

CHAMPION’S INFRINGEMENT CONTENTIONS FOR
U.S. PATENT NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.
FILING DATE: JUNE 22, 2020
PRIORITY DATE: JUNE 12, 2015

I. Firman Model WH02942¹:



II. Brief Description:

The Firman Model WH02942 is a dual fuel inverter portable generator. Model WH02942 produces 3,200W (Starting)/2,900W (Running) when using gasoline or 2,900W (Starting)/2,600W (Running) when using liquified petroleum gas (“LPG”; also known as propane). Model WH02942 can operate up to 9 hours with a 1.8-gallon gasoline tank. Model WH02942 has a battery-operated electric start and a recoil starter for its 171cc engine with a low oil shutoff and cast-iron cylinder sleeve. Model WH02942 also includes five receptacles, circuit breaker protection, and a control panel with a three-in-one data minder monitor. Model WH02942 allows for connection to another Firman inverter generator for parallel operation. Model WH02942 also has a muffler with a spark arrestor, a housing, and 5.5" never-flat tires.

III. Accused Instrumentalities:

Together with Model WH02942, the following Firman models (a)–(g) are the Accused Instrumentalities that are alleged to infringe claims 1, 2, and 4–8 (the “Asserted Claims”) of U.S. Patent No. 11,143,145 (the “’145 Patent”).

- a. Model WH02942F, a refurbished dual fuel inverter portable generator;

¹ While the product includes a “WH3200iE” label, this generator is Model WH02942. *See WH02942 Owner’s Manual*, p. 1.

CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

- b. Model WH03041, a dual fuel inverter portable generator;
- c. Model WH03042, a dual fuel inverter portable generator;
- d. Model WH03242, a dual fuel inverter portable generator;
- e. Model WH03342, a dual fuel inverter portable generator;
- f. Model WH03242F, a refurbished dual fuel inverter portable generator;
- g. Model WH03344, a dual fuel inverter portable generator.

IV. Images of Accused Instrumentalities (a)–(g):



V. Protocol:

For purposes of analyzing the Asserted Claims of the '145 Patent against the above-identified Firman generator models, Model WH02942 is considered representative. All of the above-referenced Firman generator models include components for switching between gaseous fuel and liquid fuel that infringe the claims of the '780 Patent in the same manner as discussed herein with respect to Model WH02942 and are thus all Accused Instrumentalities. In all Accused Instrumentalities, the gaseous fuel is LPG, and the liquid fuel is gasoline.

² While the product includes a “WH3200iE” label, this generator is Model WH02942F (refurbished Model WH02942). See *WH02942 Owner's Manual*, p. 1.

³ While the product includes a “WH3300i” label, this generator is Model WH03041. See *WH03041 Owner's Manual*, p. 1.

⁴ While the product includes a “WH3300iE” label, this generator is Model WH03042. See *WH03042 Owner's Manual*, p. 1.

CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

Accordingly, while the claim chart provided below in Section VIII is illustrated with reference to Model WH02942, each element in the claim chart is found in the other Accused Instrumentalities identified above in Paragraphs (a)–(g) of Section III in the same manner as illustrated with referenced to Model WH02942.

VI. Priority Dates

The priority dates for the Asserted Claims of the '780 Patent are as follows:

Asserted Claim	Priority Date
1	10/28/2015
2	10/28/2015
4	10/28/2015
5	10/28/2015
6	10/28/2015
7	10/28/2015
8	10/28/2015

VII. Statement Regarding Contributory and Induced Infringement

The claimed dual-fuel engine operates on different fuels, like a liquid fuel (e.g., gasoline) or a gaseous fuel (e.g., liquid petroleum gas or propane), but a gaseous fuel tank (e.g., an LPG tank), the gaseous fuel in the gaseous fuel tank, and liquid fuel in the liquid fuel tank (e.g., gasoline in a gasoline tank) are not required for infringement unless explicitly claimed in the Asserted Claims. Nonetheless, to the extent the Court construes any claim to require a gaseous fuel tank, gaseous fuel in the gaseous fuel tank, or liquid fuel in a liquid fuel tank, Firman contributes to or induces infringement by instructing its users to use a gaseous fuel tank, gaseous fuel, and to fill the liquid fuel tank in order to operate the multi-fuel engine.

Firman induces infringement of various Asserted Claims by specifically instructing its customers to attach an LPG tank to the engine and to put liquid fuel in the liquid fuel tank. [See Firman Owner's Manual for Model Number WH02942 at 13 ("ADD FUEL 1. Gasoline . . . Use regular UNLEADED gasoline with the generator engine with a minimum 87 octane") (*emphasis in original*) and ("2 - Connecting Liquid Petroleum Gas (LPG/Propane) Cylinder), and at 20 (providing instructions for operating generator, including "connect[ing] the regulator (A) to both LPG cylinder and generator").] To the extent the Court construes any Asserted Claim to require an LPG tank, gaseous fuel, or

CHAMPION’S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

liquid fuel for infringement, when Firman’s customers use the Accused Instrumentalities with a filled LPG tank connected and with fuel in the liquid fuel tank, the infringement of any such Asserted Claims is completed. As such, Firman’s instructions to customers to connect a filled LPG tank and fill the liquid fuel tank before operation of the Accused Instrumentalities constitutes indirect infringement.

For the same reasons, Firman’s conduct also constitutes contributory infringement. To the extent the Court’s claim construction requires an LPG tank, gaseous fuel, or liquid fuel for infringement, Firman supplies its customers every component necessary to infringe the Asserted Claims except the filled LPG tank and the liquid fuel. Because the Owner’s Manual for the Model WH02942 generator instructs customers to connect a filled LPG tank to the generator, [*see id.*], and to fill the liquid fuel tank with fuel, [*id.*], Firman knew that the Model WH02942 would be used to infringe any applicable Asserted Claims. By connecting and using the Accused Instrumentalities with a filled LPG tank connected or with liquid fuel in the liquid fuel tank, Firman’s customers complete the infringement of such Asserted Claims. As such, Firman’s conduct also constitutes contributory infringement of such Asserted Claims.

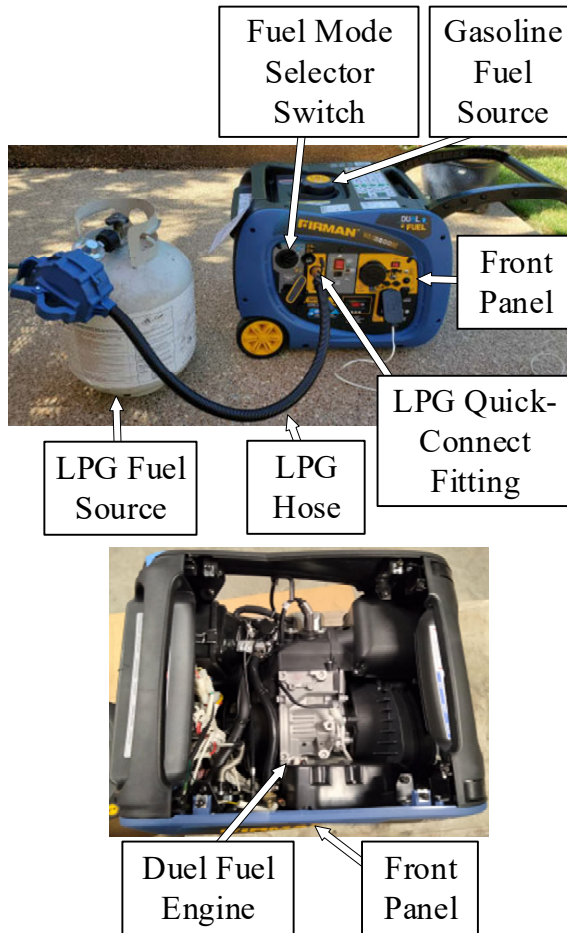
Champion incorporates this Section VII by reference into any element of any asserted claim that is construed to require attachment of a gaseous fuel tank, gaseous fuel, or filling of the liquid fuel tank with fuel.

VIII. Claim Chart:

'145 Patent Claims	Accused Instrumentality Components Illustrated with Respect to Model WH02942
1. (Preamble) A dual fuel generator comprising:	Although not necessary for infringement ⁵ , the preamble of claim 1 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) as follows:

⁵ The preambles of the Asserted Claims of the '145 Patent are not limiting and therefore should not be part of the infringement analysis. *See Artic Cat Inc. v. GEP Power Prods., Inc.*, 919 F.3d 1320, 1328 (Fed. Cir. 2019) (“We have long ruled that ‘a preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.’”) (*quoting Cataline Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002)). Nonetheless, Champion provides general description of Model WH02942 next to the preamble to show how it meets the preamble and to assist in the infringement analysis by giving an overview of the Accused Instrumentalities. Champion incorporates this footnote by reference in the preambles of all the Asserted Claims.

CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.



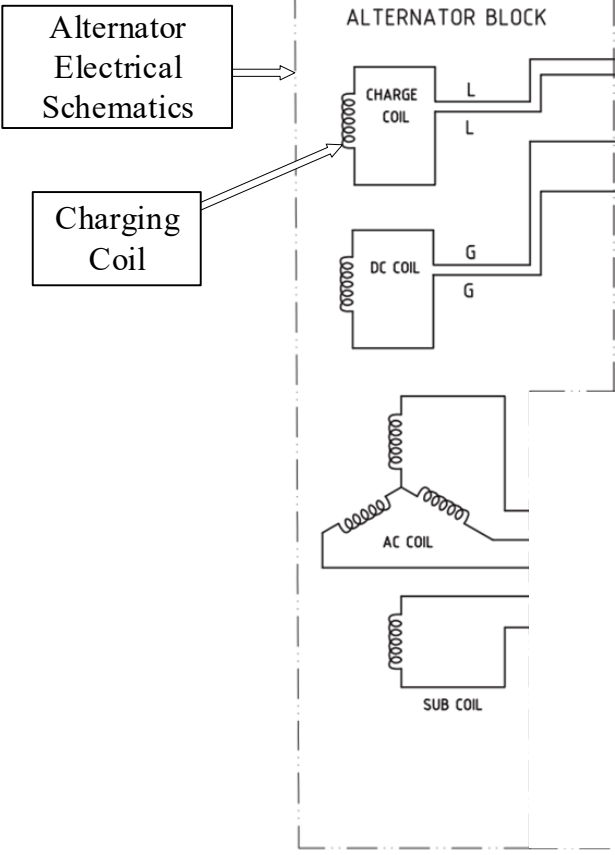
Model WH02942 is a dual fuel generator that includes a dual fuel engine that may run on fuel from either of two fuel sources. One fuel source is a liquid fuel source in the form of a gasoline tank, and the other fuel source is a gaseous fuel source in the form of a pressurized LPG tank. Model WH02942 also includes a fuel delivery system with a plurality of fuel lines that feed fuel from the fuels sources to the engine.

CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

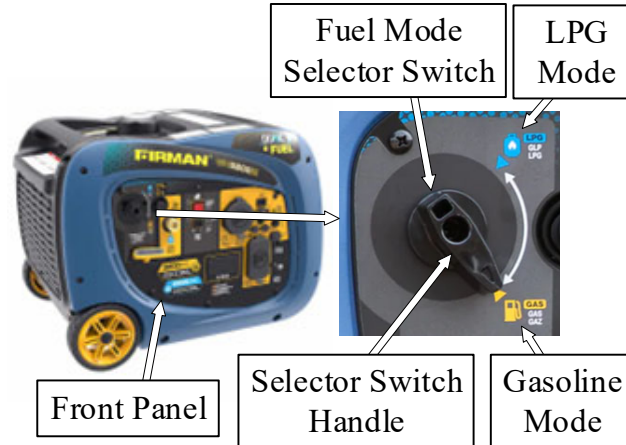
(a) an engine operable on a gaseous fuel and a liquid fuel;	Element (a) of claim 1 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally⁶ as follows: As similarly explained above with respect to the preamble of claim 1, the engine of Model WH02942 is a dual fuel engine that is operable on liquid gasoline (the “liquid fuel”) and gaseous LPG (the “gaseous fuel”).
(b) an electrical power generator driven by the engine and comprising a charging coil;	Element (b) of claim 1 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Model WH02942 includes an alternator (an electrical power generator) driven by the engine. The alternator includes a charging coil.

⁶ To the extent further discovery or claim construction reveals that any of the Accused Instrumentalities do not literally infringe the '145 Patent, Champion reserves the right to argue the Accused Instrumentalities infringe any of the Asserted Claims of the '145 Patent under the doctrine of equivalents. Champion incorporates this footnote by reference into each element of each Asserted Claim that Champion alleges is literally infringed by the Accused Instrumentalities.

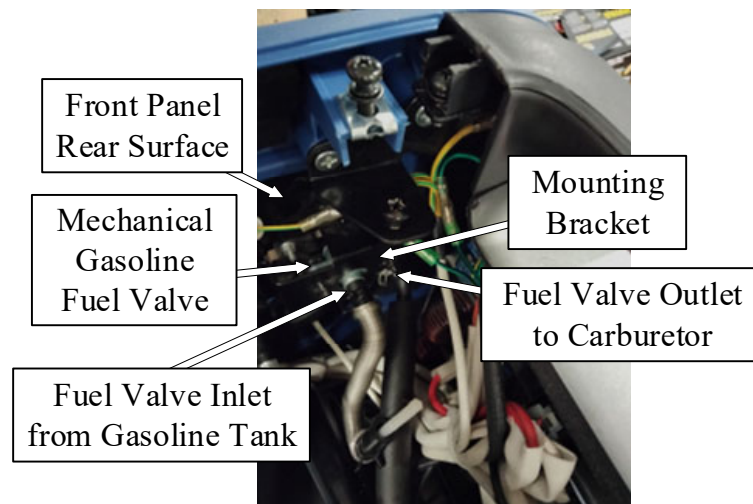
CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

	
(c) a switch to change operation of the engine between gaseous fuel and liquid fuel;	Element (c) of claim 1 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Model WH02942 includes an electro-mechanical switch to change operation of the engine between gaseous LPG and liquid gasoline. The electro-mechanical switch includes the Model WH02942 fuel mode selector switch (“selector switch”) and an electrical switch engaged by a tab on the selector switch that collectively control a valve assembly. The selector switch is rotatable between an LPG Mode and a Gasoline Mode via a handle on the front of the selector switch.

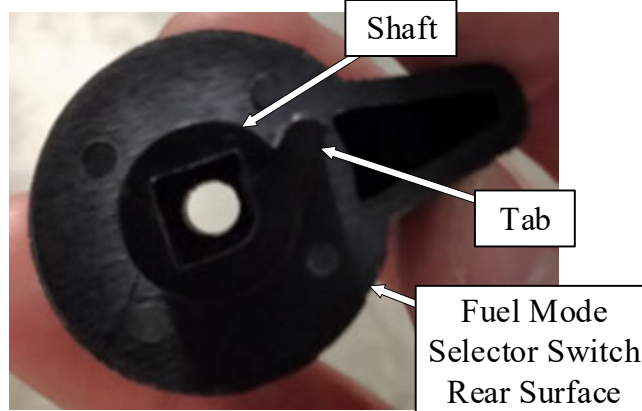
CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.



The valve assembly includes a mechanical gasoline fuel valve (the “gasoline valve”), a carburetor cutoff solenoid valve (the “carburetor solenoid”), and an LPG cutoff solenoid valve (the “LPG solenoid”). The gasoline valve is positioned behind the front panel of the generator and is part of a gasoline fuel line between the gasoline tank and the engine. The selector switch engages the gasoline valve via a shaft extending from a rear surface of the selector switch. As the selector switch rotates, the selector switch actuates the gasoline valve.

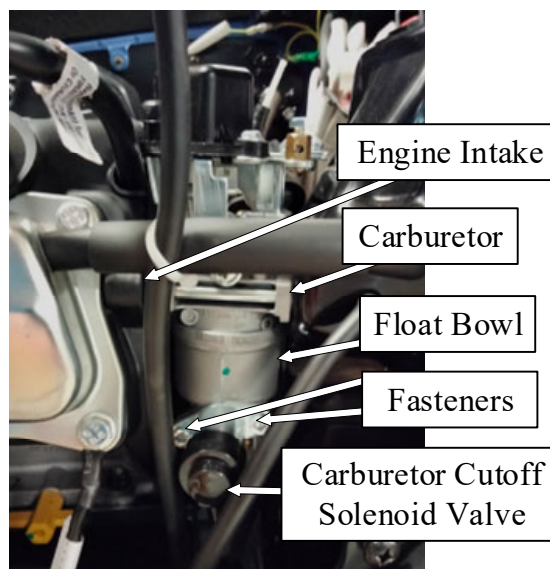


CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.



When the selector switch is in LPG Mode, the gasoline valve is in a closed position preventing gasoline from flowing to the engine. When the selector switch rotates to Gasoline Mode, the selector switch actuates the gasoline fuel valve to an open position allowing gasoline to flow to the engine.

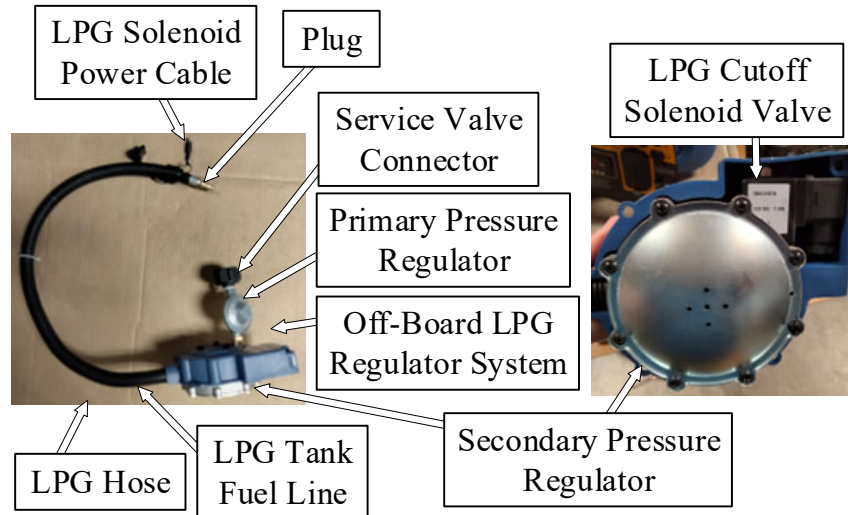
The carburetor solenoid selectively cuts off the flow of gasoline through the carburetor and to the engine.



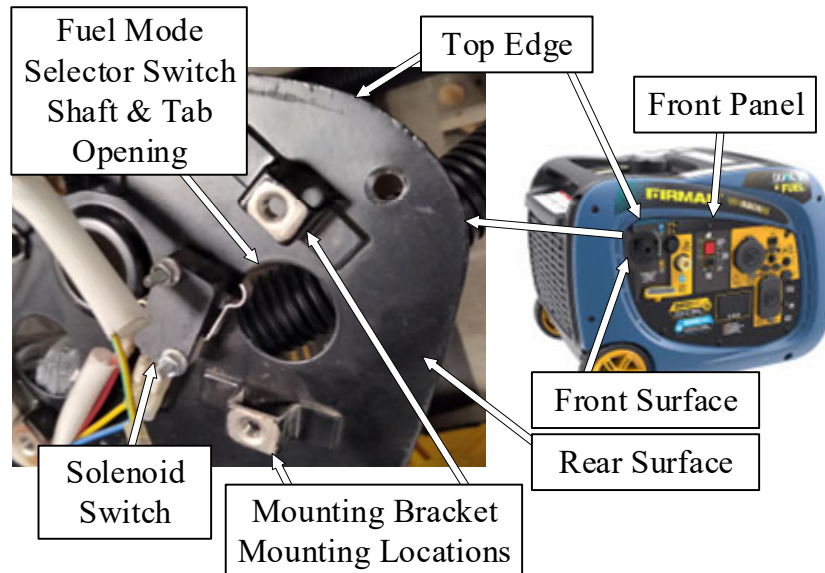
The LPG solenoid is coupled to an off-board LPG regulator system as part of an LPG hose for connecting to the LPG tank. The LPG

CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

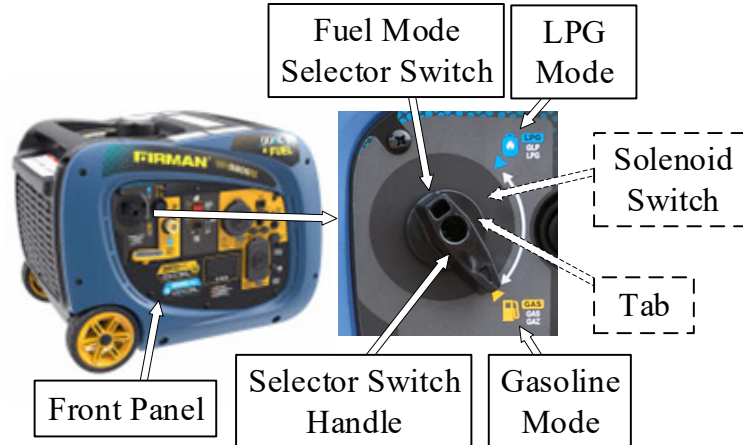
solenoid selectively opens and closes a fuel path for LPG to flow through the off-board LPG regulator system and to the carburetor.



The electrical switch is a solenoid switch positioned on a rear surface of the front panel behind the selector switch. The solenoid switch is engaged by the selector switch tab in LPG Mode. The solenoid switch is disengaged when the selector switch is in Gasoline Mode.

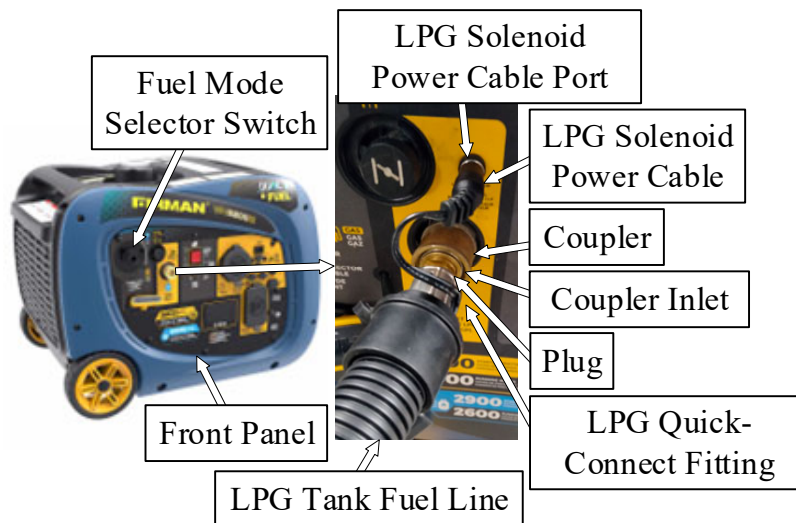


CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

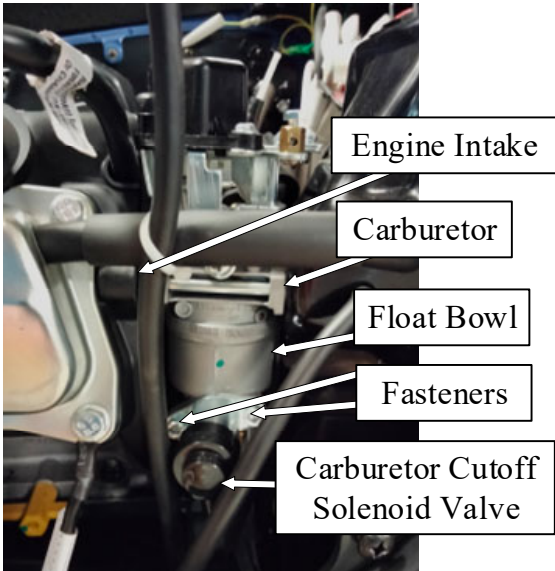


(Dashed lines indicate components hidden behind the selector switch and/or front panel)

The engagement of the solenoid switch by the selector switch tab when in LPG Mode electrically connects the alternator to the carburetor solenoid and the LPG solenoid. Power from the alternator actuates the carburetor solenoid to a closed position to prevent gasoline from flowing through the carburetor to the engine. Power from the alternator also actuates the LPG solenoid to an open position to allow LPG to flow through the off-board LPG regulator system and the carburetor to the engine. The LPG solenoid receives power via an LPG solenoid power cable plugged into an LPG solenoid power cable port on the front panel.



CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

	When the selector switch rotates to Gasoline Mode, the selector switch tab disengages from the solenoid switch, which electrically disconnects the alternator from the carburetor solenoid and the LPG solenoid. The disengagement causes the carburetor solenoid to actuate to an open position to allow gasoline to flow through the carburetor to the engine and causes the LPG solenoid to actuate to a closed position to prevent LPG from flowing through the off-board LPG regulator system.
(d) 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;	Element (d) of claim 1 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Model WH02942 includes a carburetor attached to an intake of the dual fuel engine to mix air and fuel and connect the gasoline tank and an LPG tank to the intake. Firman infringes element (d) claim 1 even when an LPG tank is not coupled to the generator. But even were an LPG tank required for infringement, Firman induces and contributes to that infringement by instructing the user to couple an LPG tank to the generator. Firman's acts contributing to and inducing infringement are discussed in Section VII, which are incorporated herein by reference. 

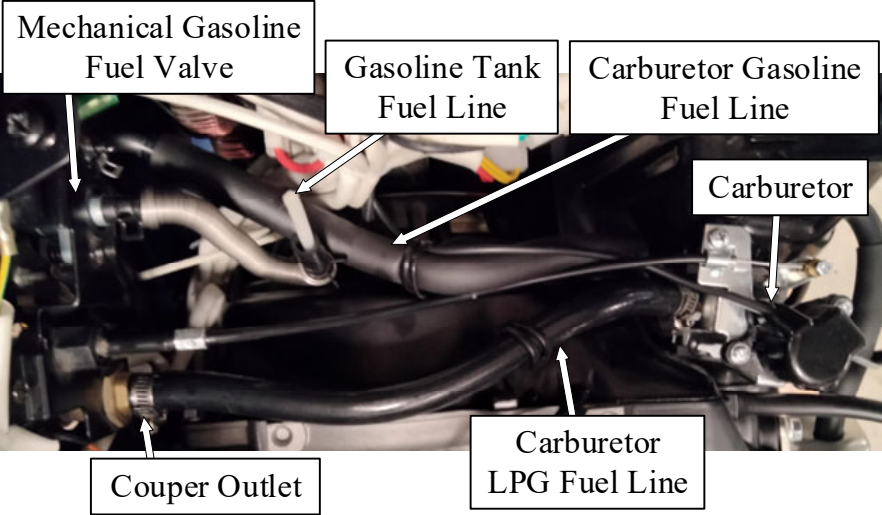
CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

(e) a liquid fuel cut-off solenoid to interrupt liquid fuel flow to the engine upon actuation of the switch from liquid fuel to gaseous fuel; and	Element (e) of claim 1 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: As explained above with respect to element (c) of claim 1, the carburetor solenoid (the “liquid fuel cut-off solenoid”) is coupled to the carburetor float bowl to open and close a liquid fuel path for gasoline to the engine downstream from the float bowl. When the selector switch rotates from Gasoline Mode to LPG Mode, the solenoid switch is engaged and electrically connects the alternator to the carburetor solenoid. Power from the alternator actuates the carburetor solenoid to a closed position to interrupt gasoline from flowing through the carburetor to the engine.
(f) a voltage regulator coupled to the charging coil to receive power therefrom and that operates to provide a regulated voltage to the liquid fuel cut-off solenoid.	Element (f) of claim 1 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Model WH02942 includes a voltage regulator coupled to the charging coil to receive power therefrom and that operates to provide a regulated voltage to the carburetor solenoid.

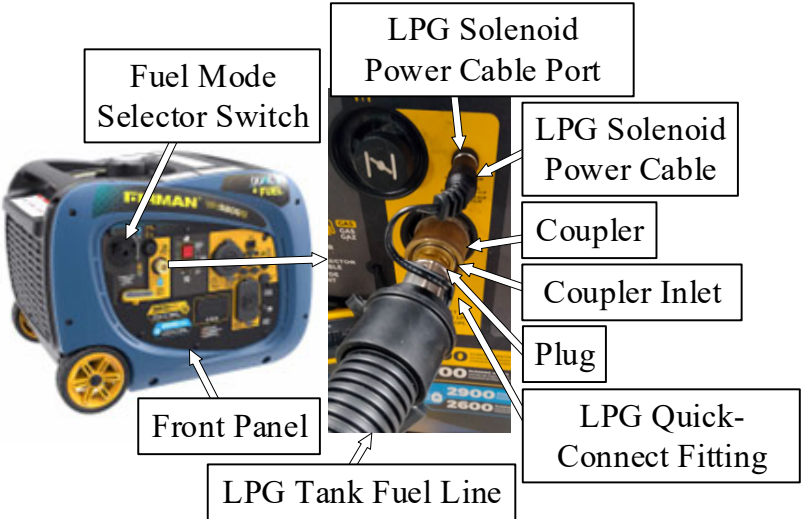
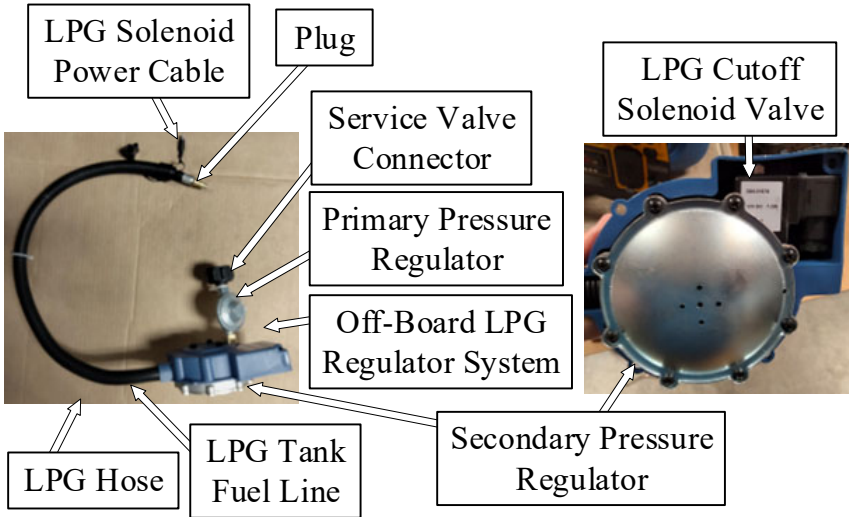
CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

	Model WH02942 Electrical Schematics Alternator Charging Coil Voltage Regulator Solenoid Switch Carburetor Cutoff Solenoid Valve LPG Cutoff Solenoid Valve
2. (Preamble) The dual fuel generator of claim 1 further comprising:	The preamble of claim 2 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Champion incorporates by reference in claim 2 the contentions set forth above for claim 1.
(a) a liquid fuel valve along a liquid fuel line coupling the liquid fuel source to the carburetor; and	Element (a) of claim 2 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: The gasoline valve is a liquid fuel valve positioned along a liquid gasoline fuel line (the liquid fuel line) coupling the gasoline tank (the “liquid fuel source”) to the carburetor. The liquid gasoline fuel line includes a gasoline tank fuel line extending between the gasoline tank and an inlet of the gasoline valve and a carburetor gasoline fuel line extending between an outlet of the gasoline valve and the carburetor.

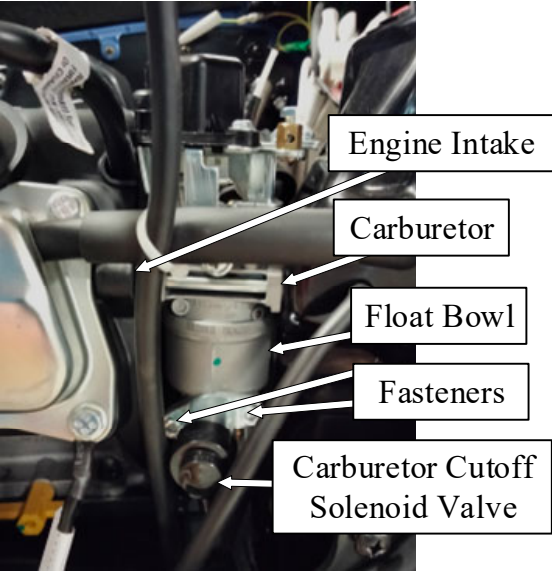
CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

	The gasoline valve connects the gasoline tank fuel line and the carburetor gasoline fuel line when in the open position to allow gasoline to flow to the carburetor. The gasoline valve prevents communication between the gasoline tank fuel line and the carburetor gasoline fuel line in the closed position. 
(b) a gaseous fuel valve along a gaseous fuel line coupling the gaseous fuel source to the carburetor.	Element (b) of claim 2 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: The LPG solenoid is positioned along a gaseous LPG fuel line coupling an LPG tank to the carburetor. The gaseous fuel line includes an LPG tank fuel line on the LPG hose external to the generator that supplies LPG from an LPG tank to an inlet of a coupler of an LPG quick-connect fitting (the “LPG fitting”) on the front panel of the generator. The gaseous fuel line also includes a carburetor LPG fuel line that supplies the LPG from an outlet of the coupler to the carburetor. The LPG solenoid is positioned on the secondary pressure regulator of the off-board LPG regulator system of the LPG hose. The LPG solenoid connects an LPG tank and the LPG tank fuel line when in the open position to allow LPG to flow to the carburetor. The LPG solenoid prevents communication between an LPG tank and the LPG tank fuel line in the closed position. Firman infringes element (b) claim 2 even when an LPG tank is not coupled to the generator. But even were an LPG tank required for

CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

	infringement, Firman induces and contributes to that infringement by instructing the user to couple an LPG tank to the generator. Firman's acts contributing to and inducing infringement are discussed in Section VII, which are incorporated herein by reference.  
4. The dual fuel generator of claim 2, wherein the liquid fuel cut-off solenoid is	Claim 4 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Champion incorporates by reference in claim 4 the contentions set forth above for claims 1 and 2.

CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

attached to the carburetor.	As shown in element (d) of claim 1, the carburetor solenoid (the “liquid fuel cut-off solenoid”) is coupled to the carburetor’s float bowl.  The photograph shows a close-up of an engine's carburetor assembly. Several components are labeled with white boxes and black arrows pointing to them: 'Engine Intake' at the top, 'Carburetor' in the middle, 'Float Bowl' below the carburetor, 'Fasteners' pointing to the base of the float bowl, and 'Carburetor Cutoff Solenoid Valve' at the bottom, which is a small cylindrical component attached to the float bowl.
5. The dual fuel generator of claim 1, wherein the gaseous fuel is LPG and the liquid fuel is gasoline.	Claim 5 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Champion incorporates by reference in claim 5 the contentions set forth above for claim 1. As similarly explained above with respect to the preamble of claim 1, Model WH02942 is designed to operate on gaseous LPG (the “gaseous fuel”) and liquid gasoline (the “liquid fuel”).
6. (Preamble) The dual fuel generator of claim 1,	Claim 6 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Champion incorporates by reference in claim 6 the contentions set forth above for claim 1.
(a) wherein the switch is an electro-mechanical switch connecting	Element (a) of claim 6 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows:

CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

one fuel source to the carburetor and connected to the electrical power generator, and	As similarly explained above with respect to element (c) of claim 1, the selector switch and the electrical switch engaged by the selector switch tab are the electro-mechanical switch. The electro-mechanical switch connects either the gasoline tank or an LPG tank to the carburetor and is connected to the alternator (the “electrical power generator”) to selectively provide power to the carburetor solenoid and the LPG solenoid. Firman infringes element (a) claim 6 even when an LPG tank is not coupled to the generator. But even were an LPG tank required for infringement, Firman induces and contributes to that infringement by instructing the user to couple an LPG tank to the generator. Firman's acts contributing to and inducing infringement are discussed in Section VII, which are incorporated herein by reference.
(b) wherein the liquid fuel cut-off solenoid is connected to open and close a fuel path to the engine in response to reception of electrical power from the switch.	Element (b) of claim 6 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: As similarly explained above with respect to element (c) of claim 1 and claim 4 (which is incorporated by reference), the carburetor solenoid (the “liquid fuel cut-off solenoid”) is connected to the float bowl of the carburetor to open and close the gasoline fuel path therethrough in response to losing or receiving power, respectively, from the alternator upon engagement of the solenoid switch.
7. The dual fuel generator of claim 6, wherein the switch selectively powers the solenoid valve by controlling electrical connection between the solenoid valve and the electrical power generator.	Claim 7 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Champion incorporates by reference in claim 7 the contentions set forth above for claims 1 and 6. As similarly explained above with respect to element (c) of claim 1 and element (b) of claim 6, the solenoid switch selectively provides power to the carburetor solenoid when the selector switch tab engages the solenoid switch through the selector switch's rotation between LPG Mode and Gasoline Mode.

CHAMPION'S INFRINGEMENT CONTENTIONS FOR U.S. PATENT
NO. 11,143,145
AS ASSERTED AGAINST
FIRMAN MODEL WH02942 ET AL.

8. The dual fuel generator of claim 1, wherein the liquid fuel cut-off solenoid is normally open to provide liquid fuel to the engine when the liquid fuel cut-off solenoid is unpowered.	Claim 8 is found within Model WH02942 (and, thereby, the remaining models outlined in (a)–(g) above) directly and literally as follows: Champion incorporates by reference in claim 8 the contentions set forth above for claim 1. As similarly explained above with respect to element (b) of claim 1, the carburetor solenoid (the “liquid fuel cut-off solenoid”) is in the open position when the solenoid switch is not electrically connecting power from the alternator to the carburetor solenoid and is in the closed position then the solenoid switch is electrically connecting power from the alternator to the carburetor solenoid. Thus, the carburetor solenoid is normally open to provide liquid gasoline to the engine when the carburetor solenoid is unpowered.