

Customer No. 26629
Confirmation No. 1059

Patent
Attorney Docket No. CET1090.042

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Collie et al.
Serial No. : 14/925,441
Filed : 10/28/2015
For : BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL
CUT-OFF
Group Art No. : 3747
Examiner : Long T. Tran

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)

37 CFR 1.10

☐ with sufficient postage as first class mail ☐ As "Express Mail Post Office to Addressee" Mailing Label No.

Transmission

- ☒ transmitted by facsimile to Fax No.: 571-273-8300 addressed to Examiner Long T. Tran at the Patent and Trademark Office.
☐ transmitted by EFS-WEB addressed to Examiner Long T. Tran at the Patent and Trademark Office.

Date: May 20, 2020

/Robyn L. Templin/
Signature

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

**COMMENTS ON STATEMENT
OF REASONS FOR ALLOWANCE**

Dear Sir:

Responsive to the Notice of Allowability mailed March 6, 2020, Applicant submits the following remarks responsive to the Examiner's Statement of Reasons for Allowance.

REMARKS

In response to the Examiner's Reasons for Allowance, Applicant believes that a separate Statement of Reasons for Allowance is unnecessary in the present case as the file history sufficiently sets forth the patentable distinctions of claims 1-3 and 5-65.

The patentability of claims 1-3 and 5-65 lies in each claim as a whole. That is, a single particular element or feature of a claim does not define the claim's patentability, but rather, it is the combination of elements and the interconnection therebetween that define the invention. The claims cannot be considered to be limited in scope based on this brief statement by the Examiner. Applicant stands by its position previously set forth in the file history.

Applicant does not acquiesce to the accuracy of the Examiner's statements in the Reasons for Allowance, the Examiner's partial paraphrasing of the claim elements, or the Examiner's characterization of the prior art.

Entry of these remarks is appreciated and Applicant cordially invites the Examiner to respond, should the Examiner disagree.

Respectfully submitted,

/Timothy J. Ziolkowski/

Timothy J. Ziolkowski
Registration No. 38,368
Direct Dial 262-268-8181
tjz@zpspatents.com

Dated: May 20, 2020
Attorney Docket No.: CET1090.042

P.O. ADDRESS:
Ziolkowski Patent Solutions Group, SC
136 South Wisconsin Street
Port Washington, WI 53074
262-268-8100



ELECTRONIC PAYMENT RECEIPT

APPLICATION #
14/925,441

RECEIPT DATE / TIME
05/20/2020 03:00:13 PM ET

ATTORNEY DOCKET #
CET1090.042

Title of Invention

BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 1059

FILED BY Robyn Templin

PATENT CENTER # 60024819

AUTHORIZED BY Timothy Ziolkowski

CUSTOMER # 26629

FILING DATE 10/28/2015

CORRESPONDENCE
ADDRESS -

FIRST NAMED
INVENTOR Kendall Collie

Payment Information

PAYMENT METHOD
CARD / 4529

PAYMENT TRANSACTION ID
E20205JF01243271

PAYMENT AUTHORIZED BY
Robyn Templin

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2501	UTILITY ISSUE FEE	500.00	1	500.00
TOTAL AMOUNT:				\$500.00

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

New Applications Under 35 U.S.C. 111

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

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

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/E/903 indicating acceptance **Champion EX2082 Page 3 of 575**

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

IPR2025-00805

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.

PART B - FEE(S) TRANSMITTAL

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

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

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

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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

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.

26629 759 03/06/2020
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

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)
May 20, 2020	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,441	10/28/2015	Kendall J. Collie	CET1090.042	1059

TITLE OF INVENTION: BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF

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	06/08/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
TRAN, LONG T	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.

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

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Champion Power Equipment, Inc.

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 /Timothy J. Ziolkowski/

Date May 20, 2020

Typed or printed name Timothy J. Ziolkowski

Registration No. 38,368



ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
14/925,441

RECEIPT DATE / TIME
05/20/2020 03:00:13 PM ET

ATTORNEY DOCKET #
CET1090.042

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PATENT # -

CONFIRMATION # 1059

FILED BY Robyn Templin

PATENT CENTER # 60024819

FILING DATE 10/28/2015

CUSTOMER # 26629

FIRST NAMED
INVENTOR Kendali Collie

CORRESPONDENCE
ADDRESS

AUTHORIZED BY Timothy Ziolkowski

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2020.05.20 Issue Fee.pdf	1	Issue Fee Payment (PTO-85B)	585 KB
2020.05.20 Comments on Reasons.pdf	2	Miscellaneous Incoming Letter	502 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2020.05.20 Issue Fee.pdf	BCE83B4C0C0B87C42F93A507ADD89D17DD58D0B2B4313440E E0EAC508FF708D1634DBCBCF99DAF2BB67403EA559605396F DCF9EEE78F6DA183E9F9CC433D43444

2020.05.20 Comments on
Reasons.pdf

6E77F866C0BF3B3D908A0F53F4D4B0EF38BC389839D56BE68
5E6F1C0F16F4F12F9ED30831CE39DA99065683488333C82094
4CEEB4EC9C2C184D3AD2858C4091D

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

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

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New International Application Filed with the USPTO as a Receiving Office

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UNITED STATES PATENT AND TRADEMARK OFFICE

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

NOTICE OF ALLOWANCE AND FEE(S) DUE

26629 759 03/06/2020
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

EXAMINER	
TRAN, LONG T	
ART UNIT	PAPER NUMBER
3747	

DATE MAILED: 03/06/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,441	10/28/2015	Kendall J. Collie	CET1090.042	1059

TITLE OF INVENTION: BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF

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	06/08/2020

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.

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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Commissioner for Patents
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Alexandria, Virginia 22313-1450

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

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26629 759 03/06/2020
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

Certificate of Mailing or Transmission

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,441	10/28/2015	Kendall J. Collie	CET1090.042	1059

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EXAMINER	ART UNIT	CLASS-SUBCLASS
TRAN, LONG T	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 _____
2 _____
3 _____

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

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

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

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

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

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

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

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

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

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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. _____



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.

14/925,441

FILING DATE

10/28/2015

FIRST NAMED INVENTOR

Kendall J. Collie

ATTORNEY DOCKET NO.

CET1090.042

CONFIRMATION NO.

1059

26629

7590

03/06/2020

ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)

136 S WISCONSIN ST

PORT WASHINGTON, WI 53074

EXAMINER

TRAN, LONG T

ART UNIT

PAPER NUMBER

3747

DATE MAILED: 03/06/2020

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

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

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

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

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

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

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 14/925,441	Applicant(s) Collie et al.	
	Examiner LONG T TRAN	Art Unit 3747	AIA (FITF) Status Yes

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

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

1. ☒ This communication is responsive to 22 January 2020.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☒ The allowed claim(s) is/are 1-3 and 5-65. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

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

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

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

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

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

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

Attachment(s)

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

/LONG T TRAN/ 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 – 3, 5 – 65 are allowed.
3. The following is an examiner's statement of reasons for allowance: The prior art references fail to disclose or teach in combination a dual fuel engine comprising: an engine operable on a gaseous fuel and a liquid fuel; a switch to change operation of the engine between gaseous fuel and liquid fuel; a carburetor attached to an intake of the engine to mix air and fuel and connect to a gaseous fuel source and a liquid fuel source; a liquid fuel valve positioned along a liquid fuel line coupling the liquid fuel source to the carburetor; a gaseous fuel valve positioned along a gaseous fuel line coupling the gaseous fuel source to the carburetor; and a liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel. The closest prior art references, Poehlman (US 4,489,699) and Tsuda et al. (US 5,809,979), teach a similar engine but are deficient in having a liquid cut-off incorporated into the carburetor. It would not have been obvious to further modify the combination of Poehlman and Tsuda et al. to include the additional fuel cut-off.

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. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LONG T TRAN whose telephone number is (571)270-1899. The examiner can normally be reached on Mon - Fri 9:00 - 5:00.

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

Application/Control Number: 14/925,441
Art Unit: 3747

Page 4

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

/LONG T TRAN/
Primary Examiner, Art Unit 3747

Notice of References Cited	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.	
	Examiner LONG T TRAN	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-20150122230-A1	05-2015	Sarder; Mark J.	F02D19/0613	123/525
*	B	US-20110253102-A1	10-2011	Watanabe; Tsuyoshi	F02D41/064	123/438
*	C	US-20100258099-A1	10-2010	Andersson; Martin N.	F02D31/006	123/676
*	D	US-20070137591-A1	06-2007	Sugimoto; Yasuhiro	F02B63/04	123/41.7
*	E	US-6591817-B2	07-2003	Deutsch; Robert W.	F02D19/0647	123/525
*	F	US-20020134362-A1	09-2002	Deutsch, Robert W.	F02D19/0647	123/575
*	G	US-5809979-A	09-1998	Tsuda; Hiroyuki	F02M13/08	123/525
*	H	US-5611312-A	03-1997	Swanson; Mark S.	F02M1/02	123/179.18
*	I	US-4489699-A	12-1984	Poehlman; Arthur G.	F02B69/04	123/525
*	J	US-4393848-A	07-1983	Poehlman; Arthur G.	F02B69/04	123/525
*	K	US-3783849-A	01-1974	Bramfitt; Thomas Hugh	F02M13/06	123/576
*	L	US-3718000-A	02-1973	Walker; Brooks	F02B11/02	60/285
*	M	US-3659574-A	05-1972	Reschke; Albert H.	F02M13/08	123/525

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	
	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.

<i>Index of Claims</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 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	04/18/2017	08/02/2017	01/22/2018	06/11/2018	10/04/2018	02/19/2019	07/17/2019	03/02/2020		
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3	3	÷	✓	✓	✓	✓	✓	✓	✓		
	4	÷	✓	✓	✓	✓	✓	-	-		
4	5	÷	✓	✓	✓	✓	✓	✓	=		
5	6	÷	✓	✓	✓	✓	✓	✓	=		
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44	36	÷	N	✓	✓	✓	✓	✓	=		
45	37	÷	N	✓	✓	✓	✓	✓	=		
46	38	÷	N	✓	✓	✓	✓	✓	=		
47	39	÷	N	✓	✓	✓	✓	✓	=		
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49	41	÷	N	✓	✓	✓	✓	✓	=		
50	42	÷	N	✓	✓	✓	✓	✓	=		

<i>Index of Claims</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 3747

CLAIM		DATE								
Final	Original	04/18/2017	08/02/2017	01/22/2018	06/11/2018	10/04/2018	02/19/2019	07/17/2019	03/02/2020	
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54	46	÷	N	✓	✓	✓	✓	✓	=	
55	47	÷	N	✓	✓	✓	✓	✓	=	
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62	53	÷	N	✓	✓	✓	✓	✓	=	
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41	62	÷	N	✓	✓	✓	✓	✓	=	
42	63	÷	N	✓	✓	✓	✓	✓	=	
22	64						✓	✓	=	
56	65						✓	✓	=	

<i>Search Notes</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 3747

CPC - Searched*		
Symbol	Date	Examiner
F02D19/0647; F02D19/0613; F02D29/06; F02D41/0025; F02D11/02; F02D19/0642; F02D35/0053; F02B63/04; F02B43/00; F02B63/044; F02M13/08; F02M19/08; F02M21/047; F02N3/02	8/2/2017	LT

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
Inventor search	8/2/2017	LT
PLUS search	8/2/2017	LT
Forward and backward citation	8/2/2017	LT
Text search	8/2/2017	LT
Updated text search	1/22/2018	LT
Updated text search	6/11/2018	LT
Updated text search	10/4/2018	LT
Updated text search	07/17/2019	LT

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<i>Search Notes</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 3747

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	F02D19/0647; F02D19/0613; F02D29/06; F02D41/0025; F02D11/02; F02D19/0642; F02D35/0053; F02B63/04; F02B43/00; F02B63/044; F02M13/08; F02M19/08; F02M21/047; F02N3/02	03/02/2020	LT

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Issue Classification 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.	
	Examiner LONG T TRAN	Art Unit 3747	

CPC						
Symbol				Type	Version	
F02M	/	17	/	38	F	2013-01-01
F02M	/	13	/	08	I	2013-01-01
F02D	/	19	/	0613	I	2013-01-01
F02M	/	43	/	00	I	2013-01-01
F02B	/	43	/	00	I	2013-01-01
F02M	/	17	/	10	I	2013-01-01
F02M	/	21	/	0212	I	2013-01-01
F02B	/	63	/	04	I	2013-01-01
F02D	/	41	/	062	A	2013-01-01
Y02T	/	10	/	32	A	2013-01-01
F02M	/	21	/	047	A	2013-01-01
Y02T	/	10	/	36	A	2013-01-01
F02D	/	41	/	0025	A	2013-01-01
F02M	/	19	/	08	A	2013-01-01
F02N	/	3	/	02	A	2013-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
/				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	64	
/LONG T TRAN/ Primary Examiner, Art Unit 3747	02 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 3747

INTERNATIONAL CLASSIFICATION			
CLAIMED			
F02M	/	17	/ 38
F02M	/	13	/ 08
F02B	/	43	/ 00
NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	64	
/LONG T TRAN/ Primary Examiner, Art Unit 3747	02 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 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	11	19	16	28	24	37	33	46	38	55	47	64	55
2	2	11	56	20	17	29	25	38	34	47	39	56	65		
3	3	12	57	21	18	30	26	39	58	48	40	57	48		
4	5	13	60	22	64	31	27	40	59	49	41	58	49		
5	6	14	61	23	19	32	28	41	62	50	42	59	50		
6	7	15	12	24	20	33	29	42	63	51	43	60	51		
7	8	16	13	25	21	34	30	43	35	52	44	61	52		
8	9	17	14	26	22	35	31	44	36	53	45	62	53		
9	10	18	15	27	23	36	32	45	37	54	46	63	54		

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	64	
/LONG T TRAN/ Primary Examiner, Art Unit 3747	02 March 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Customer No. 26629
Confirmation No. 1059

Patent
Attorney Docket No. CET1090.042

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Collie et al.
Serial No. : 14/925,441
Filed : October 28, 2015
For : BATTERYLESS DUAL FUEL ENGINE WITH LIQUID
FUEL CUT-OFF
Group Art No. : 3747
Examiner : Long T. Tran

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)

37 CFR 1.10

- ☐ with sufficient postage as first class mail ☐ As "Express Mail Post Office to Addressee" Mailing Label No.

Transmission

- ☐ transmitted by facsimile to Fax No.: 571-273-8300 addressed to Examiner Long T. Tran at the Patent and Trademark Office.
☒ transmitted by EFS-WEB addressed to Examiner Long T. Tran at the Patent and Trademark Office.

Date: January 22, 2020

/Robyn L. Templin/
Signature

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

APPEAL BRIEF PURSUANT TO 37 C.F.R §41.37

Dear Sir:

This Appeal Brief is being filed in furtherance of the Notice of Appeal filed on October 22, 2019.

1. **REAL PARTY IN INTEREST**

The real party in interest is Champion Power Equipment, Inc. by virtue of the Assignment recorded November 29, 2018, at reel 047681, frame 0698.

2. **RELATED APPEALS AND INTERFERENCES**

Appellant is unaware of any other appeals or interferences related to this Appeal. The undersigned is Appellant's legal representative in this Appeal. Champion Power Equipment, Inc., the Assignee of the above-referenced application, as evidenced by the documents mentioned above, will be directly affected by the Board's decision in the pending appeal.

3. **SUMMARY OF CLAIMED SUBJECT MATTER**

The following is a summary of the claimed subject matter of independent claims 1, 19, 35, and 48, as disclosed in the specification with supporting citations to reference numerals and page and line numbers in accordance with 37 C.F.R. §41.37(c)(1)(iii).

Claim 1 calls for a dual fuel engine (60) that includes an engine (60) operable on a gaseous fuel and a liquid fuel. *Specification*, ¶ [0031]; FIG. 1 and FIGS. 4A, 4B. A switch (86) is provided to change operation of the engine (60) between gaseous fuel and liquid fuel. *Specification*, ¶ [0056]; FIGS. 4A, 4B. A carburetor (62) is attached to an intake (90) of the engine (60) to mix air and fuel and connect to a gaseous fuel source (30) and a liquid fuel source (28), with a liquid fuel valve (54) positioned along a liquid fuel line (66) coupling the liquid fuel source (28) to the carburetor (62), a gaseous fuel valve (54) positioned along a gaseous fuel line (70) coupling the gaseous fuel source (30) to the carburetor (62), and a liquid fuel cut-off (72) incorporated into the carburetor (62) to interrupt liquid fuel upon actuation of the switch (86) from liquid fuel to gaseous fuel. *Specification*, ¶¶ [0048]-[0051], [0058], [0061]-[0063]; FIGS. 4A, 4B.

Claim 19 calls for a batteryless dual fuel generator (20) that includes a housing (21) containing a pull start engine (60) coupled to drive an alternator, the engine (60) operable on a gaseous fuel and a liquid fuel. *Specification*, ¶¶ [0031], [0032], [0052]; FIG. 1 and FIGS. 4A, 4B. The generator (20) also includes a carburetor (62) attached to an intake (90) of the engine (60), with the carburetor (62) including a throat (92) to mix

fuel with air, a float bowl (104), and a fuel passage (164) extending from the float bowl (104) to the throat (92) to provide liquid fuel. *Specification*, ¶¶ [0048], [0063], [0070]; FIGS. 4A, 4B and 6. A fuel shutoff (72) is attached to the carburetor (62) to close the fuel passage (164) upon selection of engine (60) operation to gaseous fuel. *Specification*, ¶¶ [0048]-[0051]; FIGS. 4A, 4B.

Claim 35 calls for a carburetor (62) having a fuel shutoff (72) that includes a carburetor (62) having a float bowl (104), a throat (92), and a fuel passage (164) extending from the float bowl (104) to the throat (92). *Specification*, ¶¶ [0048], [0063], [0070]; FIGS. 4A, 4B and 6. A fuel shutoff (72) is coupled to the carburetor (62) having a first end in the carburetor (62) that actuates to close the fuel passage (164) and a second end external to the carburetor (62) to actuate the first end, with the fuel shutoff (72) actuating free from linear motion. *Specification*, ¶¶ [0064]-[0074]; FIGS. 5 and 6.

Claim 48 calls for a method of assembling a dual fuel engine (60), with the method including providing an engine (60) operable on a gaseous fuel and a liquid fuel and attaching a carburetor (62) to an intake (90) of the engine (60), with the carburetor (62) including a throat (92) to mix gaseous fuel with air and liquid fuel with air, a float bowl (104), and a fuel passage (164) extending from the float bowl (104) to the throat (92) to provide liquid fuel. *Specification*, ¶¶ [0031], [0048], [0063], [0070]; FIGS. 4A, 4B and 6. The method also includes coupling a switch (86) to the engine (60) to change operation of the engine (60) between gaseous fuel and liquid fuel and attaching a liquid fuel cut-off (72) to the carburetor (62) to close the fuel passage (164) upon actuation of the switch (86) from liquid fuel to gaseous fuel. *Specification*, ¶¶ [0056], [0064], [0071]; FIGS. 4A, 4B, and 6.

4. ARGUMENTS

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

Claims 19 and 48

The Examiner rejected independent claims 19 and 48 together under 35 U.S.C. §103 as being unpatentable over Sugimoto et al. (US Pub. 2007/0137591) and further in view of Poehlman (USP 4,489,699).

Claim 19 calls for, in part, a batteryless dual fuel generator including a carburetor attached to an intake of an engine and comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat, and including a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

Claim 48 calls for, in part, a method of assembling a dual fuel engine including the steps of attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat, and including attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

Introduction

In rejecting claims 19 and 48, the Examiner asserted that “Sugimoto et al. teaches a batteryless dual fuel generator (paragraph 0086) comprising a housing (4) containing a pull start engine (46, 30) coupled to drive an alternator (40a), the engine operable on a gaseous fuel and a liquid fuel.” *Final Office Action*, July 22, 2019, p. 7. The Examiner admitted that “Sugimoto is silent as to a carburetor attached to an intake of the engine comprising: a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat to provide liquid fuel,” *id.* at 8, and thus cited to Poehlman as teaching those elements. In particular, the Examiner asserted that Poehlman discloses “a carburetor (15) attached to an intake (105) of the engine comprising: a throat (where throttle 107 resides) to mix fuel with air, a float bowl (17), a fuel passage (19) to provide liquid fuel from the float bowl to the throat; and a fuel shutoff (43) attached to the carburetor to close the fuel passage [extending from the float bowl to the throat of the carburetor] upon selection of engine operation to gaseous fuel.” *Id.*

Appellant respectfully disagrees with the rejection and believes claims 19 and 48 to be patentably distinct from that which is disclosed in Sugimoto and Poehlman. As set forth in MPEP §2142, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP §2142. “With regard to rejections under 35 U.S.C. 103, the examiner must provide evidence which as a whole shows that the

legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not.” *Id.* (emphasis in original). As will be set forth in detail here below, the combination of Sugimoto and Poehlman does not teach or suggest the claimed invention. Accordingly, the Examiner has not established a *prima facie* case of obviousness under 35 U.S.C. §103(a) with respect to claims 19 and 48.

Cited Prior Art – Sugimoto & Poehlman

Sugimoto discloses an engine generator 1 that includes a combustion engine 30, a fuel supply system Fa for supplying a fuel gas to the engine 30, an electric generator 40 to be driven for operation by the engine 30, a power control unit 41 for controlling power generated by the generator 40, and an electronic control unit (ECU) 89 for controlling the engine 30 and the fuel supply system Fa. *Sugimoto*, ¶ [0042]. The fuel supply system Fa is provided with one or a plurality of fuel bottles 61, a fuel pressure regulator 62, a heating device 80, a fuel system selector valve 12, and a fuel cutoff valve 63. *Id.* at ¶ [0071]. The fuel cutoff valve 63 is a normally-open solenoid valve which closes when energized, with ECU 89 controlling the fuel cutoff valve 63 on the basis of the pressure of the first fuel gas. *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. *Id.* at ¶[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, 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, and in a cutoff position, where the knob of the fuel system selector valve 12 is at a cutoff position, where the knob of the fuel system selector valve 12 is at a neutral position marked with "Off" to stop supplying fuel gas to the engine 30 by disconnecting both the first and the second fuel system from the engine 30. *Id.* at ¶[0082]. The fuel system selector valve 12 is

changed from the first to the second position and from the second to the first position via the neutral position. *Id.* at ¶[0082].

Poehlman shows in FIG. 1 a “control apparatus 11 for selectively operating an internal combustion engine 13 on a first or gaseous fuel and on a second or liquid fuel. The engine includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 25-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43.” *Id.* at col. 3, lns. 63-65. The “control means 41 includes a vacuum control switch 47 which is subject to variation in the amount of vacuum, which is normally closed, and which opens in response to the presence at the vacuum switch 47 of an amount of vacuum above a predetermined amount.” *Id.* at col. 4, lns. 10-15. The “control means 41 includes a primary or fuel selector switch 51.” *Id.* at col. 4, lns. 16-17. Regarding fuel changeover, Poehlman further discloses that “[i]n operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position” and that “[a]s a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15... [h]owever, the engine continues to run on the liquid fuel in the carburetor bowl 17.” *Id.* at col. 6, lns. 21-38. “The inlet manifold vacuum remains above the predetermined level of the vacuum switch 47 at idle or normal road speeds until the engine begins to run out of the liquid fuel in the fuel bowl 17” and “[t]he vacuum then drops to an amount less than or below the predetermined level thereby closing the vacuum switch 47 which energizes the solenoid coils 81 and 83.” *Id.* at col. 6, lns. 21-38. “The first solenoid coil 81 acts to displace the first switch member 65 to the terminal 63, thereby energizing the gaseous fuel control valve 45 to the open position, and thereby also energizing the spark advance means 31 and the inlet air heating means 33.” *Id.* at col. 6, lns. 21-38.

Failure of Sugimoto & Poehlman to teach Claims 19 and 48

Claim 19 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a

carburetor attached to an intake of an engine comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel. That is, neither Poehlman nor Sugimoto teach or suggest a fuel shutoff attached to the carburetor to close a fuel passage that extends from the float bowl to the throat.

Similarly, claim 48 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a method of assembling a dual fuel engine comprising attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and attaching a liquid fuel cut-off to the carburetor to close the fuel passage (extending from the float bowl to the throat) upon actuation of the switch from liquid fuel to gaseous fuel. That is, neither Poehlman nor Sugimoto discloses attaching a liquid fuel cut-off to the carburetor to close a fuel passage that extends from the float bowl to the throat.

First, the Examiner's assertion that fuel line 19 in Poehlman teaches a fuel passage extending from the float bowl to the throat in a carburetor is not supported by the disclosure of Poehlman. Fuel line 19 does not extend from the float bowl 17 to the throat 107 in Poehlman, as instead Poehlman discloses that "a float bowl 17 [of carburetor 15] is connected through a supply line 19 with a source 21 of liquid fuel." *Poehlman*, col. 3, lns. 28-30. FIG. 1 in Poehlman clearly shows this positioning of fuel line 19 - as fuel line 19 is shown therein as connecting liquid fuel source 21 to the float bowl 17 of the carburetor 15. There is simply no teaching or suggestion in Poehlman of fuel line 19 extending from the float bowl 17 to the throat 107, as asserted by the Examiner.

The clear advantage of the present invention over that of the cited references, and any combination of the cited references, is that the present invention is able to interrupt fuel flow between the float bowl and the throat thereby avoiding the need to use up the fuel in the float bowl, as is the case with the prior art. As previously explained, Poehlman requires that the engine has to nearly stall, or at least run less than optimally,

when it begins to run out of the liquid fuel in the fuel bowl enough that the vacuum drops enough to close the vacuum switch and energize the solenoid coils for the switch over. The present invention overcomes this drawback with an immediate switch over that is independent of the fuel in the fuel bowl because it cuts it off between the fuel bowl and the carburetor throat.

Second, the liquid fuel control valve 43 in Poehlman referenced by the examiner as the claimed “liquid fuel cut-off” is not attached to the carburetor 15, as called for in claims 19 and 48. Poehlman discloses “a liquid fuel control valve 43 which is incorporated in the liquid fuel supply line 19.” *Poehlman*, col. 3, lns. 64-66. Accordingly, the liquid fuel control valve 43 is located upstream from the carburetor 15, *see id.* at FIG. 1, but it is not attached to the carburetor as called for in claims 19 and 48. For purposes of clarifying this clear distinction, Appellant notes that the Specification of the present application discloses an embodiment where “fuel shutoff 110 couples to carburetor 62 to regulate liquid fuel flow.” *Specification*, ¶ [0071] (emphasis added). Since Poehlman’s liquid fuel control valve 43 is located along the liquid fuel supply line 19 upstream from the carburetor 15, the Examiner’s asserted “fuel shutoff (43)” is not attached to the carburetor, and thereby, cannot benefit from the aforementioned advantages of the present invention, but will result in some adverse operating characteristics when running down the fuel in the fuel bowl and lowering the operating vacuum of the engine in order to switch over.

Even *assuming* arguendo that the liquid fuel control valve 43 in Poehlman can be construed as being attached to the carburetor 15 (which it is not), the liquid fuel control valve 43 does not close a fuel passage in the carburetor that extends from the float bowl to the throat, as called for in claims 19 and 48. That is, the fuel control valve 43 is clearly not positioned relative to carburetor 15 so as to enable the valve 43 to close a fuel passage in the carburetor that extends from the float bowl 17 to the throat 107, as the valve 43 is instead is located along the liquid fuel supply line 19 upstream from the carburetor 15. The liquid fuel control valve 43 is not positioned to close a fuel passage that extends from the float bowl 17 to the throat 107 in the carburetor 15, as called for in claims 19 and 48.

Were the liquid fuel control valve 43 incorporated into the system of Sugimoto to modify the system thereof, the resulting system would only include an additional liquid fuel control valve 43 (in addition to fuel cutoff valve 63) that is positioned upstream from a carburetor included in the engine generator 1 of Sugimoto. However, neither the fuel control valve 43 and/or fuel cutoff valve 63 that would be included in the modified engine generator 1 of Sugimoto would be attach to the carburetor to close a fuel passage extending from the float bowl to the throat (within the carburetor) upon actuation of a switch from liquid fuel to gaseous fuel. Accordingly, the combination would fail to teach what is called for in claims 19 and 48.

In light of at least the above, the Examiner has not established a prima facie case of obviousness under 35 U.S.C. §103(a) with respect to claims 19 and 48. The combination of Sugimoto and Poehlman fails to teach the specifically claimed elements in claims 19 and 48 at least for the reason that the cited references do not teach a fuel shutoff attached to the carburetor to close a fuel passage that extends from a float bowl to a throat in the carburetor upon selection of engine operation to gaseous fuel. Sugimoto and Poehlman, and any resulting combination thereof, does not teach or suggest that which is called for in claims 19 and 48. Appellant therefore respectfully requests reversal of the rejection of claims 19 and 48 under 35 U.S.C. §103, along with the rejection of all claims depending therefrom.

Rejection under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda

Claim 1

The Examiner rejected claim 1 under 35 U.S.C. §103 as being unpatentable over Poehlman and in view of Tsuda et al. (USP 5,809,979).

Claim 1 calls for, in part, a dual fuel engine including a switch to change operation of an engine between gaseous fuel and liquid fuel, a carburetor attached to an intake of the engine, a liquid fuel valve positioned along a liquid fuel line coupling the liquid fuel source to the carburetor, a gaseous fuel valve positioned along a gaseous fuel line coupling the gaseous fuel source to the carburetor, and a liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Introduction

In rejecting claim 1, the Examiner asserted that Poehlman discloses a dual fuel engine that includes “an engine (13),” “a switch (51) to change operation of the engine between gaseous fuel and liquid fuel,” “a carburetor (15),” “a liquid fuel cut-off (41),” “a liquid fuel valve (43),” and “a gaseous fuel valve (45).” *Final Office Action*, supra at 3. The Examiner admitted that “Poehlman is silent to the liquid fuel cut-off is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel,” *id.* (emphasis in original), and thus relied on Tsuda as teaching this limitation – stating that “Tsuda et al. teaches to the liquid fuel cut-off (14) is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.” *Id.* (emphasis in original). The Examiner concluded that “it would have been obvious to one having ordinary skill in the art... to incorporate the valve into the carburetor as taught by Tsuda et al., since it has been held that rearranging parts of an invention involves only routine skill in the art.” *Id.* at 4.

Appellant respectfully disagrees with the rejection and believes claim 1 to be patentably distinct from that which is disclosed in Poehlman and Tsuda. As set forth in MPEP §2142, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP §2142. “With regard to rejections under 35 U.S.C. 103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not.” *Id.* (emphasis in original). As will be set forth in detail here below, the combination of Poehlman and Tsuda does not teach or suggest the claimed invention, nor would one skilled in the art be motivated to combine the references in the manner done so by the Examiner. Accordingly, the Examiner has not established a *prima facie* case of obviousness under 35 U.S.C. §103(a) with respect to claim 1.

Cited Prior Art – Poehlman & Tsuda

As described above, Poehlman discloses an “engine [that] includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a

source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 27-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43 which is incorporated in the liquid fuel supply line 19.” *Id.* at col. 3, lns. 62-66. The “control means 41 includes a vacuum control switch 47” and “a primary or fuel selector switch 51.” *Id.* at col. 4, lns. 10-17. Regarding fuel changeover, Poehlman further discloses that “[i]n operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position” and that “[a]s a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15... [h]owever, the engine continues to run on the liquid fuel in the carburetor bowl 17.” *Id.* at col. 6, lns. 21-38. “The inlet manifold vacuum remains above the predetermined level of the vacuum switch 47 at idle or normal road speeds until the engine begins to run out of the liquid fuel in the fuel bowl 17” and “[t]he vacuum then drops to an amount less than or below the predetermined level thereby closing the vacuum switch 47 which energizes the solenoid coils 81 and 83.” *Id.* at col. 6, lns. 21-38. “

Tsuda discloses a carburetor 1 having a mixing body 2 in which a venturi passage 3 is provided. *Tsuda*, col. 2, lns. 40-41; FIG. 1. A float chamber 4 is arranged in the mixing body 2 and a liquid fuel nozzle 5 is communicated with the float chamber 4. *Id.* at col. 2, lns. 41-43. A liquid fuel nozzle outlet 6 is faced to the venturi passage 3. *Id.* at col. 2, lns. 43-44. An upper end of the liquid fuel nozzle 5 projects into the venturi passage 3. *Tsuda*, col. 2, lns. 55-56. An inner bottom portion of the float chamber 4 is provided with a liquid fuel inlet 13, with a liquid fuel valve 14 laterally arranged at a lower portion of the float chamber 4 for opening or closing the liquid fuel inlet 13 of the float chamber 4. *Id.* at col. 2, lns. 61-62.

Failure of Poehlman & Tsuda to teach Claim 1

The Examiner’s proposed combination of Poehlman and Tsuda fails to teach that which is called for in claim 1.

Initially, Appellant believes that one skilled in the art would not have been motivated to combine Poehlman and Tsuda in the manner done so by the Examiner in

order to achieve the claimed invention. “[O]bviousness concerns whether a skilled artisan not only *could have made but would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (citing *InTouch Technologies, Inc. v. VGO Communications, Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014) (emphasis in original)). The Examiner must make “an explanation-supported finding that the evidence affirmatively provided that the PHOSITA would have sought” the additional feature(s). *See In re Nuvasive*, 842 F.3d 1376, 1384 (Fed. Cir. 2016). Accordingly, to establish a prima facie case, the Examiner must not only show that the combination includes each and every element of the claimed invention, but also provide “a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). In the present case, and as set forth in detail below, the Examiner has failed to provide an explanation-supported finding that a person having ordinary skill in the art would have been motivated to combine the references in the manner done so by the Examiner.

In combining the teachings of Tsuda with Poehlman, the Examiner admitted that “Poehlman is silent to the liquid fuel cut-off [41] is incorporated into the carburetor,” but asserted that “it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the valve into the carburetor, as taught by Tsuda et al., since it has been held that rearranging parts of an invention involves only routine skill in the art.” *Final Office Action*, supra at 3-4.

However, with regard to the Examiner’s reliance on a “rearrangement of parts” as a basis for the rejection, MPEP 2144.04 specifies that “[t]he mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims [] is not by itself sufficient to support a finding of obviousness” and that “[t]he prior art must provide a motivation or reason for the worker in the art, without the benefit of appellant’s specification, to make the necessary changes in the reference device.” (citing *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984)). In the present case, the Examiner’s suggestion to modify the system of Poehlman

to have the “liquid fuel cut-off 41” incorporated into the carburetor 15 is not a mere rearrangement of parts that would have been obvious to one skilled in the art based on a motivation or reason provided Tsuda, but instead the Examiner has improperly relied on the teaching of the present Specification as the basis for such rearrangement.

As set forth above, the system in Poehlman is directed to a control apparatus 11 for selectively operating an internal combustion engine 13 on a first or gaseous fuel and on a second or liquid fuel. *Poehlman*, Col. 3, lns. 25-27. A control means 41 is provided for a selective change-over between use of liquid fuel and gaseous fuel, with the control means 41 including a liquid fuel control valve 43 which is incorporated in a liquid fuel supply line 19 and a gaseous fuel control valve 45 which is incorporated in the gaseous fuel supply line 25. *Poehlman*, Col. 3, ln. 62 to Col. 4, ln. 6. The control means 41 also includes an electrical fuel selector switch 51 that energizes the liquid fuel control valve 43 when in a liquid fuel position and separately energizes the gaseous fuel control valve 45 when in a gaseous fuel position, as well as a vacuum control switch 47 which is normally closed and which opens in response to the presence at the vacuum switch 47 of an amount of vacuum above a predetermined amount. *Poehlman*, Col. 4, lns. 10-15, 21-30 and Col. 5, lns. 1-6.

In light of the teachings of Poehlman, it would not be an obvious “rearrangement of parts” to have what the Examiner identified as “liquid fuel cut-off 41” incorporated into the carburetor 15, as asserted by the Examiner. That is, the “liquid fuel cut-off 41” identified by the Examiner is in fact a control means 41 that includes liquid fuel control valve 43, gaseous fuel control valve 45, vacuum control switch 47, and a fuel selector switch 51. *See Poehlman*, Col. 3, lns. 62-66 and Col. 4, lns. 10-17. The Examiner is thus asserting that one skilled in the art would be motivated to incorporate the control means 41 of Poehlman - which includes liquid fuel control valve 43, gaseous fuel control valve 45, vacuum control switch 47, and fuel selector switch 51 - into the carburetor 15 based on the teaching of Tsuda of a liquid fuel valve 14 included in the carburetor 1 (FIG. 1), in order to achieve the present invention. No motivation for such a modification or “rearrangement of parts” is provided in Poehlman or Tsuda, and the rearrangement of parts, in fact, results in an arrangement not even called for in claim 1 – as claim 1 does

not call for a gaseous fuel control valve, control switch, or selector switch being incorporated into the carburetor, as would occur if the control means 41 were incorporated into the carburetor 15 in Poehlman..

In fact, logic would lead a skilled artisan to *not* incorporate elements such as a vacuum control switch 47 and/or fuel selector switch 51 (which are part of the control means 41 – i.e., the alleged “liquid fuel cut-off 41”) into the carburetor 15. It is more likely than not that the Poehlman inventors intentionally placed the vacuum control switch 47 and/or fuel selector switch 51 at a distance from carburetor 15 to shield the switch contacts from the fuel that flows through carburetor 15. There is thus no motivation to incorporate the vacuum control switch 47 and/or fuel selector switch 51 into the carburetor 15. The Examiner has thus failed to provide any “motivation or reason for the worker in the art, without the benefit of appellant’s specification, to make the necessary changes in the reference device,” as is necessary as a basis for a rejection under a “rearrangement of parts” rationale per MPEP 2144.04.

In light of all the above, one skilled in the art would recognize that it would not be a mere “rearrangement of parts” to modify the system of Poehlman to incorporate the control means 41 into the carburetor 15, as alleged by the Examiner. Rather, such a proposed “rearrangement of parts” would be an entirely unnecessary modification to Poehlman for which – based solely on Poehlman and Tsuda – there would be no “motivation or reason for the worker in the art, without the hindsight benefit of appellant’s specification, to make the necessary changes in the reference device,” as required under MPEP 2144.04.

Even assuming *arguendo* that one would combine the teachings of Poehlman and Tsuda, the resulting combination would not teach what is called for in claim 1. That is, the resulting combination would not teach each of a liquid fuel valve positioned along a liquid fuel line coupling the liquid fuel source to the carburetor and a liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, as called for in claim 1. While the Examiner cited to Poehlman as disclosing a “liquid fuel cut-off (41)” and a “liquid fuel valve (43),” *see Final Office Action*, supra at 3, Poehlman does not disclose two separate liquid fuel

valves/cut-offs as asserted by the Examiner. The elements “41” and “43” identified by the Examiner are a control means 41 and liquid fuel control valve 43, with the control means 41 described as being “for selective change-over between use of liquid fuel and gaseous fuel” and including liquid fuel control valve 43, gaseous fuel control valve 45, vacuum control switch 47, and a fuel selector switch 51. *Poehlman*, Col. 3, lns. 62-66 and Col. 4, lns. 10-17.

To the extent control means 41 can be said to teach a “liquid fuel cut-off that interrupts liquid fuel” as called for in claim 1, it is the operation of liquid fuel control valve 43 (as part of control means 41) that interrupts liquid fuel. Thus, in the interpretation set forth by the Examiner, the Examiner is citing to liquid fuel control valve 43 as teaching two separate structures – i.e., as a separate liquid fuel control valve 43 that teaches the claimed “liquid fuel valve” and as a liquid fuel control valve that is part of control means 41 that teaches the claimed “liquid fuel cut-off.” This is not what is called for in claim 1 – as claim 1 distinctly calls for a liquid fuel valve and a liquid fuel cut-off as two separate elements/structures. These elements should not be confused with one another, as the Examiner has attempted to do. *Poehlman* does not teach such an arrangement, as there are no components disclosed therein that separately define a liquid fuel valve and a liquid fuel cut-off. The Examiner has stretched the teachings of the prior art in an attempt to satisfy the elements called for in claim 1 by asserting that a single structure disclosed in *Poehlman* (i.e., liquid fuel control valve 43, alone or as part of control means 41) teaches two distinct claims elements. Such a categorization of the liquid fuel control valve 43 (and control means 41) distorts the teachings of *Poehlman* and ignores the requirement of MPEP §2143(A)(1) that the Examiner must articulate a finding that the prior art include each element claimed.

Tsuda fails to address the deficiencies of *Poehlman* with regard to the failure thereof to teach a liquid fuel valve and a separate liquid fuel cut-off, as the liquid fuel valve 14 in carburetor 1 provides no such teaching of separate valves/cut-offs. *See Tsuda*, FIG. 1. Accordingly, the combination of *Poehlman* and *Tsuda* would not teach what is called for in claim 1 regarding each of a liquid fuel valve and a liquid fuel cut-off.

In light of all the above, the Examiner has failed to supporting a *prima facie* conclusion of obviousness, as with regard to rejections under 35 U.S.C. 103, “the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not.” It would not be obvious to modify the system of Poehlman in the manner done so by the Examiner in order to achieve the claimed arrangement of claim 1, nor would any combination of Poehlman and Tsuda teach or suggest the claimed invention. Accordingly, the Examiner has not established a *prima facie* case of obviousness under 35 U.S.C. §103 for claim 1. Appellant thus respectfully requests reversal of the rejection of claim 1, along with the rejection of all claims depending therefrom.

Claim 35

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

Claim 35 calls for, in part, a carburetor having a fuel shutoff and comprising a carburetor having a float bowl, a throat, and a fuel passage extending from the float bowl to the throat, as well as a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end, wherein the fuel shutoff actuates free from linear motion.

Introduction

In rejecting claim 35, the Examiner asserted that “Poehlman teaches a carburetor (15) having a fuel shutoff (via 51) comprising: a carburetor comprising: a float bowl (17), a throat (where throttle 107 resides), a fuel passage (19) extending from the float bowl to the throat; and a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end (Fig 1 shows valve 43 connected to two end of the fuel passage); and wherein the fuel shutoff actuates free from linear motion (it rotates).” *Final Office Action*, supra at 4-5.

Appellant respectfully disagrees with the rejection. As set forth in MPEP §2142, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP §2142. “With regard to rejections under 35 U.S.C. 103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not.” *Id.* (emphasis in original). The examiner has not provided a factual underpinning to meet the minimum standard to satisfy that initial burden. In fact, the examiner has not specified how Tsuda operates nor how it remedies the deficiencies of Poehlman. Accordingly, the Examiner has not established a *prima facie* case of obviousness under 35 U.S.C. §103(a) with respect to claim 35.

Nevertheless, as will be set forth in detail here below, the combination of Poehlman and Tsuda does not teach or suggest the claimed invention.

Failure of Poehlman & Tsuda to teach Claim 35

Appellant initially notes that, despite rejecting claim 35 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Tsuda et al., the Examiner has not cited or referred to Tsuda in any respect in issuing the rejection. The Examiner’s basis for the rejection of claim 35 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Tsuda is thus unclear.

Regardless of the above, there is no teaching in Poehlman (alone or in combination with Tsuda) of a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close a fuel passage extending from the float bowl to the throat and a second end external to the carburetor to actuate the first end, wherein the fuel shutoff actuates free from linear motion as called for in claim 35.

First, and as set forth above with regard to claims 19 and 48, the fuel line 19 in Poehlman identified by the Examiner as the claimed fuel passage that extends from the float bowl 17 to the throat 107, does not extend from the float bowl to the throat. FIG. 1 of Poehlman clearly shows that fuel line 19 connects a source 21 of liquid fuel to carburetor 15 – but there is no teaching or suggestion therein of fuel line 19 extending from the float bowl 17 to the throat 107.

Second, while the Examiner has asserted that valve 43 is coupled to the carburetor 15 and has a first end in the carburetor 15 to close fuel passage 19 and a second end external to the carburetor to actuate the first end, this assertion is not supported by that which is disclosed in Poehlman. FIG. 1 of Poehlman clearly illustrates that valve 43 does not have a first end in the carburetor 15, and there is no teaching in Poehlman of the valve having second end external that actuates the first end. Valve 43 is located entirely upstream from carburetor 15, such that there is no first end in the carburetor that would actuate to close a fuel passage that extends from the float bowl to the throat in the carburetor. *See Poehlman*, at FIG. 1. Additionally, there is no disclosure in Poehlman that liquid fuel valve includes any second end that actuates a first end, as instead liquid fuel valve 43 is only generally described as a valve that is selectively energized/deenergized to open and close the valve (i.e., a solenoid valve), *see Poehlman*, col. 4, lns. 21-24, without any additional structure being described therein.

Still further, there is no teaching in Poehlman that liquid fuel valve 43 “actuates free from linear motion,” as specifically set forth in claim 35. While the Examiner has asserted that liquid fuel valve 43 “rotates” when opening/closing, *see Final Office Action*, supra at 5, the Examiner has provided no support for this conclusory statement, such that the rejection is deficient on its face (“[R]ejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).) In fact, Poehlman is completely silent regarding the manner in which liquid fuel valve 43 actuates – i.e., whether it is rotational or linear motion that opens/closes the valve. Accordingly, the Examiner has failed to meet the burden of factually supporting a *prima facie* conclusion of obviousness.

Tsuda fails to address the deficiencies of Poehlman with regard to teaching or suggesting a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close a fuel passage (extending from the float bowl to the throat) and a second end external to the carburetor to actuate the first end, wherein the fuel shutoff actuates free from linear motion.

In light of at least the above, the Examiner has failed to supporting a *prima facie* conclusion of obviousness, as with regard to rejections under 35 U.S.C. 103, “the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not.” The combination of Poehlman and Tsuda does not teach or suggest the claimed invention. Accordingly, the Examiner has not established a *prima facie* case of obviousness under 35 U.S.C. §103 for claim 35. Appellant thus respectfully requests reversal of the rejection of claim 35, along with the rejection of all claims depending therefrom

Claim 64

The Examiner rejected claim 64 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Tsuda et al.

Claim 64 calls for, wherein the liquid fuel cut-off is physically attached to an outer surface of the carburetor.

In rejecting claim 64, the Examiner asserted that “Poehlman teaches the liquid fuel cut-off is physically attached to an outer surface of the carburetor (Fig 1 shows the cut off 21 attached via tube 19 to the carburetor).” *Final Office Action*, supra at 5. Appellant respectfully disagrees with the rejection.

First, the “cut off 21” identified by the Examiner is a fuel source 21, and one skilled in the art would recognize that a fuel source is not a liquid fuel cut-off. For this reason alone, the rejection is deficient and cannot be sustained.

Second, there is no liquid fuel cut off in Poehlman that is physically attached to an outer surface of the carburetor. The liquid fuel control valve 43 in Poehlman identified as the claimed “liquid fuel cut off” is not physically attached to an outer surface of the carburetor 15, but instead is located upstream from carburetor 15 on fuel line 19. A fluid coupling of the liquid fuel control valve 43 to the carburetor 15 by the fuel line 19 would not be understood by one skilled in the art to be a physical attachment of the valve 43 to an outer surface of the carburetor 15.

In light of at least the above, claim 64 is patentably distinct from that which is disclosed in Poehlman and Tsuda. Appellant therefore respectfully requests reversal of the rejection of claim 64.

Claim 65

The Examiner rejected claim 65 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Tsuda et al.

Claim 65 calls for, the fuel shutoff extending through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage

In rejecting claim 65, the Examiner asserted that “Poehlman teaches the fuel shutoff extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage (via tube 19).” *Final Office Action*, supra at 5. Appellant respectfully disagrees with the rejection, and again believes that this is a gross misinterpretation of both the claim language and that which is disclosed in the cited reference.

First, there are no distinct “first” and “second” ends on liquid fuel control valve 43 that are separately identified/distinguished in Poehlman, as there is simply no structure provided for the valve 43.

Second, there is no fuel shutoff in Poehlman that specifically extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage. The liquid fuel control valve 43 in Poehlman does not have a first end that actuates in the float bowl 17, but instead is located upstream from carburetor 15 on fuel line 19. A fluid coupling of the liquid fuel control valve 43 to the carburetor 15 by the fuel line 19 would not be understood by one skilled in the art to somehow teach or suggest that the valve 43 extends through an opening into the float bowl 17 such that a first end thereof actuates in the float bowl to close the fuel passage.

In light of at least the above, claim 65 is patentably distinct from that which is disclosed in Poehlman and Tsuda. Appellant therefore respectfully requests reversal of the rejection of claim 65.

Rejection under 35 U.S.C. §103 over Poehlman and Tsuda in view of Sugimoto**Claim 7**

The Examiner rejected claim 7 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Tsuda et al. and Sugimoto.

Claim 7 calls for wherein the liquid fuel cut-off is a solenoid valve that operates within the carburetor to control liquid fuel flow to the engine and is powered by the electrical power generator.

In rejecting claim 7, the Examiner did not address the limitations of the claim individually, but only generally addressed claims 7-10, 56-57, and 60-61 collectively, asserting that “[m]odified Poehlman teaches all of the claimed limitations except for a power generator” and then relying on Sugimoto for teaching a pull-start engine. *See Final Office Action*, supra at 7. As the Examiner has not provided any indication of what portion of Poehlman, Tsuda, and/or Sugimoto is thought to teach each claimed element or address those elements, the present rejection of claim 7 is, on its face, deficient according to MPEP §706, and should be reversed. (“The goal of examination is to clearly articulate any rejection early in the prosecution process so that the Appellant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity.” *MPEP §706*).

Regardless of the above, none of Poehlman, Tsuda, and/or Sugimoto teaches or suggests a solenoid valve that operates within the carburetor to control liquid fuel flow to the engine and that is powered by an electrical power generator, as called for in claim 7.

Poehlman provides no teaching of a solenoid valve that is powered by an electrical power generator. Instead, Poehlman only discloses that primary switch member 57 is connected to a source 59 of direct current and movable between a first position energizing the liquid fuel terminal 55 (and liquid fuel control valve or solenoid 43) and a second position energizing the gaseous fuel terminal 53 (and gaseous fuel control valve or solenoid 45). *Poehlman*, Col. 5, lns. 1-6. This powering of liquid fuel terminal 55/liquid fuel solenoid 43 and gaseous fuel terminal 53/gaseous fuel solenoid 45 via DC power source 59 does not teach or suggest powering of the liquid fuel solenoid 43

and gaseous fuel solenoid 45 by an electrical power generator (in a pull-start engine), as called for in claim 7.

Tsuda also provides no teaching of a solenoid valve that is powered by an electrical power generator. That is, Tsuda is not disclosed as being a pull-start engine or including any electrical power generator that supplies electrical power, such as to power a liquid cut-off solenoid valve, as called for in claim 7.

Sugimoto also provides no teaching of a solenoid valve that is powered by an electrical power generator. Instead, to the extent that Sugimoto discloses an electrical power generator 40, the generator 40 is only disclosed as “being rotatively driven by the engine 30” and being associated with “a power control unit 41 for controlling the power generated by the generator 40,” with “power thus generated [being] supplied to an electric device connected to the output receptacle 13.” *Sugimoto*, ¶¶ [0065], [0068], and [0089]. There is no disclosure in Sugimoto that fuel cutoff valve or solenoid 63 is powered by the generator 40, as called for in claim 7.

In light of at least the above, Appellant believes claim 7 be patentably distinct from that which is disclosed in the cited references. As such, Appellant respectfully requests reversal of the rejection of claim 7.

Claim 8

The Examiner rejected claim 8 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Tsuda et al. and Sugimoto.

Claim 8 calls for wherein the switch selectively powers the solenoid valve by controlling electrical connection between the solenoid valve and the electrical power generator.

In rejecting claim 8, the Examiner did not address the limitations of the claim individually and thus, for similar reasons as set forth above for claim 7, the present rejection of claim 8 is, on its face, deficient according to MPEP §706, and should be reversed.

Regardless of the above, none of Poehlman, Tsuda, and/or Sugimoto teaches or suggests a switch that selectively powers a solenoid valve by controlling an electrical connection between the solenoid valve and the electrical power generator, as called for in

claim 8. Poehlman only discloses that primary switch member 57 is connected to a source 59 of direct current and movable between a first position energizing the liquid fuel terminal 55 (and liquid fuel control valve or solenoid 43) and a second position energizing the gaseous fuel terminal 53, *Poehlman*, Col. 5, lns. 1-6, but there is no teaching that switch member 57 selectively powers the liquid fuel solenoid 43 and gaseous fuel solenoid 45 by controlling an electrical connection between the solenoid valves and an electrical power generator, as called for in claim 8. Additionally, Tsuda provides no teaching of any electrical power generator (that could be connected to a solenoid valve), and there is no teaching in Sugimoto of generator 40 being selectively connected to fuel cutoff valve/solenoid 63 via a switch – as there is no disclosure in Sugimoto that generator provides power to the solenoid 63.

In light of at least the above, Appellant believes claim 8 be patentably distinct from that which is disclosed in the cited references. As such, Appellant respectfully requests reversal of the rejection of claim 8.

Claim 10

The Examiner rejected claim 10 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Tsuda et al. and Sugimoto.

Claim 10 calls for wherein a pull-starter drives the electrical power generator to power and close the solenoid valve while starting the engine on gaseous fuel.

Again, the Examiner did not address the limitations of claim 10 individually and thus, for similar reasons as set forth above for claims 7 and 8, the present rejection of claim 10 is, on its face, deficient according to MPEP §706, and should be reversed.

Regardless of the above, none of Poehlman, Tsuda, and/or Sugimoto teaches or suggests a pull-starter that drives the electrical power generator to power and close the solenoid valve while starting the engine on gaseous fuel, as called for in claim 10. The engines in Poehlman and Tsuda do not include a pull-starter, and thus necessarily there can be no disclosure therein of a pull-starter that drives the electrical power generator to power and close the solenoid valve while starting the engine on gaseous fuel. While Sugimoto discloses that the engine 30 is started by operating a recoil starter 46, see *Sugimoto*, ¶[0066], there is no teaching in Sugimoto that recoil starter 46 drives the

electrical power generator 40 to power and close the fuel cutoff valve/solenoid 63 while starting the engine on gaseous fuel, as called for in claim 10.

In light of at least the above, Appellant believes claim 10 be patentably distinct from that which is disclosed in the cited references. As such, Appellant respectfully requests reversal of the rejection of claim 10.

Rejection under 35 U.S.C. §103 over Poehlman and Tsuda in view of Swanson

Claim 14

The Examiner rejected claim 14 under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Swanson.

Claim 14 calls for the liquid fuel cut-off (of claim 1) to comprise a rotating shaft extending through an aperture in the carburetor, a fuel seal around the shaft to seal the aperture, and a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

In rejecting claim 14, the Examiner admitted that Poehlman and Tsuda are silent to the elements of the liquid fuel cut-off called for in claim 14, but asserted that Swanson discloses “a liquid fuel cut-off (118)” comprising “a rotating shaft (58) extending through an aperture in the carburetor (50),” “a fuel seal (112, 114) around the shaft to seal the aperture,” and “a blocking member (56) coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.” *Final Office Action*, supra at 9. Appellant respectfully disagrees with the rejection. Specifically, Appellant believes that the Examiner has mischaracterized that which is disclosed in Swanson in rejecting claim 14.

Swanson discloses, in relevant part, a small engine carburetor with manually controlled choke and throttle valves and associated idle ports and main metering nozzle supplied with fuel from a common metering chamber. *Swanson*, Abstract. The carburetor 50 includes a body 52 having a straight through central venturi passage 54 in which a throttle valve plate 56 (FIGS. 1 and 8) is operably disposed and mounted on a throttle shaft 58. *Swanson*, col. 9, lns. 1-4. The throttle valve is movable from its closed, normal (low) idle position as shown in FIGS. 1 and 8 to a wide open throttle position

(shown in FIG. 35) by rotating shaft 58 clockwise as shown in FIGS. 4 and 8 so that throttle plate 56 is disposed substantially parallel to the direction of flow of air through the venturi. *Id.* at col. 9, lns. 4-10. Carburetor 50 is also preferably provided with an accelerator pump and shut-off device 104 having a piston 106 carrying an O-ring 107, valve 108, spring 110, O-ring valve seat 112 and inlet passage 114 (FIG. 8), and an associated outlet passage 116 (FIG. 2), back check valve assembly 118 therein and downstream passage 120. *Id.* at col. 10, lns. 5-11. As the throttle shaft 58 is rotated to move throttle plate 56 from the normal idle position shown in FIGS. 1, 8 and 34 to the wide open throttle position shown in FIG. 35, a cam 122 on the throttle shaft advances the piston 106 and associated valve 108 so that the tip of valve 108 bears on O-ring seat 112, 114 to thereby shut-off flow of fuel from metering chamber 66. *Id.* at col. 10, lns. 17-22. When valve 108 is open, fuel normally flows from chamber 66 via inlet passage 114 through O-ring 112 into the chamber 126 defined between O-ring 112 and piston 106, and thence from chamber 126 through outlet passage 116, back check valve 118 and passage 120 to the idle well under the manually adjustable flow control of the idle adjustment needle valve assembly 102. *Id.* at col. 10, lns. 22-29.

However, there is no teaching in Swanson of a liquid fuel cut-off having a rotating shaft extending with a fuel seal around the shaft to seal an aperture in the carburetor and/or, a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

First, the “fuel seal (112, 114)” identified by the Examiner as being positioned around the “rotating shaft (58)” is a distortion of what is disclosed in Swanson, as instead the O-ring valve seat 112 and inlet passage 114 are part of shut-off device 104 and are not positioned around the throttle shaft 58, as is clearly seen in FIG. 8 of Swanson. *See Swanson*, FIG. 8. Accordingly, there is no teaching in Swanson of any fuel seal positioned around a rotating shaft extending through an aperture in the carburetor, so as to seal the aperture.

Second, the “blocking member (56)” identified by the Examiner as being coupled to the rotating shaft 58 in the carburetor and that “rotates between a blocking and a non-

blocking position to selectively block a liquid fuel path to the engine” is a distortion of what is disclosed in Swanson, as the throttle valve plate 56 does not selectively block a liquid fuel path to the engine, as called for in claim 14. Instead, the throttle valve plate 56 is movable to control a flow of air through the venturi passage 54, as Swanson discloses that “[t]he throttle valve is movable from its closed, normal (low) idle position as shown in FIGS. 1 and 8 to a wide open throttle position (shown in FIG. 35) by rotating shaft 58 clockwise as shown in FIGS. 4 and 8 so that throttle plate 56 is disposed substantially parallel to the direction of flow of air through the venturi (arrow A in FIGS. 8 and 10).” *Swanson*, col. 9, lns. 4-10. The throttle valve plate thus does not block a liquid fuel path, as asserted by the Examiner.

In light of at least the above, Appellant believes claim 14 be patentably distinct from that which is disclosed in the cited references. As such, Appellant respectfully requests reversal of the rejection of claim 14.

Claims 15 and 55

The Examiner rejected claims 15 and 55 under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Swanson.

Claim 15 calls for a lever coupled to the shaft outside the carburetor, a spring coupled to the lever to hold the blocking member in either the blocking or non-blocking position, and a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions, while claim 55 similarly calls for coupling a lever to the shaft, attaching a control spring to the lever to actuate the shaft to one of the first position and second position, and attaching a cable to the lever to actuate the shaft to the other of the first position and second position.

In rejecting claims 15 and 55, the Examiner admitted that Poehlman and Tsuda are silent to the elements called for in claims 15 and 55, but asserted that Swanson discloses “a lever (395) coupled to the shaft (58) outside the carburetor,” “a spring (397) coupled to the lever to hold the blocking member in either the blocking or non-blocking position,” and “a cable (400) coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.” *Final Office Action*, supra at 10. Appellant respectfully disagrees with the rejection. Specifically,

Appellant believes that the Examiner has mischaracterized that which is disclosed in Swanson in rejecting claims 15 and 55.

Swanson discloses, in relevant part, a small engine carburetor with manually controlled choke and throttle valves and associated idle ports and main metering nozzle supplied with fuel from a common metering chamber. *Swanson*, Abstract. The carburetor 50 includes a body 52 and a control box housing 150. *Id.* at col. 9, ln. 1 and col. 11, lns. 22-23. The body 52 includes a straight through central venturi passage 54 in which a throttle valve plate 56 (FIGS. 1 and 8) is operably disposed and mounted on a throttle shaft 58. *Id.* at col. 9, lns. 1-4. A choke valve plate 60 mounted on a choke shaft 62 (FIGS. 8 and 10) is also disposed in the venturi passage upstream of the throttle valve. *Id.* at col. 9, lns. 10-12. Choke shaft 62 receives thereon a choke lever 400 (FIGS. 1, 4 and 33-35), which has a flatted oval mounting opening 402 which keys it non-rotatably on choke shaft 62 for rotation therewith, and has an opening 404 for connection thereto of the conventional manual throttle control linkage (not shown). *Id.* at col. 17, ln. 64 and col. 18, lns. 1-4. The control box housing 150 includes a shelf wall 394 that provides a platform on which an electrical switch mechanism 395 is removably mounted (FIGS. 1, 3 and 10). *Id.* at col. 16, lns. 26-28. The exteriorly protruding right-hand end of throttle shaft 58 is provided with associated conventional throttle stop and spring structure (FIGS. 1 and 8) adapted to cooperate in a conventional manner with a body stop boss 391 and throttle stop low idle adjustment screw 393, as well as a switch actuating cam 396. *Id.* at col. 16, lns. 28-33. A spring lever 397 on switch mechanism 395 is actuated by cam 396 at an appropriate point in throttle shaft rotation to thereby enable and disable appropriate downstream operational stages of the electronic circuitry of the automatic A/F control system incorporated in housing 150. *Id.* at col. 16, lns. 33-38.

However, there is no teaching in Swanson of a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions (claim 15) and/or of attaching a cable to the lever to actuate the shaft to the other of the first position and second position (to allow fuel flow into a fuel passage within the carburetor and to block fuel flow into the fuel passage) (claim 55). That is, the “cable (400)” identified by the Examiner as being coupled to the “lever

(395)” to pull against the “spring (397)” to “rotate the blocking member (56)” is a distortion of what is disclosed in Swanson, as element 400 is a choke lever 400 that in no way is coupled to switch mechanism 395 to pull against spring lever 397 to rotate throttle valve plate 56. *See Swanson*, col. 17, ln. 67; FIG. 35. The operation/actuation of choke lever 400 in no way pulls against spring lever 397, as asserted by the Examiner, and thus Swanson does not teach that which is called for in claim 15. Similarly, the interaction/arrangement of choke lever 400, switch mechanism 395, and spring lever 397 described in Swanson in no way teaches a step of attaching choke lever 400 (allegedly the claimed “cable”) to the switch mechanism 395 (allegedly the claimed “lever”) to actuate the throttle shaft 58 to a first position or second position, and thus Swanson does not teach that which is called for in claim 55.

In light of at least the above, Appellant believes claims 15 and 55 to be patentably distinct from that which is disclosed in the cited references. As such, Appellant respectfully requests reversal of the rejection of claims 15 and 55.

Claims 50-54 and 58-59

The Examiner rejected claims 50-54 and 58-59 under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Swanson et al. (USP 5,611,312). However, in rejecting claims 50-54 and 58-59, the Examiner did not address the limitations of the claims. That is, while the Examiner collectively addressed the rejection of claims 15, 44, 50-55, and 58-59 in the Final Office Action, *see Final Office Action*, supra at 10, the only elements discussed in the rejection correspond to claims 15 and 55 – and the Examiner made no reference to any of the elements of claims 50-54 and 58-59. Specifically, the Examiner provided no indication where any of Poehlman, Tsuda, and/or Swanson are thought to teach:

- wherein attaching the liquid fuel cut-off to the carburetor comprises: providing a shaft having a valve tip located at an end of the shaft; installing a compression spring on the shaft; installing a plug on the shaft so that the compression spring is positioned between the plug and the valve tip; and

- anchoring the plug in an aperture in the carburetor so that the compression spring holds the valve tip to an inlet of the fuel passage (claim 50);
- wherein providing the shaft having a valve tip located at an end of the shaft comprises pressing the valve tip onto the shaft (claim 51);
 - positioning at least one fuel seal on the shaft to seal between the shaft and plug (claim 52);
 - wherein the shaft rotates the valve tip between a first position allowing fuel flow into the fuel passage and a second position blocking fuel flow into the fuel passage (claim 53);
 - wherein the valve tip comprises an oval or stadium shape with a cutout in the oval or stadium shape that aligns with the fuel passage when the valve tip is rotated to the first position such that fuel can pass through the cutout into the fuel passage (claim 54);
 - wherein the carburetor cutoff solenoid is open to provide liquid fuel to the engine when the carburetor cutoff solenoid is powered (claim 58); and
 - wherein a pull-starter drives the engine operating the charge winding to power and open the carburetor cutoff solenoid while starting the engine on liquid fuel (claim 59).

As the Examiner has not provided any indication of what portion of Poehlman, Tsuda, and/or Swanson thought to teach each claimed element or address those elements, the present rejection of claims 50-54 and 58-59 is, on its face, deficient according to MPEP §706, and should be reversed. (“The goal of examination is to clearly articulate any rejection early in the prosecution process so that the Appellant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity.” *MPEP §706*). Accordingly, Appellant respectfully requests reversal of the rejection of claims 50-54 and 58-59.

Rejection under 35 U.S.C. §103 over Sugimoto, Poehlman, Tsuda and Andersson**Claims 16 and 27**

The Examiner rejected claim 16 under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Andersson et al. (US Pub. 2010/0258099) and rejected claim 27 under 35 U.S.C. §103 as being unpatentable over Sugimoto, Poehlman, and Tsuda et al., and further in view of Andersson.

Each of claims 16 and 27 calls for the liquid fuel cut-off being magnetically actuated to selectively interrupt liquid fuel.

In rejecting claims 16 and 27, the Examiner admitted that Poehlman and Tsuda are silent to the element of the liquid fuel cut-off being magnetically actuated to selectively interrupt liquid fuel, as called for in claim 16, but asserted that “Andersson teaches the liquid fuel cut-off is magnetically (via 77 and 72, paragraph 0111) actuated to selectively interrupt liquid fuel for the purpose of energizing the valve to open and close.” *Final Office Action*, supra at 11. Appellant respectfully disagrees with the rejection. Specifically, Appellant believes that the Examiner has mischaracterized that which is disclosed in Andersson in rejecting claims 16 and 27.

Andersson discloses, in relevant part, an engine 10 that includes a carburetor 12 and a power generation unit (PGU) 14. *Andersson*, ¶ [0067]. The carburetor has an air bleed valve 18, an engine load sensor 20, a body 48 having an air and fuel mixing passage 49 extending therethrough, and a throttle valve 50 disposed in the mixing passage and carried by a valve rotating device such as a shaft 51 extending through the body and a lever 52 connected to the shaft. *Id.* at ¶¶ [0067] and [0107]. The carburetor also may include a float bowl 53 sealingly carried on the body by a fastener 54 (FIG. 4), a fuel inlet and passage 55, an inlet needle 56 in communication with the inlet passage, and a float 57 to urge the inlet needle closed. *Id.* at ¶ [0108]. The body may include a fuel nozzle 58 extending into the float bowl and including a nozzle passage 59 and a fuel restriction jet 60 to the limit mass flow rate of fuel into the nozzle at a pressure differential across the jet. *Id.* at ¶ [0108]. The carburetor body may include a pocket 61 to receive the solenoid valve 18. *Id.* at ¶ [0109]. An O-ring 71 may be disposed between the pocket and the body to seal the valve to the body. *Id.* at ¶ [0111]. The valve may

also include a stationary armature 72 that may be bobbin shaped and may have an outboard end 73 or disc, a rod 74, and an inboard end 76 or disc adjacent the valve plate. *Id. at* ¶ [0111]. The solenoid valve may additionally have a copper wire coil winding 77 disposed around the rod and winding leads 78 extending through the outboard disc. *Id. at* ¶ [0111]. The coil may be provided around the metallic armature bobbin 72 to induce magnetic flux in the housing to attract the valve plate to complete the established flux path upon coil energization. *Id. at* ¶ [0111]. Finally, a coiled compression spring 79 may circumscribe the rod and winding and may be disposed between the outboard disc and the valve plate to urge the valve plate to a normally closed position against the bottom of the pocket. *Id. at* ¶ [0112].

However, there is no teaching in Andersson of a liquid fuel cut-off being magnetically actuated to selectively interrupt liquid fuel. That is, the identification of elements 72 and 77 by the Examiner as magnetically actuating a liquid fuel cut-off is a distortion of what is disclosed in Andersson, as elements 72 and 77 are a stationary armature 72 and copper wire coil winding 77 that are part of an air bleed solenoid valve 18 that operates to control air flow through an air bleed path in the carburetor 12. *See Andersson*, ¶ [0111]. The controlling of a position of air bleed solenoid valve 18 by stationary armature 72 and copper wire coil winding 77 (by inducing magnetic flux) does **not** teach or suggest a liquid fuel cut-off being magnetically actuated to selectively interrupt liquid fuel, as called for in claims 16 and 27.

In light of at least the above, Appellant believes claims 16 and 27 to be patentably distinct from that which is disclosed in the cited references. As such, Appellant respectfully requests reversal of the rejection of claims 16 and 27.

Claims 17 and 28

The Examiner rejected claim 17 under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Andersson and rejected claim 28 under 35 U.S.C. §103 as being unpatentable over Sugimoto, Poehlman, and Tsuda et al., and further in view of Andersson.

Claims 17 and 28 call for a spring pushing the liquid fuel cut-off to interrupt liquid fuel and an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

In rejecting claims 17 and 28, the Examiner admitted that Poehlman and Tsuda are silent to the element of the spring and the actuating magnet, as called for in claim 17, but asserted that “Andersson teaches a spring (79) pushing the liquid fuel cut-off (18)” and “an actuating magnet (77 and 72) coupled to the carburetor (12) to selectively pull the liquid fuel cut-off against the spring.” *Final Office Action*, supra at 11. Appellant respectfully disagrees with the rejection. Specifically, Appellant believes that the Examiner has mischaracterized that which is disclosed in Andersson in rejecting claims 17 and 28.

As set forth above with regard to claim 16, the elements 72 and 77 identified by the Examiner are a stationary armature 72 and copper wire coil winding 77 that are part of an air bleed solenoid valve 18 that operates to control air flow through an air bleed path in the carburetor 12. *See Andersson*, ¶ [0111]. The stationary armature 72 and copper wire coil winding 77 (along with spring 79) function to control the position of air bleed solenoid valve 18 s to control air flow through an air bleed path in the carburetor 12 – they do not “push[] the liquid fuel cut-off to interrupt liquid fuel” and/or “selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel,” as called for in claims 17 and 28.

In light of at least the above, Appellant believes claims 17 and 28 to be patentably distinct from that which is disclosed in the cited references. As such, Appellant respectfully requests reversal of the rejection of claims 17 and 28.

Claims 18 and 29

The Examiner rejected claim 18 under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Andersson and rejected claim 29 under 35 U.S.C. §103 as being unpatentable over Sugimoto, Poehlman, and Tsuda et al., and further in view of Andersson.

Claims 18 and 29 call for a housing at least partially enclosing the liquid fuel cutoff, the housing including a first section enclosing a plunger of the liquid fuel cut-off

to the carburetor and holding the spring against the plunger and a second section coupled to the first section and enclosing the actuating magnet.

In rejecting claims 18 and 29, the Examiner admitted that Poehlman and Tsuda are silent to the specific elements called for in claim 18, but asserted that Andersson teaches “a housing (66) at least partially enclosing the liquid fuel cutoff, the housing including a first section (64) enclosing a plunger (65) of the liquid fuel cut-off to the carburetor and holding the spring against the plunger and a second section (74) coupled to the first section and enclosing the actuating magnet.” *Final Office Action*, supra at 12. Appellant respectfully disagrees with the rejection. Specifically, Appellant believes that the Examiner has mischaracterized that which is disclosed in Andersson in rejecting claims 18 and 29.

First, the “first section (64)” identified by the Examiner as forming a part/section of a “housing (66) at least partially enclosing the liquid fuel cutoff” distorts what is disclosed in Andersson. The “first section (64)” in Andersson is in fact a valve seat 64 that forms part of a pocket 61 of the carburetor body 48, *see Andersson*, ¶ [0109], it is not part of the housing 66 that at least partially encloses the air bleed solenoid valve 18 (allegedly the claimed “liquid fuel cut-off”). Accordingly, the Examiner has not shown that Andersson discloses a housing that includes a first section enclosing a plunger of the liquid fuel cut-off to the carburetor and holding the spring against the plunger, as called for in claims 18 and 29.

Second, the “second section (74)” identified by the Examiner as forming another part/section of a “housing (66) at least partially enclosing the liquid fuel cutoff” distorts what is disclosed in Andersson. The “second section (74)” in Andersson is in fact a rod 74 that forms part of a stationary armature 72 of the air bleed solenoid valve 18, *see Andersson*, ¶ [0111], it is not part of the housing 66 that at least partially encloses the air bleed solenoid valve 18 (allegedly the claimed “liquid fuel cut-off”) and with a second section “enclosing the actuating magnet” (i.e., stationary armature 72 and coil winding 77). Accordingly, the Examiner has not shown that Andersson discloses a housing that includes a second section coupled to the first section and enclosing the actuating magnet, as called for in claims 18 and 29.

In light of at least the above, Appellant believes claims 18 and 29 to be patentably distinct from that which is disclosed in the cited references. As such, Appellant respectfully requests reversal of the rejection of claims 18 and 29.

5. **CONCLUSION**

For at least the reasons set forth above, that which is called for in claims 1-3 and 5-65 is not taught or suggested in the art of record or a combination thereof. As such, Appellant believes that claims 1-3 and 5-65 are patentably distinct over the art of record.

Appellant appreciates the Board's consideration of these Remarks and respectfully requests timely issuance of a Notice of Allowance.

Respectfully submitted,

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Dated: January 22, 2019
Attorney Docket No.: CET1090.042

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CLAIMS APPENDIX

1. (Previously Presented) A dual fuel engine comprising:
an engine operable on a gaseous fuel and a liquid fuel;
a switch to change operation of the engine between gaseous fuel and liquid fuel;
a carburetor attached to an intake of the engine to mix air and fuel and connect to a gaseous fuel source and a liquid fuel source;
a liquid fuel valve positioned along a liquid fuel line coupling the liquid fuel source to the carburetor;
a gaseous fuel valve positioned along a gaseous fuel line coupling the gaseous fuel source to the carburetor; and
a liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.
2. (Original) The dual fuel engine of claim 1, wherein the engine is a pull start, batteryless engine.
3. (Original) The dual fuel engine of claim 1, wherein the gaseous fuel is LPG and the liquid fuel is gasoline.
4. (Canceled)
5. (Original) The dual fuel engine of claim 1, wherein the engine is a pull-start engine having an electrical power generator to supply electrical power.
6. (Original) The dual fuel engine of claim 5, wherein the switch is an electro-mechanical switch connecting one fuel source to the carburetor and connected to the electrical power generator; and

wherein the liquid fuel cut-off is a solenoid connected to open and close a fuel path to the pull-start engine in response to reception of electrical power from the switch.

7. (Previously Presented) The dual fuel engine of claim 5, wherein the liquid fuel cut-off is a solenoid valve that operates within the carburetor to control liquid fuel flow to the engine and is powered by the electrical power generator.

8. (Original) The dual fuel engine of claim 7, wherein the switch selectively powers the solenoid valve by controlling electrical connection between the solenoid valve and the electrical power generator.

9. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is normally open to provide liquid fuel to the engine when the solenoid valve is unpowered.

10. (Original) The dual fuel engine of claim 9, wherein a pull-starter drives the electrical power generator to power and close the solenoid valve while starting the engine on gaseous fuel.

11. (Original) The dual fuel engine of claim 7, wherein the electrical power generator comprises a magneto or an alternator coupled to a voltage regulator to provide a regulated voltage to the solenoid valve.

12. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is manually actuated to interrupt liquid fuel.

13. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off actuates to interrupt liquid fuel free from linear motion.

14. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off comprises:

a rotating shaft extending through an aperture in the carburetor;
a fuel seal around the shaft to seal the aperture; and
a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

15. (Original) The dual fuel engine of claim 14 further comprising:
a lever coupled to the shaft outside the carburetor;
a spring coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and
a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.

16. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is magnetically actuated to selectively interrupt liquid fuel.

17. (Original) The dual fuel engine of claim 1 further comprising:
a spring pushing the liquid fuel cut-off to interrupt liquid fuel; and
an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

18. (Original) The dual fuel engine of claim 17 further comprising a housing at least partially enclosing the liquid fuel cutoff, the housing including:
a first section enclosing a plunger of the liquid fuel cut-off to the carburetor and holding the spring against the plunger; and
a second section coupled to the first section and enclosing the actuating magnet.

19. (Previously Presented) A batteryless dual fuel generator comprising:

a housing containing a pull start engine coupled to drive an alternator, the engine operable on a gaseous fuel and a liquid fuel;

a carburetor attached to an intake of the engine comprising:

a throat to mix fuel with air,

a float bowl, and

a fuel passage extending from the float bowl to the throat to provide liquid fuel; and

a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

20. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff actuates to close the fuel passage free from linear motion.

21. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff comprises:

a rotating shaft extending through an opening in the carburetor; and

a valve member coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

22. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member is positioned in the float bowl and the shaft extends substantially horizontal through the opening.

23. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member has a flow passage that aligns with the fuel passage to control fuel flow into the fuel passage.

24. (Original) The batteryless dual fuel generator of claim 21 further comprising:

a compression spring on the shaft in the carburetor pushing the valve member to close the fuel passage; and

a plug in the opening surrounding the shaft to hold the compression spring against the valve member.

25. (Original) The batteryless dual fuel generator of claim 24 further comprising:

a lever coupled to the shaft outside the carburetor; and

a cable coupled to the lever to actuate the valve member to open and close the fuel passage.

26. (Original) The batteryless dual fuel generator of claim 24 further comprising one or more fuel seals within the plug to seal around the shaft.

27. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is magnetically actuated to selectively close the fuel passage, controlled by a manually actuated magnet coupled to the carburetor.

28. (Original) The batteryless dual fuel generator of claim 19 further comprising:

a spring pushing the fuel shutoff to close the fuel passage; and

an actuating magnet coupled to the carburetor to selectively pull the fuel shutoff against the spring to open the fuel passage.

29. (Original) The batteryless dual fuel generator of claim 28 further comprising a housing at least partially enclosing the fuel shutoff, the housing including:

a first section enclosing a plunger of the fuel shutoff to the carburetor and holding the spring against the plunger; and

a second section coupled to the first section and enclosing the actuating magnet.

30. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is a carburetor cutoff solenoid; and

wherein the generator further comprises:

a charge winding to generate electrical power to operate the carburetor cutoff solenoid, and

a switch to selectively power the carburetor cutoff solenoid by controlling electrical connection between the carburetor cutoff solenoid and the charge winding.

31. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is normally open to provide liquid fuel to the engine when the carburetor cutoff solenoid is unpowered.

32. (Original) The batteryless dual fuel generator of claim 31, wherein a pull-starter drives the engine operating the charge winding to power and close the carburetor cutoff solenoid while starting the engine on gaseous fuel.

33. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is an electro-mechanical switch connected to the charge winding and connecting at least one fuel source to the carburetor to selectively control fuel flow from the at least one fuel source to the carburetor.

34. (Original) The batteryless dual fuel generator of claim 30, wherein the charge winding is coupled to a voltage regulator to provide a regulated voltage to the carburetor cutoff solenoid.

35. (Previously Presented) A carburetor having a fuel shutoff comprising:
a carburetor comprising:

a float bowl,

a throat, and

a fuel passage extending from the float bowl to the throat; and
a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end; and
wherein the fuel shutoff actuates free from linear motion.

36. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff is a manually actuated fuel shutoff.

37. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff comprises a shaft extending into the carburetor through an aperture in the float bowl and coupled to a valve tip in the float bowl that rotates to open and close the fuel passage.

38. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip rotates parallel to an inlet of the fuel passage between a first position permitting fuel flow into the inlet and a second position blocking fuel flow into the inlet.

39. (Original) The carburetor having a fuel shutoff of claim 37, wherein the fuel passage has an inlet with a substantially flat perimeter edge and the valve tip maintains planar contact with the perimeter edge while rotating to open and close the fuel passage.

40. (Original) The carburetor having a fuel shutoff of claim 39, wherein the shaft is substantially horizontal and the inlet of the fuel passage faces substantially horizontal.

41. (Original) The carburetor having a fuel shutoff of claim 39 further comprising:

a plug in the aperture around the shaft; and

a compression spring around the shaft in the float bowl pushing against the plug to hold the valve tip against the perimeter edge of the inlet.

42. (Original) The carburetor having a fuel shutoff of claim 41 further comprising a first fuel seal between the shaft and plug, the first fuel seal comprising a primary o-ring in an o-ring groove in the shaft.

43. (Original) The carburetor having a fuel shutoff of claim 42 further comprising:

a second fuel seal between the shaft and plug, the second fuel seal comprising a secondary o-ring in a counterbore in the plug; and

a support member mounted over the counterbore around the shaft to hold the secondary o-ring in the counterbore.

44. (Original) The carburetor having a fuel shutoff of claim 37 further comprising:

a lever coupled to the shaft outside of the carburetor;

a spring coupled to the lever to hold the fuel shutoff opening the fuel passage; and

a cable coupled to the lever to move the lever against the spring and rotate the fuel shutoff to close the fuel passage.

45. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises thermoplastic.

46. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises one of an oval and stadium shape.

47. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip has a cutout that aligns with the fuel passage to open the fuel passage.

48. (Previously Presented) A method of assembling a dual fuel engine comprising:

providing an engine operable on a gaseous fuel and a liquid fuel;

attaching a carburetor to an intake of the engine, the carburetor comprising:

a throat to mix gaseous fuel with air and liquid fuel with air,

a float bowl, and

a fuel passage extending from the float bowl to the throat to provide liquid fuel;

coupling a switch to the engine to change operation of the engine between gaseous fuel and liquid fuel; and

attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

49. (Original) The method of claim 48 further comprising coupling a manually operated control operatively to the liquid fuel cut-off.

50. (Original) The method of claim 48, wherein attaching the liquid fuel cut-off to the carburetor comprises:

providing a shaft having a valve tip located at an end of the shaft;

installing a compression spring on the shaft;

installing a plug on the shaft so that the compression spring is positioned between the plug and the valve tip; and

anchoring the plug in an aperture in the carburetor so that the compression spring holds the valve tip to an inlet of the fuel passage.

51. (Original) The method of claim 50, wherein providing the shaft having a valve tip located at an end of the shaft comprises pressing the valve tip onto the shaft.

52. (Original) The method of claim 50 further comprising positioning at least one fuel seal on the shaft to seal between the shaft and plug.

53. (Original) The method of claim 50, wherein the shaft rotates the valve tip between a first position allowing fuel flow into the fuel passage and a second position blocking fuel flow into the fuel passage.

54. (Original) The method of claim 53, wherein the valve tip comprises an oval or stadium shape with a cutout in the oval or stadium shape that aligns with the fuel passage when the valve tip is rotated to the first position such that fuel can pass through the cutout into the fuel passage.

55. (Original) The method of claim 53 further comprising:
coupling a lever to the shaft;
attaching a control spring to the lever to actuate the shaft to one of the first position and second position; and
attaching a cable to the lever to actuate the shaft to the other of the first position and second position.

56. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is open to provide liquid fuel to the engine when the solenoid valve is powered.

57. (Original) The dual fuel engine of claim 56, wherein a pull-starter drives the electrical power generator to power and open the solenoid valve while starting the engine on liquid fuel.

58. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is open to provide liquid fuel to the engine when the carburetor cutoff solenoid is powered.

59. (Original) The batteryless dual fuel generator of claim 58, wherein a pull-starter drives the engine operating the charge winding to power and open the carburetor cutoff solenoid while starting the engine on liquid fuel.

60. (Original) The dual fuel engine of claim 7 further comprising a microcontroller to close the solenoid valve when the engine operates on gaseous fuel and open the solenoid valve to operate the engine on liquid fuel.

61. (Original) The dual fuel engine of claim 60, wherein the microcontroller closes the solenoid valve during engine shutdown from operation on liquid fuel.

62. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is a microcontroller configured to close the carburetor cutoff solenoid when the engine operates on gaseous fuel and to open the carburetor cutoff solenoid to operate the engine on liquid fuel.

63. (Original) The batteryless dual fuel generator of claim 62, wherein the microcontroller closes the carburetor cutoff solenoid during engine shutdown from operation on liquid fuel.

64. (Previously Presented) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is physically attached to an outer surface of the carburetor.

65. (Previously Presented) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage.

EVIDENCE APPENDIX:

-- None --

RELATED PROCEEDINGS APPENDIX:

-- None --

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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)		Docket Number (Optional) CET1090.042	
Application Number 14/925,441		Filed 10/28/2015	
For BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF			
Art Unit 3747		Examiner Long T. Tran	

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	Fee	Small Entity Fee	Micro Entity Fee	
☒ One month (37 CFR 1.17(a)(1))	\$ 200	\$ 100	\$ 50	\$ <u>100</u>
☐ Two months (37 CFR 1.17(a)(2))	\$ 600	\$ 300	\$ 150	\$ _____
☐ Three months (37 CFR 1.17(a)(3))	\$ 1400	\$ 700	\$ 350	\$ _____
☐ Four months (37 CFR 1.17(a)(4))	\$ 2200	\$ 1100	\$ 550	\$ _____
☐ Five months (37 CFR 1.17(a)(5))	\$ 3000	\$ 1500	\$ 750	\$ _____

☒ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number ____.

☒ Payment made via EFS-Web.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant.

☒ attorney or agent of record. Registration Number 55584.

☐ attorney or agent acting under 37 CFR 1.34. Registration number _____.

/Kevin R. Rosin/ January 22, 2020
Signature Date

Kevin R. Rosin (262) 268-8100
Typed or printed name Telephone Number

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

☒ *Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.136(a). 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 6 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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Electronic Patent Application Fee Transmittal

Application Number:	14925441			
Filing Date:	28-Oct-2015			
Title of Invention:	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF			
First Named Inventor/Applicant Name:	Kendall J. Collie			
Filer:	Kevin Roger Rosin./Robyn Templin			
Attorney Docket Number:	CET1090.042			
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(\$)
Extension - 1 month with \$0 paid	2251	1	100	100
Miscellaneous:				
Total in USD (\$)				100

Electronic Acknowledgement Receipt

EFS ID:	38364023
Application Number:	14925441
International Application Number:	
Confirmation Number:	1059
Title of Invention:	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF
First Named Inventor/Applicant Name:	Kendall J. Collie
Customer Number:	26629
Filer:	Kevin Roger Rosin./Robyn Templin
Filer Authorized By:	Kevin Roger Rosin.
Attorney Docket Number:	CET1090.042
Receipt Date:	22-JAN-2020
Filing Date:	28-OCT-2015
Time Stamp:	12:46:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$100
RAM confirmation Number	E20201LC46223004
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	Appeal Brief Filed	AppealBrief.pdf	660403	no	47
			98e661251c7b8d3b83d062bac57ff8bad3bb8c28		
Warnings:					
Information:					
2	Extension of Time	PetForExt.pdf	479482	no	1
			b7cd63a93720b0418d486a382ccea05b2c7e2d31		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30806	no	2
			557b2796bb60b0bffb78e439a67c39c24a3baa8a57		
Warnings:					
Information:					
Total Files Size (in bytes):			1170691		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

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NOTICE OF APPEAL FROM THE EXAMINER TO THE PATENT TRIAL AND APPEAL BOARD		Docket Number (Optional) CET1090.042						
I hereby certify that this correspondence is being facsimile transmitted to the USPTO, EFS-Web transmitted to the USPTO, or deposited with the United States Postal Service with sufficient postage in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] On <u>October 22, 2019</u> Signature <u>/Robyn L. Templin/</u> Typed or printed name <u>Robyn L. Templin</u>		In re Application of <u>Collie et al.</u> <table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="padding: 2px;">Application Number <u>14/925,441</u></td><td style="padding: 2px;">Filed <u>10/28/2015</u></td></tr><tr><td colspan="2" style="padding: 2px;">For <u>BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF</u></td></tr><tr><td style="padding: 2px;">Art Unit <u>3747</u></td><td style="padding: 2px;">Examiner <u>Long T. Tran</u></td></tr></table>	Application Number <u>14/925,441</u>	Filed <u>10/28/2015</u>	For <u>BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF</u>		Art Unit <u>3747</u>	Examiner <u>Long T. Tran</u>
Application Number <u>14/925,441</u>	Filed <u>10/28/2015</u>							
For <u>BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF</u>								
Art Unit <u>3747</u>	Examiner <u>Long T. Tran</u>							
<p>Applicant hereby appeals to the Patent Trial and Appeal Board from the last decision of the examiner.</p> <p>The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) \$ <u>800.00</u></p> <p>☒ Applicant asserts small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by 50%, and the resulting fee is: \$ <u>400.00</u></p> <p>☐ Applicant certifies micro entity status. See 37 CFR 1.29. Therefore, the fee shown above is reduced by 75%, and the resulting fee is: \$ _____ Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.</p> <p>☐ A check in the amount of the fee is enclosed.</p> <p>☐ Payment by credit card. Form PTO-2038 is attached.</p> <p>☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment To Deposit Account No. _____</p> <p>☒ Payment made via EFS-Web.</p> <p>☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/AIA/22 or equivalent) is enclosed. For extensions of time in reexamination proceedings, see 37 CFR 1.550.</p> <p style="text-align: center;">WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</p> <p>I am the</p> <p>☐ applicant ☒ attorney or agent of record ☐ attorney or agent acting under 37 CFR 1.34 Registration number <u>55584</u> Registration number _____</p> <p>Signature <u>/Kevin R. Rosin/</u> Typed or printed name <u>Kevin R. Rosin</u> Telephone number <u>(262) 268-8100</u> Date <u>October 22, 2019</u></p> <p>NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.</p>								
<p>☒ * Total of <u>1</u> forms are submitted.</p>								

This collection of information is required by 37 CFR 41.20(b)(1) and 41.31. 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, 1.14 and 41.6. 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 450, Alexandria, VA 22313-1450.**

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

Electronic Patent Application Fee Transmittal				
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Filing Date:		28-Oct-2015		
Title of Invention:		BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF		
First Named Inventor/Applicant Name:		Kendall J. Collie		
Filer:		Kevin Roger Rosin./Robyn Templin		
Attorney Docket Number:		CET1090.042		
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Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
NOTICE OF APPEAL	2401	1	400	400
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Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				400

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Title of Invention:	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF
First Named Inventor/Applicant Name:	Kendall J. Collie
Customer Number:	26629
Filer:	Kevin Roger Rosin./Robyn Templin
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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	Notice of Appeal Filed	NoticeOfAppeal.pdf	114532	no	1
			f12ee3bd4e860f594154a45bcff72b883359ab91		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30549	no	2
			cd6a08570a1f24f9412f6df1b5ebbad8db4c859b		
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<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,441	10/28/2015	Kendall J. Collie	CET1090.042	1059
26629	7590	07/22/2019	EXAMINER	
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)			TRAN, LONG T	
136 S WISCONSIN ST			ART UNIT	PAPER NUMBER
PORT WASHINGTON, WI 53074			3747	
			NOTIFICATION DATE	DELIVERY MODE
			07/22/2019	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

DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
2. The Amendment filed May 28, 2019 has been entered. No new matter has been added.
3. Claims 1 – 3, 5 – 65 remain pending in the application and have been fully considered.

Claim Rejections - 35 USC § 103

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.
5. 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.

6. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to

point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

7. Claims 1, 3, 12 – 13, 35 – 36, 64 – 65 are rejected under 35 U.S.C. 103 as being unpatentable over Poehlman (US 4,489,699) and in view of Tsuda et al. (US 5,809,979).

Regarding Claim 1:

Poehlman teaches a dual fuel engine comprising: an engine (13) operable on a gaseous fuel and a liquid fuel (Col 3 lines 25 – 36 describes gasoline and natural gas); a switch (51) to change operation of the engine between gaseous fuel and liquid fuel; a carburetor (15) attached to an intake (105) of the engine to mix air and fuel and connect to a gaseous fuel source (27) and a liquid fuel source (21); and a liquid fuel cut-off (41); a liquid fuel valve (43) positioned along a liquid fuel line (19) coupling the liquid fuel source to the carburetor; a gaseous fuel valve (45) positioned along a gaseous fuel line (25) coupling the gaseous fuel source to the carburetor.

Poehlman is silent to the liquid fuel cut-off is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

However, Tsuda et al. teaches to the liquid fuel cut-off (14) is incorporated into the carburetor (1, valve 14 inserted into body 2 shown in Fig 1) to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the valve into the carburetor as taught by Tsuda et al., since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70. The modification of Poelman would also further reduce the size of the engine for optimized maintenance and fuel efficiency.

Regarding Claim 3:

Poelhman teaches the gaseous fuel is LPG and the liquid fuel is gasoline (Col 3 lines 25 – 36).

Regarding Claim 4:

Poelhman teaches a liquid fuel valve (43) along a liquid fuel line (19) coupling the liquid fuel source to the carburetor; and a gaseous fuel valve (45) along a gaseous fuel line (25) coupling the gaseous fuel source to the carburetor.

Regarding Claim 12:

Poelhman teaches the liquid fuel cut-off is manually actuated to interrupt liquid fuel (via switch 51).

Regarding Claim 13:

Poelhman teaches the liquid fuel cut-off actuates to interrupt liquid fuel free from linear motion (via switch 51).

Regarding Claims 35 - 36:

Poelhman teaches a carburetor (15) having a fuel shutoff (via 51) comprising: a carburetor comprising: a float bowl (17), a throat (where throttle 107 resides), a fuel passage (19) to provide fuel from the float bowl to the throat;

and a fuel shutoff (43) coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end (Fig 1 shows valve 43 connected to two ends of the fuel passage); and wherein the fuel shutoff actuates free from linear motion (it rotates).

Regarding Claim 64:

Poelhman teaches the liquid fuel cut-off is physically attached to an outer surface of the carburetor (Fig 1 shows the cut off 21 attached via tube 19 to the carburetor).

Regarding Claim 65:

Poehlman teaches the fuel shutoff extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage (via tube 19).

8. Claims 2, 5 – 10, 48 - 49, 56 - 57, 60 – 61 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) and Tsuda et al. (US 5,809,979), and further in view of Sugimoto et al. (US 2007/0137591).

Regarding Claim 2:

Modified Poelhman teaches all of the claimed limitation except for the engine is a pull start, batteryless engine.

However, Sugimoto et al. teach a similar dual fuel engine (paragraph 0086) comprising a pull start, batteryless engine (via 46) for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claim 5:

Modified Poelhman teaches all of the claimed limitations except for the engine is a pull-start engine having an electrical power generator to supply electrical power.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claim 6:

Modified Poelhman teaches the switch is an electro-mechanical switch (51 and via 59) connecting one fuel source to the carburetor; and wherein the liquid fuel cut-off is a solenoid (81, 83) connected to open and close a fuel path.

Poelhman is silent to a pull-start engine having an electrical power generator to supply electrical power.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claims 7 – 10, 56 – 57, 60 – 61:

Modified Poelhman teaches all of the claimed limitations except for a power generator.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

9. Claims 19 – 20, 30 - 34, 48 - 49, 62 – 63 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591) and further in view of Poelhman (US 4,489,699).

Regarding Claim 19 - 20, 30 - 34, 48 - 49, 62 - 63:

Sugimoto et al. teaches a batteryless dual fuel generator (paragraph 0086) comprising a housing (4) containing a pull start engine (46, 30) coupled to drive an alternator (40a), the engine operable on a gaseous fuel and a liquid fuel (paragraphs 0085 - 0086 describes a first fuel in liquid phase to gas, and a second gas fuel).

Sugimoto et al. is silent to a carburetor attached to an intake of the engine comprising: a throat to mix fuel with air, a float bowl, and a fuel passage to provide liquid fuel from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

However, Poelhman teaches a carburetor (15) attached to an intake (105) of the engine comprising: a throat (where throttle 107 resides) to mix fuel with air, a float bowl (17), a fuel passage (19) to provide liquid fuel from the float bowl to the throat; and a fuel shutoff (43) attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the carburetor of Poelhman in the generator of Poelhman in order to effectively, efficiently, and manually switch between the two fuel based on the user's preference.

10. Claim 11 is rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699), Tsuda et al. (US 5,809,979), Sugimoto et al. (US 2007/0137591), and further in view of Satter (US 3,412,258).

Regarding Claim 11:

Modified Poelhman teaches all of the claimed limitations except for the electrical power generator comprises a magneto or an alternator coupled to a voltage regulator to provide a regulated voltage to the solenoid valve.

However, Satter teaches a similar generator comprising a magneto or an alternator (12) coupled to a voltage regulator (via phase A line) to provide a regulated voltage to the solenoid valve (44) for the purpose of supplying power to the valve.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the alternator of Satter in the engine of modified Poelhman in order to control the voltage while actuating the valve.

11. Claims 14, 15, 44, 50 - 55, 58 - 59 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699), Tsuda et al. (US 5,809,979), and further in view of Swanson et al. (US 5,611,312).

Regarding Claim 14:

Poelhman is silent to the liquid fuel cut-off comprises: a rotating shaft extending through an aperture in the carburetor; a fuel seal around the shaft to seal the aperture; and a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

However, Swanson et al. teaches a liquid fuel cut-off (118) comprising a rotating shaft (58) extending through an aperture in the carburetor (50); a fuel seal (112, 114) around the shaft to seal the aperture; and a blocking member (56) coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine for the purposes of preventing backflow.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of Poelhman in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claim 15, 44, 50 - 595, 58 - 59:

Poelhman is silent to a lever coupled to the shaft outside the carburetor; a spring coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.

However, Swanson et al. teaches a lever (395) coupled to the shaft outside the carburetor; a spring (397) coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and a cable (400) coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions for the purpose of creating a safety feature.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of Poelhman in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

12. Claims 16 – 18 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) and Tsuda et al. (US 5,809,979), and further in view of Andersson et al. (US 2010/0258099).

Regarding Claim 16:

Modified Poelhman is silent to the liquid fuel cut-off is magnetically actuated to selectively interrupt liquid fuel.

However, Andersson et al. teaches the liquid fuel cut-off is magnetically (via 77 and 72, paragraph 0111) actuated to selectively interrupt liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

Regarding Claim 17:

Modified Poelhman is silent to a spring pushing the liquid fuel cut-off to interrupt liquid fuel; and an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

However, Andersson et al. teaches a spring (79) pushing the liquid fuel cut-off (18) to interrupt liquid fuel; and an actuating magnet (77 and 72) coupled to the carburetor (12) to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

Regarding Claim 18:

Modified Poelhman is silent to a housing (66) at least partially enclosing the liquid fuel cutoff, the housing including: a first section (64) enclosing a plunger (65) of the liquid fuel cut-off to the carburetor and holding the spring against the plunger; and a second section (74) coupled to the first section and enclosing the actuating magnet for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

13. Claims 21 - 26 , 37 - 43, 45 - 47 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591), Poelhman (US 4,489,699) and Tsuda et al. (US 5,809,979), and further in view of Swanson et al. (US 5,611,312).

Regarding Claim 21 - 23, 37 - 43, 45 - 47:

Modified Sugimoto et al. is silent to a rotating shaft extending through an opening in the carburetor; and a valve member coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

However, Swanson et al. teaches a rotating shaft (58) extending through an opening in the carburetor (50); and a valve member (395) coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claim 24:

Modified Sugimoto et al. is silent to a compression spring on the shaft in the carburetor pushing the valve member to close the fuel passage; and a plug in the opening surrounding the shaft to hold the compression spring against the valve member.

However, Swanson et al. teaches a compression spring (82) on the shaft in the carburetor pushing the valve member to close the fuel passage; and a plug (368') in the opening surrounding the shaft to hold the compression spring against the valve member.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claims 25 and 26:

Modified Sugimoto et al. is silent to a lever coupled to the shaft outside the carburetor; and a cable coupled to the lever to actuate the valve member to open and close the fuel passage.

However, Swanson et al. teaches a lever (395) coupled to the shaft outside the carburetor; and a cable (400) coupled to the lever to actuate the valve member to open and close the fuel passage.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

14. Claims 27 - 29 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591) Poelhman (US 4,489,699), and Tsuda et al. (US 5,809,979), and further in view of Andersson et al. (US 2010/0258099).

Regarding Claims 27 - 29:

Modified Sugimoto et al. is silent to the fuel shutoff is magnetically actuated to selectively close the fuel passage, controlled by a manually actuated magnet coupled to the carburetor.

However, Andersson et al. teaches a spring (79) pushing the liquid fuel cut-off (18) to interrupt liquid fuel; and an actuating magnet (77 and 72) coupled to the carburetor (12) to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of modified Sugimoto et al. in order to minimize delay with the valve closure.

Response to Arguments

15. Applicant's arguments filed May 28, 2019 have been fully considered but they are not persuasive.

On Page 12 of the Remarks, the Applicant argues that the combination of Poehlman and Tsuda do not teach the liquid cut off incorporated into the carburetor. The Examiner disagrees and maintains the rejection because Poehlman teaches the main structure and function of a liquid valve controlling fuel attached to a carburetor, and Tsuda merely teaches the bodily incorporation of such a valve into a carburetor. The motivation as discussed in the above rejection would give one of ordinary skill in the art to make such a modification to Poehlman.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

On Page 14 of the Remarks, the Applicant argues that Poehlman does not teach the liquid and gaseous fuel valves interrupts the fuel. The Examiner

disagrees and maintains the rejection because Poehlman explicitly states that the valves 43 and 45 are moveable between open and closed positions, and control means 41 selectively switches between the two fuels (Col 3 lines 62 – 69).

The additional arguments in the Remarks pertain to the same concepts discussed above.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

17. **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.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LONG T TRAN whose telephone number is (571)270-1899. The examiner can normally be reached on Mon - Fri 9:00 - 5:00.

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.

/LONG T TRAN/
Primary Examiner, Art Unit 3747

Notice of References Cited	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.	
	Examiner LONG T TRAN	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-20150122230-A1	05-2015	Sarder; Mark J.	F02D19/0647	123/525
*	B	US-20110253102-A1	10-2011	Watanabe; Tsuyoshi	F02D41/064	123/438
*	C	US-20100258099-A1	10-2010	Andersson; Martin N.	F02D31/006	123/676
*	D	US-20070137591-A1	06-2007	Sugimoto; Yasuhiro	F02B43/00	123/41.7
*	E	US-6591817-B2	07-2003	Deutsch; Robert W.	F02D19/0647	123/525
*	F	US-20020134362-A1	09-2002	Deutsch, Robert W.	F02D19/0647	123/575
*	G	US-5809979-A	09-1998	Tsuda; Hiroyuki	F02M13/08	123/525
*	H	US-5611312-A	03-1997	Swanson; Mark S.	F02M1/02	123/179.18
*	I	US-4489699-A	12-1984	Poehlman; Arthur G.	F02B69/04	123/525
*	J	US-4393848-A	07-1983	Poehlman; Arthur G.	F02B69/04	123/525
*	K	US-3783849-A	01-1974	Bramfitt; Thomas Hugh	F02M13/06	123/576
*	L	US-3718000-A	02-1973	Walker; Brooks	F02B11/02	60/285
*	M	US-3659574-A	05-1972	Reschke; Albert H.	F02M13/08	123/525

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	
	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.

<i>Index of Claims</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 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	04/18/2017	08/02/2017	01/22/2018	06/11/2018	10/04/2018	02/19/2019	07/17/2019		
	1	÷	✓	✓	✓	✓	✓	✓		
	2	÷	✓	✓	✓	✓	✓	✓		
	3	÷	✓	✓	✓	✓	✓	✓		
	4	÷	✓	✓	✓	✓	✓	-		
	5	÷	✓	✓	✓	✓	✓	✓		
	6	÷	✓	✓	✓	✓	✓	✓		
	7	÷	✓	✓	✓	✓	✓	✓		
	8	÷	✓	✓	✓	✓	✓	✓		
	9	÷	✓	✓	✓	✓	✓	✓		
	10	÷	✓	✓	✓	✓	✓	✓		
	11	÷	✓	✓	✓	✓	✓	✓		
	12	÷	✓	✓	✓	✓	✓	✓		
	13	÷	✓	✓	✓	✓	✓	✓		
	14	÷	✓	✓	✓	✓	✓	✓		
	15	÷	✓	✓	✓	✓	✓	✓		
	16	÷	✓	✓	✓	✓	✓	✓		
	17	÷	✓	✓	✓	✓	✓	✓		
	18	÷	✓	✓	✓	✓	✓	✓		
	19	÷	N	✓	✓	✓	✓	✓		
	20	÷	N	✓	✓	✓	✓	✓		
	21	÷	N	✓	✓	✓	✓	✓		
	22	÷	N	✓	✓	✓	✓	✓		
	23	÷	N	✓	✓	✓	✓	✓		
	24	÷	N	✓	✓	✓	✓	✓		
	25	÷	N	✓	✓	✓	✓	✓		
	26	÷	N	✓	✓	✓	✓	✓		
	27	÷	N	✓	✓	✓	✓	✓		
	28	÷	N	✓	✓	✓	✓	✓		
	29	÷	N	✓	✓	✓	✓	✓		
	30	÷	N	✓	✓	✓	✓	✓		
	31	÷	N	✓	✓	✓	✓	✓		
	32	÷	N	✓	✓	✓	✓	✓		
	33	÷	N	✓	✓	✓	✓	✓		
	34	÷	N	✓	✓	✓	✓	✓		
	35	÷	N	✓	✓	✓	✓	✓		
	36	÷	N	✓	✓	✓	✓	✓		
	37	÷	N	✓	✓	✓	✓	✓		
	38	÷	N	✓	✓	✓	✓	✓		
	39	÷	N	✓	✓	✓	✓	✓		
	40	÷	N	✓	✓	✓	✓	✓		
	41	÷	N	✓	✓	✓	✓	✓		
	42	÷	N	✓	✓	✓	✓	✓		

<i>Index of Claims</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 3747

CLAIM		DATE								
Final	Original	04/18/2017	08/02/2017	01/22/2018	06/11/2018	10/04/2018	02/19/2019	07/17/2019		
	43	÷	N	✓	✓	✓	✓	✓		
	44	÷	N	✓	✓	✓	✓	✓		
	45	÷	N	✓	✓	✓	✓	✓		
	46	÷	N	✓	✓	✓	✓	✓		
	47	÷	N	✓	✓	✓	✓	✓		
	48	÷	N	✓	✓	✓	✓	✓		
	49	÷	N	✓	✓	✓	✓	✓		
	50	÷	N	✓	✓	✓	✓	✓		
	51	÷	N	✓	✓	✓	✓	✓		
	52	÷	N	✓	✓	✓	✓	✓		
	53	÷	N	✓	✓	✓	✓	✓		
	54	÷	N	✓	✓	✓	✓	✓		
	55	÷	N	✓	✓	✓	✓	✓		
	56	÷	✓	✓	✓	✓	✓	✓		
	57	÷	✓	✓	✓	✓	✓	✓		
	58	÷	N	✓	✓	✓	✓	✓		
	59	÷	N	✓	✓	✓	✓	✓		
	60	÷	✓	✓	✓	✓	✓	✓		
	61	÷	✓	✓	✓	✓	✓	✓		
	62	÷	N	✓	✓	✓	✓	✓		
	63	÷	N	✓	✓	✓	✓	✓		
	64						✓	✓		
	65						✓	✓		

<i>Search Notes</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 3747

CPC - Searched*		
Symbol	Date	Examiner
F02D19/0647; F02D19/0613; F02D29/06; F02D41/0025; F02D11/02; F02D19/0642; F02D35/0053; F02B63/04; F02B43/00; F02B63/044; F02M13/08; F02M19/08; F02M21/047; F02N3/02	8/2/2017	LT

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
Inventor search	8/2/2017	LT
PLUS search	8/2/2017	LT
Forward and backward citation	8/2/2017	LT
Text search	8/2/2017	LT
Updated text search	1/22/2018	LT
Updated text search	6/11/2018	LT
Updated text search	10/4/2018	LT
Updated text search	07/17/2019	LT

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<i>Search Notes</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 3747

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

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	1069	engine and ((dual double two second\$4 plural\$4 multi multiple bi pair supplement\$4) near2 fuel) and ((switch\$4 chang\$4 transition\$3 alternat44)) and (valve same (carburetor carburretor) same fuel) and solenoid	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2019/07/17 16:32

7/ 17/ 2019 4:33:14 PM
C:\ Users\ ltran2\ Documents\ EAST\ Workspaces\ 14925441.wsp

Patent
Attorney Docket No. CET1090.042

In re Application of	Collie et al.
Serial No.	14/925,441
Filed	October 28, 2015
For	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF
Group Art No.	3747
Examiner	Long T. Tran

/Robyn L. Templin/
Signature

Champion - EX2082 Page 105 of 575
Harbor Freight Tools USA Inc. et al v. Champion Power Equip., Inc.
IPR2025-00805

Electronic Acknowledgement Receipt

EFS ID:	36120812
Application Number:	14925441
International Application Number:	
Confirmation Number:	1059
Title of Invention:	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF
First Named Inventor/Applicant Name:	Kendall J. Collie
Customer Number:	26629
Filer:	Kevin Roger Rosin./Robyn Templin
Filer Authorized By:	Kevin Roger Rosin.
Attorney Docket Number:	CET1090.042
Receipt Date:	28-MAY-2019
Filing Date:	28-OCT-2015
Time Stamp:	10:27:24
Application Type:	Utility under 35 USC 111(a)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response.pdf	226181	yes	22
			762d054b28db0c5da62cb11e928a41b401f5526		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Applicant Arguments/Remarks Made in an Amendment	12	22
	Claims	2	11
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Warnings:			
Information:			
Total Files Size (in bytes):		226181	
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>			

REMARKS

Claims 1-65 are pending in the present application. In the Office Action mailed February 26, 2019, the Examiner rejected claims 1, 3, 4, 12, 13, 35, 36, 64, and 65 under 35 U.S.C. §103 as being unpatentable over Poehlman (USP 4,489,699) and in view of Tsuda et al. (USP 5,809,979). The Examiner next rejected claims 2, 5-10, 48, 49, 56, 57, 60, and 61 under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Sugimoto et al. (US Pub. 2007/0137591). Claims 19, 20, 30-34, 48, 49, 62, and 63 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al. and further in view of Poehlman. Claim 11 was rejected under 35 U.S.C. §103 as being unpatentable over Poehlman, Tsuda et al., and Sugimoto et al. and further in view of Satter (USP 3,412,258). Claims 14, 15, 44, 50-55, 58, and 59 were rejected under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Swanson et al. (USP 5,611,312). Claims 16-18 were rejected under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Andersson et al. (US Pub. 2010/0258099). Claims 21-26, 37-43, and 45-47 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al., Poehlman, and Tsuda et al., and further in view of Swanson et al. Claims 27-29 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al., Poehlman, and Tsuda et al., and further in view of Andersson et al.

Rejection under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al.**Claim 1**

The Examiner rejected claim 1 under 35 U.S.C. §103 as being unpatentable over Poehlman (USP 4,489,699) and in view of Tsuda et al. (USP 5,809,979). In rejecting claim 1, the Examiner asserted that Poehlman discloses a dual fuel engine that includes “an engine (13),” “a switch (51) to change operation of the engine between gaseous fuel and liquid fuel,” “a carburetor (15),” and “a liquid fuel cut-off (41).” *Office Action*, February 26, 2019, p. 3. The Examiner admitted that “Poehlman is silent to the liquid fuel cut-off is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel,” *id.*, and thus relied on Tsuda as teaching this limitation – stating that “Tsuda et al. teaches to the liquid fuel cut-off (14) is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.” *Id.* at 5 (emphasis in original).

Without acquiescing to the rejection, Applicant has amended claim 1 to further clarify the scope of the invention. As amended, claim 1 now further calls for a liquid fuel valve positioned

along a liquid fuel line coupling the liquid fuel source to the carburetor and a gaseous fuel valve positioned along a gaseous fuel line coupling the gaseous fuel source to the carburetor.

Applicant believes that the combination of Poehlman and Tsuda fail to disclose the combination of elements now called for in claim 1.

Poehlman shows in FIG. 1 a “control apparatus 11 for selectively operating an internal combustion engine 13 on a first or gaseous fuel and on a second or liquid fuel. The engine includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 25-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43.” *Id.* at col. 3, lns. 63-65. The “control means 41 includes a vacuum control switch 47 which is subject to variation in the amount of vacuum, which is normally closed, and which opens in response to the presence at the vacuum switch 47 of an amount of vacuum above a predetermined amount.” *Id.* at col. 4, lns. 10-15. The “control means 41 includes a primary or fuel selector switch 51.” *Id.* at col. 4, lns. 16-17. Regarding fuel changeover, Poehlman further discloses that “[i]n operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position” and that “[a]s a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15... [h]owever, the engine continues to run on the liquid fuel in the carburetor bowl 17.” *Id.* at col. 6, lns. 21-38. “The inlet manifold vacuum remains above the predetermined level of the vacuum switch 47 at idle or normal road speeds until the engine begins to run out of the liquid fuel in the fuel bowl 17” and “[t]he vacuum then drops to an amount less than or below the predetermined level thereby closing the vacuum switch 47 which energizes the solenoid coils 81 and 83.” *Id.* at col. 6, lns. 21-38. “The first solenoid coil 81 acts to displace the first switch member 65 to the terminal 63, thereby energizing the gaseous fuel control valve 45 to the open position, and thereby also energizing the spark advance means 31 and the inlet air heating means 33.” *Id.* at col. 6, lns. 21-38.

Tsuda discloses a carburetor 1 having a mixing body 2 in which a venturi passage 3 is provided. *Tsuda*, Col. 2, lns. 40-41. A float chamber 4 is arranged in the mixing body 2 and a liquid fuel nozzle 5 is communicated with the float chamber 4. *Tsuda*, Col. 2, lns. 41-43. A liquid fuel nozzle outlet 6 is faced to the venturi passage 3. *Tsuda*, Col. 2, lns. 43-44. Arranged below the mixing body 2 is the float chamber 4 accommodating a float 36 therein. *Tsuda*, Col. 2, lns. 45-46. A needle valve 37 mounted on the float 36 is adjusted to open or close a port 40 for supplying a liquid fuel to the float chamber 4. *Tsuda*, Col. 2, lns. 46-48. The mixing body 2 is

provided with an air vent 42, through which an intake passage (not shown) on an intake upstream side of the mixing body 2 communicates with the float chamber 4. *Tsuda*, Col. 2, Ins. 48-52. Vertically provided from the mixing body 2 into the float chamber 4 is a nozzle accommodating boss 41, into which a liquid fuel nozzle 5 is fitted. *Tsuda*, Col. 2, Ins. 53-55. An upper end of the liquid fuel nozzle 5 projects into the venturi passage 3 and there is arranged below the liquid fuel nozzle 5 a jet 56 for metering the liquid fuel. *Tsuda*, Col. 2, Ins. 40-41.55-58. An inner bottom portion of the float chamber 4 is provided with a liquid fuel inlet 13, through which the float chamber 4 communicates with the liquid fuel nozzle 5. *Tsuda*, Col. 2, Ins. 58-60. Laterally arranged at a lower portion of the float chamber 4 is a liquid fuel valve 14 for opening or closing the inlet 13. *Tsuda*, Col. 2, Ins. 61-62.

However, regarding the claimed liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, there is no teaching in *Tsuda* and *Poehlman* that liquid fuel valve 14 interrupts liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, as called for in claim 1. *Tsuda* only discloses that a liquid fuel valve 14 operates for “opening or closing the [liquid fuel] inlet 13,” *Tsuda*, Col. 2, Ins. 61-62, with there being no teaching in *Tsuda* of the conditions under which liquid fuel valve 14 is operated (i.e., opened/closed) or specifically that it interrupts liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, as called for in claim 1. *Poehlman* only discloses that, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position and that as a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15.” *Poehlman*, Col. 6, Ins. 21-38. However, liquid fuel control valve 43 is not a liquid fuel cut-off that is incorporated into the carburetor 15, as called for in claim 1, but instead is located upstream from carburetor 15 on supply line 19.

Were the teachings of *Tsuda* incorporated into *Poehlman*, the resulting arrangement may include a liquid fuel control valve 43 located upstream from carburetor 15 on liquid fuel supply line 19 and a liquid fuel cut-off or valve (i.e., liquid fuel valve 14 of *Tsuda*) in the carburetor, but there would still be no teaching provided of how the liquid fuel valve 14 is controlled. As best, the resulting combination would teach that liquid fuel control valve 43 is deenergized upon the operator moving the fuel selector switch 51 to the gaseous fuel position (i.e., switching from liquid fuel to gaseous fuel), but there would be simply no teaching regarding the controlling of liquid fuel valve 14 that would be incorporated into the carburetor 15. There is simply no teaching in *Poehlman* or *Tsuda* that the liquid fuel valve 14 would be controlled to interrupt

liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, as called for in claim 1, as no control scheme for the liquid fuel valve 14 (i.e., of a valve incorporated into the carburetor 15) is set forth in either of the references.

In light of at least the above, the Examiner has failed to supporting a *prima facie* conclusion of obviousness, as with regard to rejections under 35 U.S.C. 103, “the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not.” The combination of Poehlman and Tsuda does not teach or suggest the claimed invention. Accordingly, the Examiner has not established a *prima facie* case of obviousness under 35 U.S.C. §103 with respect to claim 1.

Applicant therefore believes claim 1 to be patentably distinct from the combination of cited references and thus respectfully requests withdrawal of the rejection of claim 1 under 35 U.S.C. §103, along with the rejection of all claims depending therefrom.

Claim 35

The Examiner rejected claim 35 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Tsuda et al. In rejecting claim 35, the Examiner asserted that “Poehlman teaches a carburetor (15) having a fuel shutoff (via 51) comprising: a carburetor comprising: a float bowl (17), a throat (where throttle 107 resides), a fuel passage (19) extending from the float bowl to the throat; and a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end (Fig 1 shows valve 43 connected to two end of the fuel passage).” *Office Action*, supra at 4-5. Appellant respectfully disagrees with the rejection.

As indicated above, Poehlman discloses “a control apparatus 11 for selectively operating an internal combustion engine 13 on a first or gaseous fuel and on a second or liquid fuel. The engine includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 25-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43.” *Id.* at col. 3, lns. 63-65. The “control means 41 includes a vacuum control switch 47 which is subject to variation in the amount of vacuum, which is normally closed, and which opens in response to the presence at the vacuum switch 47 of an amount of vacuum above a predetermined amount.” *Id.* at col. 4, lns. 10-15. The “control means 41 includes a primary or

fuel selector switch 51.” *Id.* at col. 4, lns. 16-17. Regarding fuel changeover, Poehlman further discloses that “[i]n operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position” and that “[a]s a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15... [h]owever, the engine continues to run on the liquid fuel in the carburetor bowl 17.” *Id.* at col. 6, lns. 21-38.

However, there is no teaching in Poehlman of a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close a fuel passage extending from the float bowl to the throat and a second end external to the carburetor to actuate the first end, as called for in claim 35. First, while the Examiner has identified fuel line 19 as the claimed fuel passage that extends from the float bowl to the throat, fuel line 19 does not extend from the float bowl 17 to the throat 107. FIG. 1 of Poehlman clearly shows that fuel line 19 connects a source 21 of liquid fuel to carburetor 15 – but there is no teaching or suggestion therein of fuel line 19 extending from the float bowl 17 to the throat 107. Second, while the Examiner has asserted that valve 43 is coupled to the carburetor 15 and has a first end in the carburetor 15 to close fuel passage 19, FIG. 1 of Poehlman clearly illustrates that valve 43 is not in the carburetor 15, nor does it actuate to close a fuel passage that extends from the float bowl to the throat in the carburetor. *See Poehlman*, at FIG. 1. Instead, valve 43 is located upstream from carburetor 15 (not in the carburetor) and only acts to cut-off liquid fuel flow to an input of the carburetor (not close a fuel passage extending from the float bowl 17 to the throat 107). While Applicant does not argue that valve 43 closes a fuel line 19 between the fuel source 21 and an input to the carburetor 15, this is not what is called for in claim 15 – as claim 15 explicitly calls for a fuel shutoff coupled to the carburetor having a first end in the carburetor that that actuates to close a fuel passage extending from the float bowl to the throat.

Similarly, Tsuda fails to teach or suggest a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close a fuel passage (extending from the float bowl to the throat) and a second end external to the carburetor to actuate the first end.

In light of at least the above, claim 35 is patentably distinct from that which is disclosed in Poehlman and Tsuda. Applicant therefore respectfully requests withdrawal of the rejection of claim 35, along with the rejection of all claim dependent therefrom.

Claim 64

In rejecting claim 64, the Examiner asserted that “Poehlman teaches the liquid fuel cut-off is physically attached to an outer surface of the carburetor (Fig 1 shows the cut off 21 attached via tube 19 to the carburetor).” *Office Action*, supra at 5. Applicant respectfully disagrees with the rejection.

First, the “cut off 21” identified by the Examiner is a fuel source 21, and one skilled in the art would recognize that a fuel source is not a liquid fuel cut-off. For this reason alone, the rejection is deficient and cannot be sustained.

Second, there is no liquid fuel cut off in Poehlman that is physically attached to an outer surface of the carburetor. The liquid fuel control valve 43 in Poehlman identified as the claimed “liquid fuel cut off” is not physically attached to an outer surface of the carburetor 15, but instead is located upstream from carburetor 15 on fuel line 19. A fluid coupling of the liquid fuel control valve 43 to the carburetor 15 by the fuel line 19 would not be understood by one skilled in the art to be a physical attachment of the valve 43 to an outer surface of the carburetor 15.

In light of at least the above, claim 64 is patentably distinct from that which is disclosed in Poehlman and Tsuda. Applicant therefore respectfully requests withdrawal of the rejection of claim 64.

Claim 65

In rejecting claim 65, the Examiner asserted that “Poehlman teaches the fuel shutoff extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage (via tube 19).” *Office Action*, supra at 5. Applicant respectfully disagrees with the rejection, and again believes that this is a gross misinterpretation of both the claim language and that which is disclosed in the cited reference.

First, there are no distinct “first” and “second” ends on liquid fuel control valve 43 that are separately identified/distinguished in Poehlman, as there is simply no structure provided for the valve 43.

Second, there is no fuel shutoff in Poehlman that specifically extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage. The liquid fuel control valve 43 in Poehlman does not have a first end that actuates in the float bowl 17, but instead is located upstream from carburetor 15 on fuel line 19. A fluid coupling of the liquid fuel control valve 43 to the carburetor 15 by the fuel line 19 would not be understood by one skilled in the art to somehow teach or suggest that the valve 43 extends through an opening

into the float bowl 17 such that a first end thereof actuates in the float bowl to close the fuel passage.

In light of at least the above, claim 65 is patentably distinct from that which is disclosed in Poehlman and Tsuda. Applicant therefore respectfully requests withdrawal of the rejection of claim 65.

Rejection under 35 U.S.C. §103 over Poehlman and Tsuda in view of Sugimoto

Claim 7

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

Claim 7 calls for wherein the liquid fuel cut-off is a solenoid valve that operates within the carburetor to control liquid fuel flow to the engine and is powered by the electrical power generator.

In rejecting claim 7, the Examiner did not address the limitations of the claim individually, but only generally addressed claims 7-10, 56-57, and 60-61 collectively, asserting that “[m]odified Poehlman teaches all of the claimed limitations except for a power generator” and then relying on Sugimoto for teaching a pull-start engine. *See Office Action*, supra at 7. As the Examiner has not provided any indication of what portion of Poehlman, Tsuda, and/or Sugimoto is thought to teach each claimed element or address those elements, the present rejection of claim 7 is, on its face, deficient according to MPEP §706, and should be reversed. (“The goal of examination is to clearly articulate any rejection early in the prosecution process so that the Appellant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity.” *MPEP* §706).

Regardless of the above, none of Poehlman, Tsuda, and/or Sugimoto teaches or suggests a solenoid valve that operates within the carburetor to control liquid fuel flow to the engine and is powered by the electrical power generator, as called for in claim 7. Poehlman provides no teaching of a solenoid valve that operates within the carburetor, as there is no disclosure of a valve in the carburetor 15. Tsuda also provides no teaching of a solenoid valve that operates within the carburetor 1, as instead Tsuda at best provides a general teaching of a liquid fuel valve 14 arranged at a lower portion of the float chamber 4 for opening or closing a liquid fuel inlet 13. *Tsuda*, Col. 2, lns. 61-62. Sugimoto also provides no teaching of a solenoid valve that operates within the carburetor 18b, as there is no disclosure of a valve in the carburetor 18b.

In light of at least the above, Applicant believes claim 7 be patentably distinct from that which is disclosed in the cited references. As such, Applicant respectfully requests withdrawal of the rejection of claim 7.

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

Claims 19 and 48

The Examiner rejected independent claims 19 and 48 together under 35 U.S.C §103 as being unpatentable over Sugimoto et al. and further in view of Poehlman. In rejecting claims 19 and 48, the Examiner asserted that “Sugimoto et al. teaches a batteryless dual fuel generator (paragraph 0086) comprising a housing (4) containing a pull start engine (46, 30) coupled to drive an alternator (40a), the engine operable on a gaseous fuel and a liquid fuel,” *Office Action*, supra at 7, but admitted that Sugimoto is silent as to the claimed carburetor and fuel shutoff, and thus cited to Poehlman as teaching those elements. In particular, the Examiner asserted that Poehlman discloses “a fuel shutoff (43) attached to the carburetor to close the fuel passage [extending from the float bowl to the throat of the carburetor] upon selection of engine operation to gaseous fuel.” *Id.* at 7-8. Applicant respectfully disagrees with the rejection.

Claim 19 calls for, in part, a carburetor attached to an intake of an engine comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

Claim 48 calls for, in part, the method steps of attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

As described above, Poehlman discloses an “engine [that] includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 27-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43 which is incorporated in the liquid fuel supply line 19.” *Id.* at col. 3, lns. 62-66.

Sugimoto discloses in “FIGS. 1 to 4, the fuel supply system Fa is provided with one or a plurality of fuel bottles 61, namely, first fuel sources, internal fuel sources or first fuel

containers.” *Sugimoto*, ¶ [0071]. “The fuel bottles 61 contain the fuel gas having comparatively high boiling point, such as liquefied butane gas.” *Id.* at ¶ [0072]. “The external fuel system Fb includes the external fuel bottle 71, namely, a second fuel source or an external fuel source, a pipe A5 and a pressure reducing device 72.” *Id.* at ¶ [0073]. “The second fuel gas is, for example, liquefied propane gas.” *Id.* “The fuel pressure regulator 62 reduces the pressure of the fuel gas supplied from the two 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 the carburetor 18b at fuel supply rate varying in proportion to load on the engine 30.” *Id.* at ¶ [0071]. “The fuel bottle 61 supplies the first fuel gas in liquid phase to the fuel pressure regulator 62. The external fuel bottle 71 supplies the second fuel gas in gas phase to the fuel gas pressure regulator 62.” *Id.* at ¶ [0078]. “The fuel pressure regulator 62 functions as a vaporizer for vaporizing the first fuel gas supplied thereto in liquid phase.” *Id.*

Applicant believes that claim 19 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a carburetor attached to an intake of an engine comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel. That is, neither Poehlman nor Sugimoto teach or suggest a fuel shutoff attached to the carburetor to close a fuel passage that extends from the float bowl to the throat.

Similarly, Applicant believes that claim 48 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a method of assembling a dual fuel engine comprising attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel. That is, neither Poehlman nor Sugimoto discloses attaching a liquid fuel cut-off to the carburetor to close a fuel passage that extends from the float bowl to the throat.

First, the Examiner’s assertion that fuel line 19 in Poehlman teaches a fuel passage extending from the float bowl to the throat in a carburetor is not supported by the disclosure of Poehlman. Fuel line 19 does not extend from the float bowl 17 to the throat 107 in Poehlman, as instead FIG. 1 of Poehlman clearly shows that fuel line 19 connects a source 21 of liquid fuel to carburetor 15 – but there is no teaching or suggestion therein of fuel line 19 extending from the float bowl 17 to the throat 107.

Second, the liquid fuel control valve 43 in Poehlman referenced by the examiner as the claimed “liquid fuel cut-off” is not attached to the carburetor 15 and does not close a fuel passage in the carburetor that extends from the float bowl to the throat, as called for in claims 19 and 48. That is, the fuel control valve 43 is clearly not positioned relative to carburetor 15 so as to enable the valve 43 to close a fuel passage in the carburetor that extends from the float bowl 17 to the throat 107, as the valve 43 is instead is located along the liquid fuel supply line 19 upstream from the carburetor 15. The liquid fuel control valve 43 is not in a fuel passage that extends from the float bowl 17 to the throat 107 in the carburetor 15 and/or operable to close a fuel passage that extends from the float bowl 17 to the throat 107 in the carburetor, as called for in claims 19 and 48.

In light of at least the above, Applicant believes claims 19 and 48 to be patentably distinct from that which is disclosed in the cited references. As such, Applicant respectfully requests withdrawal of the rejection of claims 19 and 48 under 35 U.S.C. §103, and all claims depending 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 1-3 and 5-65.

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 28, 2019
Attorney Docket No.: CET1090.042

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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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In the Claims

1. (Currently Amended) A dual fuel engine comprising:
an engine operable on a gaseous fuel and a liquid fuel;
a switch to change operation of the engine between gaseous fuel and liquid fuel;
a carburetor attached to an intake of the engine to mix air and fuel and connect to
a gaseous fuel source and a liquid fuel source;
a liquid fuel valve positioned along a liquid fuel line coupling the liquid fuel
source to the carburetor;
a gaseous fuel valve positioned along a gaseous fuel line coupling the gaseous
fuel source to the carburetor; and
a liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon
actuation of the switch from liquid fuel to gaseous fuel.
2. (Original) The dual fuel engine of claim 1, wherein the engine is a pull start,
batteryless engine.
3. (Original) The dual fuel engine of claim 1, wherein the gaseous fuel is LPG and
the liquid fuel is gasoline.
4. (Canceled)
5. (Original) The dual fuel engine of claim 1, wherein the engine is a pull-start
engine having an electrical power generator to supply electrical power.
6. (Original) The dual fuel engine of claim 5, wherein the switch is an electro-
mechanical switch connecting one fuel source to the carburetor and connected to the electrical
power generator; and
wherein the liquid fuel cut-off is a solenoid connected to open and close a fuel
path to the pull-start engine in response to reception of electrical power from the switch.
7. (Previously Presented) The dual fuel engine of claim 5, wherein the liquid fuel
cut-off is a solenoid valve that operates within the carburetor to control liquid fuel flow to the
engine and is powered by the electrical power generator.

8. (Original) The dual fuel engine of claim 7, wherein the switch selectively powers the solenoid valve by controlling electrical connection between the solenoid valve and the electrical power generator.

9. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is normally open to provide liquid fuel to the engine when the solenoid valve is unpowered.

10. (Original) The dual fuel engine of claim 9, wherein a pull-starter drives the electrical power generator to power and close the solenoid valve while starting the engine on gaseous fuel.

11. (Original) The dual fuel engine of claim 7, wherein the electrical power generator comprises a magneto or an alternator coupled to a voltage regulator to provide a regulated voltage to the solenoid valve.

12. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is manually actuated to interrupt liquid fuel.

13. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off actuates to interrupt liquid fuel free from linear motion.

14. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off comprises:

- a rotating shaft extending through an aperture in the carburetor;
- a fuel seal around the shaft to seal the aperture; and
- a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

15. (Original) The dual fuel engine of claim 14 further comprising:

- a lever coupled to the shaft outside the carburetor;
- a spring coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and

a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.

16. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is magnetically actuated to selectively interrupt liquid fuel.

17. (Original) The dual fuel engine of claim 1 further comprising:
a spring pushing the liquid fuel cut-off to interrupt liquid fuel; and
an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

18. (Original) The dual fuel engine of claim 17 further comprising a housing at least partially enclosing the liquid fuel cutoff, the housing including:

a first section enclosing a plunger of the liquid fuel cut-off to the carburetor and holding the spring against the plunger; and

a second section coupled to the first section and enclosing the actuating magnet.

19. (Previously Presented) A batteryless dual fuel generator comprising:
a housing containing a pull start engine coupled to drive an alternator, the engine operable on a gaseous fuel and a liquid fuel;

a carburetor attached to an intake of the engine comprising:

a throat to mix fuel with air,

a float bowl, and

a fuel passage extending from the float bowl to the throat to provide liquid fuel; and

a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

20. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff actuates to close the fuel passage free from linear motion.

21. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff comprises:

a rotating shaft extending through an opening in the carburetor; and
a valve member coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

22. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member is positioned in the float bowl and the shaft extends substantially horizontal through the opening.

23. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member has a flow passage that aligns with the fuel passage to control fuel flow into the fuel passage.

24. (Original) The batteryless dual fuel generator of claim 21 further comprising:
a compression spring on the shaft in the carburetor pushing the valve member to close the fuel passage; and
a plug in the opening surrounding the shaft to hold the compression spring against the valve member.

25. (Original) The batteryless dual fuel generator of claim 24 further comprising:
a lever coupled to the shaft outside the carburetor; and
a cable coupled to the lever to actuate the valve member to open and close the fuel passage.

26. (Original) The batteryless dual fuel generator of claim 24 further comprising one or more fuel seals within the plug to seal around the shaft.

27. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is magnetically actuated to selectively close the fuel passage, controlled by a manually actuated magnet coupled to the carburetor.

28. (Original) The batteryless dual fuel generator of claim 19 further comprising:
a spring pushing the fuel shutoff to close the fuel passage; and

an actuating magnet coupled to the carburetor to selectively pull the fuel shutoff against the spring to open the fuel passage.

29. (Original) The batteryless dual fuel generator of claim 28 further comprising a housing at least partially enclosing the fuel shutoff, the housing including:

a first section enclosing a plunger of the fuel shutoff to the carburetor and holding the spring against the plunger; and

a second section coupled to the first section and enclosing the actuating magnet.

30. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is a carburetor cutoff solenoid; and

wherein the generator further comprises:

a charge winding to generate electrical power to operate the carburetor cutoff solenoid, and

a switch to selectively power the carburetor cutoff solenoid by controlling electrical connection between the carburetor cutoff solenoid and the charge winding.

31. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is normally open to provide liquid fuel to the engine when the carburetor cutoff solenoid is unpowered.

32. (Original) The batteryless dual fuel generator of claim 31, wherein a pull-starter drives the engine operating the charge winding to power and close the carburetor cutoff solenoid while starting the engine on gaseous fuel.

33. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is an electro-mechanical switch connected to the charge winding and connecting at least one fuel source to the carburetor to selectively control fuel flow from the at least one fuel source to the carburetor.

34. (Original) The batteryless dual fuel generator of claim 30, wherein the charge winding is coupled to a voltage regulator to provide a regulated voltage to the carburetor cutoff solenoid.

35. (Previously Presented) A carburetor having a fuel shutoff comprising:
a carburetor comprising:
a float bowl,
a throat, and
a fuel passage extending from the float bowl to the throat; and
a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end; and
wherein the fuel shutoff actuates free from linear motion.

36. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff is a manually actuated fuel shutoff.

37. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff comprises a shaft extending into the carburetor through an aperture in the float bowl and coupled to a valve tip in the float bowl that rotates to open and close the fuel passage.

38. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip rotates parallel to an inlet of the fuel passage between a first position permitting fuel flow into the inlet and a second position blocking fuel flow into the inlet.

39. (Original) The carburetor having a fuel shutoff of claim 37, wherein the fuel passage has an inlet with a substantially flat perimeter edge and the valve tip maintains planar contact with the perimeter edge while rotating to open and close the fuel passage.

40. (Original) The carburetor having a fuel shutoff of claim 39, wherein the shaft is substantially horizontal and the inlet of the fuel passage faces substantially horizontal.

41. (Original) The carburetor having a fuel shutoff of claim 39 further comprising:
a plug in the aperture around the shaft; and
a compression spring around the shaft in the float bowl pushing against the plug to hold the valve tip against the perimeter edge of the inlet.

42. (Original) The carburetor having a fuel shutoff of claim 41 further comprising a first fuel seal between the shaft and plug, the first fuel seal comprising a primary o-ring in an o-ring groove in the shaft.

43. (Original) The carburetor having a fuel shutoff of claim 42 further comprising:
a second fuel seal between the shaft and plug, the second fuel seal comprising a secondary o-ring in a counterbore in the plug; and
a support member mounted over the counterbore around the shaft to hold the secondary o-ring in the counterbore.

44. (Original) The carburetor having a fuel shutoff of claim 37 further comprising:
a lever coupled to the shaft outside of the carburetor;
a spring coupled to the lever to hold the fuel shutoff opening the fuel passage;
and
a cable coupled to the lever to move the lever against the spring and rotate the fuel shutoff to close the fuel passage.

45. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises thermoplastic.

46. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises one of an oval and stadium shape.

47. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip has a cutout that aligns with the fuel passage to open the fuel passage.

48. (Previously Presented) A method of assembling a dual fuel engine comprising:
providing an engine operable on a gaseous fuel and a liquid fuel;
attaching a carburetor to an intake of the engine, the carburetor comprising:
a throat to mix gaseous fuel with air and liquid fuel with air,
a float bowl, and

a fuel passage extending from the float bowl to the throat to provide liquid fuel;

coupling a switch to the engine to change operation of the engine between gaseous fuel and liquid fuel; and

attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

49. (Original) The method of claim 48 further comprising coupling a manually operated control operatively to the liquid fuel cut-off.

50. (Original) The method of claim 48, wherein attaching the liquid fuel cut-off to the carburetor comprises:

providing a shaft having a valve tip located at an end of the shaft;

installing a compression spring on the shaft;

installing a plug on the shaft so that the compression spring is positioned between the plug and the valve tip; and

anchoring the plug in an aperture in the carburetor so that the compression spring holds the valve tip to an inlet of the fuel passage.

51. (Original) The method of claim 50, wherein providing the shaft having a valve tip located at an end of the shaft comprises pressing the valve tip onto the shaft.

52. (Original) The method of claim 50 further comprising positioning at least one fuel seal on the shaft to seal between the shaft and plug.

53. (Original) The method of claim 50, wherein the shaft rotates the valve tip between a first position allowing fuel flow into the fuel passage and a second position blocking fuel flow into the fuel passage.

54. (Original) The method of claim 53, wherein the valve tip comprises an oval or stadium shape with a cutout in the oval or stadium shape that aligns with the fuel passage when the valve tip is rotated to the first position such that fuel can pass through the cutout into the fuel passage.

55. (Original) The method of claim 53 further comprising:
coupling a lever to the shaft;
attaching a control spring to the lever to actuate the shaft to one of the first position and second position; and
attaching a cable to the lever to actuate the shaft to the other of the first position and second position.

56. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is open to provide liquid fuel to the engine when the solenoid valve is powered.

57. (Original) The dual fuel engine of claim 56, wherein a pull-starter drives the electrical power generator to power and open the solenoid valve while starting the engine on liquid fuel.

58. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is open to provide liquid fuel to the engine when the carburetor cutoff solenoid is powered.

59. (Original) The batteryless dual fuel generator of claim 58, wherein a pull-starter drives the engine operating the charge winding to power and open the carburetor cutoff solenoid while starting the engine on liquid fuel.

60. (Original) The dual fuel engine of claim 7 further comprising a microcontroller to close the solenoid valve when the engine operates on gaseous fuel and open the solenoid valve to operate the engine on liquid fuel.

61. (Original) The dual fuel engine of claim 60, wherein the microcontroller closes the solenoid valve during engine shutdown from operation on liquid fuel.

62. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is a microcontroller configured to close the carburetor cutoff solenoid when the engine operates on gaseous fuel and to open the carburetor cutoff solenoid to operate the engine on liquid fuel.

63. (Original) The batteryless dual fuel generator of claim 62, wherein the microcontroller closes the carburetor cutoff solenoid during engine shutdown from operation on liquid fuel.

64. (Previously Presented) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is physically attached to an outer surface of the carburetor.

65. (Previously Presented) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage.



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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
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DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
2. Claims 1 - 65 remain pending in the application and have been fully considered.

Claim Rejections - 35 USC § 103

3. 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.

4. 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.

5. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to

consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

6. Claims 1, 3 – 4, 12 – 13, 35 – 36, 64 – 65 are rejected under 35 U.S.C. 103 as being unpatentable over Poehlman (US 4,489,699) and in view of Tsuda et al. (US 5,809,979).

Regarding Claim 1:

Poehlman teaches a dual fuel engine comprising: an engine (13) operable on a gaseous fuel and a liquid fuel (Col 3 lines 25 – 36 describes gasoline and natural gas); a switch (51) to change operation of the engine between gaseous fuel and liquid fuel; a carburetor (15) attached to an intake (105) of the engine to mix air and fuel and connect to a gaseous fuel source (27) and a liquid fuel source (21); and a liquid fuel cut-off (41).

Poehlman is silent to the liquid fuel cut-off is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

However, Tsuda et al. teaches to the liquid fuel cut-off (14) is incorporated into the carburetor (1, valve 14 inserted into body 2 shown in Fig 1) to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the valve into the carburetor as taught by Tsuda et al., since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70. The

modification of Poelman would also further reduce the size of the engine for optimized maintenance and fuel efficiency.

Regarding Claim 3:

Poelhman teaches the gaseous fuel is LPG and the liquid fuel is gasoline (Col 3 lines 25 – 36).

Regarding Claim 4:

Poelhman teaches a liquid fuel valve (43) along a liquid fuel line (19) coupling the liquid fuel source to the carburetor; and a gaseous fuel valve (45) along a gaseous fuel line (25) coupling the gaseous fuel source to the carburetor.

Regarding Claim 12:

Poelhman teaches the liquid fuel cut-off is manually actuated to interrupt liquid fuel (via switch 51).

Regarding Claim 13:

Poelhman teaches the liquid fuel cut-off actuates to interrupt liquid fuel free from linear motion (via switch 51).

Regarding Claims 35 - 36:

Peolhman teaches a carburetor (15) having a fuel shutoff (via 51) comprising: a carburetor comprising: a float bowl (17), a throat (where throttle 107 resides), a fuel passage (19) to provide fuel from the float bowl to the throat; and a fuel shutoff (43) coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end (Fig 1 shows valve 43 connected to two

ends of the fuel passage); and wherein the fuel shutoff actuates free from linear motion (it rotates).

Regarding Claim 64:

Poelhman teaches the liquid fuel cut-off is physically attached to an outer surface of the carburetor (Fig 1 shows the cut off 21 attached via tube 19 to the carburetor).

Regarding Claim 65:

Poehlman teaches the fuel shutoff extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage (via tube 19).

7. Claims 2, 5 – 10, 48 - 49, 56 - 57, 60 – 61 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) and Tsuda et al. (US 5,809,979), and further in view of Sugimoto et al. (US 2007/0137591).

Regarding Claim 2:

Modified Poelhman teaches all of the claimed limitation except for the engine is a pull start, batteryless engine.

However, Sugimoto et al. teach a similar dual fuel engine (paragraph 0086) comprising a pull start, batteryless engine (via 46) for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claim 5:

Modified Poelhman teaches all of the claimed limitations except for the engine is a pull-start engine having an electrical power generator to supply electrical power.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claim 6:

Modified Poelhman teaches the switch is an electro-mechanical switch (51 and via 59) connecting one fuel source to the carburetor; and wherein the liquid fuel cut-off is a solenoid (81, 83) connected to open and close a fuel path.

Poelhman is silent to a pull-start engine having an electrical power generator to supply electrical power.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claims 7 – 10, 56 – 57, 60 – 61:

Modified Poelhman teaches all of the claimed limitations except for a power generator.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

8. Claims 19 – 20, 30 - 34, 48 - 49, 62 – 63 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591) and further in view of Poelhman (US 4,489,699).

Regarding Claim 19 - 20, 30 - 34, 48 - 49, 62 - 63:

Sugimoto et al. teaches a batteryless dual fuel generator (paragraph 0086) comprising a housing (4) containing a pull start engine (46, 30) coupled to drive an alternator (40a), the engine operable on a gaseous fuel and a liquid fuel (paragraphs 0085 - 0086 describes a first fuel in liquid phase to gas, and a second gas fuel).

Sugimoto et al. is silent to a carburetor attached to an intake of the engine comprising: a throat to mix fuel with air, a float bowl, and a fuel passage to provide liquid fuel from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

However, Poelhman teaches a carburetor (15) attached to an intake (105) of the engine comprising: a throat (where throttle 107 resides) to mix fuel with air, a float bowl (17), a fuel passage (19) to provide liquid fuel from the float bowl to the throat; and a fuel shutoff (43) attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the carburetor of Poelhman in the generator of Poelhman in order to effectively, efficiently, and manually switch between the two fuel based on the user's preference.

9. Claim 11 is rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699), Tsuda et al. (US 5,809,979), Sugimoto et al. (US 2007/0137591), and further in view of Satter (US 3,412,258).

Regarding Claim 11:

Modified Poelhman teaches all of the claimed limitations except for the electrical power generator comprises a magneto or an alternator coupled to a voltage regulator to provide a regulated voltage to the solenoid valve.

However, Satter teaches a similar generator comprising a magneto or an alternator (12) coupled to a voltage regulator (via phase A line) to provide a regulated voltage to the solenoid valve (44) for the purpose of supplying power to the valve.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the alternator of Satter in the engine of modified Poelhman in order to control the voltage while actuating the valve.

10. Claims 14, 15, 44, 50 - 55, 58 - 59 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699), Tsuda et al. (US 5,809,979), and further in view of Swanson et al. (US 5,611,312).

Regarding Claim 14:

Poelhman is silent to the liquid fuel cut-off comprises: a rotating shaft extending through an aperture in the carburetor; a fuel seal around the shaft to seal the aperture; and a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

However, Swanson et al. teaches a liquid fuel cut-off (118) comprising a rotating shaft (58) extending through an aperture in the carburetor (50); a fuel seal (112, 114) around the shaft to seal the aperture; and a blocking member (56) coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine for the purposes of preventing backflow.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of Poelhman in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claim 15, 44, 50 - 595, 58 - 59:

Poelhman is silent to a lever coupled to the shaft outside the carburetor; a spring coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.

However, Swanson et al. teaches a lever (395) coupled to the shaft outside the carburetor; a spring (397) coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and a cable (400) coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions for the purpose of creating a safety feature.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of Poelhman in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

11. Claims 16 – 18 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) and Tsuda et al. (US 5,809,979), and further in view of Andersson et al. (US 2010/0258099).

Regarding Claim 16:

Modified Poelhman is silent to the liquid fuel cut-off is magnetically actuated to selectively interrupt liquid fuel.

However, Andersson et al. teaches the liquid fuel cut-off is magnetically (via 77 and 72, paragraph 0111) actuated to selectively interrupt liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

Regarding Claim 17:

Modified Poelhman is silent to a spring pushing the liquid fuel cut-off to interrupt liquid fuel; and an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

However, Andersson et al. teaches a spring (79) pushing the liquid fuel cut-off (18) to interrupt liquid fuel; and an actuating magnet (77 and 72) coupled to the carburetor (12) to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

Regarding Claim 18:

Modified Poelhman is silent to a housing (66) at least partially enclosing the liquid fuel cutoff, the housing including: a first section (64) enclosing a plunger (65) of the liquid fuel cut-off to the carburetor and holding the spring

against the plunger; and a second section (74) coupled to the first section and enclosing the actuating magnet for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

12. Claims 21 - 26 , 37 - 43, 45 - 47 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591), Poelhman (US 4,489,699) and Tsuda et al. (US 5,809,979), and further in view of Swanson et al. (US 5,611,312).

Regarding Claim 21 - 23, 37 - 43, 45 - 47:

Modified Sugimoto et al. is silent to a rotating shaft extending through an opening in the carburetor; and a valve member coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

However, Swanson et al. teaches a rotating shaft (58) extending through an opening in the carburetor (50); and a valve member (395) coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claim 24:

Modified Sugimoto et al. is silent to a compression spring on the shaft in the carburetor pushing the valve member to close the fuel passage; and a plug in the opening surrounding the shaft to hold the compression spring against the valve member.

However, Swanson et al. teaches a compression spring (82) on the shaft in the carburetor pushing the valve member to close the fuel passage; and a plug (368') in the opening surrounding the shaft to hold the compression spring against the valve member.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claims 25 and 26:

Modified Sugimoto et al. is silent to a lever coupled to the shaft outside the carburetor; and a cable coupled to the lever to actuate the valve member to open and close the fuel passage.

However, Swanson et al. teaches a lever (395) coupled to the shaft outside the carburetor; and a cable (400) coupled to the lever to actuate the valve member to open and close the fuel passage.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

13. Claims 27 - 29 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591) Poelhman (US 4,489,699), and Tsuda et al. (US 5,809,979), and further in view of Andersson et al. (US 2010/0258099).

Regarding Claims 27 - 29:

Modified Sugimoto et al. is silent to the fuel shutoff is magnetically actuated to selectively close the fuel passage, controlled by a manually actuated magnet coupled to the carburetor.

However, Andersson et al. teaches a spring (79) pushing the liquid fuel cut-off (18) to interrupt liquid fuel; and an actuating magnet (77 and 72) coupled to the carburetor (12) to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of modified Sugimoto et al. in order to minimize delay with the valve closure.

Response to Arguments

14. Applicant's arguments filed January 11, 2019 have been fully considered but they are not persuasive.

Per the Applicant's request on Page 12 of the Remarks, Claims 64 and 65 have been addressed and a new Non-Final Office Action is issued herewith.

On Page 13 of the Remarks, the Applicant argues that the combination of Poehlman and Tsuda do not teach the liquid cut off incorporated into the carburetor. The Examiner disagrees and maintains the rejection because Poehlman teaches the main structure and function of a liquid valve controlling fuel attached to a carburetor, and Tsuda merely teaches the bodily incorporation of such a valve into a carburetor. The motivation as discussed in the above rejection would give one of ordinary skill in the art to make such a modification to Poehlman.

The ensuing arguments are centered around the same principle, and the Examiner maintains the rejection.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LONG T TRAN whose telephone number is (571)270-1899. The examiner can normally be reached on Mon - Fri 9:00 - 5:00.

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.

/LONG T TRAN/
Primary Examiner, Art Unit 3747

Notice of References Cited	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.	
	Examiner LONG T TRAN	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-20150122230-A1	05-2015	Sarder; Mark J.	F02D19/0647	123/525
*	B	US-20110253102-A1	10-2011	Watanabe; Tsuyoshi	F02D41/064	123/438
*	C	US-20100258099-A1	10-2010	Andersson; Martin N.	F02D31/006	123/676
*	D	US-20070137591-A1	06-2007	Sugimoto; Yasuhiro	F02B43/00	123/41.7
*	E	US-6591817-B2	07-2003	Deutsch; Robert W.	F02D19/0647	123/525
*	F	US-20020134362-A1	09-2002	Deutsch, Robert W.	F02D19/0647	123/575
*	G	US-5809979-A	09-1998	Tsuda; Hiroyuki	F02M13/08	123/525
*	H	US-5611312-A	03-1997	Swanson; Mark S.	F02M1/02	123/179.18
*	I	US-4489699-A	12-1984	Poehlman; Arthur G.	F02B69/04	123/525
*	J	US-4393848-A	07-1983	Poehlman; Arthur G.	F02B69/04	123/525
*	K	US-3783849-A	01-1974	Bramfitt; Thomas Hugh	F02M13/06	123/179.16
*	L	US-3718000-A	02-1973	Walker; Brooks	F02B11/02	123/525
*	M	US-3659574-A	05-1972	Reschke; Albert H.	F02M13/08	123/525

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	
	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.

Search Notes 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 3747

CPC - Searched*		
Symbol	Date	Examiner
F02D19/0647; F02D19/0613; F02D29/06; F02D41/0025; F02D11/02; F02D19/0642; F02D35/0053; F02B63/04; F02B43/00; F02B63/044; F02M13/08; F02M19/08; F02M21/047; F02N3/02	8/2/2017	LT

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
Inventor search	8/2/2017	LT
PLUS search	8/2/2017	LT
Forward and backward citation	8/2/2017	LT
Text search	8/2/2017	LT
Updated text search	1/22/2018	LT
Updated text search	6/11/2018	LT
Updated text search	10/4/2018	LT

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

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<div> <div>Search Notes</div>  </div>	<div>Application/Control No.</div> <div>14/925,441</div>	<div>Applicant(s)/Patent Under Reexamination</div> <div>Collie et al.</div>
	<div>Examiner</div> <div>LONG T TRAN</div>	<div>Art Unit</div> <div>3747</div>

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<i>Index of Claims</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 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	04/18/2017	08/02/2017	01/22/2018	06/11/2018	10/04/2018	02/19/2019			
	1	÷	✓	✓	✓	✓	✓			
	2	÷	✓	✓	✓	✓	✓			
	3	÷	✓	✓	✓	✓	✓			
	4	÷	✓	✓	✓	✓	✓			
	5	÷	✓	✓	✓	✓	✓			
	6	÷	✓	✓	✓	✓	✓			
	7	÷	✓	✓	✓	✓	✓			
	8	÷	✓	✓	✓	✓	✓			
	9	÷	✓	✓	✓	✓	✓			
	10	÷	✓	✓	✓	✓	✓			
	11	÷	✓	✓	✓	✓	✓			
	12	÷	✓	✓	✓	✓	✓			
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	16	÷	✓	✓	✓	✓	✓			
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	18	÷	✓	✓	✓	✓	✓			
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	40	÷	N	✓	✓	✓	✓			
	41	÷	N	✓	✓	✓	✓			
	42	÷	N	✓	✓	✓	✓			

<i>Index of Claims</i> 	Application/Control No. 14/925,441	Applicant(s)/Patent Under Reexamination Collie et al.
	Examiner LONG T TRAN	Art Unit 3747

CLAIM		DATE								
Final	Original	04/18/2017	08/02/2017	01/22/2018	06/11/2018	10/04/2018	02/19/2019			
	43	÷	N	✓	✓	✓	✓			
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	46	÷	N	✓	✓	✓	✓			
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	61	÷	✓	✓	✓	✓	✓			
	62	÷	N	✓	✓	✓	✓			
	63	÷	N	✓	✓	✓	✓			
	64						✓			
	65						✓			

Customer No. 26629
Confirmation No. 1059

Patent
Attorney Docket No. CET1090.042

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Collie et al.
Serial No. : 14/925,441
Filed : October 28, 2015
For : BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL
 CUT-OFF
Group Art No. : 3747
Examiner : Long T. Tran

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

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37 CFR 1.8(a)

37 CFR 1.10

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- ☐ transmitted by facsimile to Fax No.: 571-273-8300 addressed to Examiner Long T. Tran at the Patent and Trademark Office.
☒ transmitted by EFS-WEB addressed to Examiner Long T. Tran at the Patent and Trademark Office.

Date: January 11, 2019

/Robyn L. Templin/
Signature

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

RESPONSE TO OFFICE ACTION MAILED OCTOBER 11, 2018

Dear Sir:

Responsive to the Office Action mailed October 11, 2018, please consider the following
Remarks:

In the Claims

1. (Previously Presented) A dual fuel engine comprising:
an engine operable on a gaseous fuel and a liquid fuel;
a switch to change operation of the engine between gaseous fuel and liquid fuel;
a carburetor attached to an intake of the engine to mix air and fuel and connect to
a gaseous fuel source and a liquid fuel source; and
a liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon
actuation of the switch from liquid fuel to gaseous fuel.
2. (Original) The dual fuel engine of claim 1, wherein the engine is a pull start,
batteryless engine.
3. (Original) The dual fuel engine of claim 1, wherein the gaseous fuel is LPG and
the liquid fuel is gasoline.
4. (Original) The dual fuel engine of claim 1 further comprising:
a liquid fuel valve along a liquid fuel line coupling the liquid fuel source to the
carburetor; and
a gaseous fuel valve along a gaseous fuel line coupling the gaseous fuel source to
the carburetor.
5. (Original) The dual fuel engine of claim 1, wherein the engine is a pull-start
engine having an electrical power generator to supply electrical power.
6. (Original) The dual fuel engine of claim 5, wherein the switch is an electro-
mechanical switch connecting one fuel source to the carburetor and connected to the electrical
power generator; and
wherein the liquid fuel cut-off is a solenoid connected to open and close a fuel
path to the pull-start engine in response to reception of electrical power from the switch.
7. (Previously Presented) The dual fuel engine of claim 5, wherein the liquid fuel
cut-off is a solenoid valve that operates within the carburetor to control liquid fuel flow to the
engine and is powered by the electrical power generator.

8. (Original) The dual fuel engine of claim 7, wherein the switch selectively powers the solenoid valve by controlling electrical connection between the solenoid valve and the electrical power generator.

9. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is normally open to provide liquid fuel to the engine when the solenoid valve is unpowered.

10. (Original) The dual fuel engine of claim 9, wherein a pull-starter drives the electrical power generator to power and close the solenoid valve while starting the engine on gaseous fuel.

11. (Original) The dual fuel engine of claim 7, wherein the electrical power generator comprises a magneto or an alternator coupled to a voltage regulator to provide a regulated voltage to the solenoid valve.

12. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is manually actuated to interrupt liquid fuel.

13. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off actuates to interrupt liquid fuel free from linear motion.

14. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off comprises:

- a rotating shaft extending through an aperture in the carburetor;
- a fuel seal around the shaft to seal the aperture; and
- a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

15. (Original) The dual fuel engine of claim 14 further comprising:

- a lever coupled to the shaft outside the carburetor;
- a spring coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and

a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.

16. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is magnetically actuated to selectively interrupt liquid fuel.

17. (Original) The dual fuel engine of claim 1 further comprising:
a spring pushing the liquid fuel cut-off to interrupt liquid fuel; and
an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

18. (Original) The dual fuel engine of claim 17 further comprising a housing at least partially enclosing the liquid fuel cutoff, the housing including:

a first section enclosing a plunger of the liquid fuel cut-off to the carburetor and holding the spring against the plunger; and

a second section coupled to the first section and enclosing the actuating magnet.

19. (Previously Presented) A batteryless dual fuel generator comprising:
a housing containing a pull start engine coupled to drive an alternator, the engine operable on a gaseous fuel and a liquid fuel;

a carburetor attached to an intake of the engine comprising:

a throat to mix fuel with air,

a float bowl, and

a fuel passage extending from the float bowl to the throat to provide liquid fuel; and

a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

20. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff actuates to close the fuel passage free from linear motion.

21. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff comprises:

a rotating shaft extending through an opening in the carburetor; and
a valve member coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

22. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member is positioned in the float bowl and the shaft extends substantially horizontal through the opening.

23. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member has a flow passage that aligns with the fuel passage to control fuel flow into the fuel passage.

24. (Original) The batteryless dual fuel generator of claim 21 further comprising:
a compression spring on the shaft in the carburetor pushing the valve member to close the fuel passage; and
a plug in the opening surrounding the shaft to hold the compression spring against the valve member.

25. (Original) The batteryless dual fuel generator of claim 24 further comprising:
a lever coupled to the shaft outside the carburetor; and
a cable coupled to the lever to actuate the valve member to open and close the fuel passage.

26. (Original) The batteryless dual fuel generator of claim 24 further comprising one or more fuel seals within the plug to seal around the shaft.

27. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is magnetically actuated to selectively close the fuel passage, controlled by a manually actuated magnet coupled to the carburetor.

28. (Original) The batteryless dual fuel generator of claim 19 further comprising:
a spring pushing the fuel shutoff to close the fuel passage; and

an actuating magnet coupled to the carburetor to selectively pull the fuel shutoff against the spring to open the fuel passage.

29. (Original) The batteryless dual fuel generator of claim 28 further comprising a housing at least partially enclosing the fuel shutoff, the housing including:

a first section enclosing a plunger of the fuel shutoff to the carburetor and holding the spring against the plunger; and

a second section coupled to the first section and enclosing the actuating magnet.

30. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is a carburetor cutoff solenoid; and

wherein the generator further comprises:

a charge winding to generate electrical power to operate the carburetor cutoff solenoid, and

a switch to selectively power the carburetor cutoff solenoid by controlling electrical connection between the carburetor cutoff solenoid and the charge winding.

31. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is normally open to provide liquid fuel to the engine when the carburetor cutoff solenoid is unpowered.

32. (Original) The batteryless dual fuel generator of claim 31, wherein a pull-starter drives the engine operating the charge winding to power and close the carburetor cutoff solenoid while starting the engine on gaseous fuel.

33. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is an electro-mechanical switch connected to the charge winding and connecting at least one fuel source to the carburetor to selectively control fuel flow from the at least one fuel source to the carburetor.

34. (Original) The batteryless dual fuel generator of claim 30, wherein the charge winding is coupled to a voltage regulator to provide a regulated voltage to the carburetor cutoff solenoid.

35. (Previously Presented) A carburetor having a fuel shutoff comprising:
a carburetor comprising:
a float bowl,
a throat, and
a fuel passage extending from the float bowl to the throat; and
a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end; and
wherein the fuel shutoff actuates free from linear motion.

36. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff is a manually actuated fuel shutoff.

37. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff comprises a shaft extending into the carburetor through an aperture in the float bowl and coupled to a valve tip in the float bowl that rotates to open and close the fuel passage.

38. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip rotates parallel to an inlet of the fuel passage between a first position permitting fuel flow into the inlet and a second position blocking fuel flow into the inlet.

39. (Original) The carburetor having a fuel shutoff of claim 37, wherein the fuel passage has an inlet with a substantially flat perimeter edge and the valve tip maintains planar contact with the perimeter edge while rotating to open and close the fuel passage.

40. (Original) The carburetor having a fuel shutoff of claim 39, wherein the shaft is substantially horizontal and the inlet of the fuel passage faces substantially horizontal.

41. (Original) The carburetor having a fuel shutoff of claim 39 further comprising:
a plug in the aperture around the shaft; and
a compression spring around the shaft in the float bowl pushing against the plug to hold the valve tip against the perimeter edge of the inlet.

42. (Original) The carburetor having a fuel shutoff of claim 41 further comprising a first fuel seal between the shaft and plug, the first fuel seal comprising a primary o-ring in an o-ring groove in the shaft.

43. (Original) The carburetor having a fuel shutoff of claim 42 further comprising:
a second fuel seal between the shaft and plug, the second fuel seal comprising a secondary o-ring in a counterbore in the plug; and
a support member mounted over the counterbore around the shaft to hold the secondary o-ring in the counterbore.

44. (Original) The carburetor having a fuel shutoff of claim 37 further comprising:
a lever coupled to the shaft outside of the carburetor;
a spring coupled to the lever to hold the fuel shutoff opening the fuel passage;
and
a cable coupled to the lever to move the lever against the spring and rotate the fuel shutoff to close the fuel passage.

45. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises thermoplastic.

46. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises one of an oval and stadium shape.

47. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip has a cutout that aligns with the fuel passage to open the fuel passage.

48. (Previously Presented) A method of assembling a dual fuel engine comprising:
providing an engine operable on a gaseous fuel and a liquid fuel;
attaching a carburetor to an intake of the engine, the carburetor comprising:
a throat to mix gaseous fuel with air and liquid fuel with air,
a float bowl, and

a fuel passage extending from the float bowl to the throat to provide liquid fuel;

coupling a switch to the engine to change operation of the engine between gaseous fuel and liquid fuel; and

attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

49. (Original) The method of claim 48 further comprising coupling a manually operated control operatively to the liquid fuel cut-off.

50. (Original) The method of claim 48, wherein attaching the liquid fuel cut-off to the carburetor comprises:

providing a shaft having a valve tip located at an end of the shaft;

installing a compression spring on the shaft;

installing a plug on the shaft so that the compression spring is positioned between the plug and the valve tip; and

anchoring the plug in an aperture in the carburetor so that the compression spring holds the valve tip to an inlet of the fuel passage.

51. (Original) The method of claim 50, wherein providing the shaft having a valve tip located at an end of the shaft comprises pressing the valve tip onto the shaft.

52. (Original) The method of claim 50 further comprising positioning at least one fuel seal on the shaft to seal between the shaft and plug.

53. (Original) The method of claim 50, wherein the shaft rotates the valve tip between a first position allowing fuel flow into the fuel passage and a second position blocking fuel flow into the fuel passage.

54. (Original) The method of claim 53, wherein the valve tip comprises an oval or stadium shape with a cutout in the oval or stadium shape that aligns with the fuel passage when the valve tip is rotated to the first position such that fuel can pass through the cutout into the fuel passage.

55. (Original) The method of claim 53 further comprising:
coupling a lever to the shaft;
attaching a control spring to the lever to actuate the shaft to one of the first position and second position; and
attaching a cable to the lever to actuate the shaft to the other of the first position and second position.

56. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is open to provide liquid fuel to the engine when the solenoid valve is powered.

57. (Original) The dual fuel engine of claim 56, wherein a pull-starter drives the electrical power generator to power and open the solenoid valve while starting the engine on liquid fuel.

58. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is open to provide liquid fuel to the engine when the carburetor cutoff solenoid is powered.

59. (Original) The batteryless dual fuel generator of claim 58, wherein a pull-starter drives the engine operating the charge winding to power and open the carburetor cutoff solenoid while starting the engine on liquid fuel.

60. (Original) The dual fuel engine of claim 7 further comprising a microcontroller to close the solenoid valve when the engine operates on gaseous fuel and open the solenoid valve to operate the engine on liquid fuel.

61. (Original) The dual fuel engine of claim 60, wherein the microcontroller closes the solenoid valve during engine shutdown from operation on liquid fuel.

62. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is a microcontroller configured to close the carburetor cutoff solenoid when the engine operates on gaseous fuel and to open the carburetor cutoff solenoid to operate the engine on liquid fuel.

63. (Original) The batteryless dual fuel generator of claim 62, wherein the microcontroller closes the carburetor cutoff solenoid during engine shutdown from operation on liquid fuel.

64. (Previously Presented) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is physically attached to an outer surface of the carburetor.

65. (Previously Presented) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage.

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Application Number:	14925441
International Application Number:	
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Title of Invention:	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF
First Named Inventor/Applicant Name:	Kendall J. Collie
Customer Number:	26629
Filer:	Kevin Roger Rosin./Robyn Templin
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response.pdf	216584	yes	20
			9cff4e869cffb995cea97948f8f7235288357423		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	11
	Applicant Arguments/Remarks Made in an Amendment	12	20
Warnings:			
Information:			
Total Files Size (in bytes):		216584	
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REMARKS

Claims 1-65 are pending in the present application. In the Office Action mailed October 11, 2018, the Examiner rejected claims 1, 3, 4, 12, 13, 35, and 36 under 35 U.S.C. §103 as being unpatentable over Poehlman (USP 4,489,699) and in view of Tsuda et al. (USP 5,809,979). The Examiner next rejected claims 2, 5-10, 48, 49, 56, 57, 60, and 61 under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Sugimoto et al. (US Pub. 2007/0137591). Claims 19, 20, 30-34, 48, 49, 62, and 63 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al. and further in view of Poehlman. Claim 11 was rejected under 35 U.S.C. §103 as being unpatentable over Poehlman, Tsuda et al., and Sugimoto et al. and further in view of Satter (USP 3,412,258). Claims 14, 15, 44, 50-55, 58, and 59 were rejected under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Swanson et al. (USP 5,611,312). Claims 16-18 were rejected under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Andersson et al. (US Pub. 2010/0258099). Claims 21-26, 37-43, and 45-47 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al., Poehlman, and Tsuda et al., and further in view of Swanson et al. Claims 27-29 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al., Poehlman, and Tsuda et al., and further in view of Andersson et al.

Status of Claims 64 and 65 and Claims 48 and 49

In the Office Action mailed October 11, 2018, the Examiner has failed to indicate the status of claims 64 and 65 that are currently pending. Claims 64 and 65 were newly presented in the after-final response filed August 3, 2018. The Advisory Action mailed August 16, 2018, checked Box #7(b) indicating that the proposed amendments – including claims 64 and 65 – “will be entered.” Accordingly, Applicant believes claims 64 and 65 to be currently pending and requests that the Examiner indicate the status of those claims in a next Non-Final Office Action, so that Applicant has proper opportunity to respond to any potential newly issued rejection.

Regarding claims 48 and 49, the Examiner indicates that the claims are rejected under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al., and further in view of Sugimoto et al. *See Office Action*, October 11, 2018, p. 5. However, the Examiner has failed to set forth a substantive rejection of claims 48 and 49 over these references, leaving Applicant guessing as to the basis for the rejection. For this additional reason, Applicant requests that the Examiner clarify the status of those claims in a next Non-Final Office Action.

Rejection under 35 U.S.C. §103 as being unpatentable over Poehlman and Tsuda et al.**Claim 1**

The Examiner rejected claim 1 under 35 U.S.C. §103 as being unpatentable over Poehlman (USP 4,489,699) and in view of Tsuda et al. (USP 5,809,979). In rejecting claim 1, the Examiner asserted that Poehlman discloses a dual fuel engine that includes “an engine (13),” “a switch (51) to change operation of the engine between gaseous fuel and liquid fuel,” “a carburetor (15),” and “a liquid fuel cut-off (41).” *Office Action*, supra at 3. The Examiner admitted that “Poehlman is silent to the liquid fuel cut-off is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel,” *id.*, and thus relied on Tsuda as teaching this limitation – stating that “Tsuda et al. teaches to the liquid fuel cut-off (14) is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.” *Id.* at 5 (emphasis in original). Applicant respectfully disagrees with the rejection.

Poehlman shows in FIG. 1 a “control apparatus 11 for selectively operating an internal combustion engine 13 on a first or gaseous fuel and on a second or liquid fuel. The engine includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 25-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43.” *Id.* at col. 3, lns. 63-65. The “control means 41 includes a vacuum control switch 47 which is subject to variation in the amount of vacuum, which is normally closed, and which opens in response to the presence at the vacuum switch 47 of an amount of vacuum above a predetermined amount.” *Id.* at col. 4, lns. 10-15. The “control means 41 includes a primary or fuel selector switch 51.” *Id.* at col. 4, lns. 16-17. Regarding fuel changeover, Poehlman further discloses that “[i]n operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position” and that “[a]s a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15... [h]owever, the engine continues to run on the liquid fuel in the carburetor bowl 17.” *Id.* at col. 6, lns. 21-38. “The inlet manifold vacuum remains above the predetermined level of the vacuum switch 47 at idle or normal road speeds until the engine begins to run out of the liquid fuel in the fuel bowl 17” and “[t]he vacuum then drops to an amount less than or below the predetermined level thereby closing the vacuum switch 47 which energizes the solenoid coils 81 and 83.” *Id.* at col. 6, lns. 21-38. “The first solenoid coil 81 acts to displace the first switch member 65 to the terminal 63, thereby

energizing the gaseous fuel control valve 45 to the open position, and thereby also energizing the spark advance means 31 and the inlet air heating means 33.” *Id.* at col. 6, lns. 21-38.

Tsuda discloses a carburetor 1 having a mixing body 2 in which a venturi passage 3 is provided. *Tsuda*, Col. 2, lns. 40-41. A float chamber 4 is arranged in the mixing body 2 and a liquid fuel nozzle 5 is communicated with the float chamber 4. *Tsuda*, Col. 2, lns. 41-43. A liquid fuel nozzle outlet 6 is faced to the venturi passage 3. *Tsuda*, Col. 2, lns. 43-44. Arranged below the mixing body 2 is the float chamber 4 accommodating a float 36 therein. *Tsuda*, Col. 2, lns. 45-46. A needle valve 37 mounted on the float 36 is adjusted to open or close a port 40 for supplying a liquid fuel to the float chamber 4. *Tsuda*, Col. 2, lns. 46-48. The mixing body 2 is provided with an air vent 42, through which an intake passage (not shown) on an intake upstream side of the mixing body 2 communicates with the float chamber 4. *Tsuda*, Col. 2, lns. 48-52. Vertically provided from the mixing body 2 into the float chamber 4 is a nozzle accommodating boss 41, into which a liquid fuel nozzle 5 is fitted. *Tsuda*, Col. 2, lns. 53-55. An upper end of the liquid fuel nozzle 5 projects into the venturi passage 3 and there is arranged below the liquid fuel nozzle 5 a jet 56 for metering the liquid fuel. *Tsuda*, Col. 2, lns. 40-41.55-58. An inner bottom portion of the float chamber 4 is provided with a liquid fuel inlet 13, through which the float chamber 4 communicates with the liquid fuel nozzle 5. *Tsuda*, Col. 2, lns. 58-60. Laterally arranged at a lower portion of the float chamber 4 is a liquid fuel valve 14 for opening or closing the inlet 13. *Tsuda*, Col. 2, lns. 61-62.

However, regarding the claimed liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, there is no teaching in Tsuda (alone or in combination with Poehlman) that liquid fuel valve 14 interrupts liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, as called for in claim 1. Instead, Tsuda only discloses that a liquid fuel valve 14 operates for “opening or closing the [liquid fuel] inlet 13.” *Tsuda*, Col. 2, lns. 61-62. There is simply no teaching provided in Tsuda of the conditions under which liquid fuel valve 14 is operated (i.e., opened/closed) or specifically that it interrupts liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, as called for in claim 1.

In light of at least the above, claim 1 is patentably distinct from that which is disclosed in Poehlman and Tsuda. Applicant therefore respectfully requests withdrawal of the rejection of claim 1, along with the rejection of all claim dependent therefrom

Claim 35

The Examiner rejected claim 35 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Tsuda et al. In rejecting claim 35, the Examiner asserted that “Poehlman teaches a carburetor (15) having a fuel shutoff (via 51) comprising: a carburetor comprising: a float bowl (17), a throat (where throttle 107 resides), a fuel passage (19) extending from the float bowl to the throat; and a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end (Fig 1 shows valve 43 connected to two end of the fuel passage).” *Office Action*, supra at 5. Appellant respectfully disagrees with the rejection.

As indicated above, Poehlman discloses “a control apparatus 11 for selectively operating an internal combustion engine 13 on a first or gaseous fuel and on a second or liquid fuel. The engine includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 25-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43.” *Id.* at col. 3, lns. 63-65. The “control means 41 includes a vacuum control switch 47 which is subject to variation in the amount of vacuum, which is normally closed, and which opens in response to the presence at the vacuum switch 47 of an amount of vacuum above a predetermined amount.” *Id.* at col. 4, lns. 10-15. The “control means 41 includes a primary or fuel selector switch 51.” *Id.* at col. 4, lns. 16-17. Regarding fuel changeover, Poehlman further discloses that “[i]n operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position” and that “[a]s a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15... [h]owever, the engine continues to run on the liquid fuel in the carburetor bowl 17.” *Id.* at col. 6, lns. 21-38.

However, there is no teaching in Poehlman of a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close a fuel passage extending from the float bowl to the throat and a second end external to the carburetor to actuate the first end, as called for in claim 35. First, while the Examiner has identified fuel line 19 as the claimed fuel passage that extends from the float bowl to the throat, fuel line 19 does not extend from the float bowl 17 to the throat 107. FIG. 1 of Poehlman clearly shows that fuel line 19 connects a source 21 of liquid fuel to carburetor 15 – but there is no teaching or suggestion therein of fuel line 19 extending from the float bowl 17 to the throat 107. Second, while the Examiner has asserted that valve 43 is

coupled to the carburetor 15 and has a first end in the carburetor 15 to close fuel passage 19, FIG. 1 of Poehlman clearly illustrates that valve 43 is not in the carburetor 15, nor does it actuate to close a fuel passage that extends from the float bowl to the throat in the carburetor. *See Poehlman*, at FIG. 1. Instead, valve 43 is located upstream from carburetor 15 (not in the carburetor) and only acts to cut-off liquid fuel flow to an input of the carburetor (not close a fuel passage extending from the float bowl 17 to the throat 107). While Applicant does not argue that valve 43 closes a fuel line 19 between the fuel source 21 and an input to the carburetor 15, this is not what is called for in claim 15 – as claim 15 explicitly calls for a fuel shutoff coupled to the carburetor having a first end in the carburetor that that actuates to close a fuel passage extending from the float bowl to the throat.

Similarly, Tsuda fails to teach or suggest a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close a fuel passage (extending from the float bowl to the throat) and a second end external to the carburetor to actuate the first end.

In light of at least the above, claim 35 is patentably distinct from that which is disclosed in Poehlman and Tsuda. Applicant therefore respectfully requests withdrawal of the rejection of claim 35, along with the rejection of all claim dependent therefrom.

Rejection under 35 U.S.C. §103 over Poehlman and Tsuda in view of Sugimoto

Claim 7

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

Claim 7 calls for wherein the liquid fuel cut-off is a solenoid valve that operates within the carburetor to control liquid fuel flow to the engine and is powered by the electrical power generator.

In rejecting claim 7, the Examiner did not address the limitations of the claim individually, but only generally addressed claims 7-10, 56-57, and 60-61 collectively, asserting that “[m]odified Poehlman teaches all of the claimed limitations except for a power generator” and then relying on Sugimoto for teaching a pull-start engine. *See Office Action*, supra at 7. As the Examiner has not provided any indication of what portion of Poehlman, Tsuda, and/or Sugimoto is thought to teach each claimed element or address those elements, the present rejection of claim 7 is, on its face, deficient according to MPEP §706, and should be reversed. (“The goal of examination is to clearly articulate any rejection early in the prosecution process so

that the Appellant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity.” *MPEP* §706).

Regardless of the above, none of Poehlman, Tsuda, and/or Sugimoto teaches or suggests a solenoid valve that operates within the carburetor to control liquid fuel flow to the engine and is powered by the electrical power generator, as called for in claim 7. Poehlman provides no teaching of a solenoid valve that operates within the carburetor, as there is no disclosure of a valve in the carburetor 15. Tsuda also provides no teaching of a solenoid valve that operates within the carburetor 1, as instead Tsuda at best provides a general teaching of a liquid fuel valve 14 arranged at a lower portion of the float chamber 4 for opening or closing a liquid fuel inlet 13. *Tsuda*, Col. 2, lns. 61-62. Sugimoto also provides no teaching of a solenoid valve that operates within the carburetor 18b, as there is no disclosure of a valve in the carburetor 18b.

In light of at least the above, Applicant believes claim 7 be patentably distinct from that which is disclosed in the cited references. As such, Applicant respectfully requests withdrawal of the rejection of claim 7.

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

Claims 19 and 48

The Examiner rejected independent claims 19 and 48 together under 35 U.S.C §103 as being unpatentable over Poehlman in view of Sugimoto. In rejecting claims 19 and 48, the Examiner asserted that “Sugimoto et al. teaches a batteryless dual fuel generator (paragraph 0086) comprising a housing (4) containing a pull start engine (46, 30) coupled to drive an alternator (40a), the engine operable on a gaseous fuel and a liquid fuel,” *Office Action*, supra at 7, but admitted that Sugimoto is silent as to the claimed carburetor and fuel shutoff, and thus cited to Poehlman as teaching those elements. In particular, the Examiner asserted that Poehlman discloses “a fuel shutoff (43) attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.” *Id.* at 7-8. Applicant respectfully disagrees with the rejection.

Claim 19 calls for, in part, a carburetor attached to an intake of an engine comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

Claim 48 calls for, in part, the method steps of attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and attaching a liquid

fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

As described above, Poehlman discloses an “engine [that] includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 27-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43 which is incorporated in the liquid fuel supply line 19.” *Id.* at col. 3, lns. 62-66.

Sugimoto discloses in “FIGS. 1 to 4, the fuel supply system Fa is provided with one or a plurality of fuel bottles 61, namely, first fuel sources, internal fuel sources or first fuel containers.” *Sugimoto*, ¶ [0071]. “The fuel bottles 61 contain the fuel gas having comparatively high boiling point, such as liquefied butane gas.” *Id.* at ¶ [0072]. “The external fuel system Fb includes the external fuel bottle 71, namely, a second fuel source or an external fuel source, a pipe A5 and a pressure reducing device 72.” *Id.* at ¶ [0073]. “The second fuel gas is, for example, liquefied propane gas.” *Id.* “The fuel pressure regulator 62 reduces the pressure of the fuel gas supplied from the two 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 the carburetor 18b at fuel supply rate varying in proportion to load on the engine 30.” *Id.* at ¶ [0071]. “The fuel bottle 61 supplies the first fuel gas in liquid phase to the fuel pressure regulator 62. The external fuel bottle 71 supplies the second fuel gas in gas phase to the fuel gas pressure regulator 62.” *Id.* at ¶ [0078]. “The fuel pressure regulator 62 functions as a vaporizer for vaporizing the first fuel gas supplied thereto in liquid phase.” *Id.*

Applicant believes that claim 19 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a carburetor attached to an intake of an engine comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel. That is, neither Poehlman nor Sugimoto teach or suggest a fuel shutoff attached to the carburetor to close a fuel passage that extends from the float bowl to the throat.

Similarly, Applicant believes that claim 48 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a method of assembling a dual fuel engine comprising attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with

air, a float bowl, and a fuel passage extending from the float bowl to the throat; and attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel. That is, neither Poehlman nor Sugimoto discloses attaching a liquid fuel cut-off to the carburetor to close a fuel passage that extends from the float bowl to the throat.

As previously set forth above with respect to claim 35, the liquid fuel control valve 43 in Poehlman referenced by the examiner as the claimed “liquid fuel cut-off” is located along the liquid fuel supply line 19 upstream from the carburetor 15 – the liquid fuel control valve 43 is not in a fuel passage that extends from the float bowl 17 to the throat 107 in the carburetor 15, as called for in claims 19 and 48.

In light of at least the above, Applicant believes claims 19 and 48 to be patentably distinct from that which is disclosed in the cited references. As such, Applicant respectfully requests withdrawal of the rejection of claims 19 and 48 under 35 U.S.C. §103, and all claims depending 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 1-65.

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/

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Dated: January 11, 2019
Attorney Docket No.: CET1090.042

P.O. ADDRESS:
Ziolkowski Patent Solutions Group, SC
136 South Wisconsin Street
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262-268-8100

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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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,441	10/28/2015	Kendall J. Collie	CET1090.042	1059
26629	7590	10/11/2018	EXAMINER	
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)			TRAN, LONG T	
136 S WISCONSIN ST			ART UNIT	PAPER NUMBER
PORT WASHINGTON, WI 53074			3747	
			NOTIFICATION DATE	DELIVERY MODE
			10/11/2018	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. 14/925,441	Applicant(s) COLLIE ET AL.	
	Examiner LONG T. TRAN	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 14 September 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) 1-63 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) 1-63 is/are rejected.
- 8) ☐ Claim(s) ____ 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

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

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 14, 2018 has been entered.
3. Claims 1 – 63 remain pending in the application and have been fully considered.

Claim Rejections - 35 USC § 103

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.
5. 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

Art Unit: 3747

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.

6. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

7. Claims 1, 3 – 4, 12 – 13, 35 - 36 are rejected under 35 U.S.C. 103 as being unpatentable over Poehlman (US 4,489,699) and in view of Tsuda et al. (US 5,809,979).

Regarding Claim 1:

Poehlman teaches a dual fuel engine comprising: an engine (13) operable on a gaseous fuel and a liquid fuel (Col 3 lines 25 – 36 describes gasoline and natural gas); a switch (51) to change operation of the engine between gaseous fuel and liquid fuel; a carburetor (15) attached to an intake (105) of the engine to mix air and fuel and connect to a gaseous fuel source (27) and a liquid fuel source (21); and a liquid fuel cut-off (41).

Poehlman is silent to the liquid fuel cut-off is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

However, Tsuda et al. teaches to the liquid fuel cut-off (14) is incorporated into the carburetor (1, valve 14 inserted into body 2 shown in Fig 1) to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the valve into the carburetor as taught by Tsuda et al., since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70. The modification of Poelman would also further reduce the size of the engine for optimized maintenance and fuel efficiency.

Regarding Claim 3:

Poelhman teaches the gaseous fuel is LPG and the liquid fuel is gasoline (Col 3 lines 25 – 36).

Regarding Claim 4:

Poelhman teaches a liquid fuel valve (43) along a liquid fuel line (19) coupling the liquid fuel source to the carburetor; and a gaseous fuel valve (45) along a gaseous fuel line (25) coupling the gaseous fuel source to the carburetor.

Regarding Claim 12:

Poelhman teaches the liquid fuel cut-off is manually actuated to interrupt liquid fuel (via switch 51).

Regarding Claim 13:

Poelhman teaches the liquid fuel cut-off actuates to interrupt liquid fuel free from linear motion (via switch 51).

Regarding Claims 35 - 36:

Peolhman teaches a carburetor (15) having a fuel shutoff (via 51) comprising: a carburetor comprising: a float bowl (17), a throat (where throttle 107 resides), a fuel passage (19) to provide fuel from the float bowl to the throat; and a fuel shutoff (43) coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end (Fig 1 shows valve 43 connected to two ends of the fuel passage); and wherein the fuel shutoff actuates free from linear motion (it rotates).

8. Claims 2, 5 – 10, 48 - 49, 56 - 57, 60 – 61 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) and Tsuda et al. (US 5,809,979), and further in view of Sugimoto et al. (US 2007/0137591).

Regarding Claim 2:

Modified Poelhman teaches all of the claimed limitation except for the engine is a pull start, batteryless engine.

However, Sugimoto et al. teach a similar dual fuel engine (paragraph 0086) comprising a pull start, batteryless engine (via 46) for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claim 5:

Modified Poelhman teaches all of the claimed limitations except for the engine is a pull-start engine having an electrical power generator to supply electrical power.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claim 6:

Modified Poelhman teaches the switch is an electro-mechanical switch (51 and via 59) connecting one fuel source to the carburetor; and wherein the liquid fuel cut-off is a solenoid (81, 83) connected to open and close a fuel path.

Poelhman is silent to a pull-start engine having an electrical power generator to supply electrical power.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claims 7 – 10, 56 – 57, 60 – 61:

Modified Poelhman teaches all of the claimed limitations except for a power generator.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

9. Claims 19 – 20, 30 - 34, 48 - 49, 62 – 63 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591) and further in view of Poelhman (US 4,489,699).

Regarding Claim 19 - 20, 30 - 34, 48 - 49, 62 - 63:

Sugimoto et al. teaches a batteryless dual fuel generator (paragraph 0086) comprising a housing (4) containing a pull start engine (46, 30) coupled to drive an alternator (40a), the engine operable on a gaseous fuel and a liquid fuel (paragraphs 0085 - 0086 describes a first fuel in liquid phase to gas, and a second gas fuel).

Sugimoto et al. is silent to a carburetor attached to an intake of the engine comprising: a throat to mix fuel with air, a float bowl, and a fuel passage to provide liquid fuel from the float bowl to the throat; and a fuel shutoff attached to

Art Unit: 3747

the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

However, Poelhman teaches a carburetor (15) attached to an intake (105) of the engine comprising: a throat (where throttle 107 resides) to mix fuel with air, a float bowl (17), a fuel passage (19) to provide liquid fuel from the float bowl to the throat; and a fuel shutoff (43) attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the carburetor of Poelhman in the generator of Poelhman in order to effectively, efficiently, and manually switch between the two fuel based on the user's preference.

10. Claim 11 is rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699), Tsuda et al. (US 5,809,979), Sugimoto et al. (US 2007/0137591), and further in view of Satter (US 3,412,258).

Regarding Claim 11:

Modified Poelhman teaches all of the claimed limitations except for the electrical power generator comprises a magneto or an alternator coupled to a voltage regulator to provide a regulated voltage to the solenoid valve.

However, Satter teaches a similar generator comprising a magneto or an alternator (12) coupled to a voltage regulator (via phase A line) to provide a

regulated voltage to the solenoid valve (44) for the purpose of supplying power to the valve.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the alternator of Satter in the engine of modified Poelhman in order to control the voltage while actuating the valve.

11. Claims 14, 15, 44, 50 - 55, 58 - 59 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699), Tsuda et al. (US 5,809,979), and further in view of Swanson et al. (US 5,611,312).

Regarding Claim 14:

Poelhman is silent to the liquid fuel cut-off comprises: a rotating shaft extending through an aperture in the carburetor; a fuel seal around the shaft to seal the aperture; and a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

However, Swanson et al. teaches a liquid fuel cut-off (118) comprising a rotating shaft (58) extending through an aperture in the carburetor (50); a fuel seal (112, 114) around the shaft to seal the aperture; and a blocking member (56) coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine for the purposes of preventing backflow.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of Poelhman in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claim 15, 44, 50 - 595, 58 - 59:

Poelhman is silent to a lever coupled to the shaft outside the carburetor; a spring coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.

However, Swanson et al. teaches a lever (395) coupled to the shaft outside the carburetor; a spring (397) coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and a cable (400) coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions for the purpose of creating a safety feature.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of Poelhman in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Art Unit: 3747

12. Claims 16 – 18 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) and Tsuda et al. (US 5,809,979), and further in view of Andersson et al. (US 2010/0258099).

Regarding Claim 16:

Modified Poelhman is silent to the liquid fuel cut-off is magnetically actuated to selectively interrupt liquid fuel.

However, Andersson et al. teaches the liquid fuel cut-off is magnetically (via 77 and 72, paragraph 0111) actuated to selectively interrupt liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

Regarding Claim 17:

Modified Poelhman is silent to a spring pushing the liquid fuel cut-off to interrupt liquid fuel; and an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

However, Andersson et al. teaches a spring (79) pushing the liquid fuel cut-off (18) to interrupt liquid fuel; and an actuating magnet (77 and 72) coupled to the carburetor (12) to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

Regarding Claim 18:

Modified Poelhman is silent to a housing (66) at least partially enclosing the liquid fuel cutoff, the housing including: a first section (64) enclosing a plunger (65) of the liquid fuel cut-off to the carburetor and holding the spring against the plunger; and a second section (74) coupled to the first section and enclosing the actuating magnet for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

13. Claims 21 - 26 , 37 - 43, 45 - 47 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591), Poelhman (US 4,489,699) and Tsuda et al. (US 5,809,979), and further in view of Swanson et al. (US 5,611,312).

Regarding Claim 21 - 23, 37 - 43, 45 - 47:

Modified Sugimoto et al. is silent to a rotating shaft extending through an opening in the carburetor; and a valve member coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

However, Swanson et al. teaches a rotating shaft (58) extending through an opening in the carburetor (50); and a valve member (395) coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claim 24:

Modified Sugimoto et al. is silent to a compression spring on the shaft in the carburetor pushing the valve member to close the fuel passage; and a plug in the opening surrounding the shaft to hold the compression spring against the valve member.

However, Swanson et al. teaches a compression spring (82) on the shaft in the carburetor pushing the valve member to close the fuel passage; and a plug (368') in the opening surrounding the shaft to hold the compression spring against the valve member.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claims 25 and 26:

Modified Sugimoto et al. is silent to a lever coupled to the shaft outside the carburetor; and a cable coupled to the lever to actuate the valve member to open and close the fuel passage.

However, Swanson et al. teaches a lever (395) coupled to the shaft outside the carburetor; and a cable (400) coupled to the lever to actuate the valve member to open and close the fuel passage.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

14. Claims 27 - 29 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591) Poelhman (US 4,489,699), and Tsuda et al. (US 5,809,979), and further in view of Andersson et al. (US 2010/0258099).

Regarding Claims 27 - 29:

Modified Sugimoto et al. is silent to the fuel shutoff is magnetically actuated to selectively close the fuel passage, controlled by a manually actuated magnet coupled to the carburetor.

However, Andersson et al. teaches a spring (79) pushing the liquid fuel cut-off (18) to interrupt liquid fuel; and an actuating magnet (77 and 72) coupled to the carburetor (12) to selectively pull the liquid fuel cut-off against the spring

away from a position interrupting liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of modified Sugimoto et al. in order to minimize delay with the valve closure.

Response to Arguments

15. Applicant's arguments with respect to claims 1 – 63 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LONG T. TRAN whose telephone number is (571)270-1899. The examiner can normally be reached on M-F, 7:30am - 5:00pm.

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>.

Art Unit: 3747

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.

/LONG T TRAN/
Primary Examiner, Art Unit 3747

Notice of References Cited	Application/Control No. 14/925,441		Applicant(s)/Patent Under Reexamination COLLIE ET AL.	
	Examiner LONG T. TRAN		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-2015/0122230 A1	05-2015	Sarder; Mark J.	F02D19/0647	123/525
*	B	US-2011/0253102 A1	10-2011	Watanabe; Tsuyoshi	F02D41/064	123/438
*	C	US-2010/0258099 A1	10-2010	Andersson; Martin N.	F02D31/006	123/676
*	D	US-2007/0137591 A1	06-2007	Sugimoto; Yasuhiro	F02B43/00	123/41.7
*	E	US-6,591,817 B2	07-2003	Deutsch; Robert W.	F02D19/0647	123/525
*	F	US-2002/0134362 A1	09-2002	Deutsch, Robert W.	F02D19/0647	123/575
*	G	US-5,809,979 A	09-1998	Tsuda; Hiroyuki	F02M13/08	123/525
*	H	US-5,611,312 A	03-1997	Swanson; Mark S.	F02M1/02	123/179.18
*	I	US-4,489,699 A	12-1984	Poehlman; Arthur G.	F02B69/04	123/525
*	J	US-4,393,848 A	07-1983	Poehlman; Arthur G.	F02B69/04	123/525
*	K	US-3,783,849 A	01-1974	Bramfitt; Thomas Hugh	F02M13/06	123/179.16
*	L	US-3,718,000 A	02-1973	Walker; Brooks	F02B11/02	123/525
*	M	US-3,659,574 A	05-1972	Reschke; Albert H.	F02M13/08	123/525

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	
	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.

Index of Claims 	Application/Control No. 14925441	Applicant(s)/Patent Under Reexamination COLLIE ET AL.
	Examiner LONG T TRAN	Art Unit 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	04/18/2017	08/02/2017	01/22/2018	06/11/2018	10/04/2018			
	1	÷	✓	✓	✓	✓			
	2	÷	✓	✓	✓	✓			
	3	÷	✓	✓	✓	✓			
	4	÷	✓	✓	✓	✓			
	5	÷	✓	✓	✓	✓			
	6	÷	✓	✓	✓	✓			
	7	÷	✓	✓	✓	✓			
	8	÷	✓	✓	✓	✓			
	9	÷	✓	✓	✓	✓			
	10	÷	✓	✓	✓	✓			
	11	÷	✓	✓	✓	✓			
	12	÷	✓	✓	✓	✓			
	13	÷	✓	✓	✓	✓			
	14	÷	✓	✓	✓	✓			
	15	÷	✓	✓	✓	✓			
	16	÷	✓	✓	✓	✓			
	17	÷	✓	✓	✓	✓			
	18	÷	✓	✓	✓	✓			
	19	÷	N	✓	✓	✓			
	20	÷	N	✓	✓	✓			
	21	÷	N	✓	✓	✓			
	22	÷	N	✓	✓	✓			
	23	÷	N	✓	✓	✓			
	24	÷	N	✓	✓	✓			
	25	÷	N	✓	✓	✓			
	26	÷	N	✓	✓	✓			
	27	÷	N	✓	✓	✓			
	28	÷	N	✓	✓	✓			
	29	÷	N	✓	✓	✓			
	30	÷	N	✓	✓	✓			
	31	÷	N	✓	✓	✓			
	32	÷	N	✓	✓	✓			
	33	÷	N	✓	✓	✓			
	34	÷	N	✓	✓	✓			
	35	÷	N	✓	✓	✓			
	36	÷	N	✓	✓	✓			

<i>Index of Claims</i> 	Application/Control No. 14925441	Applicant(s)/Patent Under Reexamination COLLIE ET AL.
	Examiner LONG T TRAN	Art Unit 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	04/18/2017	08/02/2017	01/22/2018	06/11/2018	10/04/2018						
	37	÷	N	✓	✓	✓						
	38	÷	N	✓	✓	✓						
	39	÷	N	✓	✓	✓						
	40	÷	N	✓	✓	✓						
	41	÷	N	✓	✓	✓						
	42	÷	N	✓	✓	✓						
	43	÷	N	✓	✓	✓						
	44	÷	N	✓	✓	✓						
	45	÷	N	✓	✓	✓						
	46	÷	N	✓	✓	✓						
	47	÷	N	✓	✓	✓						
	48	÷	N	✓	✓	✓						
	49	÷	N	✓	✓	✓						
	50	÷	N	✓	✓	✓						
	51	÷	N	✓	✓	✓						
	52	÷	N	✓	✓	✓						
	53	÷	N	✓	✓	✓						
	54	÷	N	✓	✓	✓						
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	56	÷	✓	✓	✓	✓						
	57	÷	✓	✓	✓	✓						
	58	÷	N	✓	✓	✓						
	59	÷	N	✓	✓	✓						
	60	÷	✓	✓	✓	✓						
	61	÷	✓	✓	✓	✓						
	62	÷	N	✓	✓	✓						
	63	÷	N	✓	✓	✓						

Search Notes 	Application/Control No. 14925441	Applicant(s)/Patent Under Reexamination COLLIE ET AL.
	Examiner LONG T TRAN	Art Unit 3747

CPC- SEARCHED		
Symbol	Date	Examiner
F02D19/0647; F02D19/0613; F02D29/06; F02D41/0025; F02D11/02; F02D19/0642; F02D35/0053; F02B63/04; F02B43/00; F02B63/044; F02M13/08; F02M19/08; F02M21/047; F02N3/02	8/2/2017	LT

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
Inventor search	8/2/2017	LT
PLUS search	8/2/2017	LT
Forward and backward citation	8/2/2017	LT
Text search	8/2/2017	LT
Updated text search	1/22/2018	LT
Updated text search	6/11/2018	LT
Updated text search	10/4/2018	LT

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

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S46	463	engine and ((dual double two second\$4 plural\$4 multi multiple bi pair supplement\$4) near2 fuel near20 (switch\$4 chang\$4 transition\$3 alternat44)) and (valve same (carburetor carburretor) same fuel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/10/04 10:00
S47	313	engine and ((dual double two second\$4 plural\$4 multi multiple bi pair supplement\$4) near2 fuel near20 (switch\$4 chang\$4 transition\$3 alternat44)) and (valve near20 (carburetor carburretor) near20 fuel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/10/04 10:02
S48	72	engine and ((dual double two second\$4 plural\$4 multi multiple bi pair supplement\$4) near2 fuel near20 (switch\$4 chang\$4 transition\$3 alternat44)) and (valve near20 (carburetor carburretor) near20 fuel) same solenoid	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/10/04 10:59

10/ 4/ 2018 1:25:58 PM
C:\ Users\ ltran2\ Documents\ EAST\ Workspaces\ 14925441.wsp

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/925,441	Filing Date 10/28/2015	☐ To be Mailed
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ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO**APPLICATION AS FILED – PART I**

(Column 1)

(Column 2)

FOR	NUMBER FILED	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), (l), 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(j))	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

(Column 1)

(Column 2)

(Column 3)

AMENDMENT	09/14/2018	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(j))	* 65	Minus	** 65	= 0	X \$50 =	0
	Independent (37 CFR 1.16(h))	* 4	Minus	***4	= 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

(Column 1)

(Column 2)

(Column 3)

AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(j))	*	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.

Request for Continued Examination (RCE) Transmittal	Application Number	14/925,441
	Filing Date	10/28/2015
	First Named Inventor	Collie et al.
	Art Unit	3747
	Examiner Name	Long T. Tran
	Attorney Docket Number	CET1090.042

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. **Submission required under 37 CFR 1.114** Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).
- a. ☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.
- i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ii. ☐ Other _____
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- ii. ☐ Affidavit(s)/Declaration(s)
- iii. ☐ Information Disclosure Statement (IDS)
- iv. ☐ Other _____
2. **Miscellaneous**
- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other _____
3. **Fees** The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
- a. ☐ The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any overpayments, to Deposit Account No. _____
- i. ☐ RCE fee required under 37 CFR 1.17(e)
- ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other _____
- b. ☐ Check in the amount of \$ _____ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)
- d. ☒ Payment by EFS-Web

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED			
Signature	/Kevin R. Rosin/	Date	September 14, 2018
Name (Print/Type)	Kevin R. Rosin	Registration No.	55584

CERTIFICATE OF MAILING OR TRANSMISSION			
I hereby certify that this correspondence is being EFS-Web transmitted to the United States Patent and Trademark Office (USPTO), deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop RCE, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450 or facsimile transmitted to the USPTO on the date shown below.			
Signature	/Robyn L. Templin/	Date	September 14, 2018
Name (Print/Type)	Robyn L. Templin		

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Customer No. 26629
Confirmation No. 1059

Patent
Attorney Docket No. CET1090.042

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Collie et al.
Serial No. : 14/925,441
Filed : October 28, 2015
For : BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL
 CUT-OFF
Group Art No. : 3747
Examiner : Long T. Tran

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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37 CFR 1.8(a)

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Date: September 14, 2018

/Robyn L. Templin/
Signature

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Alexandria, VA 22313-1450

AFTER-FINAL
AMENDMENT/RESPONSE TO FINAL OFFICE ACTION
MAILED JUNE 14, 2018

Dear Sir:

Responsive to the Final Office Action mailed June 14, 2018, please amend the Application as follows:

In the Claims

1. (Currently Amended) A dual fuel engine comprising:
an engine operable on a gaseous fuel and a liquid fuel;
a switch to change operation of the engine between gaseous fuel and liquid fuel;
a carburetor attached to an intake of the engine to mix air and fuel and connect to a gaseous fuel source and a liquid fuel source; and
a liquid fuel cut-off ~~physically attached~~ incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.
2. (Original) The dual fuel engine of claim 1, wherein the engine is a pull start, batteryless engine.
3. (Original) The dual fuel engine of claim 1, wherein the gaseous fuel is LPG and the liquid fuel is gasoline.
4. (Original) The dual fuel engine of claim 1 further comprising:
a liquid fuel valve along a liquid fuel line coupling the liquid fuel source to the carburetor; and
a gaseous fuel valve along a gaseous fuel line coupling the gaseous fuel source to the carburetor.
5. (Original) The dual fuel engine of claim 1, wherein the engine is a pull-start engine having an electrical power generator to supply electrical power.
6. (Original) The dual fuel engine of claim 5, wherein the switch is an electro-mechanical switch connecting one fuel source to the carburetor and connected to the electrical power generator; and
wherein the liquid fuel cut-off is a solenoid connected to open and close a fuel path to the pull-start engine in response to reception of electrical power from the switch.
7. (Currently Amended) The dual fuel engine of claim 5, wherein the liquid fuel cut-off is a solenoid valve that operates within the carburetor to control liquid fuel flow to the engine and is powered by the electrical power generator.

8. (Original) The dual fuel engine of claim 7, wherein the switch selectively powers the solenoid valve by controlling electrical connection between the solenoid valve and the electrical power generator.

9. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is normally open to provide liquid fuel to the engine when the solenoid valve is unpowered.

10. (Original) The dual fuel engine of claim 9, wherein a pull-starter drives the electrical power generator to power and close the solenoid valve while starting the engine on gaseous fuel.

11. (Original) The dual fuel engine of claim 7, wherein the electrical power generator comprises a magneto or an alternator coupled to a voltage regulator to provide a regulated voltage to the solenoid valve.

12. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is manually actuated to interrupt liquid fuel.

13. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off actuates to interrupt liquid fuel free from linear motion.

14. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off comprises:

- a rotating shaft extending through an aperture in the carburetor;
- a fuel seal around the shaft to seal the aperture; and
- a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

15. (Original) The dual fuel engine of claim 14 further comprising:

- a lever coupled to the shaft outside the carburetor;
- a spring coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and

a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.

16. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is magnetically actuated to selectively interrupt liquid fuel.

17. (Original) The dual fuel engine of claim 1 further comprising:
a spring pushing the liquid fuel cut-off to interrupt liquid fuel; and
an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

18. (Original) The dual fuel engine of claim 17 further comprising a housing at least partially enclosing the liquid fuel cutoff, the housing including:

a first section enclosing a plunger of the liquid fuel cut-off to the carburetor and holding the spring against the plunger; and

a second section coupled to the first section and enclosing the actuating magnet.

19. (Previously Presented) A batteryless dual fuel generator comprising:
a housing containing a pull start engine coupled to drive an alternator, the engine operable on a gaseous fuel and a liquid fuel;

a carburetor attached to an intake of the engine comprising:

a throat to mix fuel with air,

a float bowl, and

a fuel passage extending from the float bowl to the throat to provide liquid fuel; and

a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

20. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff actuates to close the fuel passage free from linear motion.

21. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff comprises:

a rotating shaft extending through an opening in the carburetor; and
a valve member coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

22. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member is positioned in the float bowl and the shaft extends substantially horizontal through the opening.

23. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member has a flow passage that aligns with the fuel passage to control fuel flow into the fuel passage.

24. (Original) The batteryless dual fuel generator of claim 21 further comprising:
a compression spring on the shaft in the carburetor pushing the valve member to close the fuel passage; and
a plug in the opening surrounding the shaft to hold the compression spring against the valve member.

25. (Original) The batteryless dual fuel generator of claim 24 further comprising:
a lever coupled to the shaft outside the carburetor; and
a cable coupled to the lever to actuate the valve member to open and close the fuel passage.

26. (Original) The batteryless dual fuel generator of claim 24 further comprising one or more fuel seals within the plug to seal around the shaft.

27. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is magnetically actuated to selectively close the fuel passage, controlled by a manually actuated magnet coupled to the carburetor.

28. (Original) The batteryless dual fuel generator of claim 19 further comprising:
a spring pushing the fuel shutoff to close the fuel passage; and

an actuating magnet coupled to the carburetor to selectively pull the fuel shutoff against the spring to open the fuel passage.

29. (Original) The batteryless dual fuel generator of claim 28 further comprising a housing at least partially enclosing the fuel shutoff, the housing including:

a first section enclosing a plunger of the fuel shutoff to the carburetor and holding the spring against the plunger; and

a second section coupled to the first section and enclosing the actuating magnet.

30. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is a carburetor cutoff solenoid; and

wherein the generator further comprises:

a charge winding to generate electrical power to operate the carburetor cutoff solenoid, and

a switch to selectively power the carburetor cutoff solenoid by controlling electrical connection between the carburetor cutoff solenoid and the charge winding.

31. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is normally open to provide liquid fuel to the engine when the carburetor cutoff solenoid is unpowered.

32. (Original) The batteryless dual fuel generator of claim 31, wherein a pull-starter drives the engine operating the charge winding to power and close the carburetor cutoff solenoid while starting the engine on gaseous fuel.

33. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is an electro-mechanical switch connected to the charge winding and connecting at least one fuel source to the carburetor to selectively control fuel flow from the at least one fuel source to the carburetor.

34. (Original) The batteryless dual fuel generator of claim 30, wherein the charge winding is coupled to a voltage regulator to provide a regulated voltage to the carburetor cutoff solenoid.

35. (Previously Presented) A carburetor having a fuel shutoff comprising:
a carburetor comprising:
a float bowl,
a throat, and
a fuel passage extending from the float bowl to the throat; and
a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end; and
wherein the fuel shutoff actuates free from linear motion.

36. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff is a manually actuated fuel shutoff.

37. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff comprises a shaft extending into the carburetor through an aperture in the float bowl and coupled to a valve tip in the float bowl that rotates to open and close the fuel passage.

38. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip rotates parallel to an inlet of the fuel passage between a first position permitting fuel flow into the inlet and a second position blocking fuel flow into the inlet.

39. (Original) The carburetor having a fuel shutoff of claim 37, wherein the fuel passage has an inlet with a substantially flat perimeter edge and the valve tip maintains planar contact with the perimeter edge while rotating to open and close the fuel passage.

40. (Original) The carburetor having a fuel shutoff of claim 39, wherein the shaft is substantially horizontal and the inlet of the fuel passage faces substantially horizontal.

41. (Original) The carburetor having a fuel shutoff of claim 39 further comprising:
a plug in the aperture around the shaft; and
a compression spring around the shaft in the float bowl pushing against the plug to hold the valve tip against the perimeter edge of the inlet.

42. (Original) The carburetor having a fuel shutoff of claim 41 further comprising a first fuel seal between the shaft and plug, the first fuel seal comprising a primary o-ring in an o-ring groove in the shaft.

43. (Original) The carburetor having a fuel shutoff of claim 42 further comprising:
a second fuel seal between the shaft and plug, the second fuel seal comprising a secondary o-ring in a counterbore in the plug; and
a support member mounted over the counterbore around the shaft to hold the secondary o-ring in the counterbore.

44. (Original) The carburetor having a fuel shutoff of claim 37 further comprising:
a lever coupled to the shaft outside of the carburetor;
a spring coupled to the lever to hold the fuel shutoff opening the fuel passage;
and
a cable coupled to the lever to move the lever against the spring and rotate the fuel shutoff to close the fuel passage.

45. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises thermoplastic.

46. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises one of an oval and stadium shape.

47. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip has a cutout that aligns with the fuel passage to open the fuel passage.

48. (Previously Presented) A method of assembling a dual fuel engine comprising:
providing an engine operable on a gaseous fuel and a liquid fuel;
attaching a carburetor to an intake of the engine, the carburetor comprising:
a throat to mix gaseous fuel with air and liquid fuel with air,
a float bowl, and

a fuel passage extending from the float bowl to the throat to provide liquid fuel;

coupling a switch to the engine to change operation of the engine between gaseous fuel and liquid fuel; and

attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

49. (Original) The method of claim 48 further comprising coupling a manually operated control operatively to the liquid fuel cut-off.

50. (Original) The method of claim 48, wherein attaching the liquid fuel cut-off to the carburetor comprises:

providing a shaft having a valve tip located at an end of the shaft;

installing a compression spring on the shaft;

installing a plug on the shaft so that the compression spring is positioned between the plug and the valve tip; and

anchoring the plug in an aperture in the carburetor so that the compression spring holds the valve tip to an inlet of the fuel passage.

51. (Original) The method of claim 50, wherein providing the shaft having a valve tip located at an end of the shaft comprises pressing the valve tip onto the shaft.

52. (Original) The method of claim 50 further comprising positioning at least one fuel seal on the shaft to seal between the shaft and plug.

53. (Original) The method of claim 50, wherein the shaft rotates the valve tip between a first position allowing fuel flow into the fuel passage and a second position blocking fuel flow into the fuel passage.

54. (Original) The method of claim 53, wherein the valve tip comprises an oval or stadium shape with a cutout in the oval or stadium shape that aligns with the fuel passage when the valve tip is rotated to the first position such that fuel can pass through the cutout into the fuel passage.

55. (Original) The method of claim 53 further comprising:
coupling a lever to the shaft;
attaching a control spring to the lever to actuate the shaft to one of the first position and second position; and
attaching a cable to the lever to actuate the shaft to the other of the first position and second position.

56. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is open to provide liquid fuel to the engine when the solenoid valve is powered.

57. (Original) The dual fuel engine of claim 56, wherein a pull-starter drives the electrical power generator to power and open the solenoid valve while starting the engine on liquid fuel.

58. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is open to provide liquid fuel to the engine when the carburetor cutoff solenoid is powered.

59. (Original) The batteryless dual fuel generator of claim 58, wherein a pull-starter drives the engine operating the charge winding to power and open the carburetor cutoff solenoid while starting the engine on liquid fuel.

60. (Original) The dual fuel engine of claim 7 further comprising a microcontroller to close the solenoid valve when the engine operates on gaseous fuel and open the solenoid valve to operate the engine on liquid fuel.

61. (Original) The dual fuel engine of claim 60, wherein the microcontroller closes the solenoid valve during engine shutdown from operation on liquid fuel.

62. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is a microcontroller configured to close the carburetor cutoff solenoid when the engine operates on gaseous fuel and to open the carburetor cutoff solenoid to operate the engine on liquid fuel.

63. (Original) The batteryless dual fuel generator of claim 62, wherein the microcontroller closes the carburetor cutoff solenoid during engine shutdown from operation on liquid fuel.

64. (Previously Presented) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is physically attached to an outer surface of the carburetor.

65. (Previously Presented) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage.

REMARKS

Claims 1-65 are pending in the present application. In the Final Office Action mailed June 14, 2018, the Examiner rejected claims 1, 3, 4, 12, 13, 35, and 36 under 35 U.S.C. §102(a)(2) as being anticipated by Poehlman (USP 4,489,699). The Examiner next rejected claims 2, 5-10, 19, 20, 30-34, 48, 49, 56, 57, and 60-63 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Sugimoto et al. (US Pub. 2007/0137591). Claim 11 was rejected under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Sugimoto et al. and further in view of Satter (USP 3,412,258). Claims 14, 15, 44, 50-55, 58, and 59 were rejected under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Swanson et al. (USP 5,611,312). Claims 16-18 were rejected under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Andersson et al. (US Pub. 2010/0258099). Claims 21-26, 37-43, and 45-47 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al. and Poehlman, and further in view of Swanson et al. Claims 27-29 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al. and Poehlman, and further in view of Andersson et al.

Without acquiescing to the rejections, Applicant has elected to amend independent claim 1 (and dependent claim 7) in order to further clarify the scope of the invention, with amendments and arguments presented here below for consideration along with an accompanying Request for Continued Examination (RCE).

Rejections under 35 U.S.C. §102 as being anticipated by Poehlman**Claim 1**

The Examiner rejected independent claim 1 under 35 U.S.C. §102(a)(2) as being anticipated by Poehlman. Responsive to the rejection, Applicant has elected to amend claim 1 in the present response to further clarify the scope of the invention. Support for the amendment can be found in at least Paragraphs [0050]-[0051], [0064]-[0065] of the Specification and in FIGS. 4A-8. No new matter is added by way of the amendment.

Amended claim 1 calls for, in part, a liquid fuel cut-off incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel. Applicant believes that amended claim 1 is patentably distinct from Poehlman at least for the reason that Poehlman fails to teach or suggest such a liquid fuel cut-off that is incorporated into the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Poehlman shows in FIG. 1 a “control apparatus 11 for selectively operating an internal combustion engine 13 on a first or gaseous fuel and on a second or liquid fuel. The engine

includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 25-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43.” *Id.* at col. 3, lns. 63-65. The “control means 41 includes a vacuum control switch 47 which is subject to variation in the amount of vacuum, which is normally closed, and which opens in response to the presence at the vacuum switch 47 of an amount of vacuum above a predetermined amount.” *Id.* at col. 4, lns. 10-15. The “control means 41 includes a primary or fuel selector switch 51.” *Id.* at col. 4, lns. 16-17. Regarding fuel changeover, Poehlman further discloses that “[i]n operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position” and that “[a]s a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15... [h]owever, the engine continues to run on the liquid fuel in the carburetor bowl 17.” *Id.* at col. 6, lns. 21-38. “The inlet manifold vacuum remains above the predetermined level of the vacuum switch 47 at idle or normal road speeds until the engine begins to run out of the liquid fuel in the fuel bowl 17” and “[t]he vacuum then drops to an amount less than or below the predetermined level thereby closing the vacuum switch 47 which energizes the solenoid coils 81 and 83.” *Id.* at col. 6, lns. 21-38. “The first solenoid coil 81 acts to displace the first switch member 65 to the terminal 63, thereby energizing the gaseous fuel control valve 45 to the open position, and thereby also energizing the spark advance means 31 and the inlet air heating means 33.” *Id.* at col. 6, lns. 21-38.

However, Poehlman does not teach or suggest a liquid fuel cut-off incorporated into the carburetor, as instead the liquid fuel control valve 43 in Poehlman is located along the liquid fuel supply line 19 upstream from the carburetor 15. *Poehlman*, col. 3, lns. 64-66; FIG. 1. Thus, the liquid fuel control valve 43 is in fact positioned off of and remote from the carburetor 15 and is not incorporated into the carburetor as called for in claim 1.

In light of at least the above, Applicant believes claim 1 to be patentably distinct from that which is disclosed in the cited reference. As such, Applicant respectfully requests withdrawal of the rejection of claim 1 under 35 U.S.C. §102, and the rejection of all claims depending therefrom.

Claim 7

The rejected claim 7 under 35 U.S.C. §102(a)(2) as being anticipated by Poehlman. Responsive to the rejection, Applicant has elected to amend claim 7 in the present response to

further clarify the scope of the invention. Support for the amendment can be found in at least Paragraph [0050] of the Specification.

As amended, claim 7 calls for the liquid fuel cut-off to be a solenoid valve that operates within the carburetor to control liquid fuel flow to the engine and is powered by the electrical power generator.

As indicated above with respect to claim 1, Poehlman does not teach or suggest a liquid fuel cut-off (that is a solenoid valve) that operates within the carburetor to control liquid fuel flow to the engine and is powered by the electrical power generator incorporated into the carburetor. Instead, the liquid fuel control valve 43 in Poehlman is located along the liquid fuel supply line 19 upstream from the carburetor 15. Poehlman, col. 3, lns. 64-66; FIG. 1. Thus, the liquid fuel control valve 43 is in fact positioned off of and remote from the carburetor 15 and does not operate within the carburetor to control liquid fuel flow to the engine as called for in claim 7.

In light of at least the above, Applicant believes claim 7 to be patentably distinct from that which is disclosed in the cited reference. As such, Applicant respectfully requests withdrawal of the rejection of claim 7 under 35 U.S.C. §102

Claim 35

The Examiner rejected independent claim 35 under 35 U.S.C. §102(a)(2) as being anticipated by Poehlman.

Claim 35 calls for, in part, a carburetor comprising a fuel passage extending from the float bowl to the throat, and a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end.

Applicant believes claim 35 is patentably distinct from Poehlman at least for the reason that Poehlman fails to teach or suggest a carburetor comprising a fuel passage extending from the float bowl to the throat, and a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end. That is, Poehlman does not teach or suggest a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close a fuel passage extending from the float bowl to the throat. While the Examiner has asserted that Poehlman discloses “fuel passage (19) to provide fuel from the float bowl to the throat” and “fuel shutoff (43) coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage,” *Final Office Action*, June 14, 2018, p. 3-4, the fuel control valve 43 does not have a first end in the

carburetor that actuates to close the fuel passage as now called for in claim 35. Instead, the liquid fuel control valve 43 is located along the liquid fuel supply line 19 upstream from the carburetor 15 – not in a fuel passage that extends from the float bowl to the throat in the carburetor 15. See *Poehlman*, at FIG. 1.

In light of at least the above, Applicant believes claim 35 to be patentably distinct from that which is disclosed in the cited reference. As such, Applicant respectfully requests withdrawal of the rejection of claim 35 under 35 U.S.C. §102, and the rejection of all claims depending therefrom.

Rejections under 35 U.S.C. §103 over Poehlman in view of Sugimoto

Claims 19 and 48

The Examiner rejected independent claims 19 and 48 together under 35 U.S.C §103 as being unpatentable over Poehlman in view of Sugimoto.

Claim 19 calls for, in part, a carburetor attached to an intake of an engine comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

Claim 48 calls for, in part, the method steps of attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

As described above, Poehlman discloses an “engine [that] includes a carburetor 15 incorporating a float bowl 17 which is connected through a supply line 19 with a source 21 of liquid fuel, such as, for instance, gasoline.” *Poehlman*, col. 3, lns. 27-31. The engine 13 “includes control means 41 for selective change-over between use of liquid fuel and gaseous fuel. In this regard, the control means 41 includes a liquid fuel control valve 43 which is incorporated in the liquid fuel supply line 19.” *Id.* at col. 3, lns. 62-66.

Sugimoto discloses in “FIGS. 1 to 4, the fuel supply system Fa is provided with one or a plurality of fuel bottles 61, namely, first fuel sources, internal fuel sources or first fuel containers.” *Sugimoto*, ¶ [0071]. “The fuel bottles 61 contain the fuel gas having comparatively high boiling point, such as liquefied butane gas.” *Id.* at ¶ [0072]. “The external fuel system Fb includes the external fuel bottle 71, namely, a second fuel source or an external fuel source, a pipe

A5 and a pressure reducing device 72.” *Id.* at ¶ [0073]. “The second fuel gas is, for example, liquefied propane gas.” *Id.* “The fuel pressure regulator 62 reduces the pressure of the fuel gas supplied from the two 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 the carburetor 18b at fuel supply rate varying in proportion to load on the engine 30.” *Id.* at ¶ [0071]. “The fuel bottle 61 supplies the first fuel gas in liquid phase to the fuel pressure regulator 62. The external fuel bottle 71 supplies the second fuel gas in gas phase to the fuel gas pressure regulator 62.” *Id.* at ¶ [0078]. “The fuel pressure regulator 62 functions as a vaporizer for vaporizing the first fuel gas supplied thereto in liquid phase.” *Id.*

Applicant believes that claim 19 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a carburetor attached to an intake of an engine comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel. That is, neither Poehlman nor Sugimoto teach or suggest a fuel shutoff attached to the carburetor to close a fuel passage that extends from the float bowl to the throat.

Similarly, Applicant believes that claim 48 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a method of assembling a dual fuel engine comprising attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel. That is, neither Poehlman nor Sugimoto discloses attaching a liquid fuel cut-off to the carburetor to close a fuel passage that extends from the float bowl to the throat.

As previously set forth above with respect to claim 35, the liquid fuel control valve 43 in Poehlman referenced by the examiner as the claimed “liquid fuel cut-off” is located along the liquid fuel supply line 19 upstream from the carburetor 15 – the liquid fuel control valve 43 is not in a fuel passage that extends from the float bowl to the throat in the carburetor 15, as called for in claims 19 and 48.

In light of at least the above, Applicant believes claims 19 and 48 to be patentably distinct from that which is disclosed in the cited references. As such, Applicant respectfully requests withdrawal of the rejection of claims 19 and 48 under 35 U.S.C. §103, and all claims depending 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 1-65.

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/

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Dated: September 14, 2018
Attorney Docket No.: CET1090.042

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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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Dated: September 14, 2018
Attorney Docket No.: CET1090.042

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Electronic Patent Application Fee Transmittal

Application Number:	14925441			
Filing Date:	28-Oct-2015			
Title of Invention:	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF			
First Named Inventor/Applicant Name:	Kendall J. Collie			
Filer:	Kevin Roger Rosin./Robyn Templin			
Attorney Docket Number:	CET1090.042			
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:				
RCE- 1ST REQUEST	2801	1	650	650
Total in USD (\$)				650

Electronic Acknowledgement Receipt

EFS ID:	33721289
Application Number:	14925441
International Application Number:	
Confirmation Number:	1059
Title of Invention:	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF
First Named Inventor/Applicant Name:	Kendall J. Collie
Customer Number:	26629
Filer:	Kevin Roger Rosin./Robyn Templin
Filer Authorized By:	Kevin Roger Rosin.
Attorney Docket Number:	CET1090.042
Receipt Date:	14-SEP-2018
Filing Date:	28-OCT-2015
Time Stamp:	10:37:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 650
RAM confirmation Number	091418INTEFSW10424300
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	Request for Continued Examination (RCE)	RCETransmittal.pdf	133870	no	1
			2b6fc9755fb9ed5b7db5bfc025f7973ca6fffc7b		
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2		Response.pdf	201990	yes	18
			2a303167af70cdb1f85884294fddf7911d62bf83		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment Submitted/Entered with Filing of CPA/RCE		1	1	
	Claims		2	11	
	Applicant Arguments/Remarks Made in an Amendment		12	18	
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30609	no	2
			ed3d49f267d23ee66163fdf59004219330c4f2e35		
Warnings:					
Information:					
Total Files Size (in bytes):			366469		

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 NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,441	10/28/2015	Kendall J. Collie	CET1090.042	1059
26629	7590	08/16/2018	EXAMINER	
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)			TRAN, LONG T	
136 S WISCONSIN ST			ART UNIT	PAPER NUMBER
PORT WASHINGTON, WI 53074			3747	
			NOTIFICATION DATE	DELIVERY MODE
			08/16/2018	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

Advisory Action Before the Filing of an Appeal Brief	Application No. 14/925,441	Applicant(s) COLLIE ET AL.	
	Examiner LONG T. TRAN	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 --

THE REPLY FILED 03 August 2018 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.
NO NOTICE OF APPEAL FILED

1. ☒ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance;
 (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires _____ months from the mailing date of the prior *Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because

a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);

b) ☐ They raise the issue of new matter (see NOTE below);

c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☐ Applicant's reply has overcome the following rejection(s): _____.

6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): (a) ☐ will not be entered, or (b) ☒ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

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

9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
The liquid fuel cutoff is connected to the valves via wires, which in turn is connected to the carburetor. This network of wires is considered a physical attachment.

13. ☐ Note the attached Information *Disclosure Statement(s)*. (PTO/SB/08) Paper No(s). _____

14. ☒ Other: PTO2323.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: 1-63.

Claim(s) withdrawn from consideration: _____

AFCP 2.0 Decision

Application No.

14/925,441

Examiner

LONG T. TRAN

Applicant(s)

COLLIE ET AL.

Art Unit

3747

This is in response to the After Final Consideration Pilot request filed 03 August 2018.

1. **Improper Request** – The AFCP 2.0 request is improper for the following reason(s) and the after final amendment submitted with the request will be treated under pre-pilot procedure.

- ☐ An AFCP 2.0 request form PTO/SB/434 (or equivalent document) was not submitted.
- ☐ A non-broadening amendment to at least one independent claim was not submitted.
- ☐ A proper AFCP 2.0 request was submitted in response to the most recent final rejection.
- ☐ Other:

2. **Proper Request**

A. After final amendment submitted with the request will not be treated under AFCP 2.0.

The after final amendment cannot be reviewed and a search conducted within the guidelines of the pilot program.

☒ The after final amendment will be treated under pre-pilot procedure.

B. Updated search and/or completed additional consideration.

The examiner performed an updated search and/or completed additional consideration of the after final amendment within the time authorized for the pilot program. The result(s) of the updated search and/or completed additional consideration are:

- ☐ 1. All of the rejections in the most recent final Office action are overcome and a Notice of Allowance is issued herewith.
- ☐ 2. The after final amendment would not overcome all of the rejections in the most recent final Office action. See attached interview summary for further details.
- ☐ 3. The after final amendment was reviewed, and it raises a new issue(s). See attached interview summary for further details.
- ☐ 4. The after final amendment raises new issues, but would overcome all of the rejections in the most recent final Office action. A decision on determining allowability could not be made within the guidelines of the pilot. See attached interview summary for further details, including any newly discovered prior art.
- ☐ 5. Other:

Examiner Note: Please attach an interview summary when necessary as described above.

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0		
Practitioner Docket No.: CET1090.042	Application No.: 14/925,441	Filing Date: October 28, 2015
First Named Inventor: Kendall J. Collie	Title: BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF	
<p>APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.</p> <ol style="list-style-type: none"> 1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (<i>e.g.</i>, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c). 2. The above-identified application contains an outstanding final rejection. 3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect. 4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection. 5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response. 6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web). 7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, <i>e.g.</i>, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.] 8. By filing this certification and request, applicant acknowledges the following: <ul style="list-style-type: none"> • Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0. • The examiner will verify that the AFCP 2.0 submission is compliant, <i>i.e.</i>, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions: <ul style="list-style-type: none"> ○ The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, <i>e.g.</i>, by mailing an advisory action. ○ If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview. <ul style="list-style-type: none"> ▪ The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate. ▪ If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116. 		
Signature /Kevin R. Rosin/	Date August 3, 2018	
Name (Print/Typed) Kevin R. Rosin	Practitioner Registration No. 55,584	
Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.		
☒ * Total of <u>1</u> forms are submitted.		

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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.

REMARKS

Claims 1-63 are pending in the present application. In the Final Office Action mailed June 14, 2018, the Examiner rejected claims 1, 3, 4, 12, 13, 35, and 36 under 35 U.S.C. §102(a)(2) as being anticipated by Poehlman (USP 4,489,699). The Examiner next rejected claims 2, 5-10, 19, 20, 30-34, 48, 49, 56, 57, and 60-63 under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Sugimoto et al. (US Pub. 2007/0137591 – hereinafter “Sugimoto”). Claim 11 was rejected under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Sugimoto et al. and further in view of Satter (USP 3,412,258). Claims 14, 15, 44, 50-55, 58, and 59 were rejected under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Swanson et al. (USP 5,611,312). Claims 16-18 were rejected under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Andersson et al. (US Pub. 2010/0258099). Claims 21-26, 37-43, and 45-47 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al. and Poehlman, and further in view of Swanson et al. Claims 27-29 were rejected under 35 U.S.C. §103 as being unpatentable over Sugimoto et al. and Poehlman, and further in view of Andersson et al.

Response under AFCP 2.0

Without acquiescing to the rejections, Applicant has elected to amend independent claims 1, 19, 35, and 48 in order to further clarify the scope of the invention, with amendments and arguments presented here below for consideration under the After Final Consideration Pilot 2.0.

Claim 1 has been amended herein to include a liquid fuel cut-off physically attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel. Support for the amendment can be found in at least Paragraph [0061] and in FIGS. 4A-6.

Claim 19 has been amended herein to include that the carburetor comprises a fuel passage extending from the float bowl to the throat. Support for the amendment can be found in at least Paragraphs [0070], [0077], [0088], [0092] of the Specification and FIGS. 6, 11. No new matter is added by way of the amendment.

Claim 35 has been amended herein to include that the carburetor comprises a fuel passage extending from the float bowl to the throat. Support for the amendment can be found in at least Paragraphs [0070], [0077], [0088], [0092] of the Specification and FIGS. 6, 11. No new matter is added by way of the amendment.

Claim 48 has been amended herein to include the method step of attaching a carburetor to an intake of the engine, the carburetor comprising a fuel passage extending from the float bowl to

the throat. Support for the amendment can be found in at least Paragraphs [0070], [0077], [0088], and [0092] of the Specification and FIGS. 6, 11. No new matter is added by way of the amendment.

Rejections under 35 U.S.C. §102 - Poehlman

Claim 1

The Examiner rejected independent claim 1 under 35 U.S.C. §102(a)(2) as being anticipated by Poehlman. While Applicant does not necessarily agree with the rejection, Applicant has elected to amend claim 1 in the present response – as indicated previously.

Amendment claim 1 includes a liquid fuel cut-off physically attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Applicant believes that amended claim 1 is patentably distinct from Poehlman at least for the reason that Poehlman fails to teach or suggest a liquid fuel cut-off physically attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel. That is, Poehlman does not teach or suggest a liquid fuel cut-off physically attached to the carburetor, as instead the liquid fuel control valve 43 in Poehlman is incorporated along the liquid fuel supply line 19 upstream from the carburetor 15. *Poehlman*, col. 3, lns. 64-66; FIG. 1. Thus, the liquid fuel control valve 43 is in fact positioned off of and remote from the carburetor 15 and is not physically attached to the carburetor as called for in claim 1.

In light of at least the above, Applicant believes claim 1 to be patentably distinct from that which is disclosed in the cited reference. As such, Applicant respectfully requests withdrawal of the rejection of claim 1 under 35 U.S.C. §102, and all claims depending therefrom.

Claim 35

The Examiner rejected independent claim 35 under 35 U.S.C. §102(a)(2) as being anticipated by Poehlman. While Applicant does not necessarily agree with the rejection, Applicant has elected to amend claim 35 in the present response – as indicated previously.

Amended claim 35 includes a carburetor comprising a fuel passage extending from the float bowl to the throat, and a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end.

Applicant believes amended claim 35 is patentably distinct from Poehlman at least for the reason that Poehlman fails to teach or suggest a carburetor comprising a fuel passage extending

from the float bowl to the throat, and a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end. That is, Poehlman does not teach or suggest a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close a fuel passage extending from the float bowl to the throat. While the Examiner has asserted that Poehlman discloses “fuel passage (19) to provide fuel from the float bowl to the throat” and “fuel shutoff (43) coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage,” *Office Action*, June 14, 2018, p. 3-4, the fuel control valve 43 does not have a first end in the carburetor that actuates to close the fuel passage as now called for in claim 35. Instead, the liquid fuel control valve 43 is located along the liquid fuel supply line 19 upstream from the carburetor 15 – not in a fuel passage that extends from the float bowl to the throat in the carburetor 15. See *Poehlman*, at FIG. 1.

In light of at least the above, Applicant believes claim 35 to be patentably distinct from that which is disclosed in the cited reference. As such, Applicant respectfully requests withdrawal of the rejection of claim 35 under 35 U.S.C. §102, and all claims depending therefrom.

Rejections under 35 U.S.C. §103 – Poehlman in view of Sugimoto

Claims 19 and 48

The Examiner rejected independent claims 19 and 48 together under 35 U.S.C. §103 as being unpatentable over Poehlman in view of Sugimoto. While Applicant does not necessarily agree with the rejection, Applicant has elected to amend claims 19 and 48 in the present response – as indicated previously.

Amended claim 19 includes a carburetor attached to an intake of an engine comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

Amended claim 48 includes the method steps of attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

Applicant believes that amendment claim 19 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a carburetor attached to an intake of an engine comprising a throat to mix fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel. That is, neither Poehlman nor Sugimoto teach or suggest a fuel shutoff attached to the carburetor to close a fuel passage that extends from the float bowl to the throat.

Applicant believes that amended claim 48 is patentably distinct from the combination of Poehlman and Sugimoto at least for the reason that the combination of references fails to teach or suggest a method of assembling a dual fuel engine comprising attaching a carburetor to an intake of the engine, the carburetor comprising a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage extending from the float bowl to the throat; and attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel. That is, neither Poehlman nor Sugimoto discloses attaching a liquid fuel cut-off to the carburetor to close a fuel passage that extends from the float bowl to the throat.

As previously set forth above with respect to claim 35, the liquid fuel control valve 43 in Poehlman referenced by the examiner as the claimed “liquid fuel cut-off” is located along the liquid fuel supply line 19 upstream from the carburetor 15 – not in a fuel passage that extends from the float bowl to the throat in the carburetor 15, as called for in amended claims 19 and 48.

In light of at least the above, Applicant believes claims 19 and 48 to be patentably distinct from that which is disclosed in the cited references. As such, Applicant respectfully requests withdrawal of the rejection of claims 19 and 48 under 35 U.S.C. §103, and all claims depending therefrom.

Newly Presented Claims

In addition to the above amendments and remarks, Applicant has newly presented claims 64 and 65 in the present response. Support for new claim 64 can be found at least in Paragraphs [0061], [0065], [0066] and in FIGS. 4A-6. Support for new claim 65 can be found at least in Paragraphs [0065], [0072], [0078], [0091] and in FIGS. 7A, 8, 11, 12.

Claim 64 is believed to be patentably distinct over the applied prior art, as Poehlman cannot be said to teach or suggest a liquid fuel cut-off physically attached to an outer surface of the carburetor.

Claim 65 is believed to be patentably distinct over the applied prior art, as Poehlman cannot be said to teach or suggest a fuel shutoff that extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage.

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 1-65.

A fee in the amount of \$100 is concurrently being paid via EFS-Web for fees associated with entering the claims newly presented herein. Applicant hereby authorizes charging of Deposit Account No. 50-2623 for any additional fees associated with entering the aforementioned claims.

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: August 3, 2018
Attorney Docket No.: CET1090.042

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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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In the Claims

1. (Currently Amended) A dual fuel engine comprising:
an engine operable on a gaseous fuel and a liquid fuel;
a switch to change operation of the engine between gaseous fuel and liquid fuel;
a carburetor attached to an intake of the engine to mix air and fuel and connect to
a gaseous fuel source and a liquid fuel source; and
a liquid fuel cut-off physically attached to the carburetor to interrupt liquid fuel
upon actuation of the switch from liquid fuel to gaseous fuel.
2. (Original) The dual fuel engine of claim 1, wherein the engine is a pull start,
batteryless engine.
3. (Original) The dual fuel engine of claim 1, wherein the gaseous fuel is LPG and
the liquid fuel is gasoline.
4. (Original) The dual fuel engine of claim 1 further comprising:
a liquid fuel valve along a liquid fuel line coupling the liquid fuel source to the
carburetor; and
a gaseous fuel valve along a gaseous fuel line coupling the gaseous fuel source to
the carburetor.
5. (Original) The dual fuel engine of claim 1, wherein the engine is a pull-start
engine having an electrical power generator to supply electrical power.
6. (Original) The dual fuel engine of claim 5, wherein the switch is an electro-
mechanical switch connecting one fuel source to the carburetor and connected to the electrical
power generator; and
wherein the liquid fuel cut-off is a solenoid connected to open and close a fuel
path to the pull-start engine in response to reception of electrical power from the switch.
7. (Original) The dual fuel engine of claim 5, wherein the liquid fuel cut-off is a
solenoid valve powered by the electrical power generator.

8. (Original) The dual fuel engine of claim 7, wherein the switch selectively powers the solenoid valve by controlling electrical connection between the solenoid valve and the electrical power generator.

9. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is normally open to provide liquid fuel to the engine when the solenoid valve is unpowered.

10. (Original) The dual fuel engine of claim 9, wherein a pull-starter drives the electrical power generator to power and close the solenoid valve while starting the engine on gaseous fuel.

11. (Original) The dual fuel engine of claim 7, wherein the electrical power generator comprises a magneto or an alternator coupled to a voltage regulator to provide a regulated voltage to the solenoid valve.

12. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is manually actuated to interrupt liquid fuel.

13. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off actuates to interrupt liquid fuel free from linear motion.

14. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off comprises:

- a rotating shaft extending through an aperture in the carburetor;
- a fuel seal around the shaft to seal the aperture; and
- a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

15. (Original) The dual fuel engine of claim 14 further comprising:

- a lever coupled to the shaft outside the carburetor;
- a spring coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and

a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.

16. (Original) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is magnetically actuated to selectively interrupt liquid fuel.

17. (Original) The dual fuel engine of claim 1 further comprising:
a spring pushing the liquid fuel cut-off to interrupt liquid fuel; and
an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

18. (Original) The dual fuel engine of claim 17 further comprising a housing at least partially enclosing the liquid fuel cutoff, the housing including:

a first section enclosing a plunger of the liquid fuel cut-off to the carburetor and holding the spring against the plunger; and

a second section coupled to the first section and enclosing the actuating magnet.

19. (Currently Amended) A batteryless dual fuel generator comprising:
a housing containing a pull start engine coupled to drive an alternator, the engine operable on a gaseous fuel and a liquid fuel;

a carburetor attached to an intake of the engine comprising:

a throat to mix fuel with air,

a float bowl, and

a fuel passage ~~extending to provide liquid fuel~~ from the float bowl to the throat to provide liquid fuel; and

a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

20. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff actuates to close the fuel passage free from linear motion.

21. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff comprises:

a rotating shaft extending through an opening in the carburetor; and
a valve member coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

22. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member is positioned in the float bowl and the shaft extends substantially horizontal through the opening.

23. (Original) The batteryless dual fuel generator of claim 21, wherein the valve member has a flow passage that aligns with the fuel passage to control fuel flow into the fuel passage.

24. (Original) The batteryless dual fuel generator of claim 21 further comprising:
a compression spring on the shaft in the carburetor pushing the valve member to close the fuel passage; and
a plug in the opening surrounding the shaft to hold the compression spring against the valve member.

25. (Original) The batteryless dual fuel generator of claim 24 further comprising:
a lever coupled to the shaft outside the carburetor; and
a cable coupled to the lever to actuate the valve member to open and close the fuel passage.

26. (Original) The batteryless dual fuel generator of claim 24 further comprising one or more fuel seals within the plug to seal around the shaft.

27. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is magnetically actuated to selectively close the fuel passage, controlled by a manually actuated magnet coupled to the carburetor.

28. (Original) The batteryless dual fuel generator of claim 19 further comprising:
a spring pushing the fuel shutoff to close the fuel passage; and

an actuating magnet coupled to the carburetor to selectively pull the fuel shutoff against the spring to open the fuel passage.

29. (Original) The batteryless dual fuel generator of claim 28 further comprising a housing at least partially enclosing the fuel shutoff, the housing including:

a first section enclosing a plunger of the fuel shutoff to the carburetor and holding the spring against the plunger; and

a second section coupled to the first section and enclosing the actuating magnet.

30. (Original) The batteryless dual fuel generator of claim 19, wherein the fuel shutoff is a carburetor cutoff solenoid; and

wherein the generator further comprises:

a charge winding to generate electrical power to operate the carburetor cutoff solenoid, and

a switch to selectively power the carburetor cutoff solenoid by controlling electrical connection between the carburetor cutoff solenoid and the charge winding.

31. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is normally open to provide liquid fuel to the engine when the carburetor cutoff solenoid is unpowered.

32. (Original) The batteryless dual fuel generator of claim 31, wherein a pull-starter drives the engine operating the charge winding to power and close the carburetor cutoff solenoid while starting the engine on gaseous fuel.

33. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is an electro-mechanical switch connected to the charge winding and connecting at least one fuel source to the carburetor to selectively control fuel flow from the at least one fuel source to the carburetor.

34. (Original) The batteryless dual fuel generator of claim 30, wherein the charge winding is coupled to a voltage regulator to provide a regulated voltage to the carburetor cutoff solenoid.

35. (Currently Amended) A carburetor having a fuel shutoff comprising:
a carburetor comprising:
a float bowl,
a throat, and
a fuel passage ~~extending to provide fuel~~ from the float bowl to the throat;
and
a fuel shutoff coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end; and
wherein the fuel shutoff actuates free from linear motion.

36. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff is a manually actuated fuel shutoff.

37. (Original) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff comprises a shaft extending into the carburetor through an aperture in the float bowl and coupled to a valve tip in the float bowl that rotates to open and close the fuel passage.

38. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip rotates parallel to an inlet of the fuel passage between a first position permitting fuel flow into the inlet and a second position blocking fuel flow into the inlet.

39. (Original) The carburetor having a fuel shutoff of claim 37, wherein the fuel passage has an inlet with a substantially flat perimeter edge and the valve tip maintains planar contact with the perimeter edge while rotating to open and close the fuel passage.

40. (Original) The carburetor having a fuel shutoff of claim 39, wherein the shaft is substantially horizontal and the inlet of the fuel passage faces substantially horizontal.

41. (Original) The carburetor having a fuel shutoff of claim 39 further comprising:
a plug in the aperture around the shaft; and

a compression spring around the shaft in the float bowl pushing against the plug to hold the valve tip against the perimeter edge of the inlet.

42. (Original) The carburetor having a fuel shutoff of claim 41 further comprising a first fuel seal between the shaft and plug, the first fuel seal comprising a primary o-ring in an o-ring groove in the shaft.

43. (Original) The carburetor having a fuel shutoff of claim 42 further comprising:
a second fuel seal between the shaft and plug, the second fuel seal comprising a secondary o-ring in a counterbore in the plug; and
a support member mounted over the counterbore around the shaft to hold the secondary o-ring in the counterbore.

44. (Original) The carburetor having a fuel shutoff of claim 37 further comprising:
a lever coupled to the shaft outside of the carburetor;
a spring coupled to the lever to hold the fuel shutoff opening the fuel passage;
and
a cable coupled to the lever to move the lever against the spring and rotate the fuel shutoff to close the fuel passage.

45. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises thermoplastic.

46. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip comprises one of an oval and stadium shape.

47. (Original) The carburetor having a fuel shutoff of claim 37, wherein the valve tip has a cutout that aligns with the fuel passage to open the fuel passage.

48. (Currently Amended) A method of assembling a dual fuel engine comprising:
providing an engine operable on a gaseous fuel and a liquid fuel;
attaching a carburetor to an intake of the engine, the carburetor comprising:
a throat to mix gaseous fuel with air and liquid fuel with air,

a float bowl, and

a fuel passage ~~extending to provide liquid fuel~~ from the float bowl to the throat to provide liquid fuel;

coupling a switch to the engine to change operation of the engine between gaseous fuel and liquid fuel; and

attaching a liquid fuel cut-off to the carburetor to close the fuel passage upon actuation of the switch from liquid fuel to gaseous fuel.

49. (Original) The method of claim 48 further comprising coupling a manually operated control operatively to the liquid fuel cut-off.

50. (Original) The method of claim 48, wherein attaching the liquid fuel cut-off to the carburetor comprises:

providing a shaft having a valve tip located at an end of the shaft;

installing a compression spring on the shaft;

installing a plug on the shaft so that the compression spring is positioned between the plug and the valve tip; and

anchoring the plug in an aperture in the carburetor so that the compression spring holds the valve tip to an inlet of the fuel passage.

51. (Original) The method of claim 50, wherein providing the shaft having a valve tip located at an end of the shaft comprises pressing the valve tip onto the shaft.

52. (Original) The method of claim 50 further comprising positioning at least one fuel seal on the shaft to seal between the shaft and plug.

53. (Original) The method of claim 50, wherein the shaft rotates the valve tip between a first position allowing fuel flow into the fuel passage and a second position blocking fuel flow into the fuel passage.

54. (Original) The method of claim 53, wherein the valve tip comprises an oval or stadium shape with a cutout in the oval or stadium shape that aligns with the fuel passage when

the valve tip is rotated to the first position such that fuel can pass through the cutout into the fuel passage.

55. (Original) The method of claim 53 further comprising:
coupling a lever to the shaft;
attaching a control spring to the lever to actuate the shaft to one of the first position and second position; and
attaching a cable to the lever to actuate the shaft to the other of the first position and second position.

56. (Original) The dual fuel engine of claim 7, wherein the solenoid valve is open to provide liquid fuel to the engine when the solenoid valve is powered.

57. (Original) The dual fuel engine of claim 56, wherein a pull-starter drives the electrical power generator to power and open the solenoid valve while starting the engine on liquid fuel.

58. (Original) The batteryless dual fuel generator of claim 30, wherein the carburetor cutoff solenoid is open to provide liquid fuel to the engine when the carburetor cutoff solenoid is powered.

59. (Original) The batteryless dual fuel generator of claim 58, wherein a pull-starter drives the engine operating the charge winding to power and open the carburetor cutoff solenoid while starting the engine on liquid fuel.

60. (Original) The dual fuel engine of claim 7 further comprising a microcontroller to close the solenoid valve when the engine operates on gaseous fuel and open the solenoid valve to operate the engine on liquid fuel.

61. (Original) The dual fuel engine of claim 60, wherein the microcontroller closes the solenoid valve during engine shutdown from operation on liquid fuel.

62. (Original) The batteryless dual fuel generator of claim 30, wherein the switch is a microcontroller configured to close the carburetor cutoff solenoid when the engine operates on gaseous fuel and to open the carburetor cutoff solenoid to operate the engine on liquid fuel.

63. (Original) The batteryless dual fuel generator of claim 62, wherein the microcontroller closes the carburetor cutoff solenoid during engine shutdown from operation on liquid fuel.

64. (New) The dual fuel engine of claim 1, wherein the liquid fuel cut-off is physically attached to an outer surface of the carburetor.

65. (New) The carburetor having a fuel shutoff of claim 35, wherein the fuel shutoff extends through an opening into the float bowl such that the first end actuates in the float bowl to close the fuel passage.

Customer No. 26629
Confirmation No. 1059

Patent
Attorney Docket No. CET1090.042

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Collie et al.
Serial No. : 14/925,441
Filed : October 28, 2015
For : BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL
 CUT-OFF
Group Art No. : 3747
Examiner : Long T. Tran

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)

37 CFR 1.10

☐ with sufficient postage as first class mail ☐ As "Express Mail Post Office to Addressee" Mailing Label No.

Transmission

☐ transmitted by facsimile to Fax No.: 571-273-8300 addressed to Examiner Long T. Tran at the Patent and Trademark Office.
☒ transmitted by EFS-WEB addressed to Examiner Long T. Tran at the Patent and Trademark Office.

Date: August 3, 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 JUNE 14, 2018

Dear Sir:

Responsive to the Final Office Action mailed June 14, 2018, please amend the Application as follows:

Electronic Patent Application Fee Transmittal

Application Number:	14925441			
Filing Date:	28-Oct-2015			
Title of Invention:	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF			
First Named Inventor/Applicant Name:	Kendall J. Collie			
Filer:	Stephanie Mueller Laundre/Robyn Templin			
Attorney Docket Number:	CET1090.042			
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:				
CLAIMS IN EXCESS OF 20	2202	2	50	100
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				100

Electronic Acknowledgement Receipt

EFS ID:	33374430
Application Number:	14925441
International Application Number:	
Confirmation Number:	1059
Title of Invention:	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF
First Named Inventor/Applicant Name:	Kendall J. Collie
Customer Number:	26629
Filer:	Stephanie Mueller Laundre/Robyn Templin
Filer Authorized By:	Stephanie Mueller Laundre
Attorney Docket Number:	CET1090.042
Receipt Date:	03-AUG-2018
Filing Date:	28-OCT-2015
Time Stamp:	17:47:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$100
RAM confirmation Number	080618INTEFSW17475400
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	After Final Consideration Program Request	AfterFinalConsiderationRequest.pdf	226536	no	2
			831e07782dc42574af10e1aace3de4cd72862e38		
Warnings:					
Information:					
2		Response.pdf	179384	yes	17
			605afa7bbdefb2ef24b3298f59e704d02b178cec		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Applicant Arguments/Remarks Made in an Amendment		12	17	
	Claims		2	11	
	Response After Final Action		1	1	
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30525	no	2
			805ca8a6c1ec8f5794bb6f52011b7f922c5873c8		
Warnings:					
Information:					
Total Files Size (in bytes):			436445		

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.

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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/925,441	Filing Date 10/28/2015	☐ To be Mailed
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ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO**APPLICATION AS FILED – PART I**

(Column 1)

(Column 2)

FOR	NUMBER FILED	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), (l), 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(j))	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

(Column 1)

(Column 2)

(Column 3)

AMENDMENT	08/03/2018	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(j))	* 65	Minus	** 63	= 2	X \$50 =	100
	Independent (37 CFR 1.16(h))	* 4	Minus	***4	= 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	100

(Column 1)

(Column 2)

(Column 3)

AMENDMENT	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(j))	*	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
LASHAWN MORGAN

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

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



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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/925,441	10/28/2015	Kendall J. Collie	CET1090.042	1059
26629 7590 06/14/2018 ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS) 136 S WISCONSIN ST PORT WASHINGTON, WI 53074			EXAMINER TRAN, LONG T	
			ART UNIT 3747	PAPER NUMBER
			NOTIFICATION DATE 06/14/2018	DELIVERY MODE 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. 14/925,441	Applicant(s) COLLIE ET AL.	
	Examiner LONG T. TRAN	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 24 April 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) 1-63 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) 1-63 is/are rejected.
- 8) ☐ Claim(s) ____ 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 see attached
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 4) ☐ Other: ____.

DETAILED ACTION

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.
2. The Amendment filed April 24, 2018 has been entered. No new matter has been added.
3. Claims 1 – 63 remain pending in the application and have been fully considered.

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.
5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

6. Claims 1, 3 – 4, 12 – 13, 35 - 36 are rejected under 35 U.S.C. 102(a)(2) as being anticipated by Poehlman (US 4,489,699).

Regarding Claim 1:

Poehlman teaches a dual fuel engine comprising: an engine (13) operable on a gaseous fuel and a liquid fuel (Col 3 lines 25 – 36 describes gasoline and

Art Unit: 3747

natural gas); a switch (51) to change operation of the engine between gaseous fuel and liquid fuel; a carburetor (15) attached to an intake (105) of the engine to mix air and fuel and connect to a gaseous fuel source (27) and a liquid fuel source (21); and a liquid fuel cut-off (41) attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Regarding Claim 3:

Poelhman teaches the gaseous fuel is LPG and the liquid fuel is gasoline (Col 3 lines 25 – 36).

Regarding Claim 4:

Poelhman teaches a liquid fuel valve (43) along a liquid fuel line (19) coupling the liquid fuel source to the carburetor; and a gaseous fuel valve (45) along a gaseous fuel line (25) coupling the gaseous fuel source to the carburetor.

Regarding Claim 12:

Poelhman teaches the liquid fuel cut-off is manually actuated to interrupt liquid fuel (via switch 51).

Regarding Claim 13:

Poelhman teaches the liquid fuel cut-off actuates to interrupt liquid fuel free from linear motion (via switch 51).

Regarding Claims 35 - 36:

Poelhman teaches a carburetor (15) having a fuel shutoff (via 51) comprising: a carburetor comprising: a float bowl (17), a throat (where throttle 107 resides), a fuel passage (19) to provide fuel from the float bowl to the throat;

and a fuel shutoff (43) coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage and a second end external to the carburetor to actuate the first end (Fig 1 shows valve 43 connected to two ends of the fuel passage); and wherein the fuel shutoff actuates free from linear motion (it rotates).

Claim Rejections - 35 USC § 103

7. 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.

8. 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.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

11. Claims 2, 5 – 10, 19 – 20, 30 - 34, 48 - 49, 56 - 57, 60 – 63 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) in view of Sugimoto et al. (US 2007/0137591).

Regarding Claim 2:

Poelhman teaches all of the claimed limitation except for the engine is a pull start, batteryless engine.

However, Sugimoto et al. teach a similar dual fuel engine (paragraph 0086) comprising a pull start, batteryless engine (via 46) for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claim 5:

Poelhman teaches all of the claimed limitations except for the engine is a pull-start engine having an electrical power generator to supply electrical power.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claim 6:

Poelhman teaches the switch is an electro-mechanical switch (51 and via 59) connecting one fuel source to the carburetor; and wherein the liquid fuel cut-off is a solenoid (81, 83) connected to open and close a fuel path.

Poelhman is silent to a pull-start engine having an electrical power generator to supply electrical power.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claims 7 – 10, 56 – 57, 60 – 61:

Poelhman teaches all of the claimed limitations except for a power generator.

However, Sugimoto et al. teaches the engine is a pull-start engine (via 46) having an electrical power generator (40) to supply electrical power for the purpose of starting the engine.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pull start function of Sugimoto et al. in order to start the engine for a portable generator system.

Regarding Claim 19 - 20, 30 - 34, 48 - 49, 62 - 63:

Sugimoto et al. teaches a batteryless dual fuel generator (paragraph 0086) comprising a housing (4) containing a pull start engine (46, 30) coupled to drive an alternator (40a), the engine operable on a gaseous fuel and a liquid fuel (paragraphs 0085 - 0086 describes a first fuel in liquid phase to gas, and a second gas fuel).

Sugimoto et al. is silent to a carburetor attached to an intake of the engine comprising: a throat to mix fuel with air, a float bowl, and a fuel passage to provide liquid fuel from the float bowl to the throat; and a fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

However, Poelhman teaches a carburetor (15) attached to an intake (105) of the engine comprising: a throat (where throttle 107 resides) to mix fuel with air, a float bowl (17), a fuel passage (19) to provide liquid fuel from the float bowl to

the throat; and a fuel shutoff (43) attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the carburetor of Poelhman in the generator of Poelhman in order to effectively, efficiently, and manually switch between the two fuel based on the user's preference.

12. Claim 11 is rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) in view of Sugimoto et al. (US 2007/0137591), and further in view of Satter (US 3,412,258).

Regarding Claim 11:

Modified Poelhman teaches all of the claimed limitations except for the electrical power generator comprises a magneto or an alternator coupled to a voltage regulator to provide a regulated voltage to the solenoid valve.

However, Satter teaches a similar generator comprising a magneto or an alternator (12) coupled to a voltage regulator (via phase A line) to provide a regulated voltage to the solenoid valve (44) for the purpose of supplying power to the valve.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the alternator of Satter in the engine of modified Poelhman in order to control the voltage while actuating the valve.

13. Claims 14, 15, 44, 50 - 55, 58 - 59 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) in view of Swanson et al. (US 5,611,312).

Regarding Claim 14:

Poelhman is silent to the liquid fuel cut-off comprises: a rotating shaft extending through an aperture in the carburetor; a fuel seal around the shaft to seal the aperture; and a blocking member coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine.

However, Swanson et al. teaches a liquid fuel cut-off (118) comprising a rotating shaft (58) extending through an aperture in the carburetor (50); a fuel seal (112, 114) around the shaft to seal the aperture; and a blocking member (56) coupled to the shaft in the carburetor that rotates between a blocking and a non-blocking position to selectively block a liquid fuel path to the engine for the purposes of preventing backflow.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of Poelhman in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claim 15, 44, 50 - 59, 58 - 59:

Poelhman is silent to a lever coupled to the shaft outside the carburetor; a spring coupled to the lever to hold the blocking member in either the blocking or

Art Unit: 3747

non-blocking position; and a cable coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions.

However, Swanson et al. teaches a lever (395) coupled to the shaft outside the carburetor; a spring (397) coupled to the lever to hold the blocking member in either the blocking or non-blocking position; and a cable (400) coupled to the lever to pull against the spring and rotate the blocking member to the other of the blocking or non-blocking positions for the purpose of creating a safety feature.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of Poelhman in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

14. Claims 16 – 18 are rejected under 35 U.S.C. 103 as being unpatentable over Poelhman (US 4,489,699) in view of Andersson et al. (US 2010/0258099).

Regarding Claim 16:

Poelhman is silent to the liquid fuel cut-off is magnetically actuated to selectively interrupt liquid fuel.

However, Andersson et al. teaches the liquid fuel cut-off is magnetically (via 77 and 72, paragraph 0111) actuated to selectively interrupt liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

Regarding Claim 17:

Poelhman is silent to a spring pushing the liquid fuel cut-off to interrupt liquid fuel; and an actuating magnet coupled to the carburetor to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel.

However, Andersson et al. teaches a spring (79) pushing the liquid fuel cut-off (18) to interrupt liquid fuel; and an actuating magnet (77 and 72) coupled to the carburetor (12) to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

Regarding Claim 18:

Poelhman is silent to a housing (66) at least partially enclosing the liquid fuel cutoff, the housing including: a first section (64) enclosing a plunger (65) of the liquid fuel cut-off to the carburetor and holding the spring against the plunger; and a second section (74) coupled to the first section and enclosing the actuating magnet for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of Poelhman in order to minimize delay with the valve closure.

15. Claims 21 - 26 , 37 - 43, 45 - 47 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591) and Poelhman (US 4,489,699), and further in view of Swanson et al. (US 5,611,312).

Regarding Claim 21 - 23, 37 - 43, 45 - 47:

Modified Sugimoto et al. is silent to a rotating shaft extending through an opening in the carburetor; and a valve member coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

However, Swanson et al. teaches a rotating shaft (58) extending through an opening in the carburetor (50); and a valve member (395) coupled to the shaft in the carburetor that rotates to control fuel flow into the fuel passage.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claim 24:

Modified Sugimoto et al. is silent to a compression spring on the shaft in the carburetor pushing the valve member to close the fuel passage; and a plug in

the opening surrounding the shaft to hold the compression spring against the valve member.

However, Swanson et al. teaches a compression spring (82) on the shaft in the carburetor pushing the valve member to close the fuel passage; and a plug (368') in the opening surrounding the shaft to hold the compression spring against the valve member.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Regarding Claims 25 and 26:

Modified Sugimoto et al. is silent to a lever coupled to the shaft outside the carburetor; and a cable coupled to the lever to actuate the valve member to open and close the fuel passage.

However, Swanson et al. teaches a lever (395) coupled to the shaft outside the carburetor; and a cable (400) coupled to the lever to actuate the valve member to open and close the fuel passage.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fuel cut-off of Swanson et al. in the engine of modified Sugimoto et al. in order to prevent fuel backflow and to control the flow of fuel through the carburetor.

Art Unit: 3747

16. Claims 27 - 29 are rejected under 35 U.S.C. 103 as being unpatentable over Sugimoto et al. (US 2007/0137591) and Poelhman (US 4,489,699), and further in view of Andersson et al. (US 2010/0258099).

Regarding Claims 27 - 29:

Modified Sugimoto et al. is silent to the fuel shutoff is magnetically actuated to selectively close the fuel passage, controlled by a manually actuated magnet coupled to the carburetor.

However, Andersson et al. teaches a spring (79) pushing the liquid fuel cut-off (18) to interrupt liquid fuel; and an actuating magnet (77 and 72) coupled to the carburetor (12) to selectively pull the liquid fuel cut-off against the spring away from a position interrupting liquid fuel for the purpose of energizing the valve to open and close.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the magnet of Andersson et al. in the solenoid valve of modified Sugimoto et al. in order to minimize delay with the valve closure.

Response to Arguments

17. Applicant's arguments filed April 24, 2018 have been fully considered but they are not persuasive.

On Page 13 of the Remarks, the Applicant argues that Poehlman does not teach a liquid fuel cut-off and a switch. The Examiner disagrees and maintains

Art Unit: 3747

the rejection based on a broad but reasonable interpretation of what each limitation entails. The control means 41 of Poehlman is clearly shown to have wirings connected to valve 43 in Figure 1, of which is attached to the carburetor via fuel line 19.

On Page 15 of the Remarks, the Applicant argues Poehlman does not disclose the supply line provide fuel from the float bowl to the throat as required in claim 35. The Examiner disagrees and maintains the rejection because fuel supply line 19 supplies fuel to bowl 17, and the fuel is then mixed with gas within the carburetor 15 and through the throttle 107, which is where the throat resides. The "throat" is defined by Applicant in the specification as a "mixing passage", see paragraph 0064 of the specification. Thus, fuel is supplied from the float bowl to the throat.

The remaining arguments in the Remarks are the same as the above limitations - the switch/fuel cut-off and float bowl fuel supply, and the above reasons are used to apply the same reasoning.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

19. **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.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LONG T. TRAN whose telephone number is (571)270-1899. The examiner can normally be reached on M-F, 7:30am - 5:00pm.

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.

Art Unit: 3747

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.

/LONG T TRAN/

Primary Examiner, Art Unit 3747

Notice of References Cited	Application/Control No. 14/925,441		Applicant(s)/Patent Under Reexamination COLLIE ET AL.	
	Examiner LONG T. TRAN		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
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*	B	US-2011/0253102 A1	10-2011	Watanabe; Tsuyoshi	F02D41/064	123/438
*	C	US-2010/0258099 A1	10-2010	Andersson; Martin N.	F02D31/006	123/676
*	D	US-2007/0137591 A1	06-2007	Sugimoto; Yasuhiro	F02B43/00	123/41.7
*	E	US-6,591,817 B2	07-2003	Deutsch; Robert W.	F02D19/0647	123/525
*	F	US-2002/0134362 A1	09-2002	Deutsch, Robert W.	F02D19/0647	123/575
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*	H	US-4,489,699 A	12-1984	Poehlman; Arthur G.	F02B69/04	123/525
*	I	US-3,783,849 A	01-1974	Bramfitt; Thomas Hugh	F02M13/06	123/179.16
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
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Search Notes 	Application/Control No. 14925441	Applicant(s)/Patent Under Reexamination COLLIE ET AL.
	Examiner LONG T TRAN	Art Unit 3747

CPC- SEARCHED		
Symbol	Date	Examiner
F02D19/0647; F02D19/0613; F02D29/06; F02D41/0025; F02D11/02; F02D19/0642; F02D35/0053; F02B63/04; F02B43/00; F02B63/044; F02M13/08; F02M19/08; F02M21/047; F02N3/02	8/2/2017	LT

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Symbol	Date	Examiner

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Class	Subclass	Date	Examiner

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SEARCH NOTES		
Search Notes	Date	Examiner
Inventor search	8/2/2017	LT
PLUS search	8/2/2017	LT
Forward and backward citation	8/2/2017	LT
Text search	8/2/2017	LT
Updated text search	1/22/2018	LT
Updated text search	6/11/2018	LT

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

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	84	engine and ((dual double two second\$4 plural\$4 multi multiple bi pair supplement\$4) near2 fuel same (switch\$4 chang\$3 changeover)) and (valve same (carburetor carburretor) same fuel) and generat\$4 and (float same (mix\$4 throat) same (carburetor carburretor))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/06/11 10:35
L4	296	engine and ((dual double two second\$4 plural\$4 multi multiple bi pair supplement\$4) near2 fuel) and (valve same fuel) and generat\$4 and (float same (mix\$4 throat) same (carburetor carburretor))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/06/11 10:39

6/ 11/ 2018 10:44:28 AM
C:\ Users\ ltran2\ Documents\ EAST\ Workspaces\ 14925441.wsp

Index of Claims 	Application/Control No. 14925441	Applicant(s)/Patent Under Reexamination COLLIE ET AL.
	Examiner LONG T TRAN	Art Unit 3747

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
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☐ Claims renumbered in the same order as presented by applicant										☐ CPA	☐ T.D.	☐ R.1.47
CLAIM		DATE										
Final	Original	04/18/2017	08/02/2017	01/22/2018	06/11/2018							
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	35	÷	N	✓	✓							
	36	÷	N	✓	✓							

Index of Claims 	Application/Control No. 14925441	Applicant(s)/Patent Under Reexamination COLLIE ET AL.
	Examiner LONG T TRAN	Art Unit 3747

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
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CLAIM		DATE							
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	62	÷	N	✓	✓				
	63	÷	N	✓	✓				

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Application Number	14925441
Filing Date	2015-10-28
First Named Inventor	Kendall J. Collie et al.
Art Unit	3747
Examiner Name	Long T. Tran
Attorney Docket Number	CET1090.042

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STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

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First Named Inventor	Kendall J. Collie et al.
Art Unit	3747
Examiner Name	Long T. Tran
Attorney Docket Number	CET1090.042

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).

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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	/Stephanie M. Laundre/	Date (YYYY-MM-DD)	2018-02-21
Name/Print	Stephanie M. Laundre	Registration Number	65124

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/L.T.T/	6	4480595		1984-11-06	Hobby et al.	
/L.T.T/	7	4628871		1986-12-16	Glass	
/L.T.T/	8	4708094		1987-11-24	Helmich et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)

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Attorney Docket Number	CET1090.042

/L.T.T./9	4979480		1990-12-25	Daikoku et al.	
/L.T.T./10	5092305		1992-03-03	King	
/L.T.T./11	5228423		1993-07-20	Oikawa et al.	
/L.T.T./12	9435273	B2	2016-09-06	Sarder et al.	

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/L.T.T./1		20040139943	A1	2004-07-22	Kern et al.	
/L.T.T./2		20070137591	A1	2007-06-21	Sugimoto et al.	
/L.T.T./3		20110168133	A1	2011-07-14	Pursifull et al.	
/L.T.T./4		20140202430	A1	2014-07-24	Monros	
/L.T.T./5		20140238340	A1	2014-08-28	Dunn et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)

Application Number	14925441
Filing Date	2015-10-28
First Named Inventor	Kendall J. Collie et al.
Art Unit	3747
Examiner Name	Long T. Tran
Attorney Docket Number	CET1090.042

/L.T. /	20140373531	A1	2014-12-25	Wong
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/L.T. /		Champion Power (2014, Dec. & Jan.) 100153 Manual, Retrieved from http://www.championpowerequipment.com/media/2400/100153_manual-english_12-4-14.pdf	

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Examiner Signature	/LONG T TRAN/	Date Considered	06/11/2018
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**INFORMATION DISCLOSURE
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Art Unit	3747
Examiner Name	Long T. Tran
Attorney Docket Number	CET1090.042

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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)	2018-05-02
Name/Print	Kevin R. Rosin	Registration Number	55584

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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).
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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.
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Doc code: IDS

PTO/SB/08a (02-18)

Doc description: Information Disclosure Statement (IDS) Filed

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Application Number	14925441
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First Named Inventor	Kendall J. Collie et al.
Art Unit	3747
Examiner Name	Long T. Tran
Attorney Docket Number	CET1090.042

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/L.T.T/	1	1981121	CN	A	2007-06-13	Honda Motor Co., Ltd.		

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- ☒ See attached certification statement.

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

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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.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	31	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel near20 (switch\$4 chang\$3)) and ((carburetor carburettor) same intake same valve) and (electric\$4 near5 generat\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/02 09:08
L2	32878	((F02D19/0647 OR F02D19/0613 OR F02D29/06 OR F02D41/0025 OR F02D11/02 OR F02D19/0642 OR F02D35/0053 OR F02B63/04 OR F02B43/00 OR F02B63/044 OR F02M13/08 OR F02M19/08 OR F02M21/047 OR F02N3/02) .CPC.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/02 09:10
S1	3	"14925441"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 09:15
S2	38	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel near20 (switch\$4 chang\$3)) and ((lpg propane ng "natural gas" hydrogen) near5 fuel) and gasoline and ((carburetor carburettor) same intake same (solenoid nea5 valve))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 09:34
S3	6	"14738060"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 09:38
S4	2	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel near20 (switch\$4 chang\$3)) and ((lpg propane ng "natural gas" hydrogen) near5 fuel) and gasoline and ((carburetor carburettor) same (solenoid near5 valve)) and ((carburetor carburettor) same intake) and (pull adj start\$4) and ((carburettor carburetor) same shaft same lever same (spring coil))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 09:51
S5	2	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel near20 (switch\$4 chang\$3)) and ((lpg propane ng "natural gas" hydrogen) near5 fuel) and gasoline and ((carburetor carburettor) same (solenoid near5 valve))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2017/08/01 09:54

		and ((carburetor carburettor) same intake) and (pull adj start\$4) and ((carburettor carburetor) same shaft same (spring coil))	IBM_TDB			
S6	4	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel near20 (switch\$4 chang\$3)) and ((lpg propane ng "natural gas" hydrogen) near10 fuel) and gasoline and ((carburetor carburettor) same (solenoid near5 valve)) and ((carburetor carburettor) same intake) and ((carburettor carburetor) same shaft same (spring coil))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 09:55
S7	26	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel near20 (switch\$4 chang\$3)) and ((lpg propane ng "natural gas" hydrogen) near10 fuel) and gasoline and ((carburetor carburettor) same intake) and (generat\$4 same electric\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 09:58
S8	2	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel same (switch\$4 chang\$3)) and ((lpg propane ng "natural gas" hydrogen) near10 fuel) and gasoline and ((carburetor carburettor) and (generat\$4 same electric\$4) and (pull adj start\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 11:12
S9	2	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel same (switch\$4 chang\$3)) and ((lpg propane ng "natural gas" hydrogen)) and gasoline and ((carburetor carburettor) and (generat\$4 same electric\$4) and (pull adj start\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 12:10
S10	7	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel same (switch\$4 chang\$3)) and ((carburetor carburettor) and (generat\$4 same electric\$4) and (pull adj start\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 12:37
S11	15	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel same (switch\$4 chang\$3)) and ((carburetor carburettor) and (generat\$4 same electric\$4) and ((pull adj start\$4) or (recoil adj start\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 13:10
S12	3	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel same (switch\$4 chang\$3)) and ((carburetor carburettor) same shaft same lever same (coil bias\$4 spring)) and (generat\$4 same electric\$4) and ((pull adj start\$4) or (recoil adj start\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 13:14
S13	5	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel) and ((carburetor carburettor) same shaft same lever same (coil bias\$4 spring)) and (generat\$4 same electric\$4) and ((pull adj	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2017/08/01 13:25

		start\$4) or (recoil adj start\$4))	DERWENT; IBM_TDB			
S14	2	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel) and ((carburetor carburettor) same rotat\$4 near2 shaft) and ((carburetor carburettor) same lever same (coil bias\$4 spring)) and (generat\$4 near5 electric\$4) and ((pull adj start\$4) or (recoil adj start\$4)) and ((ope cable cord) near20 lever)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 14:09
S15	2	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel) and (rotat\$4 near2 shaft same lever) and ((carburetor carburettor) same lever same (coil bias\$4 spring)) and (generat\$4 near5 electric\$4) and ((pull adj start\$4) or (recoil adj start\$4)) and ((ope cable cord) near20 lever)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 14:16
S16	2	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel) and (rotat\$4 near2 shaft same lever) and ((carburetor carburettor) same lever same (coil bias\$4 spring)) and (generat\$4 near5 electric\$4) and ((pull adj start\$4) or (recoil adj start\$4)) and ((rope cable cord) same lever)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 14:23
S17	34	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel) and (carburetor carburettor) and (generat\$4 near5 electric\$4) and ((pull adj start\$4) or (recoil adj start\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 14:32
S18	5	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel) and (carburetor carburettor) same solenoid adj valve and (generat\$4 near5 electric\$4) and ((pull adj start\$4) or (recoil adj start\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 14:32
S19	19	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel) and (carburetor carburettor) same valve and (generat\$4 near5 electric\$4) and ((pull adj start\$4) or (recoil adj start\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:11
S20	10	S19 not battery	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:13
S21	7	engine and ((dual double two second\$4 plural\$4 multi multiple bi) near2 fuel near50 (switch\$4 chang\$4)) and (carburetor carburettor) same valve and (generat\$4 near5 electric\$4) and ((pull near2 start\$4) or (recoil adj start\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:17

S22	2	engine same ((dual plural\$4 multi multiple bi) near2 fuel) and (carburetor carburettor) same valve and (generat\$4 near5 electric\$4) and ((pull near2 start\$4) or (recoil adj start\$4)) and ((magneto or alternator) same solenoid near2 valve)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:40
S23	0	engine and (carburetor carburettor) same valve and (generat\$4 near5 electric\$4) and ((pull near2 start\$4) or (recoil adj start\$4)) and ((magneto or alternator) same solenoid near2 valve same (voltatage near5 regulat\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:45
S24	2	engine and (carburetor carburettor) same valve and (generat\$4 near5 electric\$4) and ((pull near2 start\$4) or (recoil adj start\$4)) and ((magneto or alternator) same solenoid near2 valve same (voltage near5 regulat\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:45
S25	7	engine and (carburetor carburettor) same valve and (generat\$4 near5 electric\$4) and ((magneto or alternator) same solenoid near2 valve same (voltage near5 regulat\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:46
S26	5	engine and (carburetor carburettor) same valve and (generat\$4 near5 electric\$4) and (magnetic\$4 same solenoid near2 valve same (voltage near5 regulat\$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:55
S27	87	engine and (carburetor carburettor) same valve and (generat\$4 near5 electric\$4) and (magnetic\$4 same solenoid near2 valve)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:55
S28	47	engine and (carburetor carburettor) same valve and (generat\$4 near5 electric\$4) and (magnetic\$4 same (spring coil) same solenoid near2 valve)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 15:56
S29	27	engine and (carburetor carburettor) same solenoid adj valve and (generat\$4 near5 electric\$4) and (magnetic\$4 same (spring coil) same solenoid near2 valve)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 16:00
S30	0	engine and ((carburetor carburettor) near50 solenoid adj valve) and ((solenoid adj valve) same (rotat\$4 near2 shaft) same seal\$4 same (block\$4 (valve near2 tip))) and ((carburetor carburretor) same	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2017/08/01 16:34

		lever same (spring coil bias\$4) same (cable rope cord))	DERWENT; IBM_TDB			
S31	0	engine and ((carburetor carburettor) near50 solenoid adj valve) and ((solenoid adj valve) same (rotat\$4 near2 shaft) same (o adj ring)) and ((lever valve) same (block\$4 (valve near2 tip))) and ((carburetor carburretor) same lever same (spring coil bias\$4) same (cable rope cord))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 16:36
S32	0	engine and ((carburetor carburettor) near50 solenoid adj valve) and (valve same (rotat\$4 near2 shaft) same (o adj ring)) and ((lever valve) same (block\$4 (valve near2 tip))) and ((carburetor carburretor) same lever same (spring coil bias\$4)) and (cable rope cord)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 16:50
S33	0	engine and ((carburetor carburettor) near50 solenoid adj valve) and (valve same (rotat\$4 near2 shaft) same (o adj ring)) and ((lever valve) same (block\$4 (valve near2 tip))) and ((carburetor carburretor) same lever same (spring coil bias\$4)) and (cable rope cord) near50 lever	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 16:50
S34	1	engine and ((carburetor carburettor) near50 solenoid adj valve) and (valve same (rotat\$4 near2 shaft) same (o adj ring)) and ((lever valve) same (block\$4 (valve near2 tip))) and ((carburetor carburretor) same lever)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 16:51
S35	0	engine and ((carburetor carburettor) near50 solenoid adj valve) and (solenoid adj valve same (rotat\$4 near2 shaft) same (o adj ring)) and ((carburetor carburretor) same lever)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 16:54
S36	0	engine and ((carburetor carburettor) near50 solenoid adj valve) and (solenoid adj valve same (rotat\$4 near2 shaft) same (o adj ring))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 16:55
S37	0	engine and ((carburetor carburettor) near50 solenoid adj valve) and ((carburettor carburetor) same (rotat\$4 near2 shaft) same (o adj ring)) and ((lever valve) same (block\$4 (valve near2 tip))) and ((carburetor carburretor) same lever)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 16:56
S38	0	engine and ((carburetor carburettor) near50 solenoid adj valve) and ((carburettor carburetor) same (rotat\$4 near2 shaft) same (o adj ring)) and ((carburetor carburretor) same lever)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 16:57

8/ 2/ 2017 9:11:34 AM

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	Filing Date	2015-10-28
	First Named Inventor	Kendall J. Collie et al.
	Art Unit	3747
	Examiner Name	Long T. Tran
	Attorney Docket Number	CET1090.042

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(Not for submission under 37 CFR 1.99)

Application Number	14925441
Filing Date	2015-10-28
First Named Inventor	Kendall J. Collie et al.
Art Unit	3747
Examiner Name	Long T. Tran
Attorney Docket Number	CET1090.042

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	14925441
Filing Date	2015-10-28
First Named Inventor	Kendall J. Collie et al.
Art Unit	3747
Examiner Name	Long T. Tran
Attorney Docket Number	CET1090.042

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

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

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Patent
Attorney Docket No. CET1090.042

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Collie et al.
Serial No. : 14/925,441
Filed : October 28, 2015
For : BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF
Group Art No. : 3747
Examiner : Long T. Tran

CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10

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**INFORMATION DISCLOSURE STATEMENT
CERTIFICATION STATEMENT UNDER 37 CFR 1.704(D)(1)**

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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.: CET1090.042

Respectfully submitted,

/Kevin R. Rosin/

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Espacenet

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

Engine generator

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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

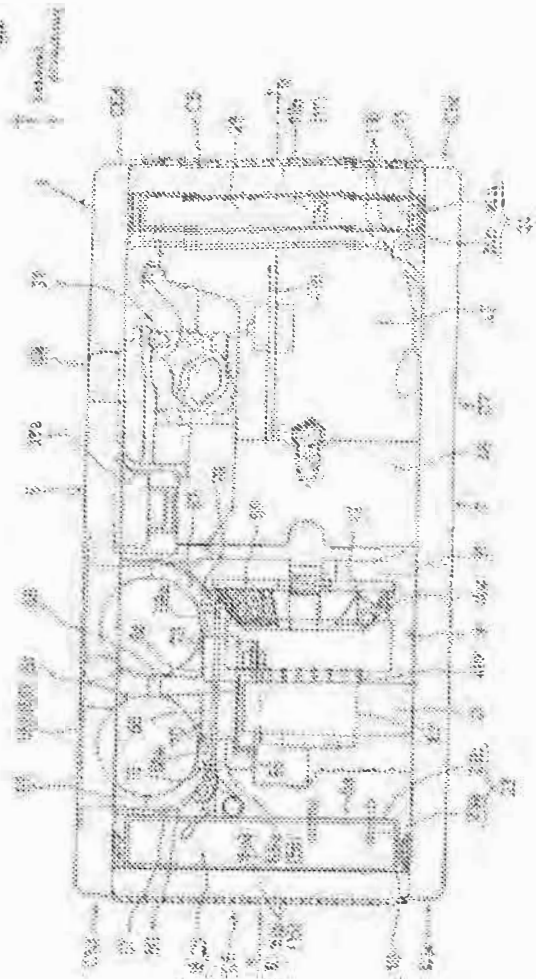
Priority number(s): JP20040285036 20040929

Also published as: CN100510347 (C) DE05785589 (T1) DE602005003347 (T2)
EP1744030 (A1) EP1744030 (A4) more

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



[19] 中华人民共和国国家知识产权局



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[85] 进入国家阶段日期 2007.1.5

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中川胜博

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代理人 陈 坚

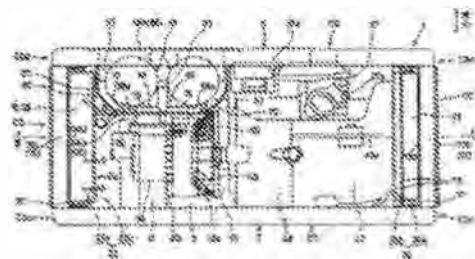
权利要求书2页 说明书25页 附图10页

[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