examiner has not "clearly articulate[d]" the rejection of any of claims 1-3, 7-10, 14-20, and 22-26, and the rejection is therefore believed to be deficient.

Regardless of the above, Applicant believes the rejection of at least of independent claims 1, 9, and 19 to be unsustainable. Specifically, Applicant believes that Champion does not teach or disclose that which is called for in independent claims 1, 9, and 19.

Claim 1 calls for a mechanical fuel lockout switch for a dual fuel engine provides for the selection of a desired fuel to operate the engine. The mechanical fuel lockout switch includes a mechanical fuel valve and a fuel lockout apparatus. The mechanical fuel valve actuates between a first position and a second position to selectively control fuel flow to the dual fuel engine from a

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first fuel source through a first fuel line and a second fuel source through a second fuel line. The fuel lockout apparatus couples to the mechanical fuel valve ensuring individual communication of the fuel sources to the engine. The mechanical fuel lockout switch communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position.

Claim 9 calls for a dual fuel generator and fuel delivery system includes a dual fuel generator configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line. The dual fuel generator and fuel delivery system also includes a fuel regulator system located off board the dual fuel generator to control the pressure of fuel from the pressurized fuel source and deliver the fuel at a desired pressure for operation of the generator. The fuel regulator system includes a primary pressure regulator coupled to a service valve of the pressurized fuel source and configured to regulate the fuel supplied from the pressurized fuel source to a reduced pressure. The fuel regulator system also includes a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator. The dual fuel generator and fuel delivery system further includes a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line.

Claim 19 calls for a method of assembling a mechanical fuel lockout switch for an internal combustion engine includes providing an internal combustion engine configured to operate on a fuel from a first fuel source and a different fuel from a second fuel source. The method also includes coupling a mechanical fuel valve to the internal combustion engine actuateable between a first position and a second position to selectively control fuel flow to the internal combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line. The method further includes coupling a fuel lockout apparatus to the mechanical fuel valve. When the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the first fuel source to the internal combustion engine and prevents the second fuel source from coupling to the internal combustion engine, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the

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second fuel source to couple to the internal combustion engine, and interrupts the first fuel source communication with the internal combustion engine.

Based on a reading of Champion, the reference discloses a dual fuel generator that "is a gasoline or LPG engine driven, alternating current (AC) generator. *See Champion*, Title page and p. 1. The generator includes a fuel selector switch, identified as component (10) on p. 6 of Champion and the drawing included thereon. *See Champion*, p. 6. The fuel selector switch is described as being "on the front panel of the generator… to choose between the fuel source desired, Gas or LPG," and "[t]o select a fuel source simply slide the switch cover to either the right or left, and this will uncover the fuel valve of the fuel selected, [where] the LPG fuel valve (A) is to the left of the switch cover [and] the gas fuel valve (B) is to the right of the switch cover." *Id.* at 14. "Once a fuel source has been selected, the user must turn the fuel valve to the vertical position to open the fuel valve (1)" and "[t]o turn a fuel valve to the off position the valve must be in the horizontal position (2)." *Id.* "The fuel selector switch cover is specifically designed not to slide to either side while a specific fuel has been selected and the valve is in the "ON" position [but] only when the fuel valves are in the "OFF" position can the cover slide side to side." *Id.*

However, Champion does not disclose that which is specifically called for in each of claims 1, 9, and 19 and does not anticipate those claims, as Champion does not expressly or inherently describe each and every element set forth therein, as required for anticipation under 35 U.S.C. §102(a)(1).

Claim 1 is distinct over Champion at least for the reason(s) that Champion does not disclose a mechanical fuel lockout switch for a dual fuel engine that includes "a mechanical fuel valve [that] actuates between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line" and/or "a fuel lockout apparatus couple[d] to the mechanical fuel valve ensuring individual communication of the fuel sources to the engine." First, Champion discloses separate valves for the separate fuel sources – LPG fuel valve (A) and gas fuel valve (B), *see Champion*, p. 14, but not a single mechanical fuel valve that *actuates between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line*, as called for in claim 1. Second, Champion only discloses that the selector switch cover slides horizontal back and forth to selectively cover one of the LPG fuel valve (A) and gas fuel valve (B), but not that the switch cover is *coupled to* either of the fuel valves, as called for in claim 1 "a fuel lockout

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apparatus couple[d] to the mechanical fuel valve"). Accordingly, Champion does not anticipate claim 1 under 35 U.S.C. §102(a)(1).

Claim 9 is distinct over Champion at least for the reason(s) that Champion does not disclose a dual fuel generator and fuel delivery system that includes "a fuel regulator system located off board the dual fuel generator [and having]... a primary pressure regulator coupled to a service valve of the pressurized fuel source and a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator," nor does Champion disclose "a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line." First, Champion only discloses use of a "LPG Hose with Regulator," *see Champion*, p. 8, but provides no teaching of a fuel regulator system located off board the dual fuel generator and having a primary pressure regulator and separate secondary pressure regulator, as called for in claim 9. Second, Champion discloses separate valves for the separate fuel sources – LPG fuel valve (A) and gas fuel valve (B), *see Champion*, p. 14, but not a mechanical fuel valve *actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line*, as called for in claim 9. Accordingly, Champion does not anticipate claim 9 under 35 U.S.C. §102(a)(1).

Claim 19 is distinct over Champion at least for the reason(s) that Champion does not disclose a method that includes "coupling a mechanical fuel valve to the internal combustion engine actuateable between a first position and a second position to selectively control fuel flow to the internal combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line" and "coupling a fuel lockout apparatus to the mechanical fuel valve." First, Champion discloses separate valves for the separate fuel sources – LPG fuel valve (A) and gas fuel valve (B), *see Champion*, p. 14, but not a single mechanical fuel valve that is *actuateable between a first position and a second position to selectively control fuel flow to the internal combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line*, as called for in claim 19. Second, Champion only discloses that the selector switch cover slides horizontal back and forth to selectively cover one of the LPG fuel valve (A) and gas fuel valve (B), but not a step of *coupling* the switch cover to either of the LPG or gas fuel valve, as called for in claim 19, nor does Champion disclose that the selector

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switch would communicate the first fuel source to the internal combustion engine and prevent the second fuel source from coupling to the internal combustion engine when in the first position and cause the fuel lockout apparatus to permit the second fuel source to couple to the internal combustion engine and interrupt the first fuel source communication with the internal combustion engine when in the second position, as further called for in claim 19.

For at least the reasons set forth above, Champion does not anticipate any of claims 1, 9, or 19 under 35 U.S.C. §102(a)(1) since, according to MPEP §2131, "to anticipate a claim, the reference must teach every element of the claim." Appellant therefore respectfully requests withdrawal of the rejection of claims 1, 9, and 19, along with the rejection of all claims depending therefrom.

Double Patenting Rejection

The Examiner rejected claims 1-3, 7-10, and 14-18 on the ground of nonstatutory double patenting as being unpatentable over claim 1 of U.S. Patent No. 9,435,273 (hereinafter the "273 patent"), with the Examiner asserting that "the limitations of claims 1-3, 7-10, and 14-18 are disclosed by the limitations of claim 1 except a detachable hose and two regulators for the transfer of one fuel." *Office Action*, supra at 5. The Examiner then further stated that "examiner takes official notice that it would have been obvious to one of ordinary skill in the art before the filing date of the invention to modify a dual fuel generator to include a fuel hose that can couple to and from the engine and two regulators to regulate the incoming pressure to the engine as these parts are not only routinely used in such a case but also are known to improve the fueling characteristics of the engine." *Id.* Applicant respectfully disagrees with the rejection.

First, Applicant believes that Examiner's application of Official Notice in rejecting claims 1-3, 7-10, and 14-18 is inappropriate under the Manual Patent Examining Procedure (MPEP). "The Examiner may take Official Notice of facts outside of the record which are capable of instant and unquestionable demonstration as being 'well-known' in the art." *MPEP §2144.03.* However, MPEP §2144.03 is clear that "such rejections [relying on official notice] should be judiciously applied," be "rare," and be used "[i]n limited circumstances." *Id.* Furthermore, "any facts so noticed should be of notorious character and serve only to 'fill in the gaps' in an insubstantial manner which might exist in the evidentiary showing made by the Examiner to support a particular ground for rejection." *Id.* Applicant does not believe that the Examiner's use of Official Notice is merely to "fill in the gaps." That is, in as much as Applicant can gather from the limited statements/rationale set forth by the Examiner, it appears that the Examiner has taken

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Official Notice of entire elements of the claims, thereby effectively attempting to teach substantial claim limitations, rather than simply "fill in the gaps." Thus, the use of Official Notice is hereby traversed. The Examiner must "cite a reference in support of his or her position" should the Applicant traverse the assertion. *Id.*

Regardless of the above, Applicant believes that the double patenting rejection is improper. MPEP §804(II)(B)(1) states that any obviousness-type double patenting rejection should make clear:

(A) The differences between the inventions defined by the conflicting claims - a claim in the patent compared to a claim in the application; and
(B) The reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim at issue would have been an obvious variation of the invention defined in a claim in the patent. *Id.* (emphasis added).

The Examiner's double patenting rejection of claims 1-3, 7-10, and 14-18 does not satisfy either of the requirements set forth in section (A) or section (B) of MPEP §804(II)(B)(1). Referring first to section (A), MPEP §804 requires a double patenting rejection make clear a **claim-to-claim** comparison between the referenced patent and the rejected claims. The Examiner's rejection does not include any claim-to-claim comparison between the present application and the '273 patent. Instead, the Examiner relies on a generalized statement that "the limitations of claims 1-3, 7-10, and 14-18 are disclosed by the limitations of claim 1 except a detachable hose and two regulators for the transfer of one fuel" and a general reference to "official notice." Since the Examiner's rejection relies on a comparison of a merely generalized referenced to the entirety of claims 1-3, 7-10, and 14-18 to claim 1 of the '273 patent , rather than a **claim-to-claim** comparison, the rejection does not meet the requirements of MPEP §804 on its face. In order to satisfy the claim-to-claim comparison required by MPEP §804, the Examiner must make clear the differences between each of the claims of the present application and claim 1 of the '273 patent. The Examiner has not provided any such analysis to date, and therefore has not properly established the grounds required in section (A) of MPEP §804 for an obviousness-type double patenting rejection.

The Examiner also has not satisfied the requirements set forth in section (B) of MPEP §804 for establishing an obviousness-type double patenting rejection. Namely, the Examiner has not provided any reasoning as to why a person of ordinary skill in the art would conclude that

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the invention defined in any of claims 1-3, 7-10, and 14-18 is an obvious variant of the invention defined in claim 1 of the '273 Patent. Again, the Examiner's rejection focuses solely on a generalized description of the invention as a whole (i.e., the collection of claims 1-3, 7-10, and 14-18) and does not specifically reference any of the claims of the present application or any of the claim elements specifically called for in claim 1 of the '273 patent. As such, the rejection of claims 1-3, 7-10, and 14-18does not establish a reasoned comparison tied to the actual claims of the present application and does not satisfy the requirements of section (B) of MPEP §804.

In summary, nowhere has the Examiner identified the reasons why any of claims 1-3, 7-10, and 14-18 of the present application are obvious variants of the invention called for in claim 1 of the '273 patent. As such, the Examiner has not provided basis for the assertion that claims 1-3, 7-10, and 14-18 are not patentably distinct from claim 1 of the '273 patent as required to support a non-statutory double patenting rejection under 35 U.S.C. §101.

Notwithstanding the deficiencies in the rejection, Applicant further submits that the nonstatutory obviousness-type double patenting rejections should be withdrawn because the claims of the present application are patentably distinct from claim 1 of the '273 Patent. According to MPEP §804, in situations where as here the application under examination is the later-filed application, a nonstatutory obviousness-type double patenting rejection is appropriate where "the invention claimed in the application would have been anticipated by, or an obvious variation of, the invention claimed in the patent." *MPEP* §804.

In light of at least the above, Applicant respectfully asserts that the inventions claimed in the present application are **not** anticipated by, or an obvious variation of, the invention of claim 1 of the '273 patent, when taken alone or in combination with official notice. Applicant therefore believes the double patenting rejection to be improper and respectfully requests the withdrawal of the rejection of claims 1-3, 7-10, and 14-18 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of the '273 patent.

Conclusion

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-26.

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Applicant appreciates the Examiner's consideration of these Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

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Dated: November 3, 2017
Attorney Docket No.: CET1090.019

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General Authorization and Extension of Time

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-2623. Should no proper payment be enclosed herewith, as by credit card authorization being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-2623. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extensions under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-2623. Please consider this a general authorization to charge any fee that is due in this case, if not otherwise timely paid, to Deposit Account No. 50-2623.

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Electronic Acknowledgement Receipt

EFS ID:	30850337
Application Number:	14738060
International Application Number:	
Confirmation Number:	9670
Title of Invention:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
First Named Inventor/Applicant Name:	Mark J. Sarder
Customer Number:	26629
Filer:	Kevin Roger Rosin./Robyn Templin
Filer Authorized By:	Kevin Roger Rosin.
Attorney Docket Number:	CET1090.019
Receipt Date:	03-NOV-2017
Filing Date:	12-JUN-2015
Time Stamp:	14:22:41
Application Type:	Utility under 35 USC 111(a)

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Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response.pdf	196263 aaa465e2c694c76dfd34e4858ccc11b10d382ed23	yes	18

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	7
	Applicant Arguments/Remarks Made in an Amendment	8	18
Warnings:			
Information:			
	Total Files Size (in bytes):	196263	

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.

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/738,060	Filing Date 06/12/2015	☐ To be Mailed

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ 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).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 11/03/2017

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	- 26	Minus	** 26	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	- 3	Minus	***3	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** 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 number found in the appropriate box in column 1.

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This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/738,060	06/12/2015	Mark J. Sarder	CET1090.019	9670

26629 7590 08/03/2017
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

EXAMINER	
LATHERS, KEVIN ANTHONY	

ART UNIT	PAPER NUMBER
3747	

NOTIFICATION DATE	DELIVERY MODE
08/03/2017	ELECTRONIC

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

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

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

info@zpspatents.com
sml@zpspatents.com

Office Action Summary	Application No. 14/738,060	Applicant(s) SARDER ET AL.	
	Examiner KEVIN A. LATHERS	Art Unit 3747	AIA (First Inventor to File) Status Yes

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/12/2015*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ 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.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-26* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-3,7-10 and 14-26* is/are rejected.

8)☒ Claim(s) *4-6 and 11-13* is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, 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.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *06/12/2015* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ 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)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

4) ☒ Other: *NPL*

Champion - EX2093, Page 206 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

DETAILED ACTION

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 112

1. The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 19-26 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

3. Claims 19-26 provides for the use of a mechanical fuel switch on an internal combustion engine, but, since the claim does not set forth any steps involved in the method/process of assembling the engine as is set forth as the claim objective, it is unclear what method/process applicant is intending to encompass. This makes t

Claim Rejections - 35 USC § 102

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

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

5. Claim(s) 1-3, 7-10, 14-20, and 22-26 is/are rejected under 35 U.S.C. 102(a)(1) as being clearly anticipated by Champion (Champion Power (2014, Dec. & Jan.). 100153 Manual. Retrieved from http://www.championpowerequipment.com/media/2400/100153_manual-english_12-4-14.pdf).

6. **Regarding claims 1-3, 7-10, 14-20, and 22-26,** the manual of Champion clearly anticipates the entirety of the claim limitations. The manual discloses a dual fuel generator internal combustion engine (Title page) which makes use a fuel selector switch and valves (shown in picture on title page and elaborated upon through the text) to selectively allow gasoline or propane into the engine, the propane being using a hose couple and passing through two regulators, one on the line and one within as per part #102 and the "fuel metering system" regulator disclosed on the last page.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have

been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For

more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

8. Claims 1-3, 7-10, and 14-18 rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of U.S. Patent No. 9,435,273. Although the claims at issue are not identical, they are not patentably distinct from each other because the limitations of claims 1-3, 7-10, and 14-18 are disclosed by the limitations of claim 1 except a detachable hose and two regulators for the transfer of one fuel. However, examiner takes official notice that it would have been obvious to one of ordinary skill in the art before the filing date of the invention to modify a dual fuel generator to include a fuel hose that can couple to and from the engine and two regulators to regulate the incoming pressure to the engine as these parts are not only routinely used in such a case but also are known to improve the fueling characteristics of the engine.

Allowable Subject Matter

9. Claims 4-6 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art fails to disclose or make obvious the use of a dual fuel lockout switch on a dual fuel internal combustion engine wherein when the lockout switch is in one position it prevents the fuel source from coupling to the fuel system *lines* of the engine.

11. Champion discloses a dual fuel system as discussed above, but its lockout switch does not prevent the hose of the propane tank from even coupling to the engine fuel system lines.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Monros (US 2014/0202430) discloses an engine which makes use of a gasoline supply 16 and a propane supply 18 which uses a selector switch and valve 20 to allow one or the other of the fuels to the engine (Fig. 1, shown). Stoltman (US 4,463,735) discloses an engine which makes use of a two fuels, a liquid and gaseous, which are metered by a fuel selection valve according to the pressure of the system (Fig. 1, shown).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN A. LATHERS whose telephone number is (571)272-1050. The examiner can normally be reached on 10:00 am-7:00 pm EST, Monday to Thursday.

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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lindsay Low can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/KEVIN A LATHERS/
Examiner, Art Unit 3747

Notice of References Cited	Application/Control No. 14/738,060	Applicant(s)/Patent Under Reexamination SARDER ET AL.	
	Examiner KEVIN A. LATHERS	Art Unit 3747	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2014/0202430 A1	07-2014	Monros; Serge V.	F02D19/0615	123/445
*	B	US-9,435,273 B2	09-2016	Sarder; Mark J.		1/1
*	C	US-4,463,735	08-1984	Stoltman		123/525
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	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	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Champion Power (2014, Dec. & jan.). 100153 Manul. Retrieved from http://www.championpowerequipment.com/media/2400/100153_manual-english_12-4-14.pdf
	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.

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BIB DATA SHEET

CONFIRMATION NO. 9670

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
14/738,060	06/12/2015	123	3747	CET1090.019

APPLICANTS
Champion Engine Technology, LLC, Sussex, WI;

INVENTORS
Mark J. Sarder, Waukesha, WI;
Aleko D. Sotiriades, Cedarburg, WI;
James J. Dehn, Brookfield, WI;
Leigh Jenison, Hartland, WI;

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

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

** **IF REQUIRED, FOREIGN FILING LICENSE GRANTED** ** SMALL ENTITY **
06/22/2015

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☐ No Verified and Acknowledged /KEVIN ANTHONY LATHERS/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		WI	5	26	3

ADDRESS
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074
UNITED STATES

TITLE
DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14738060	SARDER ET AL.
	Examiner	Art Unit
	KEVIN A LATHERS	3747

CPC- SEARCHED		
Symbol	Date	Examiner
F02D19/0613, 16/0605, 19/0647	07/28/2017	/K.L./
Y02T10/36	07/28/2017	/K.L./

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

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

SEARCH NOTES		
Search Notes	Date	Examiner
EAST including inventor and assignee search.	07/28/2017	/K.L./
Google key word search (e.g. "dual fuel generator").	07/28/2017	/K.L./

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14738060	SARDER ET AL.
	Examiner	Art Unit
	KEVIN A LATHERS	3747

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

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

CLAIM		DATE								
Final	Original	07/28/2017								
	1	✓								
	2	✓								
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	21	✓								
	22	✓								
	23	✓								
	24	✓								
	25	✓								
	26	✓								

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Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	
First Named Inventor	Mark J. Sarder et al.
Art Unit	
Examiner Name	
Attorney Docket Number	CET1090.019

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	4502453		1985-03-05	Kabasin et al.	
	2	5171487		1992-12-15	Hudz	
	3	5320078		1994-06-14	Lorraine	
	4	5450832		1995-09-19	Graf	
	5	5673670		1997-10-07	Powell et al.	
	6	6223730	B1	2001-05-01	Hasegawa et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Mark J. Sarder et al.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CET1090.019

	1					

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	1							☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/KEVIN A LATHERS/	Date Considered	05/03/2017

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.A.L./

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)	Application Number	
	Filing Date	
	First Named Inventor	Mark J. Sarder et al.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CET1090.019

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Timothy J. Ziolkowski/	Date (YYYY-MM-DD)	2015-06-12
Name/Print	Timothy J. Ziolkowski	Registration Number	38368

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.A.D./

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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 the Freedom of Information Act requires disclosure of these record s.

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

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

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

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

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

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

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

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /K.A.D./

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	5	"9435273"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 14:35
S1	445	F02D19/0613.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S2	1204	F02D19/0605.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S3	3408	F02D19/0647.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S4	15258	Y02T10/36.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:25
S5	808	(S1 S2 S3 S4) and (switch valve) near20 (propane natural adj gas gaseous lng cng) near20 (gasoline liquid diesel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:28
S6	79	(S1 S2 S3 S4) and (switch valve) near20 (propane natural adj gas gaseous lng cng) near20 (gasoline liquid diesel) and (second secondary auxiliary) near5 (regulat$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:29
S7	64	(S1 S2 S3 S4) and (switch valve) near20	US-PGPUB;	OR	OFF	2017/07/27

		(propane natural adj gas gaseous lng cng) near20 (gasoline liquid diesel) and (second secondary auxiliary) adj (regulat$3 pressure)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			14:44
S8	28	("5450832" | "20130220274" | "5325835" | "5320078" | "4619240" | "6082323" | "6453877" | "5171487" | "6223730" | "6213083" | "4489699" | "5287839" | "8590510" | "5673670" | "4450821" | "5816224" | "6276345" | "4502453" | "20130047964" | "4372276" | "6401685" | "7905469" | "2722208" | "4895124" | "5161496" | "5379740" | "5438968" | "5419291" | "6914342" | "8342158").PN.	USPAT	OR	OFF	2017/07/27 14:45
S9	124	("5450832" | "20130220274" | "5325835" | "5320078" | "4619240" | "6082323" | "6453877" | "5171487" | "6223730" | "6213083" | "4489699" | "5287839" | "8590510" | "5673670" | "4450821" | "5816224" | "6276345" | "4502453" | "20130047964" | "4372276" | "6401685" | "7905469" | "2722208" | "4895124" | "5161496" | "5379740" | "5438968" | "5419291" | "6914342" | "8342158").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:45
S10	421	(duel dual) near5 fuel near20 (engine generator) same (switch valve) near20 between	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 14:46
S11	0	dual adj fuel near20 engine same "switchover valve"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:17
S12	44	dual adj fuel near20 engine same (switch switchover) near5 valve	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:19
S13	49	"6591817"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:19
S14	63	("3799125" | "4150645" | "4265208" | "4303049" | "4305350" | "4323046" | "4353345" | "4391251" | "4398517" | "4524033" | "4671243" | "5450832" | "5524582" | "5623907" | "5720266" | "5816224" | "6035837").PN. OR ("6591817").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:20

S15	80	dual adj fuel near20 engine same (switch switchover select$3) near5 valve	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/27 15:21
S16	30	(("SARDER") near3 ("Mark")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S17	28	(("SOTIRIADES") near3 ("Aleko")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S18	41	(("DEHN") near3 ("James")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S19	15	(("JENISON") near3 ("Leigh")).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:25
S20	16	(("CHAMPION") near3 ("ENGINE") near3 ("TECHNOLOGY") near3 ("LLC")).AANM.	USPAT	OR	OFF	2017/07/27 15:25
S21	19	(("CHAMPION") near3 ("ENGINE") near3 ("TECHNOLOGY") near3 ("LLC")).as.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:26
S22	5	("20040240141" | "20060169238" | "20130098349" | "20130122439" | "4489699").PN. OR ("9435273").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:42
S23	41	("1973142" | "2315882" | "2381304" | "4068639" | "4227497" | "4335697").PN. OR ("4489699").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 15:43
S24	97	(dual multi multiple plural plurality) adj fuel near20 engine same (switch switchover changeover change switch$3) near5 (valve switch)	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 16:02
S25	1	(09/813622).APP.	USPAT; USOCR	OR	OFF	2017/07/27 16:03
S26	63	("3799125" | "4150645" | "4265208" | "4303049" | "4305350" | "4323046" | "4353345" | "4391251" | "4398517" | "4524033" | "4671243" | "5450832" | "5524582" | "5623907" | "5720266" | "5816224" | "6035837").PN. OR ("6591817").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 16:03
S27	64	("4335697" | "4393848" | "4430978" | "4606322" | "4683864" | "4825842" | "4922862" | "5379740" | "5474047" | "5479906" | "5755211" | "5775282").PN. OR ("6035837").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/07/27 16:34
S28	27	("5999888" | "6543395" | "4619240" | "20140366577" | "20120168023" | "20140202430" | "4463735" | "5668310" | "5224457").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 10:32
S29	0	(14/156204).APP.	USPAT; USOCR	OR	OFF	2017/07/28 11:33
S30	5	(gas gasoline liquid near5 fuel) near20	USPAT;	OR	OFF	2017/07/28

		(propane natural adj gas) near20 (fill$3 fueling) same (quick-connect connect$3) near20 (cover flange)	USOCR			11:47
S31	109	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (quick-connect connect$3) near20 (cover flange)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 11:47
S32	280	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (cover flange)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 11:48
S33	171	(gas gasoline liquid near5 fuel) near20 (propane natural adj gas) near20 (fill$3 fueling) same (cover flange) not S31	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/07/28 11:48

EAST Search History (Interference)

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7/ 28/ 2017 3:00:52 PM
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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	14738060
Filing Date	2015-06-12
First Named Inventor	Mark J. Sarder et al.
Art Unit	3747
Examiner Name	
Attorney Docket Number	CET1090.019

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	2722208		1955-11-01	Conroy, Jr. et al.	
	2	4372276		1983-02-08	Bernhardsson et al.	
	3	4450821		1984-05-29	Venning et al.	
	4	4489699		1984-12-25	Poehlman	
	5	4619240		1986-10-28	Bedford et al.	
	6	4895124		1990-01-23	Bartholomew	
	7	5287839		1994-02-22	Kondou et al.	
	8	5379740		1995-01-10	Moore et al.	

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	9	5419291		1995-05-30	Kimata et al.	
	10	5438968		1995-08-08	Johnson et al.	
	11	5816224		1998-10-06	Welsh et al.	
	12	6082323		2000-07-04	Winberg	
	13	6213083	B1	2001-04-10	Winberg	
	14	6276345	B1	2001-08-21	Nelson et al.	
	15	6401685	B1	2002-06-11	Warner	
	16	6453877	B1	2002-09-24	Lucier et al.	
	17	6914342	B1	2005-07-05	French	
	18	7905469	B2	2011-03-15	Nickels et al.	
	19	8342158	B2	2013-01-01	Ulrey et al.	

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	20	8590510	B2	2013-11-26	Sumilla et al.	
	21	5161496		1992-11-10	Matsushima et al.	
	22	5325835		1994-07-05	Kimata et al.	

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	1	20130047964	A1	2013-02-28	Kim	
	2	20130220274	A1	2013-08-29	Deshpande et al	

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	1	Honda EU20i LPG, March 20, 2012, https://www.youtube.com/watch?v=yBpq33aJmR0	☐
	2	JOHNSON et al., "Electronic Direct Fuel Injection (EDFI) for Small Two-Stroke Engines," SAE Technical Paper 1999-01-3312, Proceedings of the 1999 SAE Small Engine Technology Conference, Madison, WI, September 28-30, 1999, pp. 1-15	☐

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Examiner Signature	/KEVIN A LATHERS/	Date Considered	05/03/2017

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Art Unit	3747
Examiner Name	
Attorney Docket Number	CET1090.019

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Timothy J. Ziolkowski/	Date (YYYY-MM-DD)	2015-10-28
Name/Print	Timothy J. Ziolkowski	Registration Number	38368

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/738,060	06/12/2015	Mark J. Sarder	CET1090.019

CONFIRMATION NO. 9670

26629
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

PUBLICATION NOTICE

OC00000087914249

Title:DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

Publication No.US-2016-0363058-A1
Publication Date:12/15/2016

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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.

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Application Number	14738060
Filing Date	2015-06-12
First Named Inventor	Mark J. Sarder et al.
Art Unit	3747
Examiner Name	
Attorney Docket Number	CET1090.019

U.S.PATENTS						Remove
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	4	4489699		1984-12-25	Poehlman	
	5	4619240		1986-10-28	Bedford et al.	
	6	4895124		1990-01-23	Bartholomew	
	7	5287839		1994-02-22	Kondou et al.	
	8	5379740		1995-01-10	Moore et al.	

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	9	5419291		1995-05-30	Kimata et al.	
	10	5438968		1995-08-08	Johnson et al.	
	11	5816224		1998-10-06	Welsh et al.	
	12	6082323		2000-07-04	Winberg	
	13	6213083	B1	2001-04-10	Winberg	
	14	6276345	B1	2001-08-21	Nelson et al.	
	15	6401685	B1	2002-06-11	Warner	
	16	6453877	B1	2002-09-24	Lucier et al.	
	17	6914342	B1	2005-07-05	French	
	18	7905469	B2	2011-03-15	Nickels et al.	
	19	8342158	B2	2013-01-01	Ulrey et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14738060
	Filing Date	2015-06-12
	First Named Inventor	Mark J. Sarder et al.
	Art Unit	3747
	Examiner Name	
	Attorney Docket Number	CET1090.019

	20	8590510	B2	2013-11-26	Surnilla et al.	
	21	5161496		1992-11-10	Matsushima et al.	
	22	5325835		1994-07-05	Kimata et al.	

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

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20130047964	A1	2013-02-28	Kim	
	2	20130220274	A1	2013-08-29	Deshpande et al.	

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14738060
	Filing Date	2015-06-12
	First Named Inventor	Mark J. Sarder et al.
	Art Unit	3747
	Examiner Name	
	Attorney Docket Number	CET1090.019

	1	Honda EU20i LPG, March 20, 2012, https://www.youtube.com/watch?v=yBpq33aJmR0	☐
	2	JOHNSON et al., "Electronic Direct Fuel Injection (EDFI) for Small Two-Stroke Engines," SAE Technical Paper 1999-01-3312, Proceedings of the 1999 SAE Small Engine Technology Conference, Madison, WI, September 28-30, 1999, pp. 1-15	☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14738060
	Filing Date	2015-06-12
	First Named Inventor	Mark J. Sarder et al.
	Art Unit	3747
	Examiner Name	
	Attorney Docket Number	CET1090.019

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Timothy J. Ziolkowski/	Date (YYYY-MM-DD)	2015-10-28
Name/Print	Timothy J. Ziolkowski	Registration Number	38368

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: 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 the Freedom of Information Act requires disclosure of these record s.

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

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

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

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

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

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

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

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

Electronic Acknowledgement Receipt

EFS ID:	23918070
Application Number:	14738060
International Application Number:	
Confirmation Number:	9670
Title of Invention:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
First Named Inventor/Applicant Name:	Mark J. Sarder
Customer Number:	26629
Filer:	Timothy J. Ziolkowski/Robyn Templin
Filer Authorized By:	Timothy J. Ziolkowski
Attorney Docket Number:	CET1090.019
Receipt Date:	28-OCT-2015
Filing Date:	12-JUN-2015
Time Stamp:	15:18:21
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	Information Disclosure Statement (IDS) Form (SB08)	SuppIDS.pdf	613139 57b2d0870564b237f705b1eca1adeb24f7a bc744	no	6

Warnings:	
Information:	

2	Non Patent Literature	NPL1-HONDA_EU20i_LPG.pdf	15304933 ab3b8df9b9920528fa110a17a5b7c54d6961 0aabe=	no	3
Warnings:					
Information:					
3	Non Patent Literature	NPL2-Johnson-Electronic_Direct_Fuel_Injection.pdf	414792 fb1a5b3aa5b1053ee0c5f24678e329b55544f3b	no	17
Warnings:					
Information:					
		Total Files Size (in bytes):	16332864		

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.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 14/738,060

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	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	26 minus 20 =	* 6	x 40 =	240	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x 210 =	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	970		TOTAL	

APPLICATION AS AMENDED - PART II

		(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($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	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	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)	OR	RATE($)	ADDITIONAL FEE($)
AMENDMENT B	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
14/738,060	06/12/2015	3747	970	CET1090.019	26	3

CONFIRMATION NO. 9670

26629
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

FILING RECEIPT

OC000000075883212

Date Mailed: 06/24/2015

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)

Mark J. Sarder, Waukesha, WI;
Aleko D. Sotiriades, Cedarburg, WI;
James J. Dehn, Brookfield, WI;
Leigh Jenison, Hartland, WI;

Applicant(s)

Champion Engine Technology, LLC, Sussex, WI;

Power of Attorney: The patent practitioners associated with Customer Number 26629

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.

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 06/22/2015
The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/738,060**
Projected Publication Date: 12/15/2016

Champion - EX2093, Page 241 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

Non-Publication Request: No

Early Publication Request: No
** **SMALL ENTITY** **
Title

DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

Preliminary Class

123

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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.

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Champion - EX2093, Page 242 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
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Application Number	
Filing Date	
First Named Inventor	Mark J. Sarder
Title	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
Art Unit	
Examiner Name	
Attorney Docket Number	CET1090.019

SIGNATURE of Applicant or Patent Practitioner

Signature	/Timothy J. Ziolkowski/	Date (Optional)	
Name	Timothy J. Ziolkowski	Registration Number	38368
Title (if Applicant is a juristic entity)	Patent Practitioner		
Applicant Name (if Applicant is a juristic entity)	Champion Engine Technology, LLC		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ *Total of 1 forms are submitted.

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Document Description: Power of Attorney

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POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 26629

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

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Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	Dorrance J. Norman		
Title	CEO, Champion Engine Technology, LLC		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☑ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 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: 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.

PTO/SB/08a (01-10)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	
First Named Inventor	Mark J. Sarder et al.
Art Unit	
Examiner Name	
Attorney Docket Number	CET1090.019

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	4502453		1985-03-05	Kabasin et al.	
	2	5171487		1992-12-15	Hudz	
	3	5320078		1994-06-14	Lorraine	
	4	5450832		1995-09-19	Graf	
	5	5673670		1997-10-07	Powell et al.	
	6	6223730	B1	2001-05-01	Hasegawa et al.	

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

U.S.PATENT APPLICATION PUBLICATIONS						Remove
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Mark J. Sarder et al.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CET1090.019

	1					

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

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] ¡	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Mark J. Sarder et al.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CET1090.019

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Timothy J. Ziolkowski/	Date (YYYY-MM-DD)	2015-06-12
Name/Print	Timothy J. Ziolkowski	Registration Number	38368

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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

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

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

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

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

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

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

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

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

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

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

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
First Named Inventor/Applicant Name:	Mark J. Sarder
Filer:	Timothy J. Ziolkowski/Robyn Templin
Attorney Docket Number:	CET1090.019

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Claims in excess of 20	2202	6	40	240
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	970

Electronic Acknowledgement Receipt

EFS ID:	22617957
Application Number:	14738060
International Application Number:	
Confirmation Number:	9670
Title of Invention:	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE
First Named Inventor/Applicant Name:	Mark J. Sarder
Customer Number:	26629
Filer:	Timothy J. Ziolkowski/Robyn Templin
Filer Authorized By:	Timothy J. Ziolkowski
Attorney Docket Number:	CET1090.019
Receipt Date:	12-JUN-2015
Filing Date:	
Time Stamp:	15:03:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$970
RAM confirmation Number	1521
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	App-ADS.pdf	1565471	no	8
Warnings:					
Information:					
2		App-Body.pdf	132226	yes	26

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Specification	1	19
Claims	20	25
Abstract	26	26

Warnings:					
Information:					
3	Oath or Declaration filed	App-Dec.pdf	1265909	no	4
Warnings:					
Information:					
4	Drawings-only black and white line drawings	App-Drawings.pdf	721565	no	5
Warnings:					
Information:					
5	Power of Attorney	POATransmittal.pdf	417641	no	1
Warnings:					
Information:					
6	Power of Attorney	GeneralPOA.pdf	295414	no	1

Warnings:					
Information:					
7	Information Disclosure Statement (IDS) Form (SB08)	IDS.pdf	612308 d65c80045151880ae090256aec04b29c88bfd5f32	no	4
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	37064 ed0118285227 8e57cdf91544c3d66274e0443fac	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	5047598	

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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CET1090.019
	Application Number	
Title of Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE	

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.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Mark	J.	Sarder	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Waukesha	State/Province	WI	Country of Residence i	US

Mailing Address of Inventor:

Address 1	W245 N5551 Corporate Circle		
Address 2			
City	Sussex	State/Province	WI
Postal Code	53089	Country i	US

Inventor 2 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Aleko	D.	Sotiriades	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Cedarburg	State/Province	WI	Country of Residence i	US

Mailing Address of Inventor:

Address 1	W245 N5551 Corporate Circle		
Address 2			
City	Sussex	State/Province	WI
Postal Code	53089	Country i	US

Inventor 3 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	James	J.	Dehn	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

Champion - EX2093, Page 255 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CET1090.019
	Application Number	
Title of Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE	

City	Brookfield	State/Province	WI	Country of Residence i	US

Mailing Address of Inventor:

Address 1	W245 N5551 Corporate Circle		
Address 2			
City	Sussex	State/Province	WI
Postal Code	53089	Country i	US

Inventor 4 Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Leigh		Jenison	

Residence Information (Select One) (•) US Residency ( ) Non US Residency ( ) Active US Military Service

City	Hartland	State/Province	WI	Country of Residence i	US

Mailing Address of Inventor:

Address 1	W245 N5551 Corporate Circle		
Address 2			
City	Sussex	State/Province	WI
Postal Code	53089	Country i	US

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

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

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

Customer Number	26629		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE		
Attorney Docket Number	CET1090.019	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

Filing By Reference :

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CET1090.019
	Application Number	
Title of Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE	

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ 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.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	26629		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the application number blank.

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

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Champion - EX2093, Page 257 of 297
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-01121

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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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CET1090.019
	Application Number	
Title of Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE	

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. 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(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) [i]the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country [i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

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

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CET1090.019
	Application Number	
Title of Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE	

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:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 Remove

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. [X]

Organization Name	Champion Engine Technology, LLC		
Mailing Address Information:			
Address 1	W245 N5551 Corporate Circle		
Address 2			
City	Sussex	**State/Province**	WI
Country [i]	US	Postal Code	53089
Phone Number		Fax Number	

PTO/AIA/14 (12-13)
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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CET1090.019
	Application Number	
Title of Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE	

Email Address	

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

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not subsitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication . An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

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Signature	/Timothy J. Ziolkowski/			Date (YYYY-MM-DD)	2015-06-12
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	CET1090.019
	Application Number	
Title of Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE	

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DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

BACKGROUND OF THE INVENTION

[0001] Embodiments of the invention relate generally to dual fuel generators, and more particularly, to an apparatus and method for delivering liquid fuel and gaseous fuel to a dual fuel generator.

[0002] Electric generators are frequently driven by internal combustion engines that use gasoline as a fuel source. Gasoline is a common fuel source for generators in a variety of applications. However, alternative fuel sources also provide a desirable fuel source. For instance, alternative fuels may provide a clean burning fuel that limits hazardous emissions. Alternative fuels may also be stored for long periods of time without degradation, whereas gasoline can degrade over a period of months leading to hard starting, rough running, and also lead to gum and varnish deposit left in the fuel system. In addition, generators that operate on alternative fuels may generate electricity when gasoline is not readily available. For instance, generators are frequently used when power outages in the utility grid result from severe weather. Unfortunately, gas stations may also be closed as a result of the power outage. Such a circumstance presents just one example where it would be advantageous to operate electrical generators on alternative fuels.

[0003] Certain generators are configured to operate as "dual fuel" generators, otherwise known as bi-fuel generators. These generators are driven by an internal combustion engine that is configured to operate on a liquid fuel for a period of operation and an alternative fuel for another period of operation. The alternative fuel source may exist in a gaseous state at normal temperature and pressure and can be any one of liquefied petroleum gas, compressed natural gas, hydrogen, or the like. Liquefied petroleum gas (LPG), often referred to as propane, exists in a gaseous state at normal temperature and pressure but can be conveniently stored under pressure in a liquid state. LPG may be a desirable fuel source for internal combustion engines because it can be stored for longer periods of time and contains fewer impurities than gasoline, resulting in smoother and cleaner operation, and often resulting in a longer lasting engine.

[0004] In order to provide the liquid and gaseous fuel to the engine, the dual fuel engine may have a first fuel line for liquid fuel and a second fuel line for gaseous fuel. A liquid fuel source and a gaseous fuel source may be coupled to the respective lines to provide fuel to the engine. However, a common problem with such configurations that couple two fuel sources to a single engine is the engine can experience overly rich air-fuel ratio when both fuels are simultaneously engaged during cross-over switching between the fuel sources. Further, such simultaneous delivery of fuel from the first fuel line and the second fuel line may make the engine hard to start or lead to unstable operating conditions.

[0005] Therefore, it would be desirable to design a dual fuel generator having a liquid fuel and gaseous fuel delivery system that overcomes the aforementioned detriments without substantially increasing the overall cost of the system.

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BRIEF DESCRIPTION OF THE INVENTION

[0006] In accordance with one aspect of the invention, a mechanical fuel lockout switch for a dual fuel engine provides for the selection of a desired fuel to operate the engine. The mechanical fuel lockout switch includes a mechanical fuel valve and a fuel lockout apparatus. The mechanical fuel valve actuates between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line. The fuel lockout apparatus couples to the mechanical fuel valve ensuring individual communication of the fuel sources to the engine. The mechanical fuel lockout switch communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position.

[0007] In accordance with another aspect of the invention, a dual fuel generator and fuel delivery system includes a dual fuel generator configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line. The dual fuel generator and fuel delivery system also includes a fuel regulator system located off board the dual fuel generator to control the pressure of fuel from the pressurized fuel source and deliver the fuel at a desired pressure for operation of the generator. The fuel regulator system includes a primary pressure regulator coupled to a service valve of the pressurized fuel source and configured to regulate the fuel supplied from the pressurized fuel source to a reduced pressure. The fuel regulator system also includes a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator. The dual fuel generator and fuel delivery system further includes a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual

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fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line.

[0008] In accordance with yet another aspect of the invention, a method of assembling a mechanical fuel lockout switch for an internal combustion engine includes providing an internal combustion engine configured to operate on a fuel from a first fuel source and a different fuel from a second fuel source. The method also includes coupling a mechanical fuel valve to the internal combustion engine actuateable between a first position and a second position to selectively control fuel flow to the internal combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line. The method further includes coupling a fuel lockout apparatus to the mechanical fuel valve. When the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the first fuel source to the internal combustion engine and prevents the second fuel source from coupling to the internal combustion engine, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the second fuel source to couple to the internal combustion engine, and interrupts the first fuel source communication with the internal combustion engine.

[0009] Various other features and advantages will be made apparent from the following detailed description and the drawings.

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BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The drawings illustrate preferred embodiments presently contemplated for carrying out the invention.

[0011] In the drawings:

[0012] FIG. 1 is a perspective view of a dual fuel generator coupled to a fuel delivery system, according to an embodiment of the invention.

[0013] FIG. 2 is a detail view of a portion of the generator of FIG. 1 about a mechanical fuel lockout switch with the switch in a first position, according to an embodiment of the invention.

[0014] FIG. 3 is a detail view similar to FIG. 2 and showing the mechanical fuel lockout switch in a second position, with an LPG supply line connected thereto, according to an embodiment of the invention.

[0015] FIG. 4A is a schematic diagram of a fuel system for the dual fuel generator of FIG. 1 showing a liquid fuel source in communication with a carburetor of the generator consistent with the first position of the switch as shown in FIG. 2, according to an embodiment of the invention.

[0016] FIG. 4B is a schematic diagram of the fuel system of FIG. 4A showing a gaseous fuel source in communication with a carburetor of the generator of FIG. 1 consistent with the second position of the switch as shown in FIG. 3, according to an embodiment of the invention.

[0017] FIG. 5 is a perspective view of a fuel delivery system for the dual fuel generator of FIG. 1, according to an embodiment of the invention.

[0018] FIG. 6 is a side view of a fuel delivery system for the dual fuel generator of FIG. 1, according to an embodiment of the invention.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0019] The operating environment of the invention is described with respect to a dual fuel generator. However, it will be appreciated by those skilled in the art that the invention is equally applicable for use with any dual fuel internal combustion engine. Moreover, the invention will be described with respect to a dual fuel generator configured to operate on a liquid fuel and a gaseous fuel. However, one skilled in the art will further appreciate that the invention is equally applicable for use with other fuel combinations for dual fuel generators and internal combustion engines.

[0020] Referring to FIG. 1, a dual fuel generator 20 is coupled to a fuel delivery system 22, in accordance with an embodiment of the invention. Dual fuel generator 20 includes an internal combustion engine (not shown) within housing 21 at one end 24, operatively connected to an alternator also enclosed in housing 21 at another end 26, by conventional means. Dual fuel generator 20 is configured to operate on different fuels via either a first fuel source 28 or a second fuel source 30. In an exemplary embodiment of the invention, first fuel source 28 is a liquid fuel and second fuel source 30 is a gaseous fuel. The liquid fuel may be gasoline and the gaseous fuel may be liquid petroleum gas (LPG). Each can selectively operate the generator as desired and controlled by an operator. For instance, generator 20 may operate on gasoline for a first period of operation and then switch to LPG for a second period of operation. However, it is contemplated that dual fuel generator 20 is configured to operate on fuels other than gasoline and LPG (e.g., natural gas, biodiesel, etc.), and thus the scope of the invention is not meant to be limited strictly to a dual fuel arrangement where first fuel source 28 provides gasoline and second fuel source 30 provides LPG.

[0021] In one embodiment of the invention, dual fuel generator 20 includes a gasoline tank 32 or, generally, a liquid fuel tank, located inside cover 21 onboard generator 20 to provide gasoline to the engine as first fuel source 28. Gasoline tank 32 connects to a first fuel line to provide gasoline to the carburetor to run the engine, as will later be described with reference to FIG. 4A and 4B. Generator 20 is also coupled to a pressurized fuel container 34, or a pressurized fuel source, located off board

generator 20 to provide LPG to the engine as second fuel source 30. Pressurized fuel container 34 is coupled to generator 20 with an LPG supply hose 36. LPG supply hose 36 is coupled to a second fuel line within generator 20 to provide LPG to the carburetor to run the engine. Dual fuel generator 20 includes a mechanical fuel lockout switch 38 for selecting a desired fuel to be provided to the engine. The mechanical fuel lockout switch 38 is actuated to select first fuel source 28 when in a first position, as shown in FIG. 2, and alternately to select second fuel source 30 when in a second position, as shown in FIG. 3.

[0022] Referring back to FIG. 1, in an exemplary embodiment, fuel 30 from pressurized fuel container 34 is regulated using a fuel regulator system 39 for delivery to the engine. Fuel regulator system 39 includes one or more pressure regulators that reduce and control the pressure of the fuel from pressurized fuel container 34 and delivers fuel at a desired pressure for operation of the engine. Fuel regulator system 39 has an inlet 41 operatively coupled to a service valve 40 of pressurized fuel container 34 and an outlet 43 coupled to LPG supply hose 36. Fuel regulator system 39 includes a primary pressure regulator 42 coupled to pressurized fuel container 34 and a secondary pressure regulator 44. Primary pressure regulator 42 protects downstream components from high pressure of pressurized fuel container 34. Primary pressure regulator 42 receives LPG through service valve 40 of pressurized fuel container 34 and reduces the pressure of the LPG to a first stage. In one embodiment of the invention, the first stage may be delivered directly to generator 20 at a pressure required for operation of the engine.

[0023] In an exemplary embodiment of the invention, fuel regulator system 39 includes secondary pressure regulator 44 coupled to the outlet of primary pressure regulator 42 in order to use standard "off-the-shelf" components. Typically, the primary pressure regulator is mounted on the LPG tank, while the secondary pressure regulator is mounted on the component using the fuel, such as an engine or grill. Here, since generator 20 can be used as a gasoline only generator, secondary pressure regulator 44 is mounted off-board the generator to reduce size and cost of the generator. Secondary pressure regulator 44 receives LPG from primary pressure regulator 42 and further

reduces the pressure of LPG to a second stage to be delivered to generator 20. In a system with two regulators, primary pressure regulator 42 regulates fuel received from pressurized fuel container 34 and reduces the pressure of the fuel to a level required for operation of secondary pressure regulator 44. Secondary pressure regulator 44 regulates fuel received from primary pressure regulator 42 and further reduces the pressure of the fuel to a level required for operation of generator 20. In addition, primary pressure regulator 42 may compensate for varying tank pressure as fuel is depleted while secondary pressure regulator 44 may compensate for varying demand from generator 20.

[0024] In accordance with an exemplary embodiment of the invention, fuel regulator system 39 includes both the primary and secondary regulators, or a custom single regulator, but in any case is located remotely, or off-board, from dual fuel generator 20. Fuel regulator system 39 may be directly mounted to pressurized fuel container 34 using a regulator mounting bracket 46. Regulator mounting bracket 46 has mounting locations for primary pressure regulator 42 and secondary pressure regulator 44. Regulator mounting bracket 46 also has a securing mechanism 48 to secure regulator mounting bracket 46 to pressurized fuel container 34.

[0025] In another embodiment of the invention, primary pressure regulator 42 is mounted on regulator mounting bracket 46 while secondary pressure regulator 44 could be mounted on or near generator 20. In yet another embodiment of the invention, a dual stage regulator may regulate the fuel received from pressurized fuel container 34 and deliver fuel at a pressure required for operation of generator 20. Such a dual stage regulator may regulate the fuel to the second stage within a single structure. The dual stage regulator may be mounted directly on fuel container 34.

[0026] Referring to FIG. 2, a detail view of a portion of generator 20 of FIG. 1 depicts mechanical fuel lockout switch 38 in a first position 38(a), in accordance with an embodiment of the invention. In this position, mechanical fuel lockout switch 38 provides gasoline flow from gasoline tank 32 to the engine while preventing connection of an LPG supply line to fuel inlet 59 of the second fuel line, as will later be discussed

in detail with reference to FIGS. 4A and 4B. Still referring to FIG. 2, mechanical fuel lockout switch 38 provides a combination liquid fuel shutoff valve and a gaseous fuel supply lockout that prevents simultaneous delivery of fuel to the engine from gasoline tank 32 and pressurized fuel container 34, FIG. 1. As such, mechanical fuel lockout switch 38 provides a fuel selector to ensure only the selected fuel is provided to dual fuel generator 20.

[0027] Mechanical fuel lockout switch 38, FIG. 2, includes mechanical fuel valve 54 actuateable between first position 38(a) as shown in FIG. 2 and second position 38(b) as shown in FIG. 3 to selectively control fuel flow to the dual fuel engine from first fuel source 28 through a first fuel line and second fuel source 30 through a second fuel line 36. Mechanical fuel lockout switch 38 may also include fuel lockout apparatus 58 coupled to mechanical fuel valve 54 to communicate fuel sources individually to generator 20. In one embodiment of the invention, fuel lockout apparatus 58 communicates first fuel source 28 to the engine by actuating mechanical fuel valve 54 to first position 38(a) to open the first fuel line as shown in FIG. 2, and communicates second fuel source 30 to the engine by actuating mechanical fuel valve 54 to second position 38(b) to open communication of the second fuel source 30 to the engine as shown in FIG. 3. Referring back to FIG. 2, when mechanical fuel valve 54 is in first position 38(a), fuel lockout apparatus 58 communicates first fuel source 28 to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine.

[0028] In an exemplary embodiment of the invention, mechanical fuel valve 54 controls the flow of LPG to the engine by actuating fuel lockout apparatus 58 to block or unblock fuel inlet 59 for the second fuel source. Mechanical fuel valve 54 is coupled to the first fuel line, as shown in FIGS. 4A and 4B, and therefore can control the flow of gasoline to the engine by opening and closing the first fuel line. When the mechanical fuel valve 54, FIG. 2, is in the first position 38(a), gasoline flows from the gasoline tank to the engine and the fuel lockout apparatus 58 blocks the fuel inlet 59. Accordingly, fuel lockout apparatus 58 prevents LPG flow to generator 20 when the mechanical fuel valve 54 is in first position 38(a) wherein the engine is operated on gasoline.

[0029] Mechanical fuel valve 54 includes a fuel valve handle 56 to control the opening and closing of the valve. Fuel valve handle 56 is movable between first position 38(a) as shown in FIG. 2 and second position 38(b) as shown in FIG. 3. Mechanical fuel valve 54 opens the first fuel line (to enable liquid fuel flow to the engine) when fuel valve handle 56 is in the first position, and mechanical fuel valve 54 closes the first fuel line (to prevent liquid fuel flow to the engine) when fuel valve handle 56 is in the second position. Thus, when fuel valve handle 56 is in first position 38(a) as shown in FIG. 2, mechanical fuel valve 54 opens the first fuel line and allows gasoline from gasoline tank 32 to flow to the engine.

[0030] Fuel valve handle 56 is coupled to fuel lockout apparatus 58. Fuel valve handle 56 actuates with fuel lockout apparatus 58 to prevent LPG flow to generator 20 when gasoline flow to the generator is enabled. Fuel lockout apparatus 58 is controlled by fuel valve handle 56 so that moving fuel valve handle 56 to the first position causes fuel lockout apparatus 58 to block fuel inlet 59 for LPG, and moving fuel valve handle 56 to the second position causes fuel lockout apparatus 58 to unblock fuel inlet 59 for LPG.

[0031] In an exemplary embodiment of the invention, fuel valve handle 56 rotates between the first position and the second position and fuel lockout apparatus 58 is rigidly coupled to the rotating handle. Fuel lockout apparatus 58 may include a fuel inlet cover 61, which may be a flange, coupled to fuel valve handle 56 so that fuel inlet cover 61 rotates with the handle. Fuel inlet cover 61 extends radially outward from fuel valve handle 56 and sweeps over fuel inlet 59 for LPG as fuel valve handle 56 rotates. That is, fuel inlet cover 61 rotates transversely across fuel inlet 59 and blocks access thereto. Accordingly, fuel inlet cover 61 prevents LPG flow to generator 20 when fuel valve handle 56 is in first position 38(a) to allow gasoline to run the engine.

[0032] Referring to FIG. 3, a detail view of a portion of generator 20 of FIG. 1 depicts mechanical fuel lockout switch 38 in a second position 38(b), in accordance with an embodiment of the invention. In this position, the mechanical fuel lockout switch 38 provides a disconnect to stop gasoline flow from gasoline tank 32 to the

engine while allowing connection of LPG supply hose 36 to fuel inlet 59 of the second fuel line. FIG. 3 further shows LPG supply hose 36 coupling second fuel source 30 to generator 20 to deliver LPG to run the generator.

[0033] Mechanical fuel lockout switch 38 includes mechanical fuel valve 54 coupled to fuel lockout apparatus 58 to prevent gasoline flow to generator 20 when LPG from the LPG service hose 36 is supplied to the engine. In one embodiment of the invention, actuation of mechanical fuel valve 54 to second position 38(b) causes fuel lockout apparatus 58 to allow communication of second fuel source 30 to the dual fuel engine, and interrupts the first fuel source 28 communication with the dual fuel engine. The position of fuel lockout apparatus 58 prevents the fuel valve handle 56 from moving to first position 38(a) (FIG. 2) while LPG supply hose 36 is connected to generator 20.

[0034] A quick-disconnect hose coupling 50, also referred to as a quick-connect hose coupling, connects LPG supply hose 36 to generator 20 so that LPG supply hose 36 may be quickly attached and detached from generator 20. Hose coupling 50 has a first end 50a mounted on the external surface of generator 20 and coupled to supply the second fuel to the engine. Hose coupling 50 has a second end 50b coupled to the outlet of LPG supply hose 36. Hose coupling 50 has a valve that opens when the couplings are engaged and closes when the couplings are disengaged. As such, quick-disconnect hose coupling 50 automatically opens when connected to enable fuel flow from LPG supply hose 36 to the engine. Hose coupling 50 automatically disconnects fluid communication when disconnected. Accordingly, when the supply hose is detached from generator 20, the coupling 50 is automaticlaly closed so that fuel does not escape and unwanted air does not enter the fuel system.

[0035] In one embodiment, fuel inlet cover 61 is coupled to fuel valve handle 56 so that it is spaced apart from the surface of generator 20 to provide clearance for first end 50a of the quick-disconnect hose coupling 50 that protrudes from the surface of generator 20. As shown in FIG. 2, fuel inlet cover 61 blocks off first end 50a of the quick-disconnect hose coupling when fuel valve handle 56 is rotated to first position 38(a) to enable gasoline flow so that fuel inlet cover 61 prevents connection of LPG

supply hose 36 (FIG. 3) to generator 20. As shown in FIG. 3, fuel inlet cover 61 uncovers first end 50a of the quick-disconnect hose coupling 50 when fuel valve handle 56 is rotated to second position 38(b) to disable gasoline flow so that fuel inlet cover 61 permits connection of LPG supply hose 36 to generator 20.

[0036] To operate generator 20 on LPG, fuel valve handle 56 is turned to second position 38(b) to disable the flow of gasoline to the engine and to expose first end 50a of hose coupling 50 on generator 20. LPG supply hose 36 is then connected to generator 20 via hose coupling 50 to enable the flow of LPG to the engine. To operate generator 20 on gasoline, LPG supply hose 36 is disconnected from generator 20 via hose coupling 50 to disable the flow of LPG to the engine and to unblock fuel valve handle 56 from rotating to the first position. As shown in FIG. 2, fuel valve handle 56 is then turned to first position 38(a) to enable the flow of gasoline to generator 20.

[0037] Referring to FIG. 4A, a schematic diagram of a fuel system for a dual fuel engine shows mechanical fuel lockout switch 38 in first position 38(a) to provide communication between the first fuel source 28 and dual fuel carburetor 62, according to an embodiment of the invention. Mechanical fuel lockout switch 38 prevents communication between second fuel source 30 and dual fuel carburetor 62 when the switch is in first position 38(a). In one embodiment of the invention, first fuel source 28 includes a gasoline tank 32 to provide gasoline to carburetor 62 through a first fuel line 66, and second fuel source 30 includes a propane or LPG tank 68 to provide propane or LPG to carburetor 62 through a second fuel line 70. Accordingly, first fuel line 66 may be a liquid fuel line and second fuel line 70 may be a gaseous fuel line.

[0038] Mechanical fuel lockout switch 38 includes a mechanical fuel valve 54 actuateable between first position 38(a) as shown in FIG. 4A and second position 38(b) as shown in FIG. 4B to selectively control fuel flow to the dual fuel engine from first fuel source 28 through first fuel line 66 and second fuel source 30 through second fuel line 70. Referring back to FIG. 4A, mechanical fuel valve 54 selectively controls fuel flow through first fuel line 66 by opening the line when the mechanical fuel lockout switch 38 actuates to first position 38(a). Mechanical fuel valve 54 may be coupled to

fuel lockout apparatus 58 that actuates with mechanical fuel valve 54 to block and unblock fuel inlet 59 of second fuel line 70. First end 50a of the quick-disconnect hose coupling is located at fuel inlet 59 and a mating end 50b of the quick-disconnect hose coupling is coupled to the propane or LPG tank 68. Actuation of mechanical fuel valve 54 to first position 38(a) causes fuel lockout apparatus 58 to block fuel inlet 59 to prevent coupling the first end 50a and second end 50b of the quick-disconnect hose coupling together, and actuation of mechanical fuel valve 54 to another position causes fuel lockout apparatus 58 to unblock fuel inlet 59 to permit attaching first end 50a and second end 50b together.

[0039] In one embodiment of the invention, a fuel cut solenoid 63 couples to carburetor 62 to regulate liquid fuel flow into a main nozzle within the carburetor. Fuel cut solenoid 63 is advantageous to control liquid fuel flow downstream of a float bowl in the carburetor and can stop fuel flow to the engine immediately after ignition shutdown. As such, fuel cut solenoid 63 prevents the engine from drawing in fuel from the float bowl while the engine shuts off. Fuel cut solenoid 63 also traps fuel in the float bowl to eliminate delay in filling the bowl when starting the engine on liquid fuel, and prevents liquid fuel flow from the float bowl to the engine when starting on gaseous fuel.

[0040] Fuel cut solenoid 63 may regulate fuel flow through multiple fuel lines in carburetor 62 that provide fuel from the float bowl to the engine. For instance, carburetor 62 may have a main fuel line and an idle fuel line that receive fuel from the float bowl. Fuel cut solenoid 63 may control fuel flow through all of the fuel lines that receive fuel from the float bowl or may regulate only some of the fuel lines. As such, fuel cut solenoid 63 may block fuel flow through the main fuel line while small amounts of fuel can flow through the idle fuel line.

[0041] Fuel cut solenoid 63 preferably operates as a normally closed valve that opens when powered by a 12 volt battery 65, although fuel cut solenoid 63 may also be operated as a normally open valve. The normally closed valve is opened for gasoline mode to allow gasoline flow to the engine and closed for LPG mode to prevent gasoline

flow to the engine. Fuel cut solenoid 63 is operated by an electrical switch 67 which may be mechanically actuated and controlled by mechanical fuel lockout switch 38. As such, actuation of mechanical fuel lockout switch 38 to first position 38(a) closes electrical switch 67 to power and open fuel cut solenoid 63 as represented in FIG. 4A, and actuation of mechanical fuel lockout switch 38 to second position 38(b) opens electrical switch 67 to interrupt power and close fuel cut solenoid 63 as represented in FIG. 4B.

[0042] Referring to FIG. 4B, a schematic diagram of a fuel system for a dual fuel engine shows mechanical fuel lockout switch 38 in second position 38(b) to provide communication between second fuel source 30 and dual fuel carburetor 62, according to an embodiment of the invention. Mechanical fuel lockout switch 38 prevents communication between first fuel source 28 and dual fuel carburetor 62 when the switch is in second position 38(b). The dual fuel engine has a first fuel line 66 to provide fuel from first fuel source 28 to carburetor 62 and a second fuel line 70 to provide fuel from second fuel source 30 to carburetor 62.

[0043] Mechanical fuel lockout switch 38 includes mechanical fuel valve 54 that selectively controls fuel flow through first fuel line 66 by closing the line when mechanical fuel lockout switch 38 actuates to second position 38(b). Mechanical fuel lockout switch 38 may also include a mechanical lockout apparatus 58 to block and unblock fuel inlet 59 of the second fuel line 70. Fuel inlet 59 may include first end 50a of the quick-connect hose coupling mounted on the generator and coupled to second fuel line 70. Second end 50b of the quick-connect hose coupling is coupled to the outlet of second fuel source 30, and the first end 50a mates with second end 50b to quickly attach propane or LPG tank 68 to second fuel line 70. Fuel lockout apparatus 58 may also hold mechanical fuel lockout switch 38 in second position 38(b) when the propane or LPG tank 68 is coupled to the engine via the ends 50a, 50b of the quick-connect hose coupling.

[0044] Fuel cut solenoid 63 couples to carburetor 62 to regulate liquid fuel flow through the carburetor as described with respect to FIG. 4A. FIG. 4B shows electrical

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switch 67 opened to interrupt power and close fuel cut solenoid 63 for LPG mode when mechanical fuel lockout switch 38 is in second position 38(b).

[0045] FIG. 4A and 4B depict an embodiment where mechanical fuel valve 54 operates along first fuel line 66 to provide a flow path for first fuel source 28 to carburetor 62 when the valve is in first position 38(a). That is, mechanical fuel valve 54 may control a single fuel line that runs through the valve while operating fuel lockout apparatus 58 to control fuel flow through second fuel line 70. Embodiments of the invention also contemplate mechanical fuel valve 54 configured to operate along second fuel line 70 to provide a flow path for second fuel source 30 to carburetor 62 when the valve is in second position 38(b). Mechanical fuel valve 54 may be configured to control multiple fuel lines that run through the valve according to embodiments of the invention.

[0046] Referring now to FIG. 5, a perspective view of fuel delivery system 22 for dual fuel generator 20 of FIG. 1 is shown, in accordance with an embodiment of the invention. Fuel delivery system 22 includes a mounting arrangement for fuel regulator system 39. The mounting arrangement includes regulator mounting bracket 46 for mounting fuel regulator system 39. Regulator mounting bracket 46 extends around the outer periphery of collar 136 on pressurized fuel container 34. Regulator mounting bracket 46 has securing mechanism 48 to secure to collar 136. In one embodiment, securing mechanism 48 is a rigid component that extends inward from regulator mounting bracket 46 with a slot for receiving collar 136 to hold regulator mounting bracket 46 to collar 136.

[0047] Regulator mounting bracket 46 provides mounting locations for pressure regulators. In one embodiment, regulator mounting bracket 46 is made of sheet metal bent in two locations to provide a central panel 138, a first outer panel 140, and a second outer panel 142 for mounting the regulators. The panels may be angled from each other such that regulator mounting bracket 46 fits around collar 136. Primary pressure regulator 42 mounts on first outer panel 140 and secondary pressure regulator 44 mounts on second outer panel 142. The panels are sized according to their respective

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regulators. Accordingly, second outer panel 142 is larger than first outer panel 140 if secondary pressure regulator 44 is larger than primary pressure regulator 42. Panels 140, 142 have fasteners or openings to receive fasteners to couple respective regulators 42, 44 to the panels. Regulator mounting bracket 46 rests on top of pressurized fuel container 34 and engages the periphery of collar 136 to support fuel regulator system 39 on the container.

[0048] In one embodiment of the invention, primary pressure regulator 42 couples to two ninety degree elbows 144, 145 to reach around collar 136 in order to couple to service valve 40. The two elbows 144, 145 are joined by a hose or pipe 146 that leads from elbow 144 at service valve 40 to elbow 145 at the outer periphery of collar 136. The outlet of primary pressure regulator 42 couples to a hose 148 that extends to another ninety degree elbow 150 coupled to the inlet of secondary pressure regulator 44. Secondary pressure regulator 44 couples to LPG supply hose 36. Pressurized fuel container 34 may be strapped to a dolly 152.

[0049] Referring now to FIG. 6, a side view of another fuel delivery system 22 for dual fuel generator 20 of FIG. 1 is shown, in accordance with an embodiment of the invention. Fuel delivery system 22 includes a mounting arrangement for fuel regulator system 39. The mounting arrangement includes a regulator mounting structure 154 for mounting fuel regulator system 39 to pressurized fuel container 34. Regulator mounting structure 154 includes a cylinder 156 that surrounds the circumference of pressurized fuel container 34 to secure regulator mounting structure 154 radially along the circumference of pressurized fuel container 34. Cylinder 156 couples to a dome 158 to support cylinder 156 relative to the top of pressurized fuel container 34. Dome 158 has a central opening 160 through which collar 136 of pressurized fuel container 34 extends. Collar 136 of pressurized fuel container 34 extends through dome 158 so that service valve 40 is easily accessible from above regulator mounting structure 154 and so that dome 158 sits on pressurized fuel container 34 around collar 136.

[0050] Regulator mounting structure 154 supports pressure regulators around the outer circumference of cylinder 156. In some embodiments of the invention, a dual

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stage pressure regulator 162 functions as both a primary pressure regulator and a secondary pressure regulator in a single integral component, and dual stage pressure regulator 162 may be mounted on regulator mounting structure 154. In other embodiments in of the invention, primary pressure regulator 42 (FIG. 5) is mounted to service valve 40 while secondary pressure regulator 44 (FIG. 5) is mounted on regulator mounting structure 154. Alternatively, both primary pressure regulator 42 (FIG. 5) and secondary pressure regulator 44 (FIG. 5) may be mounted on regulator mounting structure 154.

[0051] Fuel regulator system 39 may be coupled to service valve 40 by a flexible connector called a pigtail 164. Pigtail 164 absorbs shock in the system from pressure surges and from movement of downstream components. Pigtail 164 can be looped to conserve space and therefore pressurized fuel container 34 is referred to as an LPG pig. Accordingly, regulator mounting structure 154 is referred to as a pig hat because it fits on the LPG pig. Pressurized fuel container 34 may be secured to a platform or mobile cart 64 for stability or transportation. In another embodiment, a regulator mounting device, including regulator mounting structure 154 or regulator mounting bracket 46 (FIG. 5), is secured directly to a platform or a mobile cart.

[0052] Beneficially, embodiments of the invention provide for a mechanical fuel lockout switch to ensure that two fuels are not simultaneously delivered to a dual fuel internal combustion engine. Embodiments of the invention also provide for a dual fuel generator with a remotely mounted gaseous fuel regulator system.

[0053] Therefore, according to one embodiment of the invention, a mechanical fuel lockout switch for a dual fuel engine includes a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line. The mechanical fuel lockout switch also includes a fuel lockout apparatus coupled to the mechanical fuel valve. The mechanical fuel lockout switch communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the

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mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position.

[0054] According to another embodiment of the invention, a dual fuel generator and fuel delivery system includes a dual fuel generator configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line. The dual fuel generator and fuel delivery system also includes a fuel regulator system located off board the dual fuel generator. The fuel regulator system includes a primary pressure regulator coupled to a service valve of the pressurized fuel source and configured to regulate the fuel supplied from the pressurized fuel source to a reduced pressure. The fuel regulator system also includes a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator. The dual fuel generator and fuel delivery system further includes a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line.

[0055] According to yet another embodiment of the invention, a method of assembling a mechanical fuel lockout switch for an internal combustion engine includes providing an internal combustion engine configured to operate on a fuel from a first fuel source and a different fuel from a second fuel source. The method also includes coupling a mechanical fuel valve to the internal combustion engine actuateable between a first position and a second position to selectively control fuel flow to the internal combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line. The method further includes coupling a fuel lockout apparatus to the mechanical fuel valve. When the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the first fuel source to the internal combustion engine and prevents the second fuel source from coupling to the internal combustion engine, and actuation of the mechanical fuel valve to the second position

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causes the fuel lockout apparatus to permit the second fuel source to couple to the internal combustion engine, and interrupts the first fuel source communication with the internal combustion engine.

[0056] This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they have structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

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CLAIMS

What is claimed is:

1. A mechanical fuel lockout switch for a dual fuel engine comprising:

a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line; and

a fuel lockout apparatus coupled to the mechanical fuel valve;

wherein the mechanical fuel lockout switch:

communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and

communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position.

2. The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source communicates with the dual fuel engine.

3. The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the fuel lockout apparatus is configured to:

prevent the second fuel source from coupling to the second fuel line while the mechanical fuel valve is in the first position; and

permit the second fuel source to couple to the second fuel line while the mechanical fuel valve is in the second position.

4. The mechanical fuel lockout switch for a dual fuel engine of claim 3, wherein the fuel lockout apparatus comprises a flange rigidly coupled to the mechanical fuel valve that covers an inlet of the second fuel line while the mechanical fuel valve is

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in the first position and uncovers the inlet of the second fuel line while the mechanical fuel valve is in the second position.

5. The mechanical fuel lockout switch for a dual fuel engine of claim 4, wherein the mechanical fuel valve rotates between the first position and the second position and the flange rotates transversely across the inlet of the second fuel line.

6. The mechanical fuel lockout switch for a dual fuel engine of claim 4, further comprising;

a first end of a quick-disconnect hose coupling attached to the inlet of the second fuel line; and

a second end of the quick-disconnect hose coupling attached to the second fuel source to mate with the first end of the quick-disconnect hose coupling to couple the second fuel source to the second fuel line.

7. The mechanical fuel lockout switch for a dual fuel engine of claim 1, wherein the mechanical fuel valve and the fuel lockout apparatus operate together to ensure that fuel from the first fuel source and fuel from the second fuel source are not simultaneously delivered to the dual fuel engine.

8. The mechanical fuel lockout switch for a dual fuel engine of claim 7, wherein the first fuel source provides liquid fuel from a liquid fuel tank to the dual fuel engine and the second fuel source provides gaseous fuel from a pressurized fuel container to the dual fuel engine.

9. A dual fuel generator and fuel delivery system comprising:

a dual fuel generator configured to operate on a liquid fuel supplied from a liquid fuel source through a liquid fuel line and a gaseous fuel supplied from a pressurized fuel source through a gaseous fuel line;

a fuel regulator system located off board the dual fuel generator, the fuel regulator system comprising:

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a primary pressure regulator coupled to a service valve of the pressurized fuel source and configured to regulate the fuel supplied from the pressurized fuel source to a reduced pressure; and

a secondary pressure regulator coupled to the primary pressure regulator and configured to regulate the gaseous fuel supplied from the primary pressure regulator to a desired pressure for delivery through the gaseous fuel line to operate the dual fuel generator; and

a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel generator from the liquid fuel source through the liquid fuel line and the pressurized fuel source through the gaseous fuel line.

10. The dual fuel generator and fuel delivery system of claim 9 further comprising a fuel lockout apparatus coupled to the mechanical fuel valve; and

wherein when the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the liquid fuel source to the dual fuel generator and prevents the pressurized fuel source from coupling to the dual fuel generator, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the pressurized fuel source to couple to the dual fuel generator, and interrupts the liquid fuel source communication with the dual fuel generator.

11. The dual fuel generator and fuel delivery system of claim 9, wherein mechanical fuel valve opens and closes the liquid fuel line to selectively control fuel flow from the liquid fuel source to the dual fuel generator; and further comprises:

a fuel lockout apparatus coupled to the mechanical fuel valve and configured to prevent the pressurize fuel source from coupling to the gaseous fuel line while the mechanical fuel valve opens the liquid fuel line, and permit the pressurized fuel source to couple to the gaseous fuel line while the mechanical fuel valve closes the liquid fuel line.

12. The dual fuel generator and fuel delivery system of claim 11, wherein the fuel lockout apparatus is further configured to prevent the mechanical fuel valve from opening the liquid fuel line while the dual fuel generator receives fuel from the pressurized fuel source.

13. The dual fuel generator and fuel delivery system of claim 11, wherein the fuel lockout apparatus further comprises a fuel inlet cover that actuates with the mechanical fuel valve to cover an inlet of the gaseous fuel line while the mechanical fuel valve opens the liquid fuel line and to uncover mechanical fuel lockout switch the inlet of the gaseous fuel line when the mechanical fuel valve closes the liquid fuel line.

14. The dual fuel generator and fuel delivery system of claim 9, further comprising:

a first end of a quick-connect hose coupling coupled to an outlet of the secondary pressure regulator; and

a second end of the quick-connect hose coupling coupled to an inlet of the gaseous fuel line to mate with the first end of the quick-connect hose coupling to couple the secondary pressure regulator to the gaseous fuel line.

15. The dual fuel generator and fuel delivery system of claim 9, further comprising a regulator mounting device secured to the pressurized fuel source with at least the secondary pressure regulator mounted on the regulator mounting device.

16. The dual fuel generator and fuel delivery system of claim 15, wherein the primary pressure regulator is mounted on the regulator mounting device.

17. The dual fuel generator and fuel delivery system of claim 16, wherein the pressurized fuel source comprises a pressurized fuel container having a collar; and

wherein the regulator mounting device secures to the collar so that the primary and secondary pressure regulators are positioned adjacent each other along an outer periphery of the collar.

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18. The dual fuel generator and fuel delivery system of claim 9, wherein the primary and secondary pressure regulators are integral components of a dual stage pressure regulator.

19. A method of assembling a mechanical fuel lockout switch for an internal combustion engine comprising:

providing an internal combustion engine configured to operate on a fuel from a first fuel source and a different fuel from a second fuel source;

coupling a mechanical fuel valve to the internal combustion engine actuateable between a first position and a second position to selectively control fuel flow to the internal combustion engine from the first fuel source through a first fuel line and the second fuel source through a second fuel line; and

coupling a fuel lockout apparatus to the mechanical fuel valve;

wherein when the mechanical fuel valve is in the first position, the fuel lockout apparatus communicates the first fuel source to the internal combustion engine and prevents the second fuel source from coupling to the internal combustion engine, and actuation of the mechanical fuel valve to the second position causes the fuel lockout apparatus to permit the second fuel source to couple to the internal combustion engine, and interrupts the first fuel source communication with the internal combustion engine.

20. The method of claim 19, wherein the fuel lockout apparatus prevents actuation of the mechanical fuel valve to the first position when the second fuel source is coupled to the internal combustion engine.

21. The method of claim 20, wherein the fuel lockout apparatus is further configured to:

prevent coupling of the second fuel source to the second fuel line while the mechanical fuel valve is in the first position; and

permit coupling of the second fuel source to the second fuel line while the mechanical fuel valve is in the second position.

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22. The method of claim 19, wherein the fuel lockout apparatus comprises a fuel inlet cover configured to actuate in unison with the mechanical fuel valve to cover a fuel inlet on the internal combustion engine for the second fuel source when the mechanical fuel valve is in the first position and uncover the fuel inlet when the mechanical fuel valve is in the second position.

23. The method of claim 19, further comprising coupling a fuel regulator system to the second fuel source to reduce fuel pressure therefrom and deliver fuel to the second fuel line at a pressure required for operation of the internal combustion engine.

24. The method of claim 23, further comprising mounting the fuel regulator system to the second fuel source located off-board the internal combustion engine.

25. The method of claim 23, further comprising:

coupling one end of a quick-disconnect hose coupling to an inlet on the internal combustion engine for the second fuel source; and

coupling a mating end of the quick-disconnect hose coupling to an outlet of the fuel regulator system.

26. The method of claim 19, further comprising providing gasoline in a liquid fuel tank as the first fuel source and LPG in a pressurized fuel container as the second fuel source.

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ABSTRACT

A mechanical fuel lockout switch for a dual fuel engine includes a mechanical fuel valve actuateable between a first position and a second position to selectively control fuel flow to the dual fuel engine from a first fuel source through a first fuel line and a second fuel source through a second fuel line. The mechanical fuel lockout switch also includes a fuel lockout apparatus coupled to the mechanical fuel valve. The mechanical fuel lockout switch communicates the first fuel source to the dual fuel engine and prevents communication between the second fuel source and the dual fuel engine when the mechanical fuel valve is in the first position, and communicates the second fuel source to the dual fuel engine and interrupts the first fuel source communication with the dual fuel engine when in the second position.

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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

As the below named inventor, I hereby declare that:

This declaration is directed to:

☑ The attached application, or

☐ United States application or PCT international application number _____

filed on _____

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

I believe that 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.

WARNING:

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LEGAL NAME OF INVENTOR

Inventor: Mark J. Sarder Date (Optional): _____

Signature: Mark J. Sarder

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

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LEGAL NAME OF INVENTOR

Inventor: Aleko D. Sotiriades Date (Optional): _____

Signature: Aleko Sotiriades

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

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LEGAL NAME OF INVENTOR

Inventor: James J. Dehn Date (Optional): 6/12/2015

Signature: James J Dehn

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	DUAL FUEL LOCKOUT SWITCH FOR GENERATOR ENGINE

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☑ The attached application, or

☐ United States application or PCT international application number _____

filed on _____

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

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

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LEGAL NAME OF INVENTOR

Inventor: Leigh Jenison Date (Optional): 6.12.2015

Signature: Leigh Jenison

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

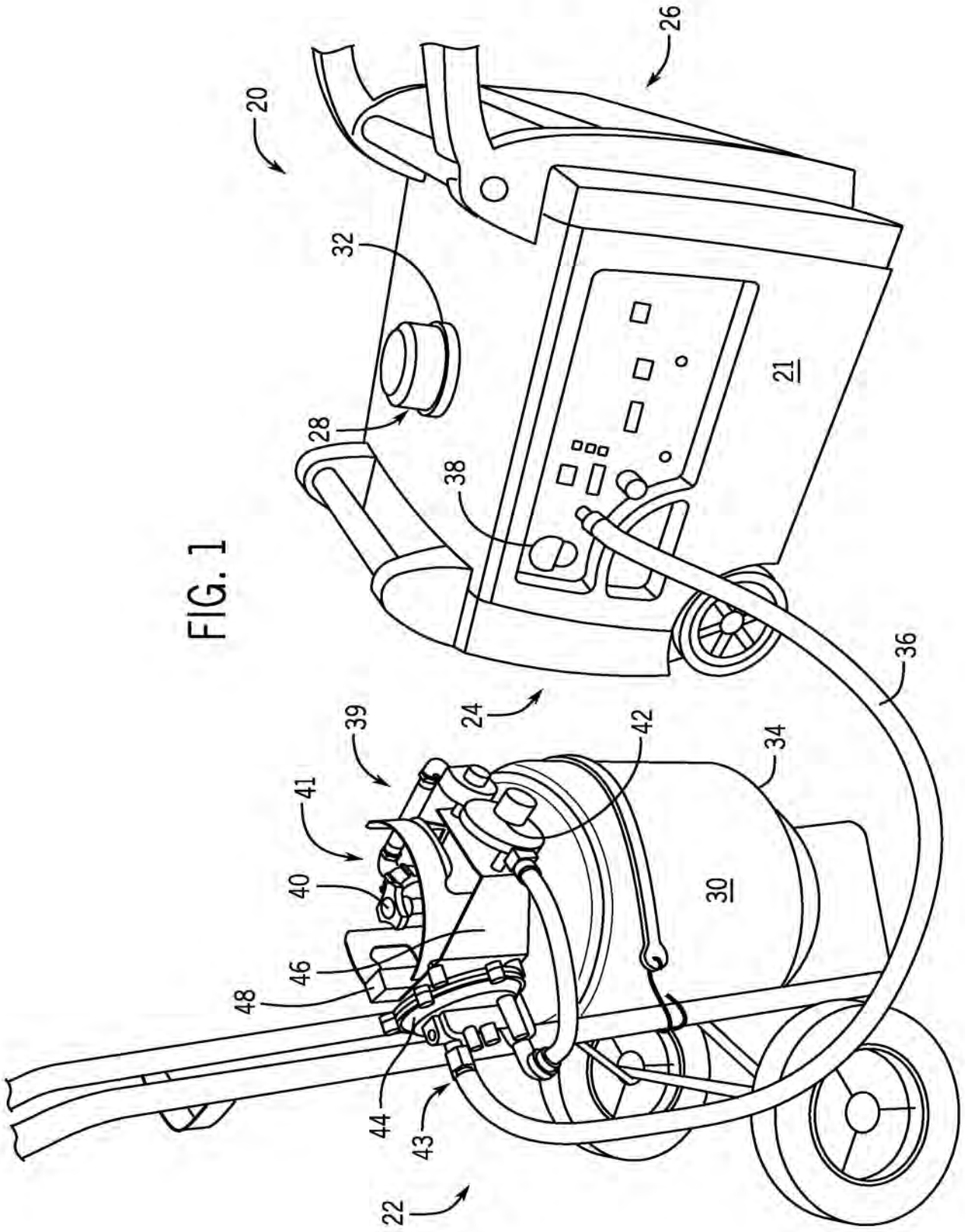


FIG. 1

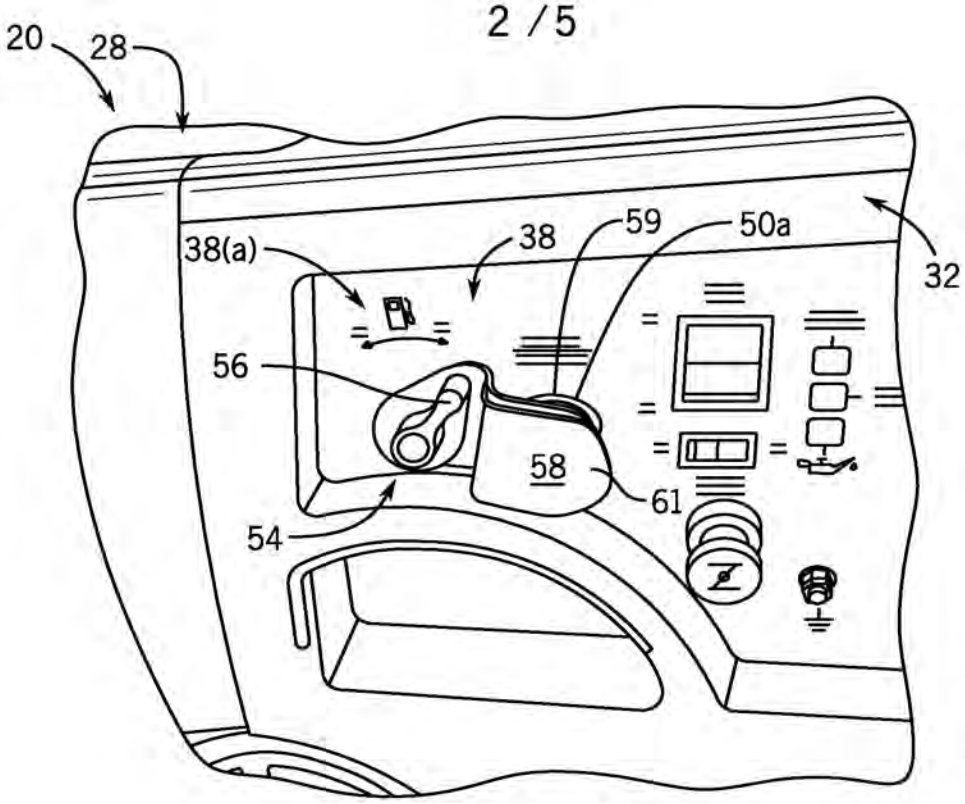

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61
54

FIG. 2

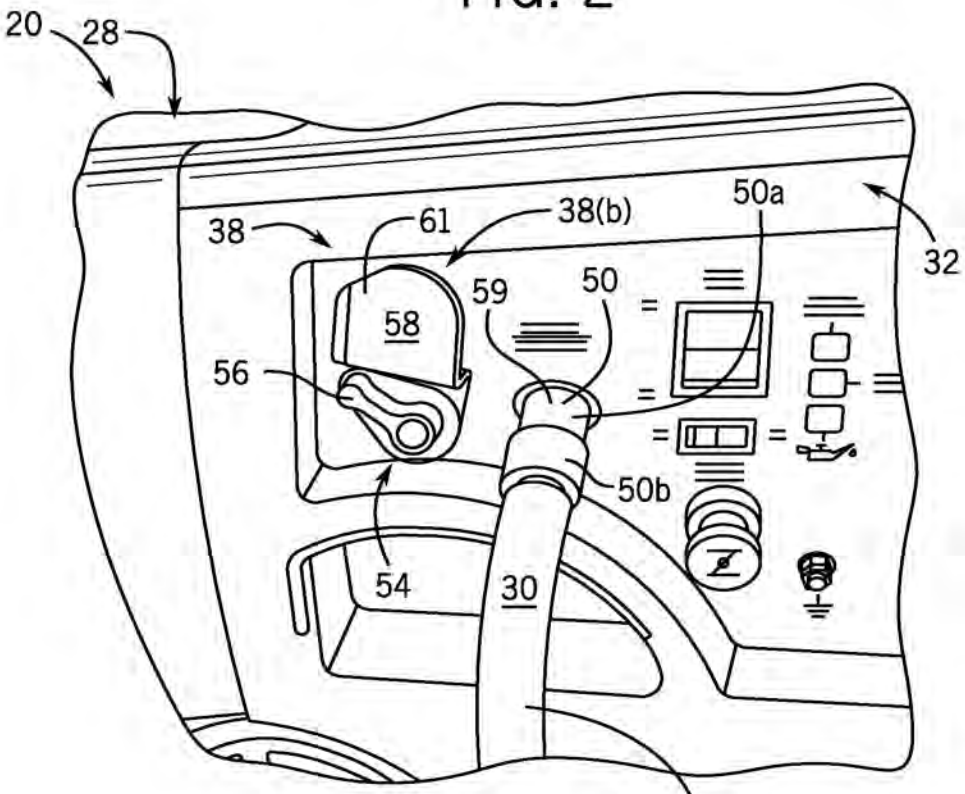

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FIG. 3

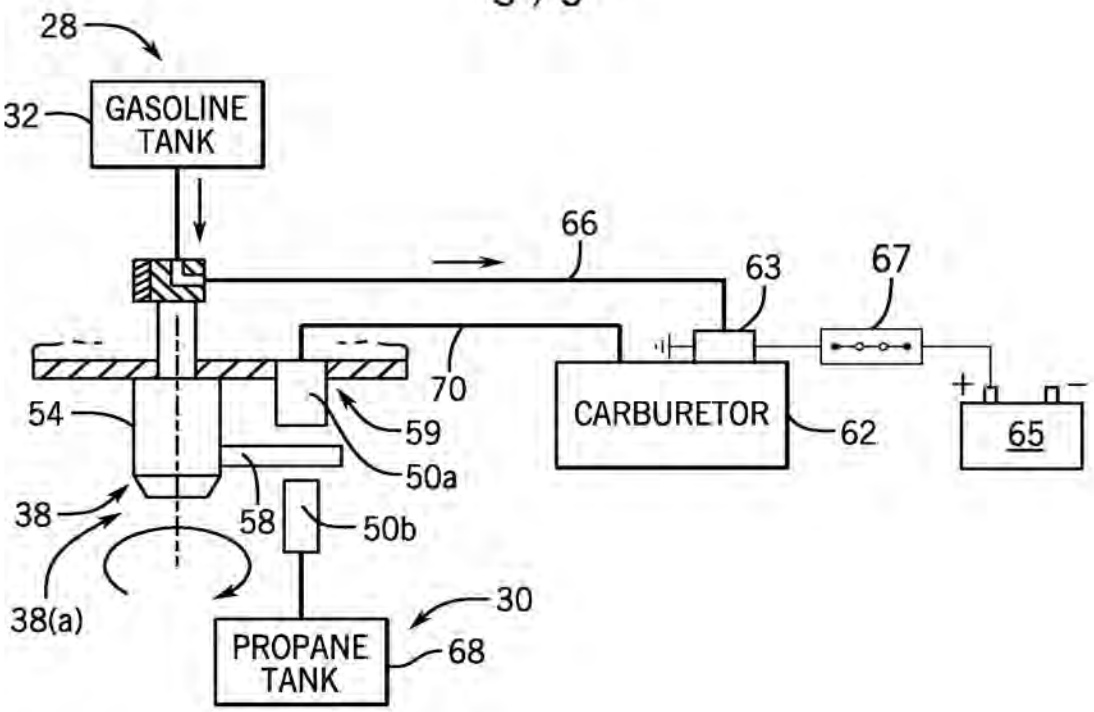

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FIG. 4A

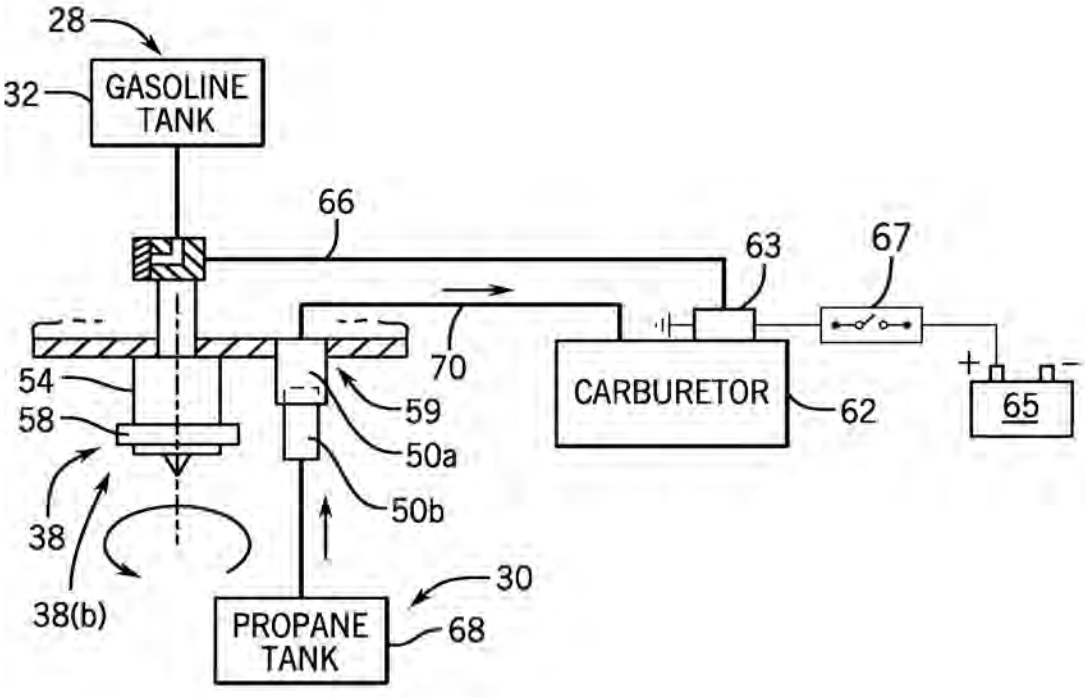

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PROPANE TANK
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FIG. 4B

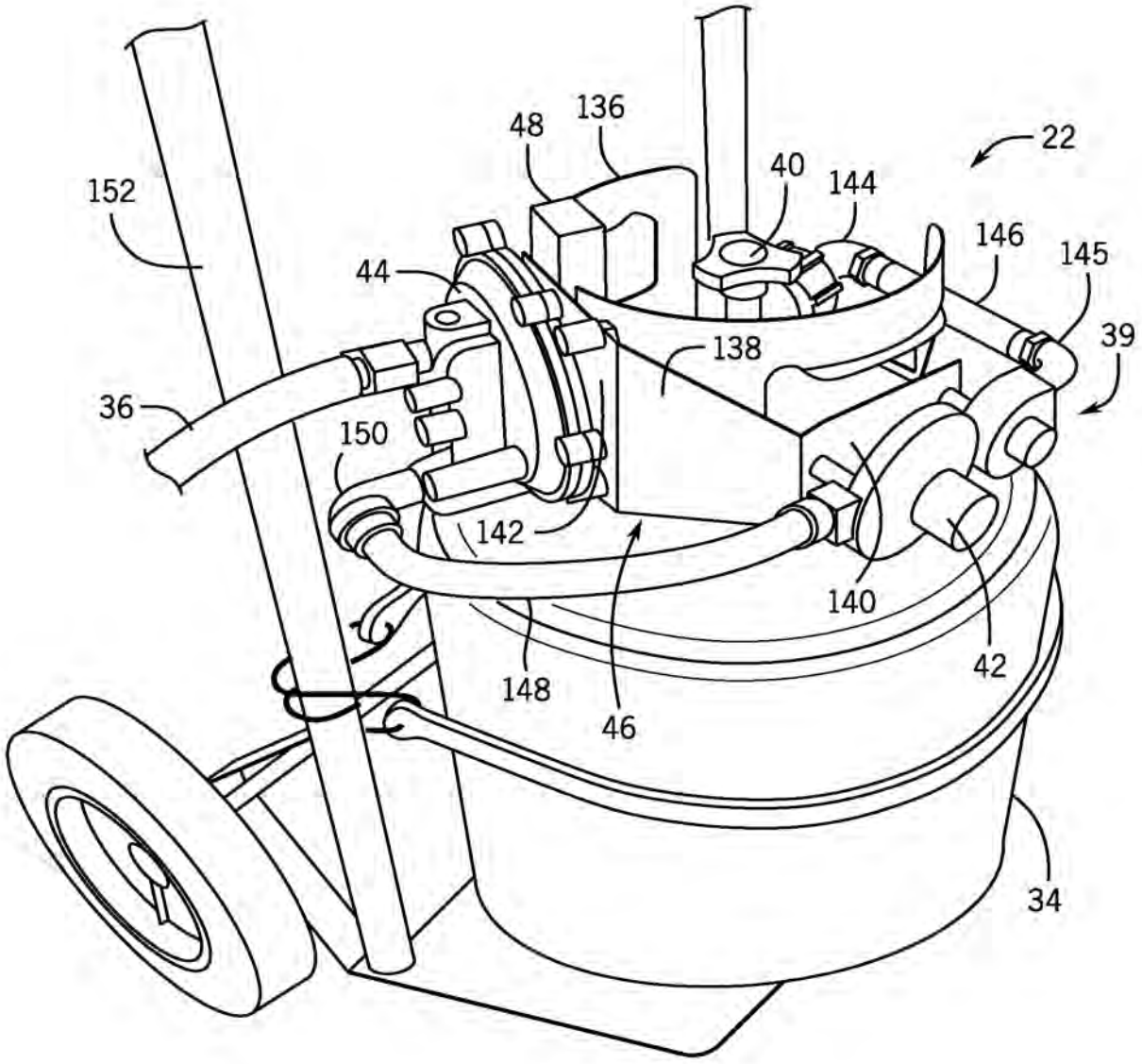


FIG. 5

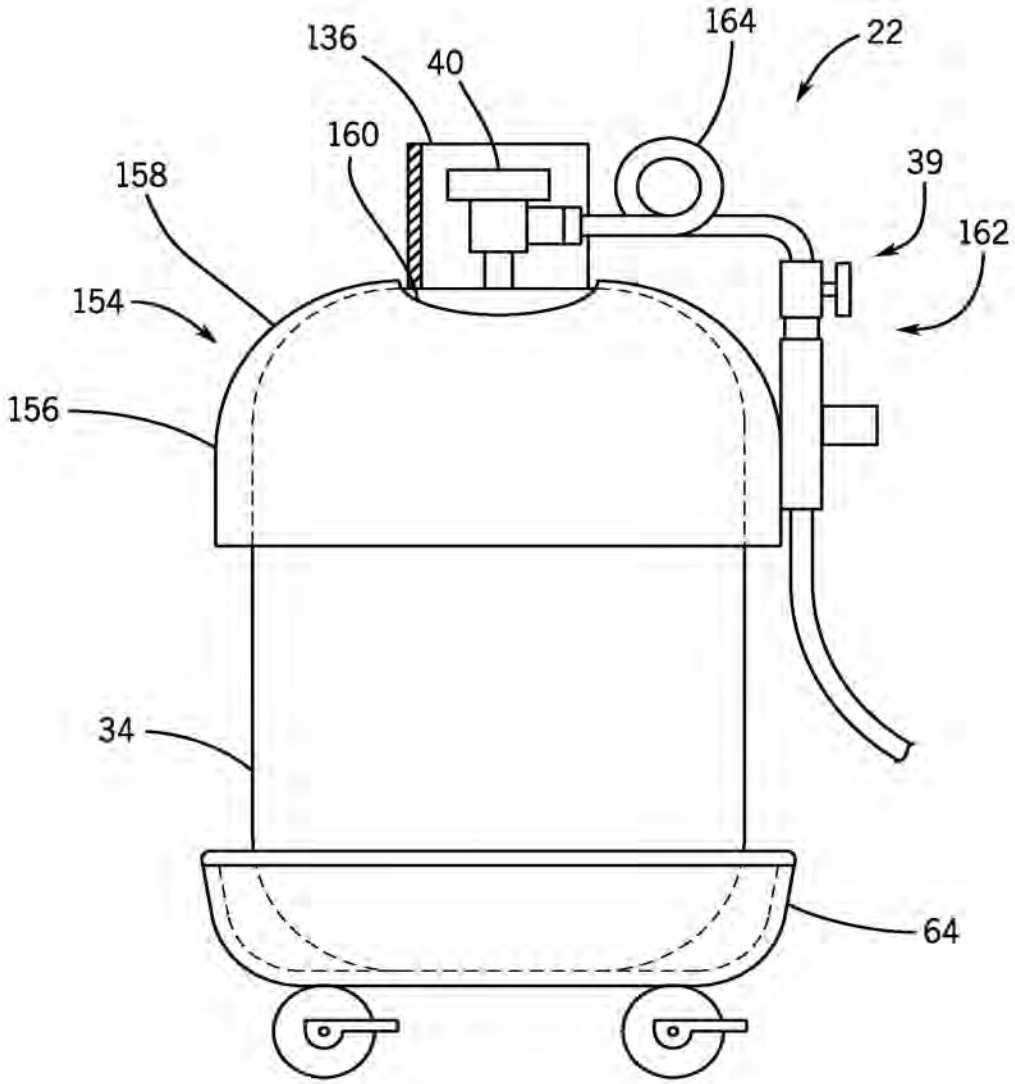


FIG. 6