

36, 40. Selector plate 28 also includes slots or grooves 44 formed therein that are positioned both above and below the first and second fuel valve handles 34, 38, with the slots 44 extending generally in a lengthwise fashion along a length of the selector plate 28. Each of the slots 44 is configured to receive a protrusion or flange formed on selector switch 30, such that the selector switch 30 can be slideably coupled to the selector plate 28 – with the selector switch 30 being translatable in a linear fashion by way of its mating with the slots 44.

[0026] Detailed views of the selector switch 30 and of its mating with the selector plate 28 are shown in FIGS. 4-6. Referring first to FIG. 4, the general structure of selector switch 30 is shown according to an exemplary embodiment. Protrusions or flanges 46 are formed on each of top and bottom surfaces of the selector switch 30 that are configured to mate with the corresponding slots 44 formed in selector plate 28 (FIG. 3). The protrusions 46 may be flexible so as to accommodate coupling of the selector switch 30 to the selector plate 28. A front surface 48 of selector switch 30 includes finger-hold depressions 50 formed therein that accommodate the fingers of an operator, with the finger-holds providing a convenient feature by which the operator can operate (i.e., slide) the selector switch 30. A back surface 52 of the selector switch 30 includes a groove or channel 54 formed therein having a width and depth sufficient to receive the first and second fuel valve handles 34, 38 therein when in their horizontal position (i.e., the OFF position). The groove 54 is further sized and configured such that the first and second fuel valve handles 34, 38 will not fit therein when in their vertical position (i.e., the ON position).

[0027] Positioning of the selector switch 30 relative to the selector plate 28 and first and second valve assemblies 24, 26 is shown in FIGS. 5 and 6. As shown therein, positioning of the first valve assembly 24 and second valve assembly 26 adjacent selector plate 28 – and on the same horizontal plane - provides for selective positioning of the selector switch 30 relative to the fuel valve handles 34, 38 in what are generally referred to hereafter as a first position and a second position 56, 58. The selector switch 30 is translatable in a horizontal motion – via a sliding motion within slots 44 of the selector plate 28 – from the first position 56 (FIG. 5) to the second position 58 (FIG.

6) to selectively restrict actuation of the first and second fuel valve handles 34, 38. As the groove 54 formed in selector switch 30 is configured such that the first and second fuel valve handles 34, 38 will not fit therein when in their vertical position (i.e., the ON position), it is recognized that in order to translate the selector switch 30 back and forth between the first and second positions 56, 58, both of the fuel valve handles 34, 38 must be in their horizontal OFF position.

[0028] In FIG. 5, selector switch 30 is illustrated in the first position 56. When selector switch 30 is in first position 56, selector switch 30 covers second fuel valve handle 38, and groove 54 formed on the back surface 52 of the fuel selector switch 30 locks second fuel valve handle 38 in an OFF position, so as to prohibit the second valve assembly 26 from moving to the ON position. Further, when selector switch 30 is in first position 56, first valve assembly 24 is able to move freely between the ON position and the OFF position, with the first fuel valve handle 34 being actuatable by the operator. In one embodiment of the invention, when first valve assembly 24 is in the ON position, first fuel valve handle 34 is in a vertical position and prevents selector switch 30 from moving horizontally from first position 56 to second position 58.

[0029] In operation, when selector switch 30 is moved from second position 58 into first position 56, second fuel valve handle 38 slides into the groove 54 formed in selector switch 30. As a result, when selector switch 30 is in first position 56, second fuel valve handle 38 is unable to move, as it is locked in place by groove 54, and second valve assembly 26 is locked in the OFF position, with movement from the OFF position to the ON position being prohibited.

[0030] IN FIG. 6, selector switch 30 is illustrated in the second position 58. When selector switch 30 is in second position 58, selector switch 30 covers first fuel valve handle 34, and groove 54 formed on the back surface 52 of the fuel selector switch 30 locks first fuel valve handle 34 in an OFF position, so as to prohibit the first valve assembly 24 from moving to the ON position. In addition, when selector switch 30 is in second position 58, second valve assembly 26 is able to freely move between the ON position and the OFF position, with the second fuel valve handle 38 being actuatable by

the operator. In one embodiment of the invention, when second valve assembly 26 is in the ON position, second fuel valve handle 38 is in a vertical position and prevents selector switch 30 from moving horizontally from second position 58 to first position 56.

[0031] In operation, when selector switch 30 is moved from first position 56 into second position 58, first fuel valve handle 34 slides into groove 54 formed in selector switch 30. Therefore, when selector switch 30 is in second position 58, first fuel valve handle 34 is unable to move, as it is locked in place by groove 54, and first valve assembly 24 is locked in the OFF position, with movement from the OFF position to the ON position being prohibited.

[0032] Referring still now to FIG. 6, according to an exemplary embodiment of the invention, the fuel selector 22 of generator 10 further comprises a carburetor solenoid switch 32 that is positioned within an opening 60 formed in selector plate 28 so as to extend therethrough and is further positioned adjacent second valve assembly 26 (i.e., second fuel valve handle 38). As solenoid switch 32 is located adjacent to the second valve assembly 26 – which is in turn connected to the gasoline fuel source 20 – selector switch 30 covers and triggers solenoid switch 32 when slid from the second position 58 to the first position 56 – by depressing the solenoid switch 32 as it comes in contact therewith. When solenoid switch 32 is triggered, a carburetor shutoff solenoid operatively connected to the solenoid switch 32 is activated and shuts off the flow of gasoline to the carburetor 16 (FIG. 2). In the preferred embodiment of the invention, solenoid switch 32 is a depressible switch, but it is contemplated that solenoid switch 32 may be another type of switch that can be activated via interaction with selector switch 30 or via interaction with either valve handle 34, 38, so as to activate the carburetor shutoff solenoid.

[0033] Beneficially, the design of the fuel selector 22 and of the selector switch 30 described herein prevents differing fuels from two separate fuel sources from flowing to the engine of a dual fuel generator at the same time. The interaction of the selector switch 30 with the first and second fuel valve assemblies 24, 26 – with the selector

switch 30 sliding back and forth to selectively cover/engage first and second fuel valve assemblies 24, 26 - prohibits both valve assemblies from being in the “ON” position at the same time. The selector switch 30 is thus a foolproof device that prevents the mixing of fuels so as to provide additional safety to the usage of dual fuel generators.

[0034] Therefore, according to one embodiment of the invention, a fuel selector for use with a dual fuel generator includes a selector plate, a first fuel valve assembly positioned adjacent the selector plate and actuatable between an ON position and an OFF position to selectively control a first fuel flow to an engine of the dual fuel generator, and a second fuel valve assembly positioned adjacent the selector plate and actuatable between an ON position and an OFF position to selectively control a second fuel flow to the engine of the dual fuel generator. The fuel selector also includes a selector switch coupled to the selector plate so as to be linearly translatable from a first position to a second position, wherein translation of the selector switch between the first and second positions enables positioning of only one of the first fuel valve assembly and the second fuel valve assembly in the ON position at a given time, such that the first and second fuel valve assemblies cannot be in the ON position concurrently.

[0035] According to another embodiment of the invention, a method of controlling fuel flow in a dual fuel generator includes providing a first fuel valve assembly to control fuel flow from a first fuel source to an internal combustion engine of the dual fuel generator, the first fuel valve assembly including a first fuel valve handle movable between an ON position and an OFF position to control fuel flow from the first fuel source to the internal combustion engine. The method also includes providing a second fuel valve assembly to control fuel flow from a second fuel source to the internal combustion engine of the dual fuel generator, the second fuel valve assembly including a second fuel valve handle movable between an ON position and an OFF position to control fuel flow from the second fuel source to the internal combustion engine. The method further includes providing a fuel selector switch adjacent the first fuel valve assembly and the second fuel valve assembly such that the fuel selector switch is translatable to a first position and a second position, wherein the fuel selector switch is translatable between the first position and the second position to selectively inhibit

actuation of the first fuel valve handle and the second fuel valve handle, so as to prevent a simultaneous flow of fuels from the first and second fuel sources to the internal combustion engine.

[0036] According to yet another embodiment of the invention, a dual fuel generator includes a first fuel source, a second fuel source, and an internal combustion engine coupled to the first fuel source and the second fuel source to selectively receive fuel therefrom. The dual fuel generator also includes a fuel selector configured to control a flow of fuel from the first and second fuel sources to the internal combustion engine, with the fuel selector comprising a first fuel valve assembly including a first fuel valve and a first fuel valve handle that is actuatable between an open position and a closed position to selectively open and close the first fuel valve, a second fuel valve assembly including a second fuel valve and a second fuel valve handle that is actuatable between an open position and a closed position to selectively open and close the second fuel valve, a selector plate having the first fuel valve assembly and the second fuel valve assembly coupled to a front side thereof, and a selector switch slideably coupled to the selector plate so as to be movable from a first position to a second position. Positioning of the selector switch in the first position causes the selector switch to cover the second fuel valve handle so as to prevent the second fuel valve handle from moving to the open position and positioning of the selector switch in the second position causes the selector switch to cover the first fuel valve handle so as to prevent the first fuel valve handle from moving to the open position.

[0037] While the invention has been described in connection with only a limited number of embodiments, it should be readily understood that the invention is not limited to such disclosed embodiments. Rather, the invention can be modified to incorporate any number of variations, alterations, substitutions or equivalent arrangements not heretofore described, but which are commensurate with the spirit and scope of the invention. Additionally, while various embodiments of the invention have been described, it is to be understood that aspects of the invention may include only some of the described embodiments. Accordingly, the invention is not to be seen as limited by the foregoing description, but is only limited by the scope of the appended claims.

CLAIMS

WHAT IS CLAIMED IS:

1. A fuel selector for use with a dual fuel generator, the fuel selector comprising:

a valve assembly fluidly connected to each of a first fuel source and a second fuel source, the valve assembly being operable to selectively control a first fuel flow and a second fuel flow from the first fuel source and the second fuel source, respectively, to an engine of the dual fuel generator; and

a selector switch positioned on the valve assembly to allow a user to manually select one of the first fuel flow and the second fuel flow;

wherein the valve assembly comprises:

two fuel inputs, with a first fuel input connected to the first fuel source and a second fuel input connected to the second fuel source; and

two fuel outputs for selectively supplying fuel to the engine from the first fuel source or the second fuel source.

2. The fuel selector of claim 1 wherein the two fuel outputs selectively supply fuel to the engine from only one of the first fuel source or the second fuel source, responsive to selection of the first fuel flow or the second fuel flow via the selector switch, and a corresponding operation of the valve assembly.

3. The fuel selector of claim 1 wherein the valve assembly comprises:

a first fuel valve having open and closed positions to selectively control the first fuel flow to the engine; and

a second fuel valve having open and closed positions to selectively control the second fuel flow to the engine.

4. The fuel selector of claim 3 wherein the first fuel valve and the second fuel valve are non-solenoid, mechanical valves.

5. The fuel selector of claim 2 wherein the selector switch provides for manual actuation of the first fuel valve and the second fuel valve between the open and closed positions.

6. The fuel selector of claim 1 further comprising a carburetor solenoid switch configured to activate an associated carburetor solenoid when actuated.

7. The fuel selector of claim 6 wherein, when the selector switch is in a first position, the selector switch actuates the carburetor solenoid switch, so as to activate the carburetor solenoid and stop the second fuel flow to the engine.

8. The fuel selector of claim 6 wherein, when the selector switch is in a second position, the carburetor solenoid allows the second fuel flow to the engine.

9. The fuel selector of claim 1 wherein the first fuel source is a liquefied petroleum gas (LPG) fuel source and wherein the second fuel source is a gasoline source.

10. A fuel selector of a dual fuel generator comprising:
a selector switch having a first fuel mode and a second fuel mode;
a solenoid switch having open and closed positions; and
a fuel solenoid having open and closed positions;
wherein, when the selector switch is in the first fuel mode, the solenoid switch and the fuel solenoid are in the closed positions and, when the selector switch is in the second fuel mode, the solenoid switch and the fuel solenoid are in the open positions.

11. The fuel selector of claim 10 wherein the selector switch triggers the solenoid switch when changed from the second fuel mode to the first fuel mode, so as to cause the solenoid switch and the fuel solenoid to operate in the closed positions.

12. The fuel selector of claim 10 further comprising:
a valve assembly fluidly connected to each of a first fuel source and a second fuel source, the valve assembly being operable to selectively control a first fuel flow and a second fuel flow from the first fuel source and the second fuel source, respectively, to an engine of the dual fuel generator; and
wherein positioning of the selector switch in the first fuel mode and the second fuel mode enables a selection of one of the first fuel flow and the second fuel flow.

13. The fuel selector of claim 12 wherein the valve assembly is positioned on or adjacent the selector switch.

14. The fuel selector of claim 12 wherein the valve assembly comprises:
two fuel inputs, with a first fuel input connected to the first fuel source and a second fuel input connected to the second fuel source; and
two fuel outputs for selectively supplying fuel to the engine from the first fuel source or the second fuel source.

15. The fuel selector of claim 14 wherein the two fuel outputs selectively supply fuel to the engine from only one of the first fuel source or the second fuel source, responsive to selection of the first fuel flow or the second fuel flow via the selector switch and a corresponding operation of the valve assembly.

16. The fuel selector of claim 14 wherein the valve assembly comprises:
a first fuel valve having open and closed positions to selectively control the first fuel flow to the engine; and
a second fuel valve having open and closed positions to selectively control the second fuel flow to the engine.

17. The fuel selector of claim 12 wherein the first fuel source is a liquefied petroleum gas (LPG) fuel source and wherein the second fuel source is a gasoline source.

ABSTRACT

A fuel selector for use with a dual fuel generator includes a selector plate, a first fuel valve assembly positioned adjacent the selector plate and actuatable between an ON position and an OFF position to selectively control a first fuel flow to an engine of the dual fuel generator, and a second fuel valve assembly positioned adjacent the selector plate and actuatable between an ON position and an OFF position to selectively control a second fuel flow to the engine of the dual fuel generator. A selector switch coupled to the selector plate is linearly translatable from a first position to a second position, so as to enable positioning of only one of the first fuel valve assembly and the second fuel valve assembly in the ON position at a given time, such that the first and second fuel valve assemblies cannot be in the ON position concurrently.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	DUAL FUEL SELECTOR SWITCH
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As the below named inventor, I hereby declare that:

This declaration ☒ The attached application, or
is directed to:

☐ United States application or PCT international application number _____
filed on _____

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

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

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

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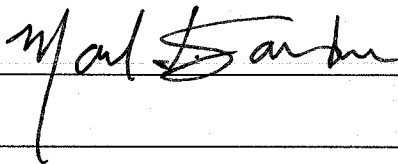
LEGAL NAME OF INVENTOR

Inventor: Mark J. Sarder

Date (Optional):

13/10/31

Signature:



Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/AIA/01 form for each additional inventor.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
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Title of
Invention

DUAL FUEL SELECTOR SWITCH

As the below named inventor, I hereby declare that:

This declaration
is directed to:



The attached application, or



United States application or PCT international application number _____

filed on _____

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

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

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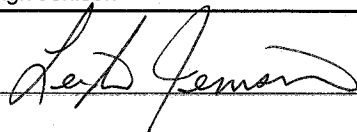
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LEGAL NAME OF INVENTOR

Inventor: Leigh Jenison

Date (Optional): 10-31-2013

Signature:



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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of
Invention

DUAL FUEL SELECTOR SWITCH

As the below named inventor, I hereby declare that:

This declaration
is directed to:



The attached application, or



United States application or PCT international application number _____

filed on _____

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

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

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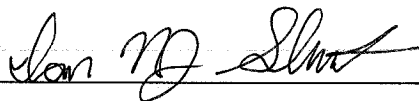
LEGAL NAME OF INVENTOR

Inventor: Ian Schmit

Date (Optional):

10/31/13

Signature:



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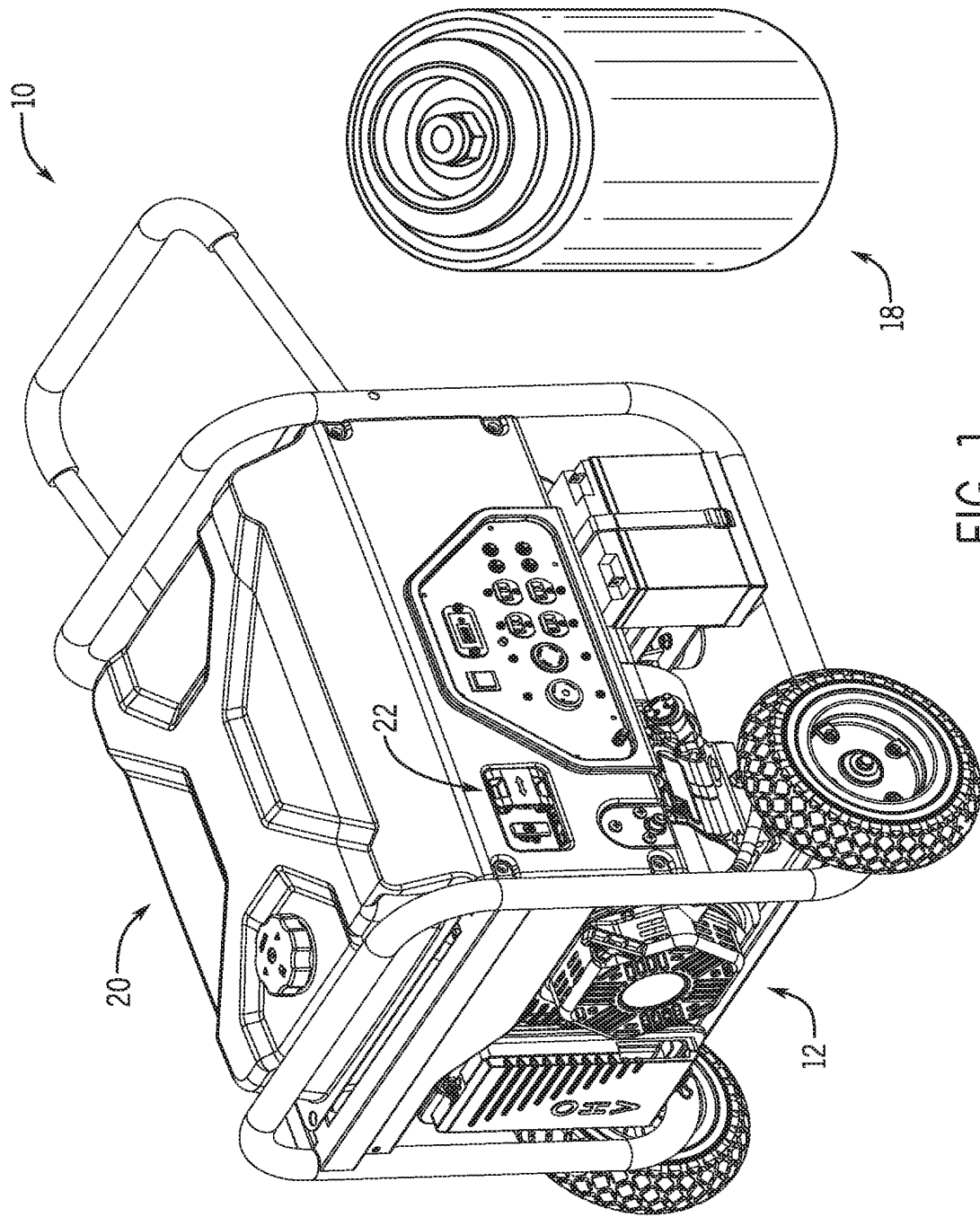
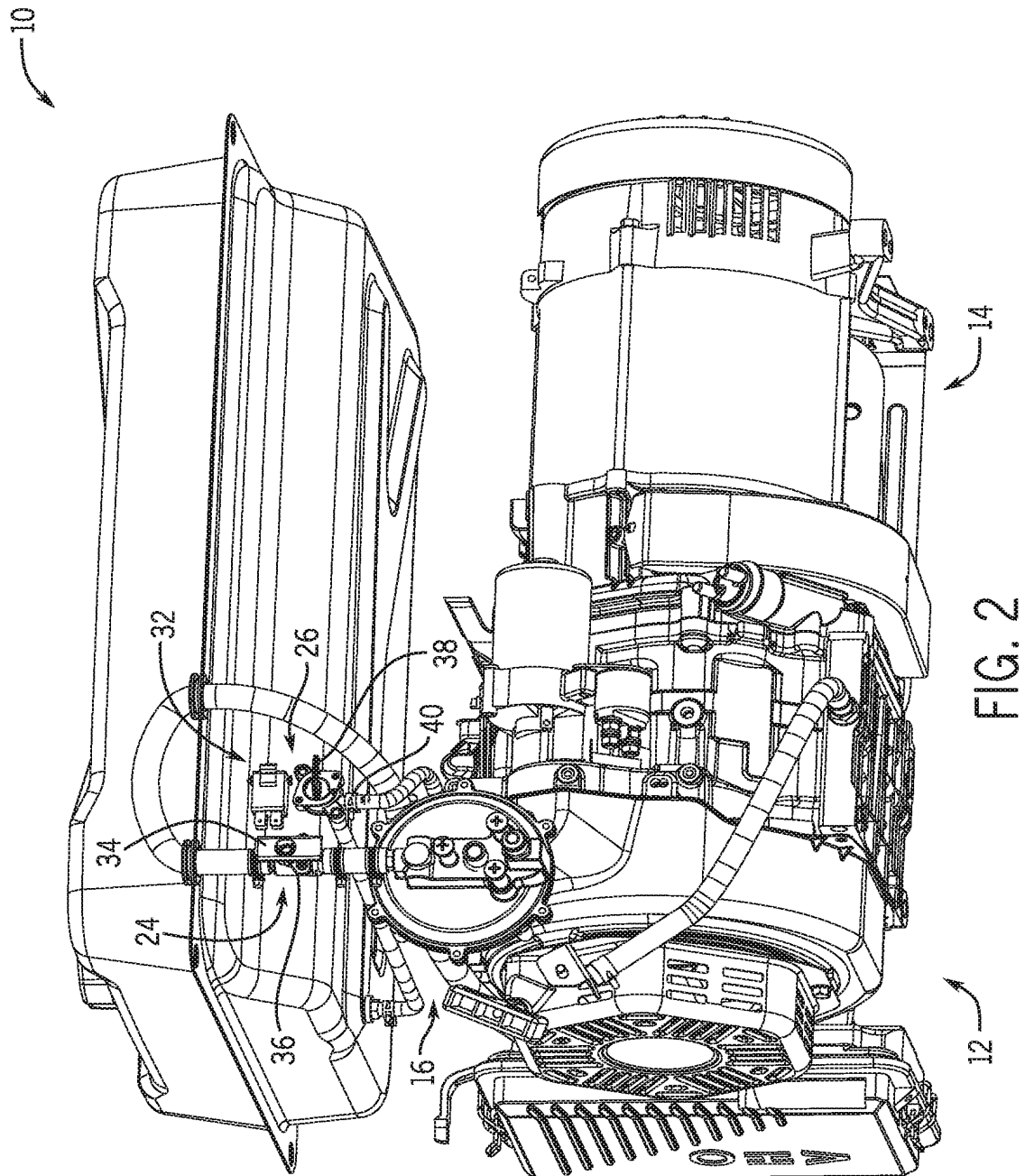


FIG. 1



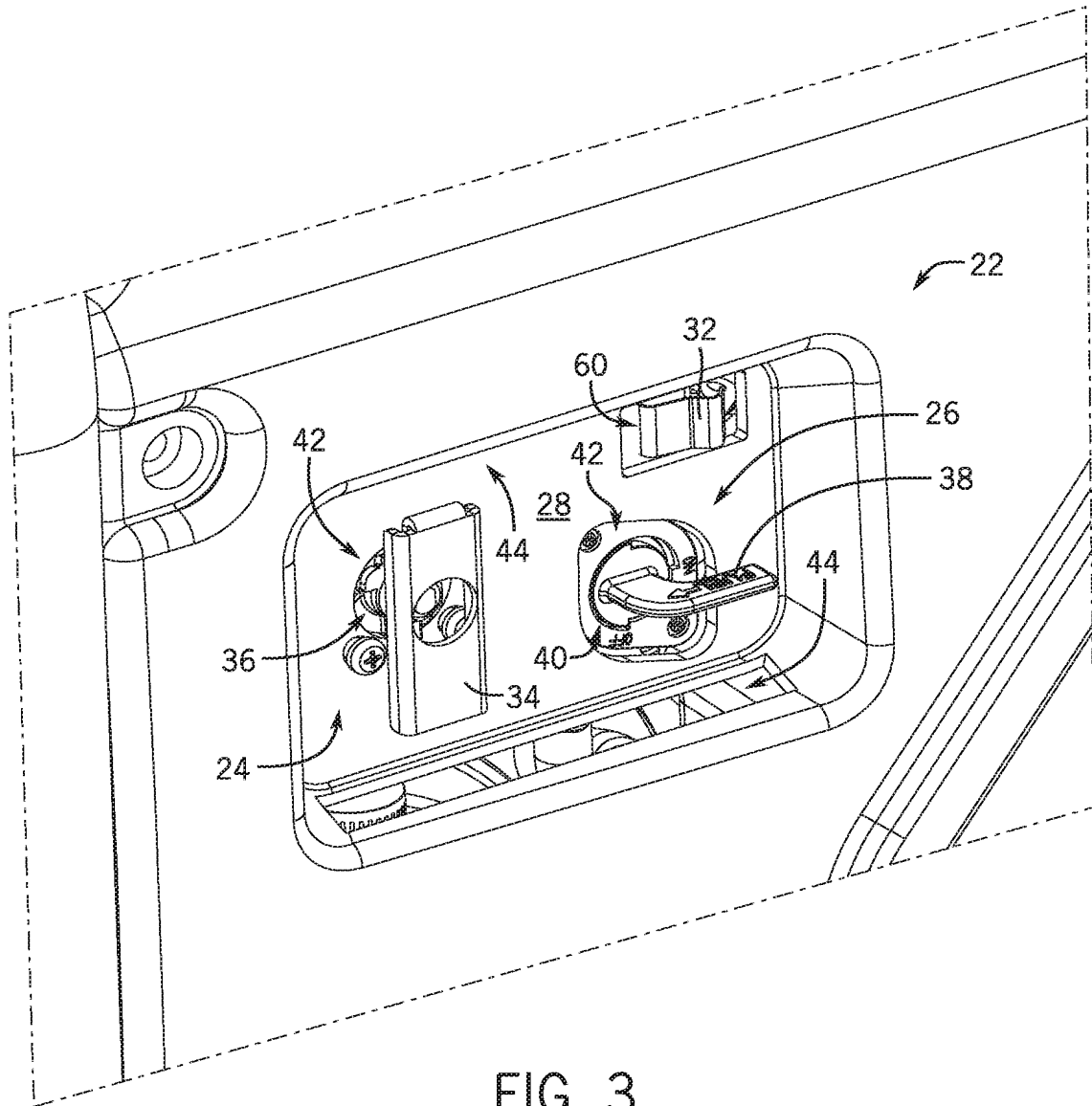


FIG. 3

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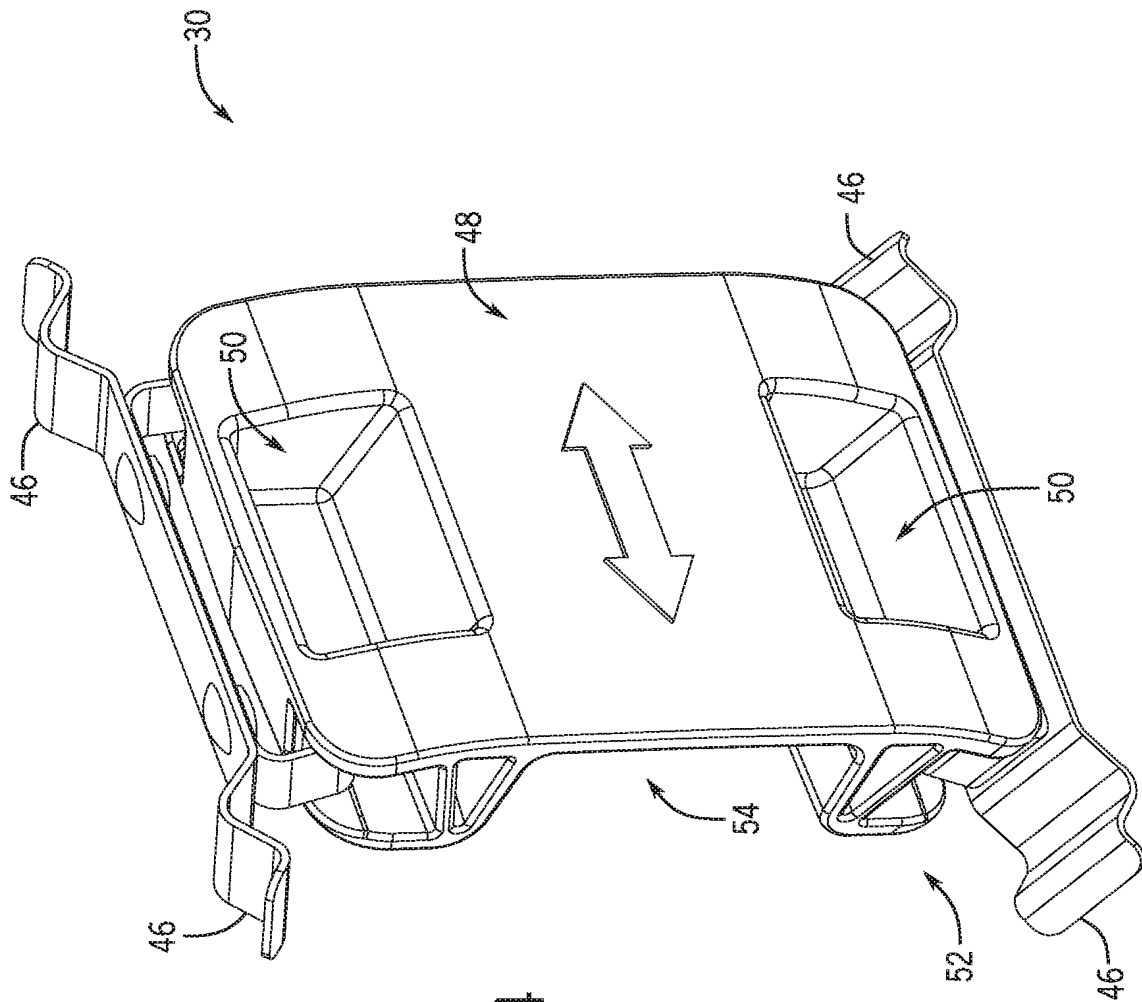


FIG. 4

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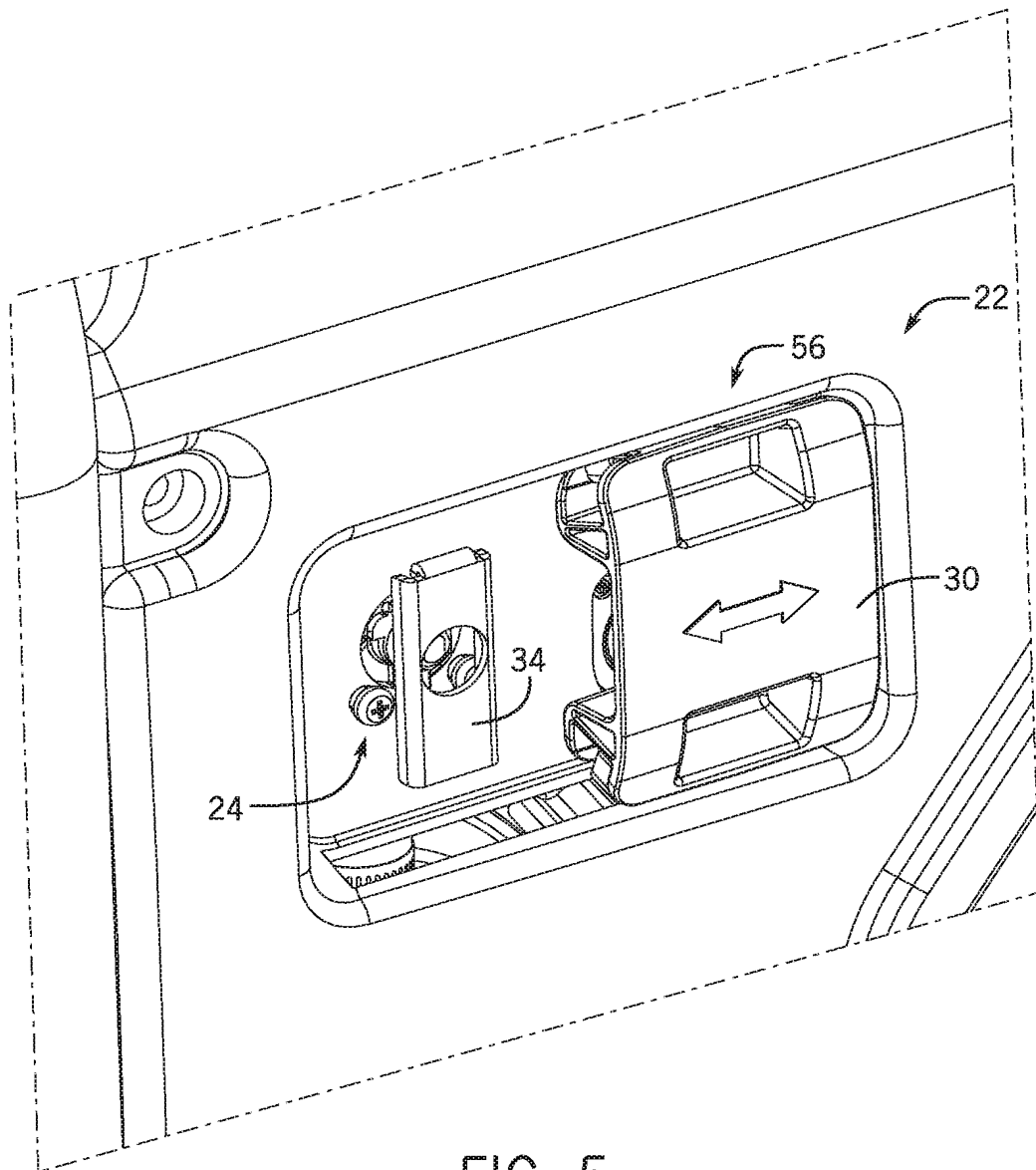


FIG. 5

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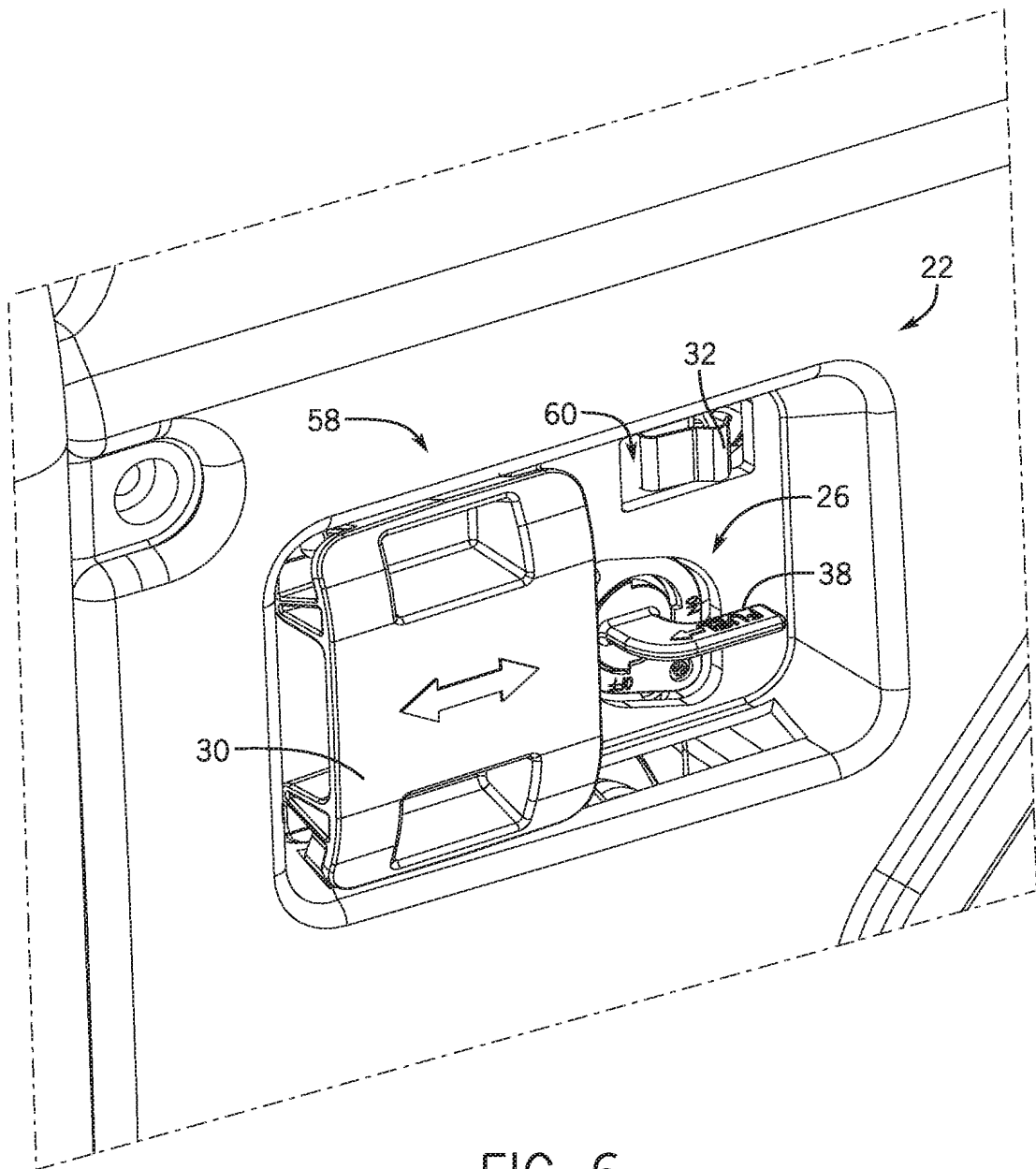


FIG. 6