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[54]	Title:	DIESEL OR BIOFUEL STOVE		
[71]	Applicant(s):	GOODFIRE STOVES CORP		
[72]	Inventor(s):	LAGUINIA ENRIQUE L		
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[57]	Abstract:	A diesel or bio-fuel stove comprising a fuel burner, a fuel tank connected to the fuel burner by a fuel entry tube, a support stand connected to the fuel tank by braces and situated above the fuel burner, said fuel burner being defined by a fuel intake tube connected to the fuel entry tube, a generating loop in communication with the fuel intake tube, said generating loop having a closed free end welded to the fuel entry tube, the generating loop for further having a flattened upper portion which acts as primary flame spreader, a U-shaped tube disposed at the middle of said loop and below said flattened upper portion, a fuel outlet provided at the bridging portion of said U-shaped tube, said fuel outlet having a nozzle holder attached thereon with a nozzle adjustably secured on said holder, the fuel entry tube has a lateral bore being constricted by an adjustable knob to regulate the flow of fuel from the fuel tank, a bracket with lock nut used for holding the control valve in place, a heating cup disposed and held below the fuel entry tube, an enlarged drip pan welded to the heating cup to receive the wind shield, pieces of volcanic lava or rock placed on the heating cup, said loop further having opposed notches provided thereon to retain the opposed arms of a burner hood, said hood having a top convex plate to define a secondary flame spreader, said convex plate having prongs laterally extending thereto to define pot support holders, said fuel tank having a fuel inlet port near the upper portion thereof, an air release valve proximate the inlet port, an air pump disposed laterally thereof.		

SPECIFICATION

DIESEL OR BIO-FUEL STOVE

FIELD OF THE INVENTION

This invention relates generally to stoves in general but, more particularly to a diesel or bio-fuel stove.

BACKGROUND OF THE INVENTION

Unlike gasoline and kerosene which are volatile gases, diesel fuel is hard to ignite. Internal combustion diesel engines need a start-up heaters to pre-heat the diesel fuel before ignition. The same holds true for bio-fuel containing diesel fuel.

For these reasons, stoves use kerosene or gasoline as fuel, since they are easy to ignite. However, kerosene and gasoline cost much more than diesel fuel so that there is a need to improve the stove design in order to accommodate diesel fuel or other organic fuel.

OBJECT OF THE INVENTION

Accordingly, it is the principal object of subject Invention is to remedy the aforementioned drawbacks by providing for a stove having a pre-heater or start-up heater to heat the diesel or organic fuel prior to actual ignition to attain the needed complete combustion.

Another object of subject invention is to provide for a stove that is capable of using diesel fuel or bio-fuel so that the cost of cooking is minimized, since diesel fuel is cheaper than kerosene and gasoline.

Still another object of subject invention is to provide for a stove using diesel or bio-fuel wherein there is minimal modifications on the original design of the kerosene stove which will allow a cheaper and more affordable alternative to the kerosene stove.

Yet, another object of subject invention is to provide for a diesel or bio-fuel stove sung locally available materials which will allow the production of the stove at a lower cost.

Other objects and advantages of subject invention will be apparent upon reading the following description, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front view of a diesel or bio-fuel stove embodying subject invention;

FIG. 2 is a top view of the burner;

FIG. 3 is a front view showing the use of a gravity-fed fuel tank;

FIG. 4 is a cut-away magnified view of the inset A as shown in FIG. 3;

FIG. 5 is a perspective view of the wind shield welded to the enlarged drip pan enclosing the burner;

FIG. 6 is a perspective view of the wind shield with a slot for fuel tube; and

FIG. 7 is a perspective view of the enlarged drip pan with hater cup welded thereto.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings in detail, wherein like numerals designate same parts throughout, there is shown in the drawings particularly in FIG.1, a diesel or bio-fuel stove of subject invention generally designated as 10, which includes a fuel burner 11, a fuel tank 12 connected to the fuel burner 11 by a fuel entry tube 13, a support stand 14 connected to the fuel tank 12 by braces 15 and situated above the fuel burner 11.

This fuel burner 11 has a fuel intake tube 16 connected to said fuel entry tube 13, and a generating loop 17 in communication with said fuel intake tube 16 having a closed free end 18 welded to said fuel entry tube 13.

The generating loop 17 further having a flattened upper portion 19 which acts as the primary flame spreader.

This fuel burner 11 further having a U-shaped fuel tube 20 preferably made of brass material that is disposed at the middle of said generating loop 17 and below said flattened upper portion 19. And a fuel outlet 21 provided at the bridging portion 22 of said U-shaped fuel tube 20.

As shown in FIG. 4, this fuel outlet 21 has a nozzle cup base 23 attached thereon with a nozzle 24 screwably attached on this nozzle cup base 23. A nozzle plated 25 is provided between this nozzle 24 and this nozzle cup base 23. A cylindrical screen 26 is provided within said nozzle cup base 23.

This fuel entry tube 13 as shown in FIG.1 has a lateral bore 27 being constricted to be an adjustable knob 28 to regulate the flow of fuel from the fuel tank 12. A bracket 29 with a lock nut 30 is used for holding the control valve 30 in place.

A check valve 32 is disposed within said generating loop 17 below this U-shaped fuel tube 20 to prevent the back flow of the fuel.

As shown in FIGS. 3 -7, a pre-heating cup 33 is disposed and held below the fuel entry tube 13. An enlarged drip pan 34 as shown in FIG. 5 is welded to this pre-heating cup 33 to receive the wind shield 35 enclosing the fuel burner 11 which is attached to fuel entry tube 13 through the slot 36 for the fuel tube 37.

Pieces of volcanic lava or rock 38 as shown in FIGS. 1 and 3 are placed on this pre-heating cup 33 to prolong heating.

This generating loop 17 further has opposed notches 39, 40 to retain the opposite arms 41,42 respectively, of the burner hood 43.

This burner hood 43 has a top convex plate 44 to define a secondary flame spreader and having prongs 45 laterally extending thereto.

The fuel tank 12 as shown in FIG. 1, has of a fuel inlet port 46 near its upper portion, an air release valve 47 proximate this fuel

inlet port 46, an air pump 48 disposed laterally thereof, a fuel indicator 49 proximate this air pump 48, and a fuel control valve 50 in communication with said fuel entry tube 13.

This burner 11 is adapted to turn the fuel into vapor form to be use for continues cooking. The pre-heating cup 33 and this volcanic lava or rock 38 is used for pre-heating this burner 11 at the start of cooking. The burner 11 will produce vapor continuously by its own heat without the use of pre-heating.

The air pump 48 has this contained fuel control valve 50 to allow air to pump into the fuel tank 12. The air release 47 is to be used for emergency purposes only.

In use, diesel or bio-fuel is poured on the fuel tank 12 through the fuel inlet port 46. The air pump 48 is retracted back and forth to pressurize the fuel to flow into the fuel entry tube 13 as pressurized diesel or bio-fuel. Alcohol is poured into the heating cup 33 to pre-heat the burner 11 above. As soon as the burner 11 is heated the control valve 50 is opened and vapor will come out at said nozzle 24 continuously. The diesel or bio-fuel as shown by the arrow heads F is pressurized further by the check valve 32 as it is released on the fuel outlet 21 through this nozzle 24.

As shown in FIG. 3, an alternative fuel tank defined by a gravity-fed fuel tank 51 is used which has a constant pressure at all times.

I CLAIM:

1. A diesel or bio-fuel stove comprising:

a fuel burner having a fuel intake tube and fuel outlet;

a preheating cup secured below said intake tube for pre-heating said fuel burner and adapted to contain therein volcanic lava for further preheating said burner;

a fuel control valve with one end connected to said fuel intake tube for controlling the flow of fuel;

a fuel entry tube with one end connected to said fuel control valve; and

a fuel tank connected to the other end of said fuel entry tube and having an air pump for pressurizing the diesel or bio-fuel inside.

2. A diesel or bio-fuel stove in accordance with claim 1, wherein said fuel burner is defined by a generating loop having a flattened upper portion which acts as a primary flame spreader and a U-shaped fuel tube disposed at the middle of said loop and below said flattened upper portion.

3. A diesel or bio-fuel stove in accordance with claim 2, wherein said generating loop is provided with a check valve for preventing the back flow of the fuel.

4. A diesel or bio-fuel stove in accordance with claim 2, further comprising a wind shield for enclosing the burner.

5. A diesel or bio-fuel stove in accordance with claim, wherein said fuel tank is defined further by a gravity-fed fuel tank.

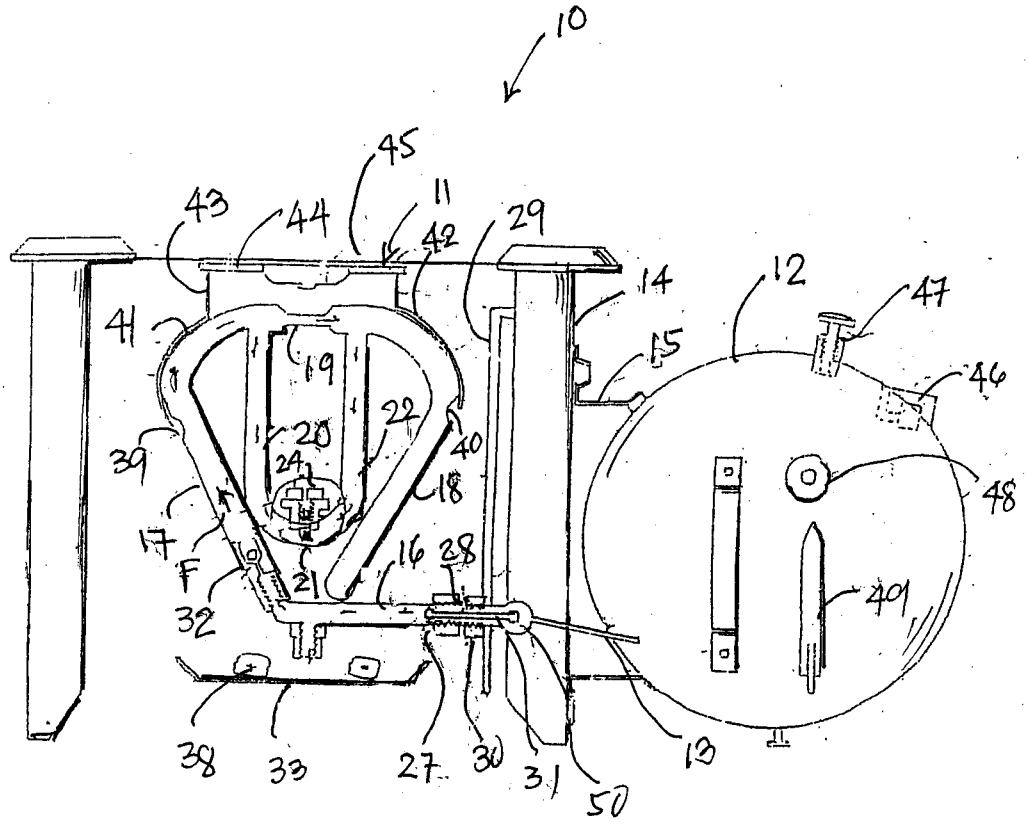


FIG. 1

Goodfire Stoves Corporation
Applicant

By: MarksPro Philippines/
Law Firm of Reyes Rara
and Associates

Rhoda Regina Reyes-Rara
Attorney-in-Fact

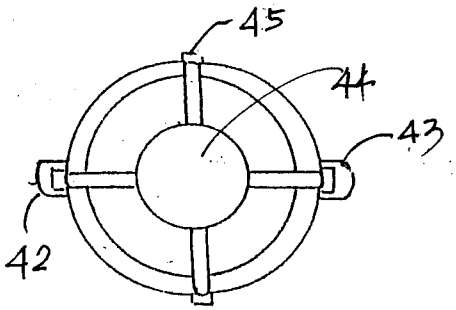


Fig. 2

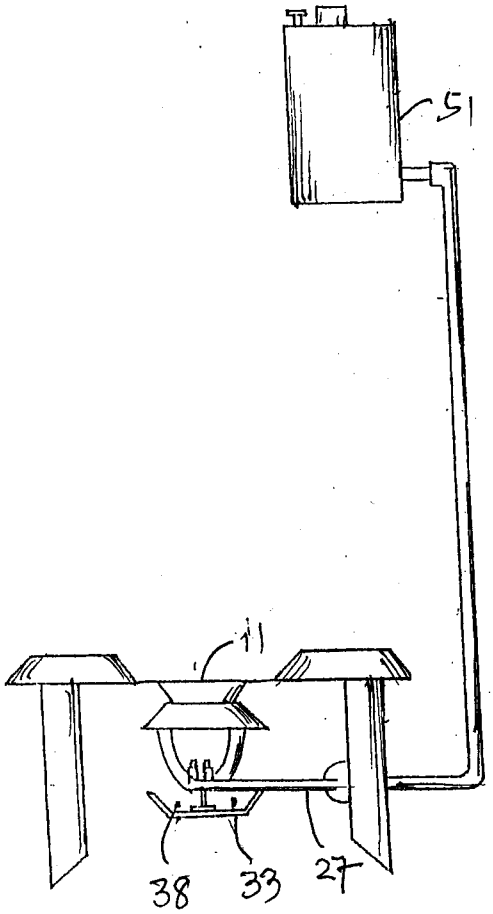


Fig. 3

Goodfire Stoves Corporation
Applicant

By: MarksPro Philippines/
Law Firm of Reyes Rara
and Associates

Rhoda Regina Reyes-Rara
Attorney-in-Fact

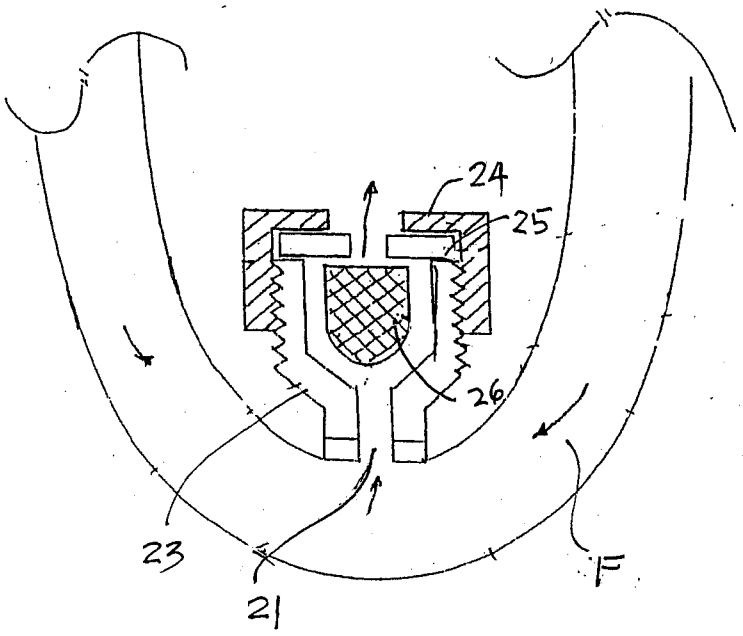


FIG. 4

Goodfire Stoves Corporation
Applicant

By: MarksPro Philippines/
Law Firm of Reyes Rara
and Associates

Rhoda Regina Reyes-Rara
Attorney-in-Fact

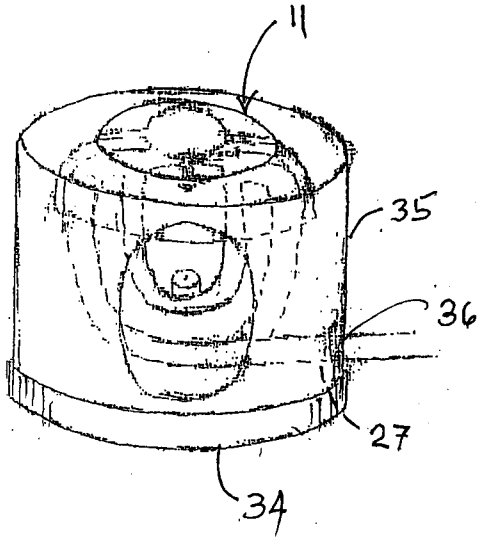


FIG. 5

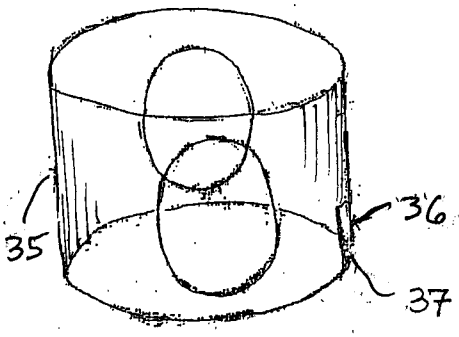


FIG. 6

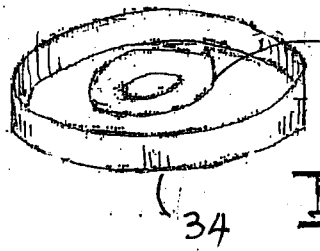


FIG. 7

Goodfire Stoves Corporation
Applicant

By: MarksPro Philippines/
Law Firm of Reyes Rara
and Associates

Rhoda Regina Reyes-Rara
Attorney-In-Fact