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 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.

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.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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	÷	✓	✓	✓	✓				
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	14	÷	✓	✓	✓	✓				
	15	÷	✓	✓	✓	✓				
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	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	✓	✓	✓				

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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	✓	✓	✓				
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	61	÷	✓	✓	✓	✓				
	62	÷	N	✓	✓	✓				
	63	÷	N	✓	✓	✓				

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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

Champion - EX2082, Page 193 of 575
MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

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

PTO/SB/06 (09-11)
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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

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 09/14/2018

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 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

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
TAMARA HARRELL

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

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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

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

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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/		
Name (Print/Type)	Robyn L. Templin	Date	September 14, 2018

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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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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.

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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

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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:

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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

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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.

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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.

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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

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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.

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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.

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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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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

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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]In 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 <u>not</u> 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 <u>not</u> 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.

<u>Claim 7</u>

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

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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

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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

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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.

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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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Phone 262-268-8100 ext. 16
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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.

/Kevin R. Rosin/

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

Dated: September 14, 2018
Attorney Docket No.: CET1090.042

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
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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 2b6fc0755b9ed5b7db5bfc02517973ca6fff c7a	no	1
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2		Response.pdf	201990 2a303167a700dd01858842946bdf7911d62 0f83	yes	18
	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 ed3d49f267d23ee66163fd6900f219330c4 2e35	no	2
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.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

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

EXAMINER	
TRAN, LONG T	

ART UNIT	PAPER NUMBER
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:

/LONG T TRAN/
Primary Examiner, Art Unit 3747

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AFCP 2.0 Decision	Application No.	Applicant(s)
	14/925,441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T. TRAN	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.

Doc Code: A.NE.AFCP
Document Description: After Final Consideration Pilot Program Request

PTO/SB/434 (05-13)

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0

Practitioner Docket No.:	Application No.:	Filing Date:
CET1090.042	14/925,441	October 28, 2015
First Named Inventor:	**Title:**	
Kendall J. Collie	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF	

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.

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 (*e.g.*, 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, *e.g.*, 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:
   - 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.e.*, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions:
     - 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, *e.g.*, 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.
       - 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	Date
/Kevin R. Rosin/	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 1 forms are submitted.

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.

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

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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

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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 Poelhman 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.

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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.

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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.

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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

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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:

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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

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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.

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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

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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,

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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

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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.

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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.

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IPR2025-01457

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) ☐ with sufficient postage as first class mail

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

Transmission

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

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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 83fe07782dc42574a110e1aace3de4cd72862e38	no	2
Warnings:					
Information:					
2		Response.pdf	179384 605afa7b3de1b2ef2db3298f59e70dd02b7f6cec	yes	17

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 405ca8a6c1ec8f5794bb6f52011b7f922c5873c8	no	2
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.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 08/03/2018

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 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

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
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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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	PAPER NUMBER
3747	

NOTIFICATION DATE	DELIVERY MODE
06/14/2018	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 *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: _____.

Champion - EX2082, Page 249 of 575
MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

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:

Poelhman 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) 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:

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).

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 - 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.

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.

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

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.

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-5,611,312 A	03-1997	Swanson; Mark S.	F02M1/02	123/179.18
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*	J	US-3,718,000 A	02-1973	Walker; Brooks	F02B11/02	123/525
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	M	US-				

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	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.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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

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

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

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.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	**Art Unit**
	LONG T TRAN	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					
	1	÷	✓	✓	✓					
	2	÷	✓	✓	✓					
	3	÷	✓	✓	✓					
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	6	÷	✓	✓	✓					
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	34	÷	N	✓	✓					
	35	÷	N	✓	✓					
	36	÷	N	✓	✓					

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CLAIM		DATE								
Final	Original	04/18/2017	08/02/2017	01/22/2018	06/11/2018					
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	38	÷	N	✓	✓					
	39	÷	N	✓	✓					
	40	÷	N	✓	✓					
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	60	÷	✓	✓	✓					
	61	÷	✓	✓	✓					
	62	÷	N	✓	✓					
	63	÷	N	✓	✓					

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

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

PTO/SB/08a (03-15)
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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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/L.T.T/		2060477	CN	U	1990-08-15	Zhao Yunying		

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Art Unit	3747
Examiner Name	Long T. Tran
Attorney Docket Number	CET1090.042

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Examiner Signature	/LONG T TRAN/	Date Considered	06/11/2018

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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.

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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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MWE Investments, LLC et al v. Champion Power Equip., Inc.
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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.

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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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Champion - EX2082, Page 274 of 575
MWE Investments, LLC et al v. Champion Power Equip., Inc.
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Doc code: IDS
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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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
/L.T.T/	1	3384059		1968-05-21	Kopa	
/L.T.T/	2	3888223		1975-06-10	Mondt	
/L.T.T/	3	4335697		1982-06-22	McLean	
/L.T.T/	4	4373493		1983-02-15	Welsh	
/L.T.T/	5	4463735		1984-08-07	Stoltman	
/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.	

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/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.	

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/L.T.T/	1	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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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

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Signature	/Kevin R. Rosin/	Date (YYYY-MM-DD)	2018-05-02
Name/Print	Kevin R. Rosin	Registration Number	55584

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

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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Champion - EX2082, Page 279 of 575
MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

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

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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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Attorney Docket Number	CET1090.042

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EXAMINER SIGNATURE

Examiner Signature	/LONG T TRAN/	Date Considered	06/11/2018

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

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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):

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

OR

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

X See attached certification statement.

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

A certification statement is not submitted herewith.

SIGNATURE

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

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

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

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Champion - EX2082, Page 283 of 575
MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

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

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

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

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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

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INFORMATION DISCLOSURE STATEMENT
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Dear Sir:

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

Dated: June 1, 2018
Attorney Docket No.: CET1090.042

Respectfully submitted,

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

Engine generator

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

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

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

Application number: CN2005822860 20050920

Priority number(s): JP20040285036 20040929

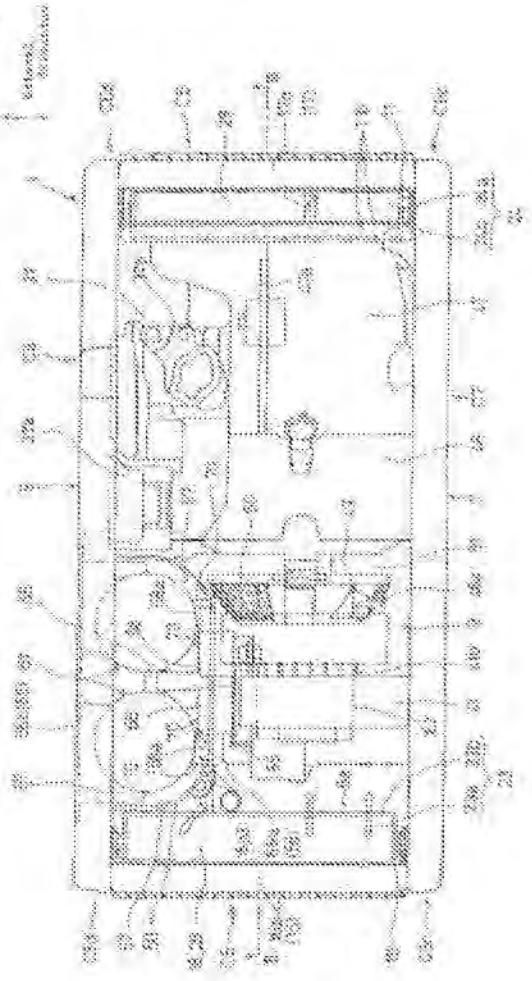
Also published as: CN100510347 (C) DE05785589 (T1) DE602005003347 (T2) EP1744030 (A1) EP1744030 (A4) more

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).

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Fig.4



[19] 中华人民共和国国家知识产权局

[12] 发明专利申请公布说明书

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F02M 21/02 (2006.01)
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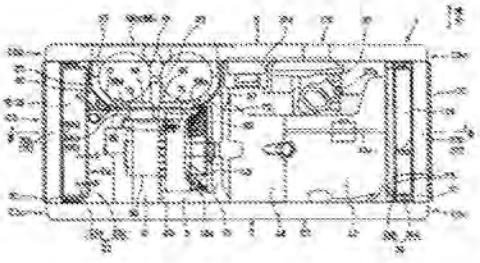
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[85] 进入国家阶段日期 2007.1.5
[71] 申请人 本田技研工业株式会社
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代理人 陈 坚
权利要求书 2 页 说明书 25 页 附图 10 页

[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

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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

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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

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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

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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

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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

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

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65 … 容纳室

66 … 室壁

68 … 安装传感器

70 … 传热部件

71 … 外部高压气瓶

73 … 燃料压力传感器

74 … 切断开关

75 … 主开关

80 … 加热装置

89 … ECU

C … 箱体

Fa … 燃料供给装置

具体实施方式

以下，参照图 1～图 10 说明本发明的实施方式。

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

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

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

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

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

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

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

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

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进行连接；以及指示灯 15a、15b、15c 等。

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

在第一、第二侧壁 66a、66b 上，为了防止或抑制由发动机 30 的运转

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

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

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

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

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

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

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

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

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

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经过停止位置而进行。

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

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

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

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

另一方面，加热装置 80 只在燃料切换阀 12 位于第一位置时，由于主

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

下面，对如上构成的实施方式的作用和效果进行说明。

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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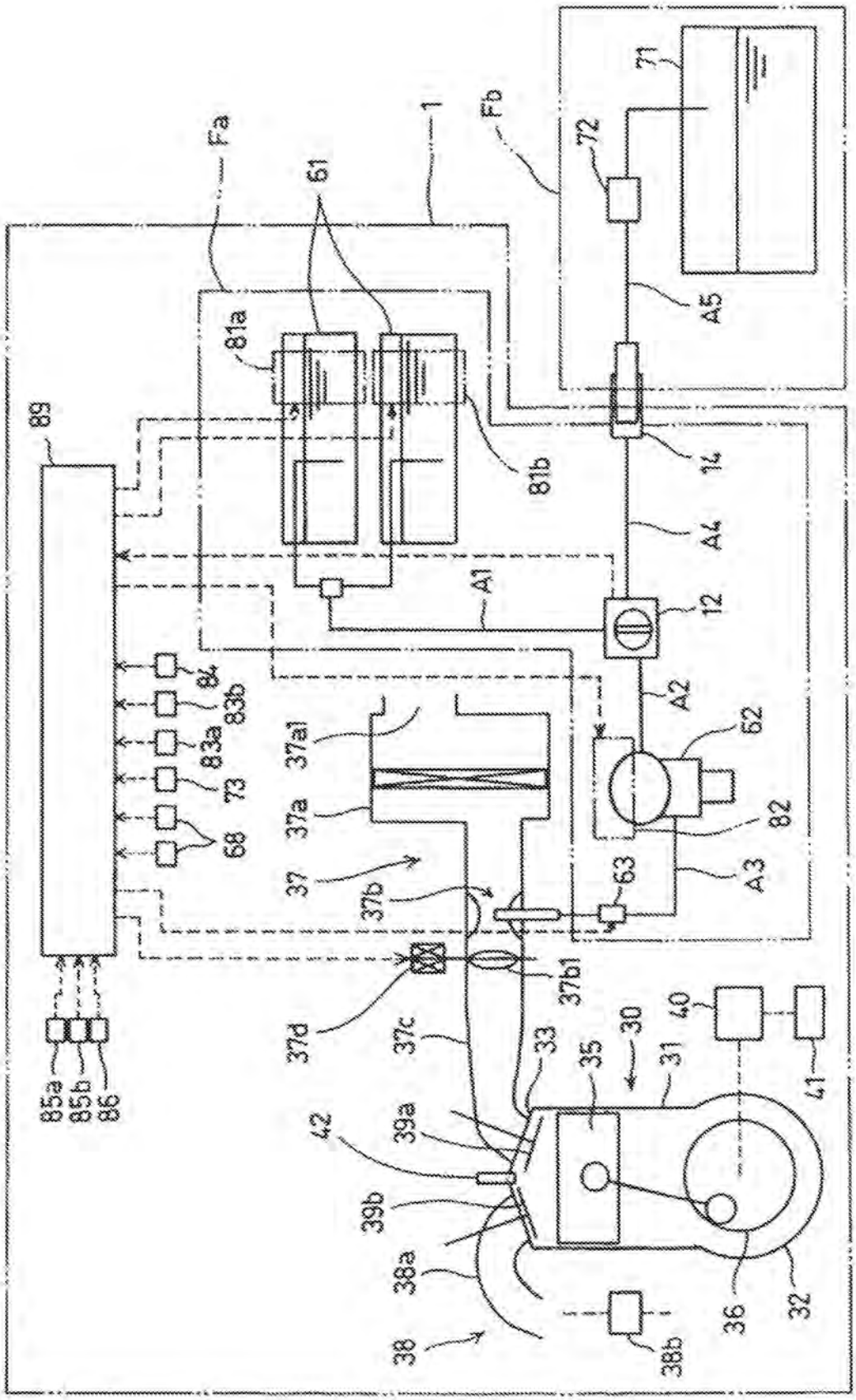


图 1

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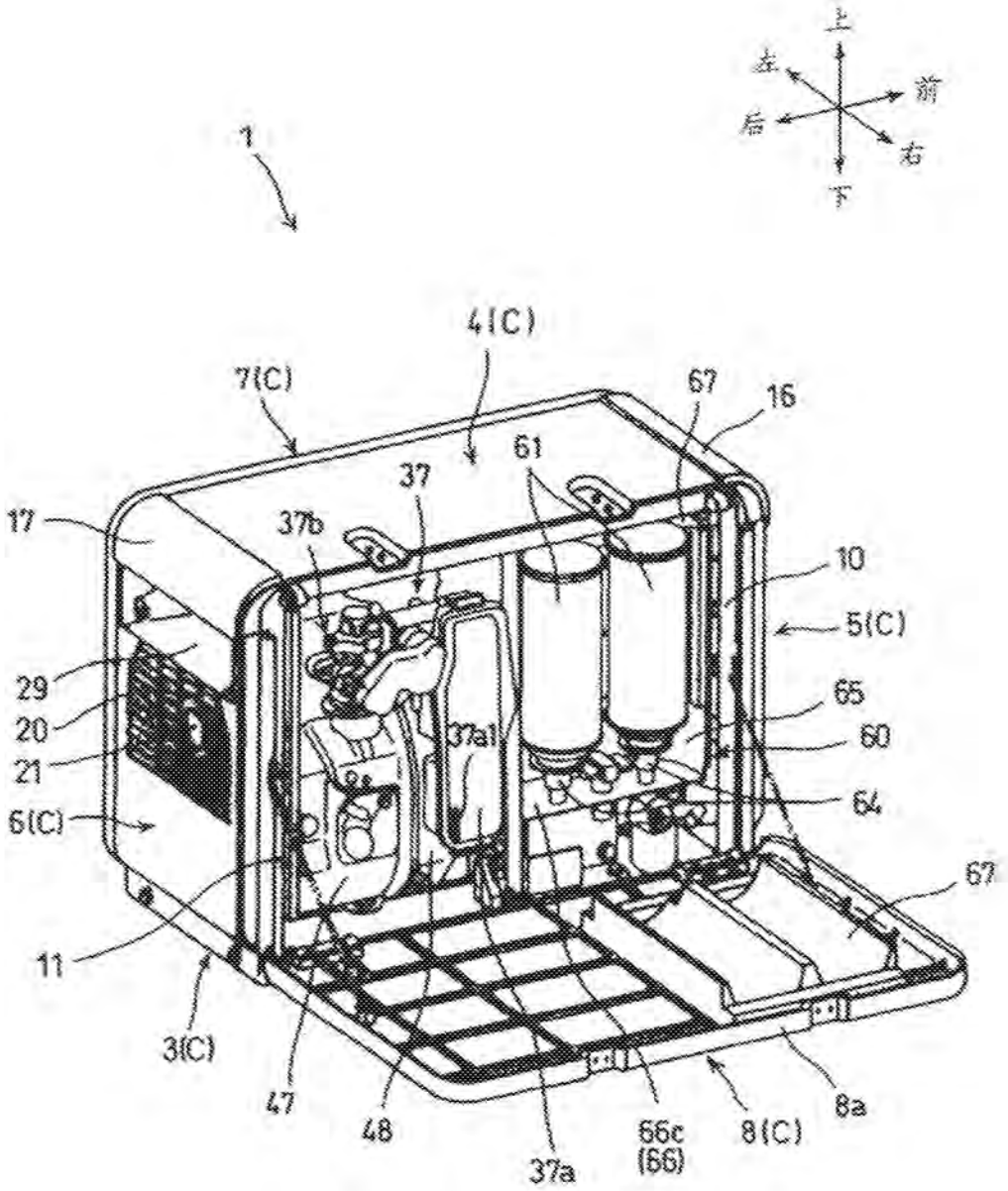


图 2

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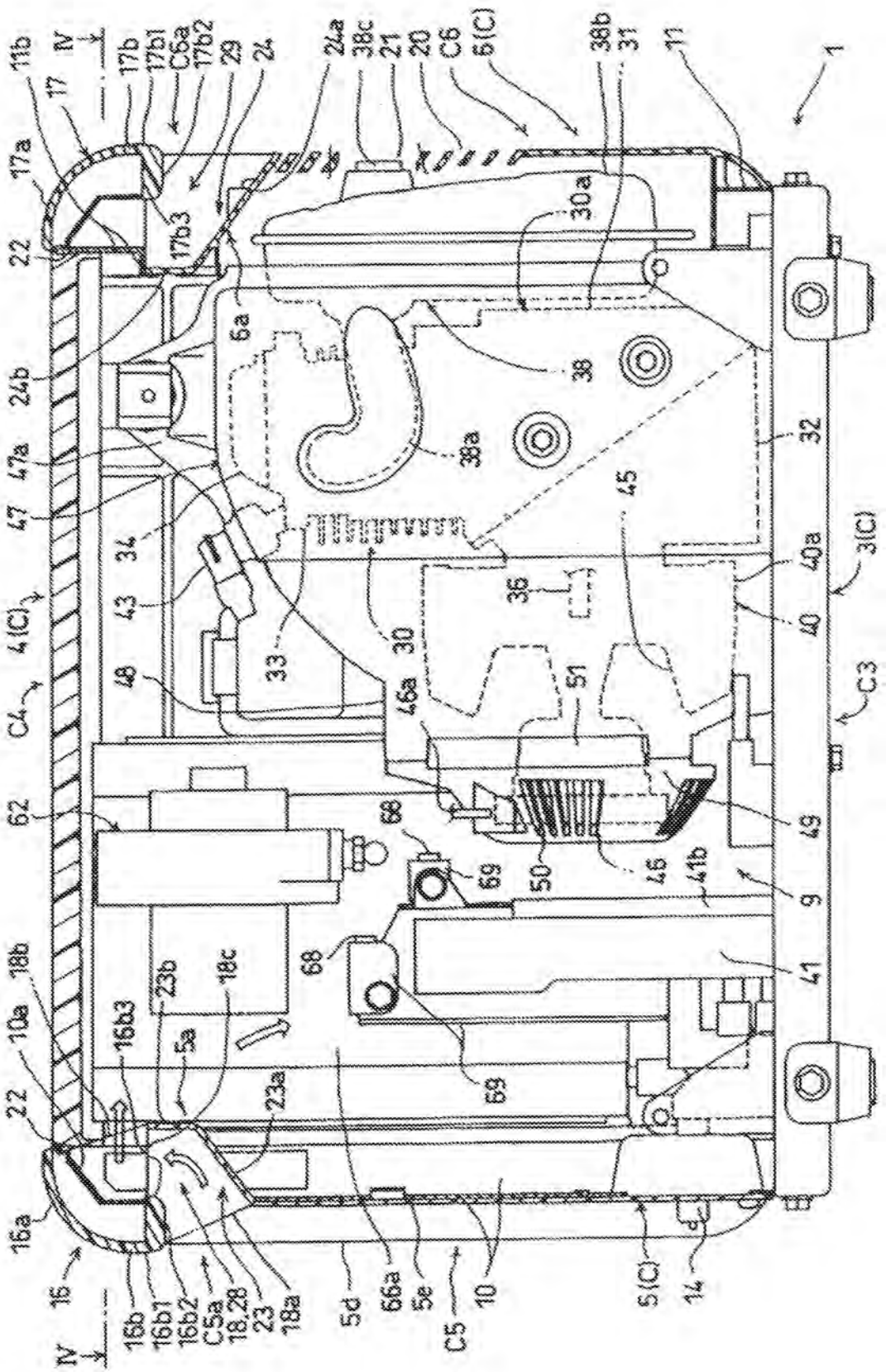


图 3

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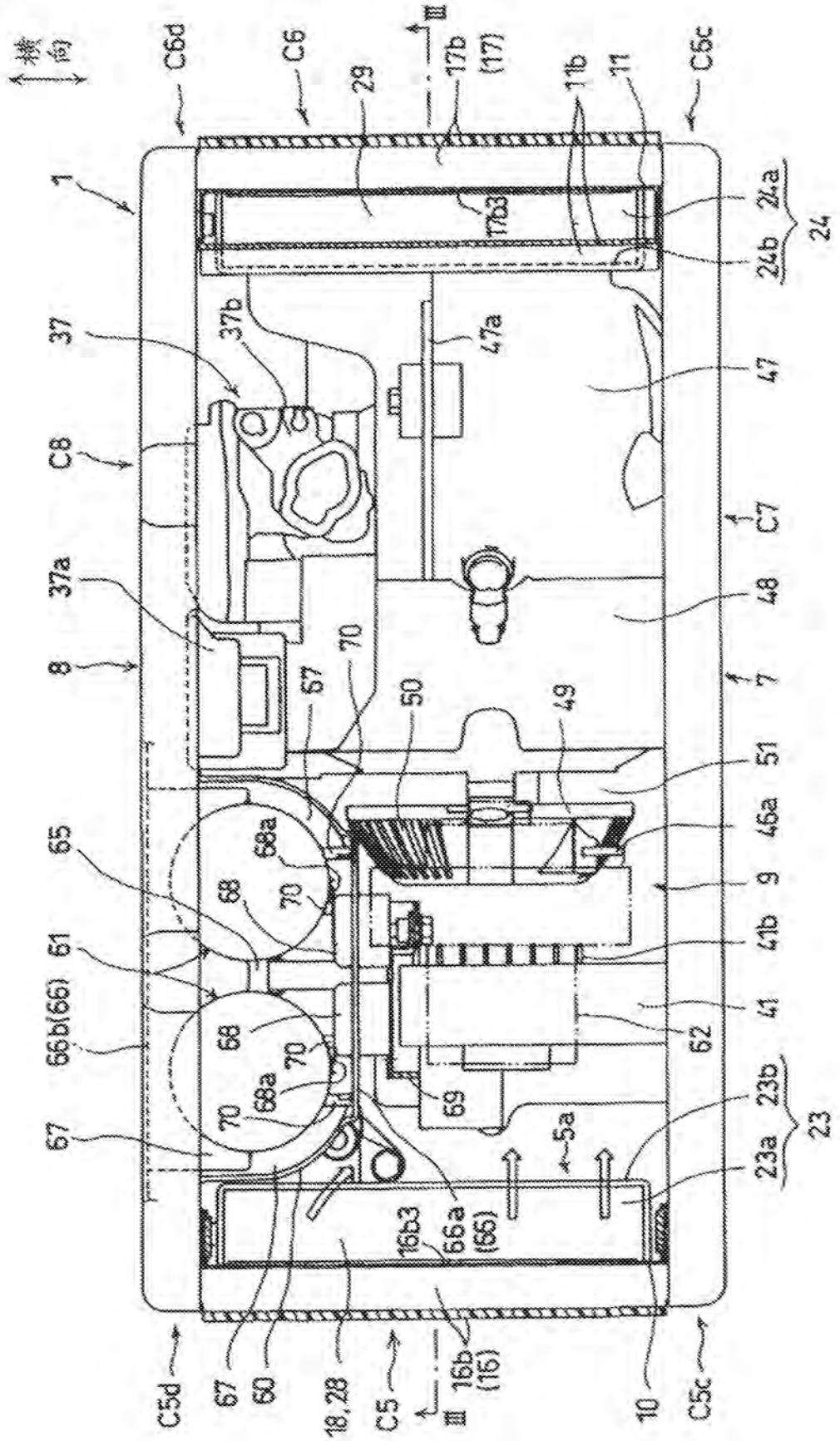


图 4

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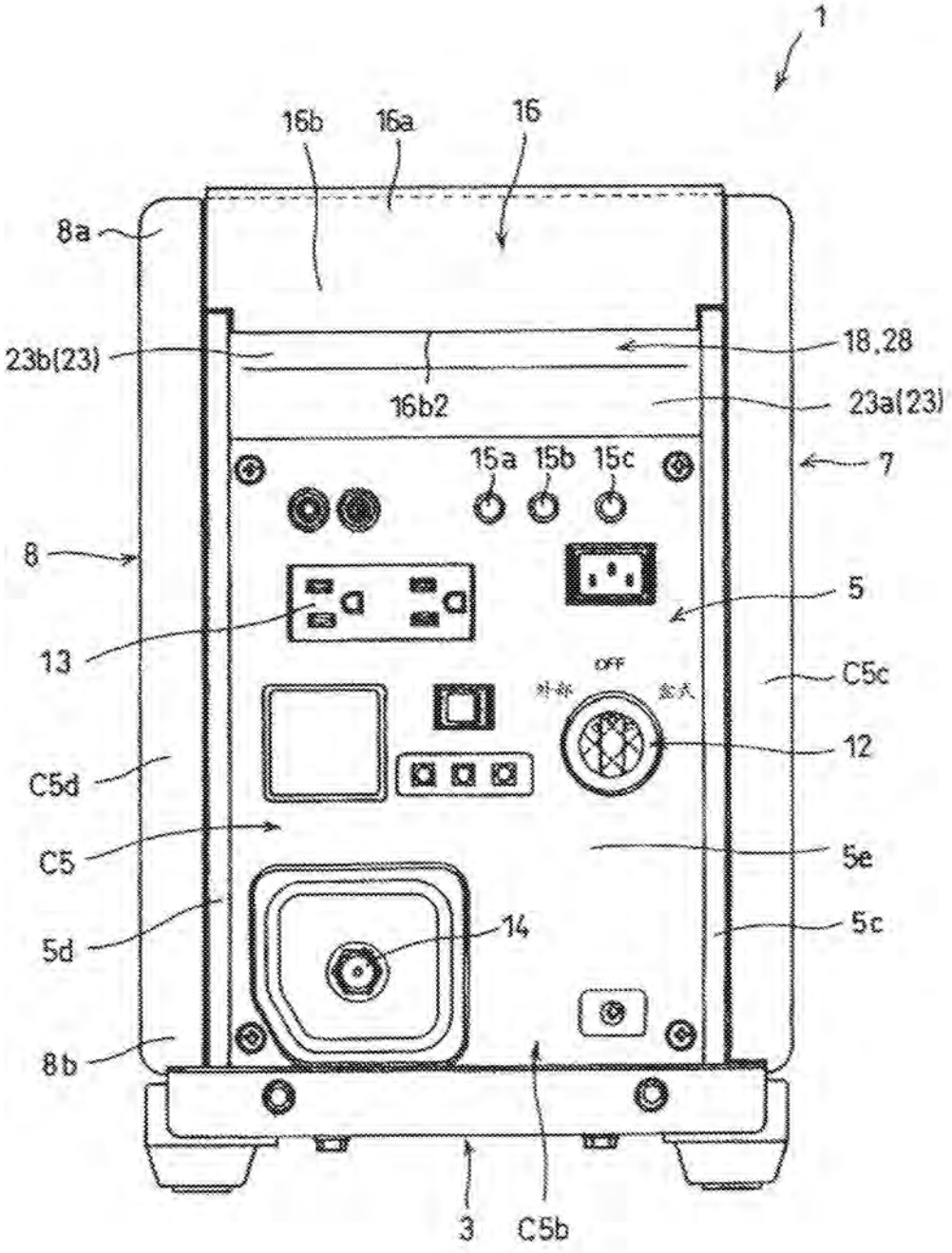


图 5

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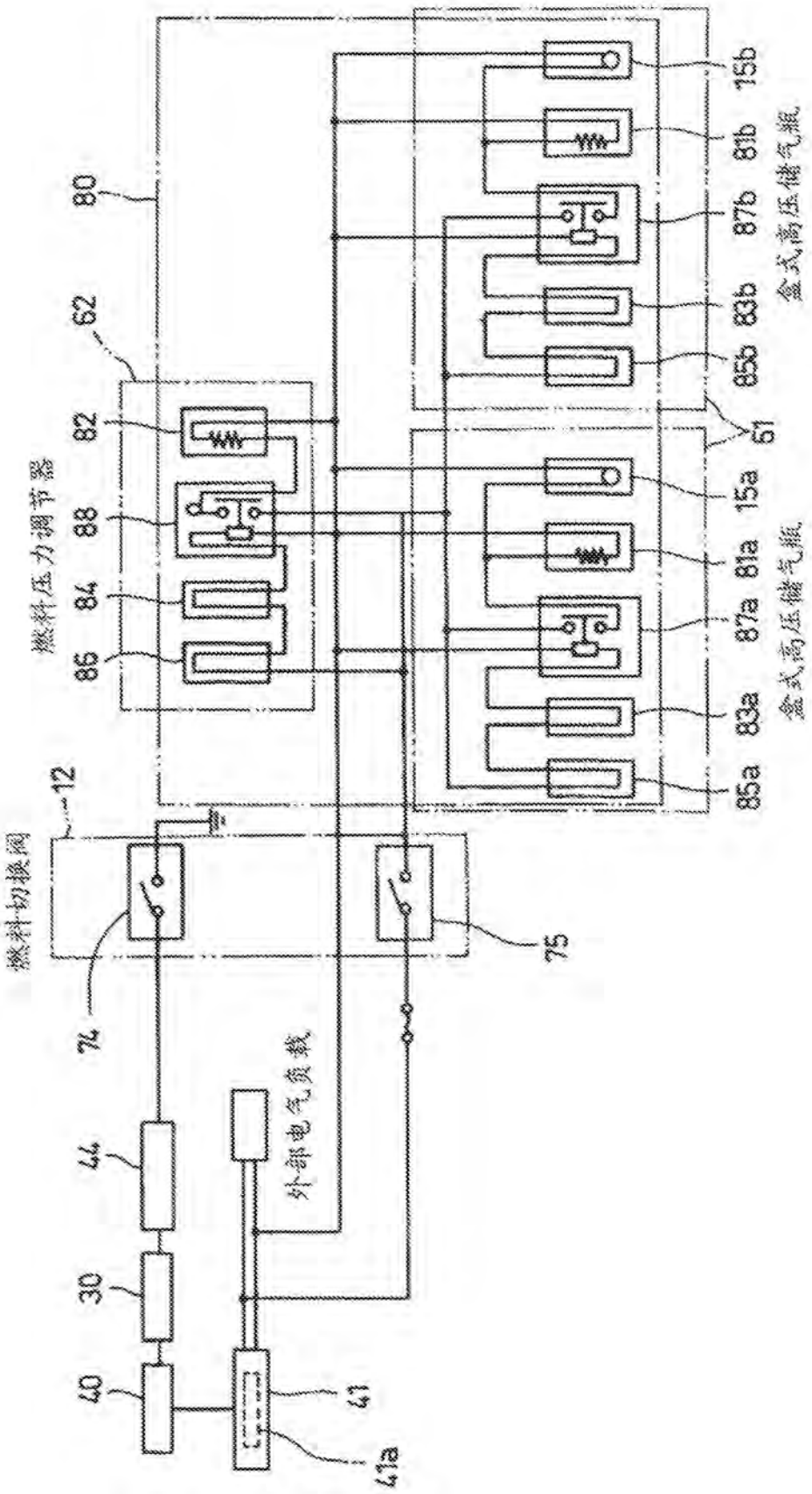


图 6

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

图 7

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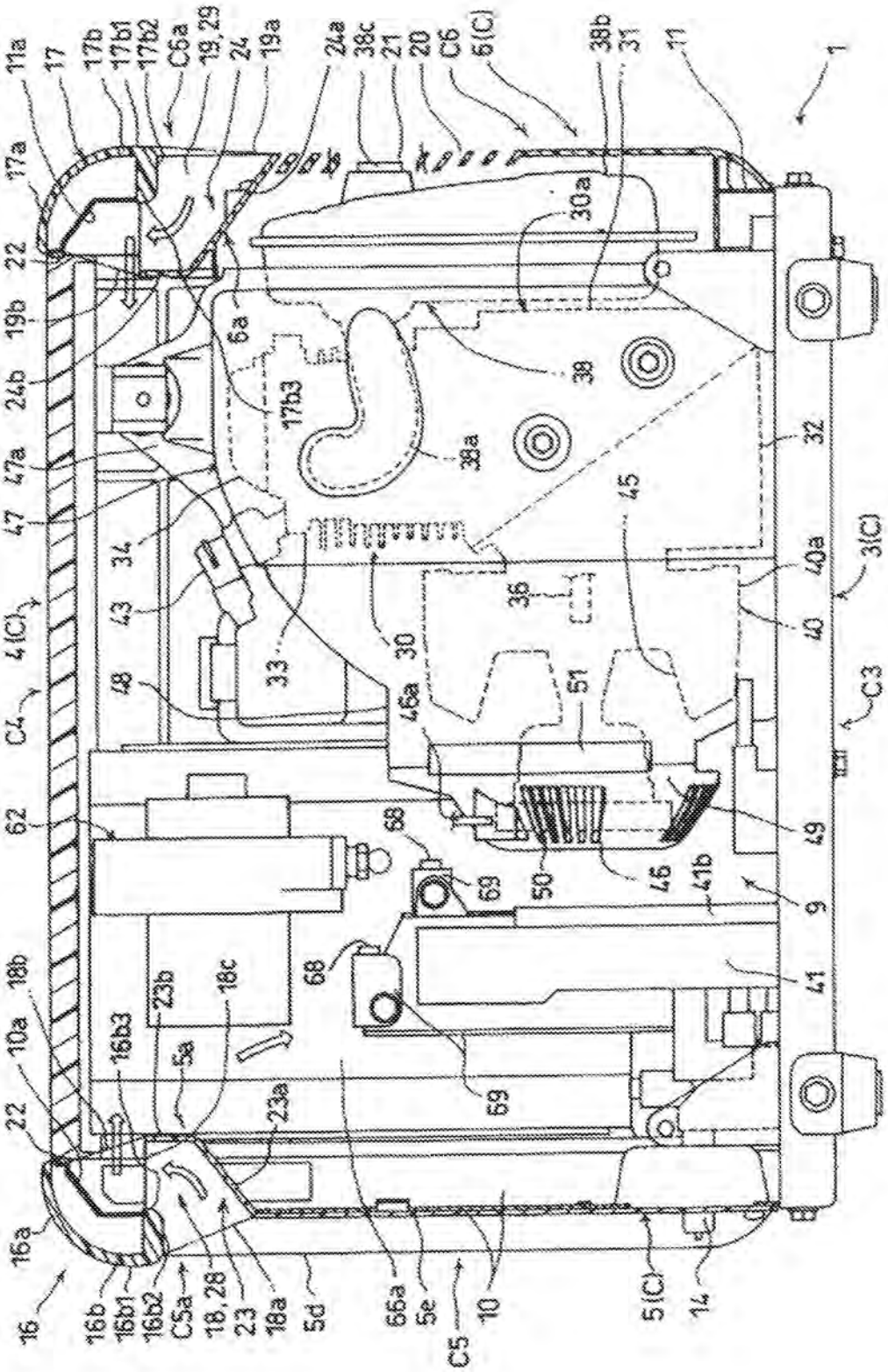


图 8

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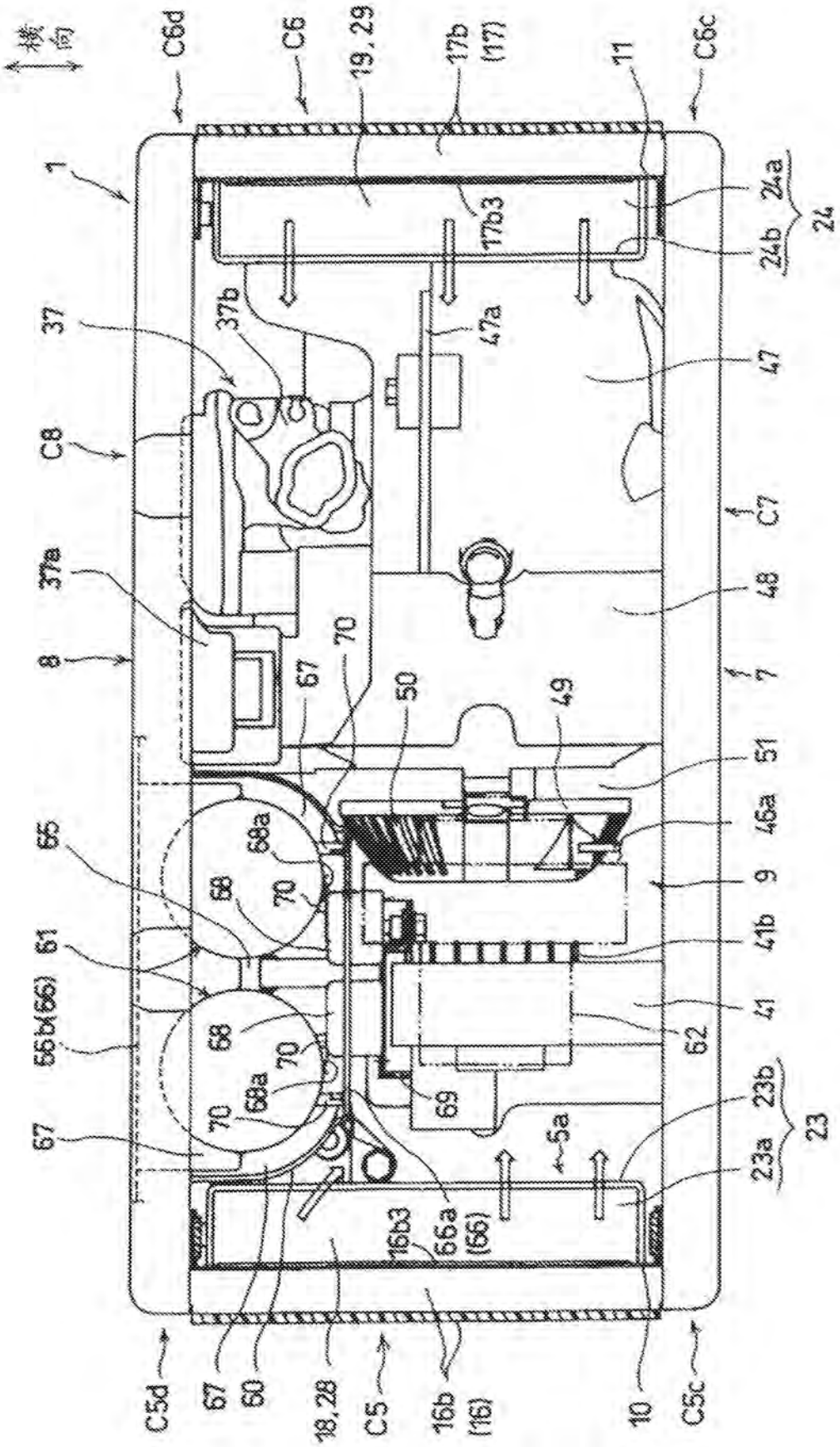


图 9

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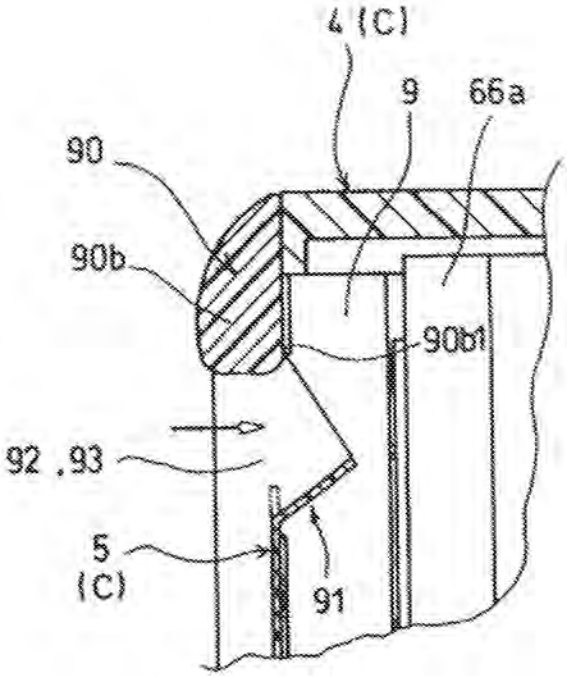


图 10

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EFS ID:	32782831
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:	01-JUN-2018
Filing Date:	28-OCT-2015
Time Stamp:	14:47:10
Application Type:	Utility under 35 USC 111(a)

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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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	3	4335697		1982-06-22	McLean	
	4	4373493		1983-02-15	Welsh	
	5	4463735		1984-08-07	Stoltman	
	6	4480595		1984-11-06	Hobby et al.	
	7	4628871		1986-12-16	Glass	
	8	4708094		1987-11-24	Helmich et al.	

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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

	9	4979480		1990-12-25	Daikoku et al.	
	10	5092305		1992-03-03	King	
	11	5228423		1993-07-20	Oikawa et al.	
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	3	20110168133	A1	2011-07-14	Pursifull et al.	
	4	20140202430	A1	2014-07-24	Monros	
	5	20140238340	A1	2014-08-28	Dunn et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Examiner Name	Long T. Tran
	Attorney Docket Number	CET1090.042

	6	20140373531	A1	2014-12-25	Wong			

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	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

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

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

A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Kevin R. Rosin/	Date (YYYY-MM-DD)	2018-05-02
Name/Print	Kevin R. Rosin	Registration Number	55584

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

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IPR2025-01457

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($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
		Total in USD ($)		**120**

Electronic Acknowledgement Receipt

EFS ID:	32507816
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:	02-MAY-2018
Filing Date:	28-OCT-2015
Time Stamp:	10:33:03
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$120
RAM confirmation Number	050218INTEFSW10334400
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The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	SuppIDS.pdf	1034749 3c1abadce37631194dff171c3eb9939f1951c30ea	no	5
Warnings:					
Information:					
2	Non Patent Literature	NPL1-Champion_Power_100153_Manual.pdf	2038378 537ac7b4c52337a9aff172a3ae37d2ec418e30f14	no	34
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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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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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 1.10
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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: April 24, 2018

/Robyn L. Templin/
Signature

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

AMENDMENT/RESPONSE TO OFFICE ACTION
MAILED JANUARY 26, 2018

Dear Sir:

Responsive to the Office Action mailed January 26, 2018, please amend the Application as follows and consider the following remarks:

In the Claims

1. (Original) 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 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.

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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

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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 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.

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

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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.

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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:

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a carburetor comprising:

a float bowl,

a throat, and

a fuel passage 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.

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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 to provide liquid fuel from the float bowl to the throat;

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

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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;

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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.

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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.

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REMARKS

Claims 1-63 are pending in the present application. In the Office Action mailed January 26, 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.

Rejection under 35 U.S.C. §102(a)(2) 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. In rejecting claim 1, the Examiner stated that:

> Poelhman 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) attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Office Action, 01/26/2018, p. 2-3. 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

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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:

> In operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position. As a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15. However, the engine continues to run on the liquid fuel in the carburetor bowl 17. 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. The 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. 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.

Claim 1 calls for, in part, 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 attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Contrary to the Examiner's assertion, Poehlman does not disclose that control means 41 is 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." *See Office Action*, p. 3. Claim 1 calls for a liquid fuel cut-off in addition to a switch to change operation of the engine between gaseous fuel and liquid fuel. While the Examiner referred to control means 41 as "liquid fuel cut-off (41)," the Examiner also referred to the fuel selector switch 51 as "a switch (51) to change operation of the engine between gaseous fuel and liquid fuel." *Id.* However, Poehlman discloses that control means 41 includes fuel selector switch 51 (*Poehlman*, col. 4, lns. 16-17), and shows fuel selector switch 51 as part of a control means 41 schematic in FIG. 1. Thus, the Examiner's reference to the control means 41 schematic fails to separately identify both the liquid fuel cut-off and the switch of claim 1.

Notwithstanding the aforementioned deficiencies in the rejection, Poehlman also does not disclose a liquid fuel cut-off attached to 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 stated that Poehlman discloses "a liquid fuel cut-off (41) attached to the carburetor," (*Office Action*, p. 3.),

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Poehlman discloses that liquid fuel control valve 43 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 coupled to the liquid fuel supply line 19 rather than the carburetor 15. The liquid fuel cut-off of claim 1, on the other hand, is shown by FIG. 4A physically attached/coupled to the carburetor 62. That is, the Specification states that the "[l]iquid fuel cut-off 72 couples to carburetor 62 to regulate liquid fuel flow through the carburetor as described with respect to FIG. 4A." *Specification*, ¶ [0061]. (emphasis added). FIGS. 4A-4B are schematic diagrams of a fuel system for the dual fuel engine 60 that specifically show the liquid fuel cut-off 72 physically attached to the carburetor 62. FIGS. 5-6 also clearly show liquid fuel cut-off 72 physically attached to the carburetor 62. While Applicant is aware that it is improper to import claim limitations from the Specification, Applicant notes that the Examiner must give claims their broadest reasonable interpretation in light of the Specification. *See MPEP §2111*. As Applicant's Specification clearly sets forth in Paragraph [0061] and FIGS. 4A-6 what is meant by the "liquid fuel cut-off attached to the carburetor" in claim 1, the Examiner must consider the teachings of the Specification when interpreting the claims. As the liquid fuel control valve 43 of Poehlman is not disclosed as being physically attached to the carburetor 15, Applicant believes that Poehlman cannot be shown to teach or suggest each and every limitation of claim 1.

Accordingly, Applicant believes the subject matter of claim 1 is patentably distinct from the art of record. Applicant respectfully requests the withdrawal of the rejection of claim 1 under 35 U.S.C. §102(a)(2), as well as 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. In rejecting claim 35, the Examiner stated that:

> 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).

Office Action, p. 4. Applicant respectfully disagrees with the rejection.

Poehlman discloses an "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. 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

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includes a liquid fuel control valve 43 which is incorporated in the liquid fuel supply line 19." *Id.* at col. 3, lns. 62-66. Regarding fuel changeover, Poehlman further discloses:

> In operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position. As a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15. However, the engine continues to run on the liquid fuel in the carburetor bowl 17.

Id. at col. 6, lns. 21-27.

Claim 35 calls for, in part, a carburetor having a float bowl, a throat, and a fuel passage 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.

Contrary to the Examiner's assertion, Poehlman does not disclose that supply line 19 provides fuel from a float bowl 17 to a throat of the carburetor 15. Instead, Poehlman discloses that 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. 27-31. While the Examiner stated that the throat is located at throttle 107 of the carburetor 15 (*Office Action*, p. 4), FIG. 1 clearly shows that supply line 19 does not provide a fuel path from the float bowl 17 to the throttle 107. *Poehlman*, FIG. 1. Since the supply line 19 is located upstream from the carburetor 15, the supply line 19 is not "a fuel passage (19) to provide fuel from the float bowl to the throat" as relied upon by the Examiner. *Office Action*, p. 4. Accordingly, the Examiner has not shown that Poehlman discloses a fuel passage to provide fuel from the float bowl to the throat that is closed by a fuel shutoff, as called for in claim 35.

In addition, Poehlman does not disclose the Examiner's asserted "fuel shutoff (43) coupled to the carburetor having a first end in the carburetor that actuates to close the fuel passage." *Quoting Office Action*, p. 4. 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. In contrast, the Specification discloses an embodiment where "fuel shutoff 110 couples to carburetor 62 to regulate liquid fuel flow downstream of float bowl 104." *Specification*, ¶ [0071]. 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)" (*Office Action*, p. 4) does not have a first end in the carburetor.

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Thus, Poehlman does not teach or suggest a carburetor having a float bowl, a throat, and a fuel passage 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, as called for in claim 35. Accordingly, Applicant believes claim 35 is patentably distinct from Poehlman and respectfully requests withdrawal of the rejection of claim 35, and the claims depending therefrom.

Rejections under 35 U.S.C. §103 as being unpatentable 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. According to the Examiner:

> 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).
>
> ...
>
> 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 *[sic]* in order to effectively, efficiently, and manually switch between the two fuel *[sic]* based on the user's preference.

Office Action, p. 7-8. Applicant respectfully disagrees with the rejection of claims 19 and 48.

Poehlman discloses an "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. 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

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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.*

Claim 19 calls for a batteryless dual fuel generator including 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 having 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.

Claim 48 calls for a method of assembling a dual fuel engine including providing an engine operable on a gaseous fuel and a liquid fuel; attaching a carburetor to an intake of the engine, the carburetor having a throat to mix gaseous fuel with air and liquid fuel with air, a float bowl, and a fuel passage to provide liquid fuel from the float bowl to the throat; 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.

Contrary to the Examiner's assertion, Poehlman does <u>not</u> disclose a carburetor "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." *Quoting Office Action*, p. 8. As argued extensively above with respect to claim 35, Poehlman discloses that supply line 19 is connected upstream from the carburetor 15 to a source 21 of liquid fuel. *Poehlman*, col. 3, lns. 27-31; FIG. 1. As such, supply line 19 does <u>not</u> provide a fuel path from the float bowl 17 to the throat of the carburetor 15. *See Id.* In addition, Poehlman does not disclose the Examiner's asserted "fuel shutoff (43) attached to the carburetor to close the fuel passage." *Office Action*, p. 8. As stated above with respect to claim 35, Poehlman's FIG. 1 shows that liquid fuel control valve 43 is located upstream from the carburetor 15 along the liquid fuel supply line 19, and therefore is not coupled to the carburetor. In addition, the Examiner admitted that Sugimoto is silent as to the carburetor with a fuel shutoff or a liquid fuel cut-off attached to the carburetor in the manner called for respectively by claims 19 and 48. *Office Action*, p. 7-8.

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As such, the Examiner has not shown that the combination of Sugimoto and Poehlman discloses a carburetor attached to an intake of an engine having 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, as called for in claim 19. For similar reasons the Examiner has not shown that the combination of Sugimoto and Poehlman discloses attaching a carburetor to an intake of an engine, the carburetor having a fuel passage to provide liquid fuel from a float bowl to a throat; and attaching a liquid fuel cut-off to the carburetor to close the fuel passage, as called for in claim 48.

In addition, Sugimoto does not disclose the Examiner's asserted "engine operable on a gaseous fuel and a liquid fuel." *Quoting Office Action*, p. 7. While the Examiner stated that "paragraphs 0085-0086 describes a first fuel in liquid phase to gas, and a second gas fuel" (*Office Action*, p. 7), Sugimoto actually discloses "[t]he external fuel bottle 71 supplies the second fuel gas in gas phase to the fuel gas pressure regulator 62" and "[t]he fuel pressure regulator 62 functions as a vaporizer for vaporizing the first fuel gas supplied thereto in liquid phase." Sugimoto, ¶ [0078]. Since the first fuel gas is vaporized by the fuel pressure regulator 62, the first fuel gas and the second fuel gas are provided in a gaseous form to the carburetor 18b. *See Id.* at ¶ [0071]. As such, the Examiner has not shown that Sugimoto discloses an engine operable on a gaseous fuel and a liquid fuel, as called for in claims 19 and 48. In addition, the Examiner has not shown that Sugimoto discloses a pull start engine operable on a gaseous fuel and a liquid fuel, as called for in claim 19. The Examiner also has not shown that Sugimoto discloses coupling a switch to the engine to change operation of the engine between gaseous fuel and liquid fuel, as called for in claim 48. *See Office Action*, p. 7-8.

Accordingly, Applicant believes claims 19 and 48 to be patentably distinct over a combination of Sugimoto and Poehlman, and thus Applicant requests withdrawal of the rejection of claims 19 and 48, and of 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 1-63.

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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: April 24, 2018
Attorney Docket No.: CET1090.042

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
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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: April 24, 2018
Attorney Docket No.: CET1090.042

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Champion - EX2082, Page 365 of 575
MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

Electronic Acknowledgement Receipt

EFS ID:	32431558
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:	24-APR-2018
Filing Date:	28-OCT-2015
Time Stamp:	16:32:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response.pdf	196258 8c42f61cec13377ae0a576b1bdc63be92fa6d4f2	yes	20

	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:			
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	Total Files Size (in bytes):	196258	

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New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
14/925,441	10/28/2015	

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 04/24/2018

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 63	Minus	** 63	= 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

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SLIE
NICHELE PETERSON

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

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PTO/SB/08a (03-15)
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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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	1	2060477	CN	U	1990-08-15	Zhao Yunying		

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	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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Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	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

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

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

A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Stephanie M. Laundre/	Date (YYYY-MM-DD)	2018-02-21
Name/Print	Stephanie M. Laundre	Registration Number	65124

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

Espacenet

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

CARBURETTOR

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

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

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

Application number: CN1989217629U 19890927

Priority number(s): CN1989217629U 19890927

Abstract of CN2060477 (U)

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

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IPR2025-01457

(19)中华人民共和国专利局　　(11)公告号 CN 2060477U

(12)实用新型专利申请说明书

(21) 申请号 89217629.6

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F02M 3/05

(43)公告日 1990年8月15日

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(71)申请人 赵云英
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(72)设计人 赵云英

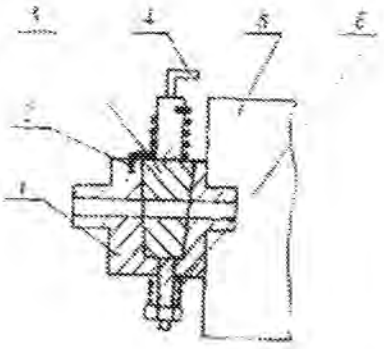
(74)专利代理机构 河北省专利事务所
代理人 朱振荣

说明书页数: 2　　附图页数: 2

(54)实用新型名称　一种汽化器

(57)摘要

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



(56)第1457号

权 利 要 求 书

1、一种摩托发动机使用的汽化器，其特征在于所述的汽化器摩油入口处，有一摩油开关。

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

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

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说　　明　　书

一种汽化器

本实用新型属于一种供燃烧发动机使用的汽化器。

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

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

以下结合附图对本实用新型进行详细描述。

附图1为汽车发动系统示意图。

附图2为本实用新型燃油开关结构示意图。

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

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

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

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

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

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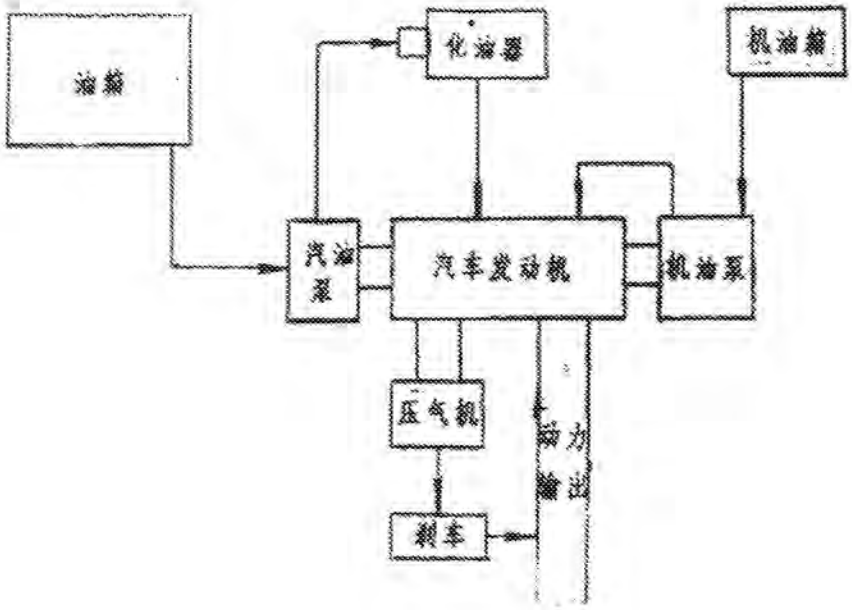


图1

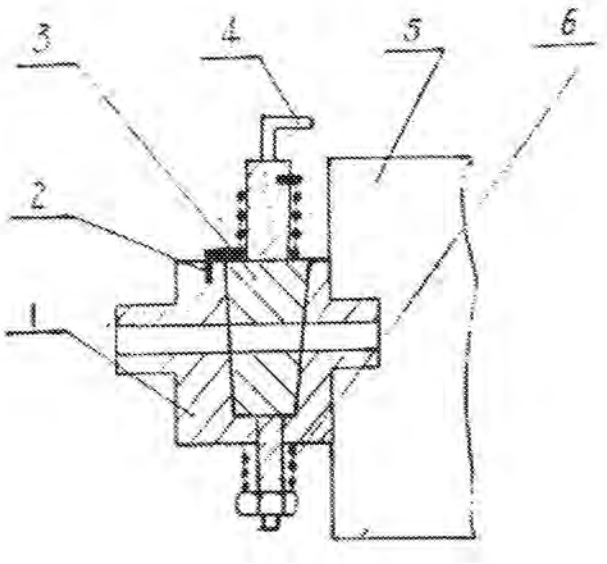


图2

Electronic Acknowledgement Receipt

EFS ID:	31847017
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:	21-FEB-2018
Filing Date:	28-OCT-2015
Time Stamp:	14:11:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	SuppIDS.pdf	1034617 3995c11e2a395a77e327afaefa82792f2e5e8bb6	no	4

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2	Foreign Reference	FPD1-CN2060477U.pdf	451233 21f1ee71ce689dab107045535acd6671165 25e46	no	7
Warnings:					
Information:					
		Total Files Size (in bytes):	1485850		

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 01/26/2018
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

EXAMINER	
TRAN, LONG T	

ART UNIT	PAPER NUMBER
3747	

NOTIFICATION DATE	DELIVERY MODE
01/26/2018	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 *6 November 2017*.

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

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

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

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

Disposition of Claims*

5)☒ Claim(s) *1-63* 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 *28 October 2015* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

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

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

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

4) ☐ Other: _____.

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

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. A Petition Decision was entered on December 5, 2017. Claims 19 - 55, 58 - 59, and 62 - 63 have been granted a rejoinder and are now fully considered.

3. The previous Office Action is now withdrawn.

4. Claims 1 - 63 remain pending in the application and have been fully considered.

Claim Rejections - 35 USC § 102

5. 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.

6. 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.

7. 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:

Poelhman 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) 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:

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).

Claim Rejections - 35 USC § 103

8. 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.

9. 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.

10. 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.

11. 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.

12. 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, 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.

13. 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.

14. 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 - 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.

15. 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.

16. 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.

17. 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.

Conclusion

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

19. 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.

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/
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-5,611,312 A	03-1997	Swanson; Mark S.	F02M1/02	123/179.18
*	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
*	J	US-3,718,000 A	02-1973	Walker; Brooks	F02B11/02	123/525
*	K	US-3,659,574 A	05-1972	Reschke; Albert H.	F02M13/08	123/525
*	L	US-3,412,258 A	11-1968	WILLIAM SATTER HARVEY	H02P9/42	290/40R
	M	US-				

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	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.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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

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

Champion - EX2082, Page 400 of 575
MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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						
	1	÷	✓	✓						
	2	÷	✓	✓						
	3	÷	✓	✓						
	4	÷	✓	✓						
	5	÷	✓	✓						
	6	÷	✓	✓						
	7	÷	✓	✓						
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	10	÷	✓	✓						
	11	÷	✓	✓						
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	32	÷	N	✓						
	33	÷	N	✓						
	34	÷	N	✓						
	35	÷	N	✓						
	36	÷	N	✓						

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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						
	37	÷	N	✓						
	38	÷	N	✓						
	39	÷	N	✓						
	40	÷	N	✓						
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	61	÷	✓	✓						
	62	÷	N	✓						
	63	÷	N	✓						

Champion - EX2082, Page 402 of 575
MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1481	engine and ((dual double two second$4 plural$4 multi multiple bi pair supplement$4) near2 fuel same (switch$4 chang$3)) and (valve same (carburetor carburretor) same fuel)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/22 12:53
L2	519	engine and ((dual double two second$4 plural$4 multi multiple bi pair supplement$4) near2 fuel same (switch$4 chang$3)) and (valve same (carburetor carburretor) same fuel) and generat$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/01/22 12:54

1/ 22/ 2018 1:00:21 PM
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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 12/05/2017

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

EXAMINER
TRAN, LONG T

ART UNIT	PAPER NUMBER
3747	

NOTIFICATION DATE	DELIVERY MODE
12/05/2017	ELECTRONIC

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

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

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

info@zpspatents.com
sml@zpspatents.com

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

In re Application of: Collie et al.	:	
Appl. No.: 14/925,441	:	DECISION ON PETITION TO
Filed: October 28, 2015	:	REVIEW RESTRICITON
Attorney Docket No.: CET1090.042	:	REQUIREMENT UNDER
For: BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF	:	37 CFR 1.144

This is a decision on the petition filed on November 6, 2017 in which petitioner requests reconsideration and withdrawal of restriction requirement mailed in the April 21, 2017 Office action. Petitioner requests rejoinder of claims 19-55, 58-59 and 62-63. The petition is being considered pursuant to 37 CFR 1.181 and CFR 1.144 and no fee is required for the petition.

The petition is **granted**.

After consulting with the Examiner, the requested relief is granted. The restriction requirement mailed on April 21, 2017 is hereby withdrawn. Petitioner's amendment filed on November 6, 2017 has been entered into the application. The examiner will issue an Office Action to rejoin and treat withdrawn claims 19-55, 58-59 and 62-63 on their merits.

The application is being forwarded to the examiner via the Supervisory Patent Examiner of Art Unit 3747 for preparation of an Office Action consistent with this decision in due course.

Any inquiry regarding this decision should be directed to Julie Brocketti, Quality Assurance Specialist, at (571) 272-0206.

PETITION GRANTED.

Cheryl Tyler, Director
Technology Center 3700

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

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

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

Transmission

☐ transmitted by facsimile to Fax No.: 571-273-8300 addressed to **Examiner 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: November 6, 2017

/Robyn L. Templin/
Signature

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

RESPONSE TO OFFICE ACTION
MAILED AUGUST 7, 2017

Dear Sir:

Responsive to the Office Action mailed August 7, 2017, please consider the following remarks:

Electronic Acknowledgement Receipt

EFS ID:	30862885
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:	Timothy J. Ziolkowski/Robyn Templin
Filer Authorized By:	Timothy J. Ziolkowski
Attorney Docket Number:	CET1090.042
Receipt Date:	06-NOV-2017
Filing Date:	28-OCT-2015
Time Stamp:	14:05:18
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response.pdf	169034 75865ac726109290b262721ee3m4f93ad03 ab2ac	yes	16

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	12	16
	Claims	2	11
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	169034	

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.

REMARKS

Claims 1-63 are pending in the present application. In the Office Action mailed August 7, 2017, the Examiner rejected claims 1, 3, 4, 12, and 13 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, 56, 57, 60, and 61 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 and 15 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 19-55, 58, 59, 62, and 63 have been withdrawn from consideration by the Examiner.

Election/Restriction

In the Office Action mailed August 7, 2017, the Examiner made final the Requirement for Restriction of Inventions I, II, III, and IV. The Examiner withdrew claims 19-55, 58-59, 62-63 from consideration as being drawn to a non-elected invention but did not provide any further support for the restriction. *See Office Action*, 08/07/2017, p. 2.

Applicant respectfully requests reconsideration of the Restriction. As set forth in detail in the Request for Supervisory Review of the Restriction Requirement, filed concurrently herewith, the Examiner has not met the burdens set forth by MPEP § 806.05(j) to show that alleged Inventions I-IV, as claimed, are distinct. Therefore, Applicant respectfully requests reconsideration and withdrawal of the restriction of Inventions I, II, III, and IV, and requests rejoinder of all claims.

Rejection under 35 U.S.C. §102(a)(2) 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. In rejecting claim 1, the Examiner stated that:

> Poelhman 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);

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> 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.

Office Action, 08/07/2017, p. 2-3. 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:

> In operation, when switching from liquid fuel to gaseous fuel, the operator moves the fuel selector switch 51 to the gaseous fuel position. As a result, the liquid fuel control valve 43 is consequently deenergized and turns off the liquid fuel supply to the carburetor 15. However, the engine continues to run on the liquid fuel in the carburetor bowl 17. 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. The 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. 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.

Claim 1 calls for, in part, 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 attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel.

Contrary to the Examiner's assertion, Poehlman does not disclose that control means 41 is 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." *See Office Action*, p. 2-3. Claim 1 calls for a liquid fuel cut-off in addition to a switch to change operation of the engine between gaseous fuel and

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liquid fuel. While the Examiner referred to control means 41 as "liquid fuel cut-off (41)," the examiner also referred to the fuel selector switch 51 as "a switch (51) to change operation of the engine between gaseous fuel and liquid fuel." *Id.* However, Poehlman discloses that control means 41 includes fuel selector switch 51 (*Poehlman*, col. 4, lns. 16-17), and shows fuel selector switch 51 as part of a control means 41 schematic in FIG. 1. The Examiner's reference to the control means 41 schematic fails to identify both the liquid fuel cut-off and the switch of claim 1.

Notwithstanding the aforementioned deficiencies in the rejection, Poehlman also does not disclose a liquid fuel cut-off attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, as called for in claim 1. For instance, the present Application describes one embodiment where a "[l]iquid fuel cut-off 72 couples to carburetor 62 to control liquid fuel flow downstream of float bowl 104 in the carburetor." *Specification*, ¶ [0064]. In contrast, Poehlman discloses liquid fuel control valve 43 coupled to a liquid fuel supply line 19 upstream of a fuel bowl 17. *Poehlman*, FIG. 1. Since the liquid fuel control valve 43 is located upstream of the fuel bowl 17, the engine 13 would continue to run on liquid fuel from the fuel bowl 17 after closure of the liquid fuel control valve 43. As such, the liquid fuel control valve 43 has not been shown to interrupt liquid fuel to the engine 13 upon actuation of the fuel selector switch 51 from liquid fuel to gaseous fuel.

Further, the liquid fuel control valve 43 does not interrupt liquid fuel upon actuation of the fuel selector switch 51 in part because fuel changeover occurs when the vacuum switch 47 is actuated. That is, when the operator moves the fuel selector switch 51 to the gaseous fuel position, the liquid fuel control valve 43 turns off but the engine 13 continues to run on the liquid fuel in the carburetor bowl 17. *Id.* at col. 6, lns. 21-27. Once the engine 13 begins to run out of the liquid fuel in the carburetor bowl 17, vacuum conditions drop to an amount less than a predetermined level thereby closing vacuum switch 47, which then causes the gaseous fuel control valve 45 to open. *Id.* at col. 6, lns. 27-36. Accordingly, Poehlman relies upon vacuum switch 47 to effectuate fuel changeover when the fuel bowl 17 empties, rather than the liquid fuel control valve 43 interrupting liquid fuel to the engine 13 upon actuation of the fuel selector switch 51.

Since Poehlman's engine 13 relies upon vacuum conditions to effectuate fuel changeover, the liquid fuel control valve 43 is located upstream from the carburetor 15 and does not function to trap fuel in the fuel bowl 17 for startup or fuel changeover. That is, the present Application describes one embodiment where "[l]iquid fuel cut-off 72 also traps fuel in float bowl 104 to eliminate delay in filling the bowl when starting the engine on liquid fuel, and can stop liquid fuel

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flow to the engine immediately after ignition shutdown." *Specification*, ¶ [0064]. In contrast, Poehlman's liquid fuel control valve 43 has not been shown to eliminate delay in filling the fuel bowl 17 when starting the engine 13 on liquid fuel, or stop liquid fuel flow to the engine 13 immediately after ignition shutdown. Since the liquid fuel control valve 43 is not coupled to trap fuel in the fuel bowl 17, the Examiner has not shown that the liquid fuel control valve 43 can interrupt liquid fuel from the float bowl 17 upon actuation of the fuel selector switch 51. Accordingly, the Examiner has not shown that Poehlman discloses a liquid fuel cut-off attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel, as called for in claim 1.

Accordingly, Poehlman does not teach or suggest each and every element of claim 1. The subject matter of claim 1 is patentably distinct from the art of record. Applicant respectfully requests the withdrawal of the rejection of claim 1 under 35 U.S.C. §102(a)(2), as well as all claims depending therefrom.

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 1-63.

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: November 6, 2017
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. (Original) 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 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.

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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

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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. (Withdrawn) 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,

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.

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

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

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

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

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

27. (Withdrawn) 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. (Withdrawn) 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.

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29. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) A carburetor having a fuel shutoff comprising:

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a carburetor comprising:

a float bowl,

a throat,

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

37. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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.

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

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

47. (Withdrawn) 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. (Withdrawn) 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,

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

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

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

53. (Withdrawn) 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. (Withdrawn) 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.

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55. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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.

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

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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

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

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PETITION UNDER 37 C.F.R. §1.181 SEEKING SUPERVISORY REVIEW OF RESTRICTION REQUIREMENT

Dear Madam:

Responsive to the Office Action mailed August 7, 2017, Applicant requests supervisory review and consideration of the Restriction Requirement issued April 21, 2017, based on the following remarks in support of rejoinder of withdrawn claims 19-55, 58-59, 62-63.

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REMARKS

In the Restriction Requirement issued April 21, 2017 (hereinafter, "Restriction Requirement"), the Examiner imposed a restriction of claims 1-63. The Examiner has identified four 'inventions' in the pending claims. The Examiner's classification of the 'inventions' include Group I consisting of claims 1-18, 56-57, and 60-61 drawn to a dual fuel engine and classified by the Examiner in class F02D 19/06, Group II consisting of claims 19-34, 58-59, and 62-63 drawn to a generator and classified by the Examiner in class F02B 63/04, Group III consisting of claims 35-47 drawn to a carburetor and classified by the Examiner in class F02M 17/20, and Group IV consisting of claims 48-55 drawn to a process of making an engine and classified by the Examiner in class B23P 19/042.

In response to the Restriction Requirement, Applicant filed a timely Election and Response on June 21, 2017, in which alleged Invention I was elected with traverse, corresponding to claims 1-18, 56-57, and 60-61. In the Office Action mailed August 7, 2017 (hereinafter, "Office Action"), the Examiner made the restriction of claims 19-55, 58-59, 62-63 final and withdrew the claims from further consideration as being drawn to a non-elected invention. In the Office Action, the Examiner did not provide any further support for the restriction. *See Office Action*, 08/07/2017, p. 2.

For the reasons set forth below and in Applicant's June 21, 2017 Response to the Restriction Requirement, Applicant believes that the Examiner has improperly restricted claims 1-63 of the pending application, and, therefore, requests rejoinder of all claims, of each Invention.

Restriction of Groups I, II, III, and IV

The Examiner asserted in the Restriction Requirement that alleged "Inventions I, II, III and IV are directed to related internal combustion engines," but that the "inventions are distinct, each from the other," and issued a restriction under MPEP § 806.05(j). *Restriction Requirement*, p. 2. MPEP § 806.05(j)states that "[t]o support a requirement for restriction between two or more related product inventions, or between two or more related process inventions, both two-way distinctness and reasons for insisting on restriction are necessary." *Id.* at § 806.05(j). Related product or process inventions are only distinct if "(A) the inventions *as claimed* do not overlap in scope, i.e., are mutually exclusive; (B) the inventions *as claimed* are not obvious variants; and (C) the inventions *as claimed* are either not capable of use together or can have a materially different design, mode of operation, function, or effect." *Id.* (emphasis in original). "The burden is on the examiner to provide an example to support the determination that the inventions are distinct." *Id.*

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In this case, the Examiner has failed to meet the burden set forth by MPEP § 806.05(j)(A)-(C). That is, in order to show that alleged Inventions I-IV are distinct as claimed, the Examiner must prove that each alleged invention is (A) mutually exclusive; (B) not obvious variants, **and** (C) "not capable of use together or can have a materially different design, mode of operation, function, or effect." *See Id.* at § 806.05(j)(A)-(C). The Examiner did not prove each of (A)-(C), but instead merely made conclusory statements that "[i]n the instant case, the inventions as claimed have a materially different design, mode of operation, function, or effect. Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants." *Restriction Requirement*, p. 2-3. The Examiner did not cite to any claim elements to support that conclusion. Further, the Examiner did not provide an example to support the determination that alleged Inventions I-IV are distinct, as required by MPEP § 806.05(j).

Notwithstanding the aforementioned deficiency of the restriction, alleged Inventions I, II, III, and IV, as claimed in independent claims 1, 19, 35, and 48 are not distinct for at least the reason that they overlap in scope. *See* MPEP § 806.05(j)(A). Each of claims 1, 19, 35 and 48 directed to alleged Inventions I, II, III, and IV, respectively, include a carburetor and either a fuel shutoff or a fuel cut-off attached to the carburetor. In addition, each of claims 19, 35, and 48 directed to alleged Inventions II, III, and IV include that the carburetor has a float bowl, a throat, and a fuel passage to provide fuel from the float bowl to the throat. Claims 19, 35, and 48 also include that the fuel shutoff or fuel cut-off attaches to the carburetor to close the fuel passage. In comparison, claim 6 of alleged Invention I includes a fuel path to the engine that is opened and closed by the fuel cut-off. As such, all of alleged Inventions I, II, III, and IV include a carburetor and a fuel shutoff/cut-off that attaches to the carburetor to close a fuel passage/path.

In addition, alleged Inventions I, II, and IV, as claimed in independent claims 1, 19, and 48, respectively, are not distinct since they overlap in scope regarding the carburetor attached to an intake of an engine. Each of claims 1, 19, and 48 include an engine operable on a gaseous fuel and a liquid fuel. Also, claims 1, 30, and 48 directed to alleged Inventions I, II, and IV, respectively, all include a switch to change operation of the engine between gaseous fuel and liquid fuel. Furthermore, claim 1 (alleged Invention I) includes the liquid fuel cut-off attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel. Claim 19 (alleged Invention II) includes the fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel. Claim 48 (alleged Invention IV) includes 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. Therefore, each of alleged Invention I, II,

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and IV as claimed in independent claims 1, 19, and 48, respectively, include that the fuel shutoff/cut-off attaches to the carburetor to interrupt liquid fuel or close a liquid fuel passage upon selection of engine operation to gaseous fuel.

All of alleged Inventions I, II, III, and IV as claimed in claims 15, 25, 44, 55, respectively, also include a cable actuated fuel shutoff/cut-off. Initially, each of claims 14, 21, 37, and 53 directed to alleged Inventions I, II, III, and IV, respectively, include a rotating shaft extending through an aperture or opening in the carburetor, and either a blocking member or a valve member couples to the shaft in the carburetor that rotates to selectively control fuel flow through a fuel passage/path within the carburetor. Furthermore, each of alleged Inventions I, II, III, IV (via claims 14, 26, 42, 52, respectively) includes a fuel seal around the shaft for the aperture or opening in the carburetor. Each of alleged Inventions I, II, III, IV (via claims 15, 25, 44, 55, respectively) includes a lever coupled to the shaft, and a cable couples to the lever to actuate the blocking/valve member. Therefore, as claimed, alleged Invention I, II, III, and IV overlap in scope and cannot be said to be mutually exclusive under MPEP § 806.05(j).

In light of the above, alleged Invention I, II, III, and IV as claimed in claims 1-18, 56-57, 60-61; claims 19-34, 58-59, 62-63; claims 35-47; and claims 48-55; respectively, are not distinct. The Examiner has not met the burdens set forth by MPEP § 806.05(j) to show that alleged Inventions I-IV, as claimed, are distinct, as the Examiner has not shown that the alleged inventions are mutually exclusive, not obvious variants, **and** not capable of use together / have a materially different design, mode of operation, function, or effect. On the contrary, alleged Inventions I-IV, as called for in the claims, are related under the present disclosure and overlap in scope. Accordingly, Applicant respectfully requests that the restriction between alleged Inventions I, II, III, and IV be withdrawn.

Conclusion

For all these reasons, Applicant respectfully requests rejoinder of all claims, of each group. The Examiner is invited to call the undersigned to discuss this Election or any other matters regarding this application to further prosecution.

Dated: November 6, 2017
Attorney Docket No.: CET1090.042

Respectfully submitted,

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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
14/925,441	10/28/2015	

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **11/06/2017**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 63	Minus	** 63	= 0	X $0 =	0
Independent (37 CFR 1.16(h))	* 4	Minus	***4	= 0	X $0 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
LINDA HUMES

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

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

26629 7590 08/07/2017

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EXAMINER
TRAN, LONG T

ART UNIT	PAPER NUMBER
3747	

NOTIFICATION DATE	DELIVERY MODE
08/07/2017	ELECTRONIC

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

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

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

info@zpspatents.com
sml@zpspatents.com

Office Action Summary	Application No. 14/925,441	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 *21 June 2017*.

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

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

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

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

Disposition of Claims*

5)☒ Claim(s) *1-18,56,57,60 and 61* is/are pending in the application.

5a) Of the above claim(s) *19-55,58-59,62-63* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-18,56-57,60-61* 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 *28 October 2015* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

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

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

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

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

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *10/28/15*.

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

4) ☐ Other: _____.

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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. Applicant elected group I, Claims 1 - 18, 56 – 57, and 60 – 61, with traverse on June 21, 2017. The remaining claims have been withdrawn from consideration.

Claim Rejections - 35 USC § 102

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 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.

5. Claims 1, 3 – 4, 12 – 13 are rejected under 35 U.S.C. 102(a)(2) as being anticipated by Poehlman (US 4,489,699).

Regarding Claim 1:

Poelhman 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) 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:

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

Claim Rejections - 35 USC § 103

6. 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.

7. 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.

8. 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.

9. 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.

10. Claims 2, 5 – 10, 56 – 57, 60 – 61 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.

11. 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.

12. Claims 14 and 15 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 sea (112, 114)l 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:

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.

13. 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.

Conclusion

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

15. 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.

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/
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

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
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	O					
	P					
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	S					
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*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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

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

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

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CONFIRMATION NO. 1059

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
14/925,441	10/28/2015	123	3747	CET1090.042

APPLICANTS

Champion Engine Technology, LLC, Sussex, WI;

INVENTORS

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James J. Dehn, Brookfield, WI;
Leigh Jenison, Hartland, WI;
Hiroaki Sato, Brookfield, WI;

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

This application is a CIP of 14/738,060 06/12/2015

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

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **

11/06/2015

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /LONG T TRAN/ Examiner's Signature	☐ Met after Allowance LT Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CA	12	63	4

ADDRESS

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

TITLE

BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF

FILING FEE RECEIVED		
2660	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

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
L3	7	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 (solenoid near2 valve) and (valve same (rotat$4 near2 shaft) same (carburetor carburretor))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/02 09:22
L4	2	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 (solenoid near2 valve) and (valve same (rotat$4 near2 shaft) same (carburetor carburretor)) and (o adj ring)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/02 09:33
L5	12	engine and ((dual double two second$4 plural$4 multi multiple bi) near2 fuel same (switch$4 chang$3)) and (valve same (rotat$4 near2 shaft) same (carburetor carburretor)) and (o adj ring)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/02 09:35
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)) and ((carburetor carburettor) same intake) and (pull adj start$4) and ((carburettor carburetor) same shaft same (spring coil))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 09:54
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	US-PGPUB; USPAT; USOCR; FPRS; EPO;	OR	ON	2017/08/01 12:37

		same electric$4) and (pull adj start$4)	JPO; DERWENT; IBM_TDB			
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 start$4) or (recoil adj start$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/08/01 13:25
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;	OR	ON	2017/08/01 14:32

			IBM_TDB			
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;	OR	ON	2017/08/01 15:55

			JPO; DERWENT; IBM_TDB			
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 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 16:34
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 9:52:31 AM
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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	
First Named Inventor	Kendall J. Collie et al.
Art Unit	
Examiner Name	
Attorney Docket Number	CET1090.042

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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/L.T.T/	3	4450821		1984-05-29	Venning et al.	
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/L.T.T/	8	5171487		1992-12-15	Hudz	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.T.T/

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	
First Named Inventor	Kendall J. Collie et al.
Art Unit	
Examiner Name	
Attorney Docket Number	CET1090.042

/L.T.T/	9	5287839		1994-02-22	Kondou et al.	
/L.T.T/	10	5320078		1994-06-14	Lorraine	
/L.T.T/	11	5379740		1995-01-10	Moore et al.	
/L.T.T/	12	5419291		1995-05-30	Kimata et al.	
/L.T.T/	13	5438968		1995-08-08	Johnson et al.	
/L.T.T/	14	5450832		1995-09-19	Graf	
/L.T.T/	15	5673670		1997-10-07	Powell et al.	
/L.T.T/	16	5816224		1998-10-06	Welsh et al.	
/L.T.T/	17	6082323		2000-07-04	Winberg	
/L.T.T/	18	6213083	B1	2001-04-10	Winberg	
/L.T.T/	19	6223730	B1	2001-05-01	Hasegawa et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /L.T.T/

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IPR2025-01457

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Kendall J. Collie et al.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CET1090.042

/L.T.T/	20	6276345	B1	2001-08-21	Nelson et al.	
/L.T.T/	21	6401685	B1	2002-06-11	Warner	
/L.T.T/	22	6453877	B1	2002-09-24	Lucier et al.	
/L.T.T/	23	6914342	B1	2005-07-05	French	
/L.T.T/	24	7905469	B2	2011-03-15	Nickels et al.	
/L.T.T/	25	8342158	B2	2013-01-01	Ulrey et al.	
/L.T.T/	26	8590510	B2	2013-11-26	Surnilla et al.	
/L.T.T/	27	5161496		1992-11-10	Matsushima et al.	
/L.T.T/	28	5325835		1994-07-05	Kimata et al.	

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

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Kendall J. Collie et al.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CET1090.042

/L.T.T/	1	20130047964	A1	2013-02-28	Kim		
/L.T.T/	2	20130220274	A1	2013-08-29	Deshpande et al.		

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

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
/L.T.T/	1	Honda EU20i LPG, March 20, 2012, https://www.youtube.com/watch?v=yBpq33aJmR0	☐
/L.T.T/	2	JOHNSON et al., "Electronic Direct Fuel Injection (EDFI) for Small Two-Stroke Engines," SAE Technical Paper 1999-01-3312, Proceedings of the 1999 SAE Small Engine Technology Conference, Madison, WI, September 28-30, 1999, pp. 1-15	☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/LONG T TRAN/	Date Considered	08/02/2017

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	
First Named Inventor	Kendall J. Collie et al.
Art Unit	
Examiner Name	
Attorney Docket Number	CET1090.042

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

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Kendall J. Collie et al.
	Art Unit	
	Examiner Name	
	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).

OR

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

☐ See attached certification statement.

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

☐ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Timothy J. Ziolkowski/	Date (YYYY-MM-DD)	2015-10-28
Name/Print	Timothy J. Ziolkowski	Registration Number	38368

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

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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.

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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IPR2025-01457

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	**Art Unit**
	LONG T TRAN	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							
	1	÷	✓							
	2	÷	✓							
	3	÷	✓							
	4	÷	✓							
	5	÷	✓							
	6	÷	✓							
	7	÷	✓							
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	9	÷	✓							
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	30	÷	N							
	31	÷	N							
	32	÷	N							
	33	÷	N							
	34	÷	N							
	35	÷	N							
	36	÷	N							

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
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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							
	37	÷	N							
	38	÷	N							
	39	÷	N							
	40	÷	N							
	41	÷	N							
	42	÷	N							
	43	÷	N							
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	45	÷	N							
	46	÷	N							
	47	÷	N							
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	55	÷	N							
	56	÷	✓							
	57	÷	✓							
	58	÷	N							
	59	÷	N							
	60	÷	✓							
	61	÷	✓							
	62	÷	N							
	63	÷	N							

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PLUS Search Results for S/N 14925441, Searched Tue Aug 01 13:20:31 EDT 2017

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

4411243 99
5655505 99
4244328 99
4312317 99
4340013 99
4350133 99
4364364 99
4438749 99
4458654 99
4550691 99
4600418 99
4829957 99
4836173 99
5226400 99
5322046 99
5343848 99
5433176 99
5545357 99
5546919 99
5575266 99
5588416 99
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4369751 98
4372155 98
4387689 98
4395998 98
4412521 98
4425898 98
4444169 98
4453523 98
4483307 98
4483305 98
4492207 98
4497304 98
4515134 98
4531497 98
4545356 98

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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■ transmitted by EFS-WEB addressed to **Examiner Long T Tran** at the Patent and Trademark Office.

Date: June 21, 2017

/Robyn L. Templin/
Signature

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

RESPONSE TO APRIL 21, 2017 RESTRICTION REQUIREMENT

Dear Sir:

Responsive to the Restriction Requirement mailed April 21, 2017, please enter the following election with traverse and consider the following comments in support of rejoinder.

Electronic Acknowledgement Receipt

EFS ID:	29561766
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:	21-JUN-2017
Filing Date:	28-OCT-2015
Time Stamp:	12:22:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Response.pdf	159521 edc7886f728dbc7f7e8da506aa3fd8d1055df5a	yes	13

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	11	13
	Claims	2	10
	Response to Election / Restriction Filed	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	159521	

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.

ELECTION

Applicant elects, with traverse, what the Examiner has characterized as "Invention I", deemed drawn to a dual fuel engine, and corresponding to claims 1-18, 56-57, and 60-61.

REMARKS

The Examiner has identified four 'inventions' in the pending claims. The Examiner's classification of the 'inventions' include Group I consisting of claims 1-18, 56-57, and 60-61 drawn to a dual fuel engine and classified by the Examiner in class F02D 19/06, Group II consisting of claims 19-34, 58-59, and 62-63 drawn to a generator and classified by the Examiner in class F02B 63/04, Group III consisting of claims 35-47 drawn to a carburetor and classified by the Examiner in class F02M 17/20, and Group IV consisting of claims 48-55 drawn to a process of making an engine and classified by the Examiner in class B23P 19/042. *Restriction Requirement*, 4/21/17, p. 2

Restriction of Groups I, II, III, and IV

The Examiner asserted in the Restriction Requirement that alleged "Inventions I, II, III and IV are directed to related internal combustion engines," but that the "inventions are distinct, each from the other," and issued a restriction under MPEP § 806.05(j). *Restriction Requirement*, p. 2. MPEP § 806.05(j)states that "[t]o support a requirement for restriction between two or more related product inventions, or between two or more related process inventions, both two-way distinctness and reasons for insisting on restriction are necessary." *Id.* at § 806.05(j). Related product or process inventions are only distinct if "(A) the inventions *as claimed* do not overlap in scope, i.e., are mutually exclusive; (B) the inventions *as claimed* are not obvious variants; and (C) the inventions *as claimed* are either not capable of use together or can have a materially different design, mode of operation, function, or effect." *Id.* (emphasis in original). "The burden is on the examiner to provide an example to support the determination that the inventions are distinct." *Id.*

In this case, the Examiner has failed to meet the burden set forth by MPEP § 806.05(j)(A)-(C). That is, in order to show that alleged Inventions I-IV are distinct as claimed, the Examiner must prove that each alleged invention is (A) mutually exclusive; (B) not obvious variants, **and** (C) "not capable of use together or can have a materially different design, mode of operation, function, or effect." *See Id.* at § 806.05(j)(A)-(C). The Examiner did not prove each of (A)-(C), but instead merely made conclusory statements that "[i]n the instant case, the inventions as claimed have a materially different design, mode of operation, function, or effect.

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Furthermore, the inventions as claimed do not encompass overlapping subject matter and there is nothing of record to show them to be obvious variants." *Restriction Requirement*, p. 2-3. The Examiner did not cite to any claim elements to support that conclusion. Further, the Examiner did not provide an example to support the determination that alleged Inventions I-IV are distinct, as required by MPEP § 806.05(j).

However, regardless of the deficiency of the restriction, alleged Inventions I, II, III, and IV, as claimed in independent claims 1, 19, 35, and 48 are not distinct for at least the reason that they overlap in scope. *See* MPEP § 806.05(j)(A). Each of claims 1, 19, 35 and 48 directed to alleged Inventions I, II, III, and IV, respectively, include a carburetor and either a fuel shutoff or a fuel cut-off attached to the carburetor. In addition, each of claims 19, 35, and 48 directed to alleged Inventions II, III, and IV include that the carburetor has a float bowl, a throat, and a fuel passage to provide fuel from the float bowl to the throat. Claims 19, 35, and 48 also include that the fuel shutoff or fuel cut-off attaches to the carburetor to close the fuel passage. In comparison, claim 6 of alleged Invention I includes a fuel path to the engine that is opened and closed by the fuel cut-off. As such, all of alleged Inventions I, II, III, and IV include a carburetor and a fuel shutoff/cut-off that attaches to the carburetor to close a fuel passage/path.

In addition, alleged Inventions I, II, and IV, as claimed in independent claims 1, 19, and 48, respectively, are not distinct since they overlap in scope regarding the carburetor attached to an intake of an engine. Each of claims 1, 19, and 48 include an engine operable on a gaseous fuel and a liquid fuel. Also, claims 1, 30, and 48 directed to alleged Inventions I, II, and IV, respectively, all include a switch to change operation of the engine between gaseous fuel and liquid fuel. Furthermore, claim 1 (alleged Invention I) includes the liquid fuel cut-off attached to the carburetor to interrupt liquid fuel upon actuation of the switch from liquid fuel to gaseous fuel. Claim 19 (alleged Invention II) includes the fuel shutoff attached to the carburetor to close the fuel passage upon selection of engine operation to gaseous fuel. Claim 48 (alleged Invention IV) includes 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. Therefore, each of alleged Invention I, II, and IV as claimed in independent claims 1, 19, and 48, respectively, include that the fuel shutoff/cut-off attaches to the carburetor to interrupt liquid fuel or close a liquid fuel passage upon selection of engine operation to gaseous fuel.

All of alleged Inventions I, II, III, and IV as claimed in claims 15, 25, 44, 55, respectively, also include a cable actuated fuel shutoff/cut-off. Initially, each of claims 14, 21, 37, and 53 directed to alleged Inventions I, II, III, and IV, respectively, include a rotating shaft extending through an aperture or opening in the carburetor, and either a blocking member or a

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valve member couples to the shaft in the carburetor that rotates to selectively control fuel flow through a fuel passage/path within the carburetor. Furthermore, each of alleged Inventions I, II, III, IV (via claims 14, 26, 42, 52, respectively) includes a fuel seal around the shaft for the aperture or opening in the carburetor. Each of alleged Inventions I, II, III, IV (via claims 15, 25, 44, 55, respectively) includes a lever coupled to the shaft, and a cable couples to the lever to actuate the blocking/valve member. Therefore, as claimed, alleged Invention I, II, III, and IV overlap in scope and cannot be said to be mutually exclusive under MPEP § 806.05(j).

In light of the above, alleged Invention I, II, III, and IV as claimed in claims 1-18, 56-57, 60-61; claims 19-34, 58-59, 62-63; claims 35-47; and claims 48-55; respectively, are not distinct. The Examiner has not met the burdens set forth by MPEP § 806.05(j) to show that alleged Inventions I-IV, as claimed, are distinct, as the Examiner has not shown that the alleged inventions are mutually exclusive, not obvious variants, **and** not capable of use together / have a materially different design, mode of operation, function, or effect. On the contrary, alleged Inventions I-IV, as called for in the claims, are related under the present disclosure and overlap in scope. Accordingly, Applicant respectfully requests that the restriction between alleged Inventions I, II, III, and IV be withdrawn.

Conclusion

For all these reasons, Applicant respectfully requests rejoinder of all claims, of each group. The Examiner is invited to call the undersigned to discuss this Election or any other matters regarding this application to further prosecution.

Respectfully submitted,

/Kevin R. Rosin/

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Registration No. 55,584
Phone 262-268-8100
krr@zpspatents.com

Dated: June 21, 2017
Attorney Docket No.: CET1090.042

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Port Washington, WI 53074
262-268-8100

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IN THE CLAIMS:

1. (Original) 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 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.

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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.

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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. (Withdrawn) 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,

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.

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

21. (Withdrawn) 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.

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

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

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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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) A carburetor having a fuel shutoff comprising:

a carburetor comprising:

a float bowl,

a throat,

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

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

37. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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.

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

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

47. (Withdrawn) 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. (Withdrawn) 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,

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

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.

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

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

53. (Withdrawn) 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. (Withdrawn) 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. (Withdrawn) 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.

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

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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
14/925,441	10/28/2015	

ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 06/21/2017

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 63	Minus	** 63	= 0	X $40 =	0
Independent (37 CFR 1.16(h))	* 4	Minus	***4	= 0	X $210 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
CURTIS NELLOMS JR

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

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

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

26629 7590 04/21/2017
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

EXAMINER
TRAN, LONG T

ART UNIT	PAPER NUMBER
3747	

NOTIFICATION DATE	DELIVERY MODE
04/21/2017	ELECTRONIC

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

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

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

info@zpspatents.com
sml@zpspatents.com

Office Action Summary	Application No. 14/925,441	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 2 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 *28 October 2015*.

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

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

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

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

Disposition of Claims*

5)☒ Claim(s) *1-63* 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) _____ is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) *1-63* 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: _____.

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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.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1 – 18, 56 – 57, 60 - 61, drawn to a Dual Fuel engine, classified in F02D 19/06.

II. Claims 19 – 34, 58 – 59, 62 - 63, drawn to a Generator, classified in F02B 63/04.

III. Claims 35 – 47, drawn to a Carburetor, classified in F02M 17/20.

IV. Claims 48 – 55, drawn to a process of making an engine, classified in B23P 19/042.

3. The inventions are distinct, each from the other because of the following reasons:

Inventions I, II, III and IV are directed to related internal combustion engines. The related inventions are distinct if: (1) the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect; (2) the inventions do not overlap in scope, i.e., are mutually exclusive; and (3) the inventions as claimed are not obvious variants. See MPEP § 806.05(j). In the instant case, the inventions as claimed have a materially different design, mode of operation, function, or effect. Furthermore, the inventions as claimed do not encompass

overlapping subject matter and there is nothing of record to show them to be obvious variants.

4. Restriction for examination purposes as indicated is proper because all the inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and/or examination burden if restriction were not required because one or more of the following reasons apply:

Each of the inventions as listed are patentable distinct in scope and would require a serious burden of search on the Examiner since each related search field comprise of vastly different engine designs that do not overlap in the invention's scope. In addition, the distinct inventions that are different in scope present embodiments that do not overlap in scope that would allow for a reasonable search.

5. **Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined** even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after

the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103 or pre-AIA 35 U.S.C. 103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be corrected in compliance with 37 CFR 1.48(a) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. A request to correct inventorship under 37 CFR 1.48(a) must be accompanied by an application data sheet in accordance with 37 CFR 1.76 that identifies each inventor by his or her legal name and by the processing fee required under 37 CFR 1.17(i).

6. 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.

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/
Examiner, Art Unit 3747

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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								
	1	÷								
	2	÷								
	3	÷								
	4	÷								
	5	÷								
	6	÷								
	7	÷								
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IPR2025-01457

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14925441	COLLIE ET AL.
	Examiner	Art Unit
	LONG T TRAN	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								
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MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/925,441	10/28/2015	Kendall J. Collie	CET1090.042

CONFIRMATION NO. 1059

PUBLICATION NOTICE

26629
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

Title:BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF

Publication No.US-2016-0363099-A1
Publication Date:12/15/2016

NOTICE OF PUBLICATION OF APPLICATION

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

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

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

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

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

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
14/925,441	10/28/2015	3747	2660	CET1090.042	63	4

CONFIRMATION NO. 1059

FILING RECEIPT

26629
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)
136 S WISCONSIN ST
PORT WASHINGTON, WI 53074

OC000000078549464

Date Mailed: 11/10/2015

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

Inventor(s)

Kendall J. Collie, Anaheim Hills, CA;
Mark J. Sarder, Waukesha, WI;
Aleko D. Sotiriades, Cedarburg, WI;
James J. Dehn, Brookfield, WI;
Leigh Jenison, Hartland, WI;
Hiroaki Sato, Brookfield, WI;

Applicant(s)

Champion Engine Technology, LLC, Sussex, WI;

Power of Attorney: The patent practitioners associated with Customer Number 26629

Domestic Priority data as claimed by applicant

This application is a CIP of 14/738,060 06/12/2015

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

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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/925,441**

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

Projected Publication Date: 12/15/2016

Non-Publication Request: No

Early Publication Request: No
** **SMALL ENTITY** **
Title

BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF

Preliminary Class

123

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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MWE Investments, LLC et al v. Champion Power Equip., Inc.
IPR2025-01457

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 14/925,441

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	63 minus 20 =	* 43	x 40 =	1720	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	x 210 =	210			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	2660		TOTAL	

APPLICATION AS AMENDED - PART II

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

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

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

Doc Code: PA..
Document Description: Power of Attorney

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I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

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☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 26629

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I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

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☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	
Name	Mark J. Sarder		
Title	Vice President of Engineering, Champion Engine Technology, LLC		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

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Application Number	
Filing Date	
First Named Inventor	Kendall J. Collie
Title	BATTERYLESS DUAL FUEL ENGINE WITH LIQUID FUEL CUT-OFF
Art Unit	
Examiner Name	
Attorney Docket Number	CET1090.042

SIGNATURE of Applicant or Patent Practitioner

Signature	/Timothy J. Ziolkowski/	Date (Optional)	
Name	Timothy J. Ziolkowski	Registration Number	38368
Title (if Applicant is a juristic entity)	Patent Practitioner		
Applicant Name (if Applicant is a juristic entity)	Champion Engine Technology, LLC		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

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(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	
First Named Inventor	Kendall J. Collie et al.
Art Unit	
Examiner Name	
Attorney Docket Number	CET1090.042

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	2722208		1955-11-01	Conroy, Jr. et al.	
	2	4372276		1983-02-08	Bernhardsson et al.	
	3	4450821		1984-05-29	Venning et al.	
	4	4489699		1984-12-25	Poehlman	
	5	4502453		1985-03-05	Kabasin et al.	
	6	4619240		1986-10-28	Bedford et al.	
	7	4895124		1990-01-23	Bartholomew	
	8	5171487		1992-12-15	Hudz	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Kendall J. Collie et al.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CET1090.042

	9	5287839		1994-02-22	Kondou et al.	
	10	5320078		1994-06-14	Lorraine	
	11	5379740		1995-01-10	Moore et al.	
	12	5419291		1995-05-30	Kimata et al.	
	13	5438968		1995-08-08	Johnson et al.	
	14	5450832		1995-09-19	Graf	
	15	5673670		1997-10-07	Powell et al.	
	16	5816224		1998-10-06	Welsh et al.	
	17	6082323		2000-07-04	Winberg	
	18	6213083	B1	2001-04-10	Winberg	
	19	6223730	B1	2001-05-01	Hasegawa et al.	

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	Application Number	
	Filing Date	
	First Named Inventor	Kendall J. Collie et al.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CET1090.042

	20	6276345	B1	2001-08-21	Nelson et al.	
	21	6401685	B1	2002-06-11	Warner	
	22	6453877	B1	2002-09-24	Lucier et al.	
	23	6914342	B1	2005-07-05	French	
	24	7905469	B2	2011-03-15	Nickels et al.	
	25	8342158	B2	2013-01-01	Ulrey et al.	
	26	8590510	B2	2013-11-26	Surnilla et al.	
	27	5161496		1992-11-10	Matsushima et al.	
	28	5325835		1994-07-05	Kimata et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	
	First Named Inventor	Kendall J. Collie et al.
	Art Unit	
	Examiner Name	
	Attorney Docket Number	CET1090.042

	1	20130047964	A1	2013-02-28	Kim	
	2	20130220274	A1	2013-08-29	Deshpande et al.	

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	1	Honda EU20i LPG, March 20, 2012, https://www.youtube.com/watch?v=yBpq33aJmR0	☐
	2	JOHNSON et al., "Electronic Direct Fuel Injection (EDFI) for Small Two-Stroke Engines," SAE Technical Paper 1999-01-3312, Proceedings of the 1999 SAE Small Engine Technology Conference, Madison, WI, September 28-30, 1999, pp. 1-15	☐

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Examiner Signature		Date Considered	

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