

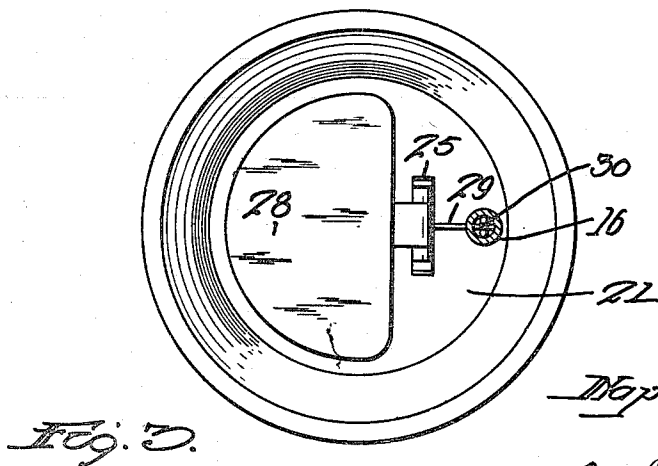
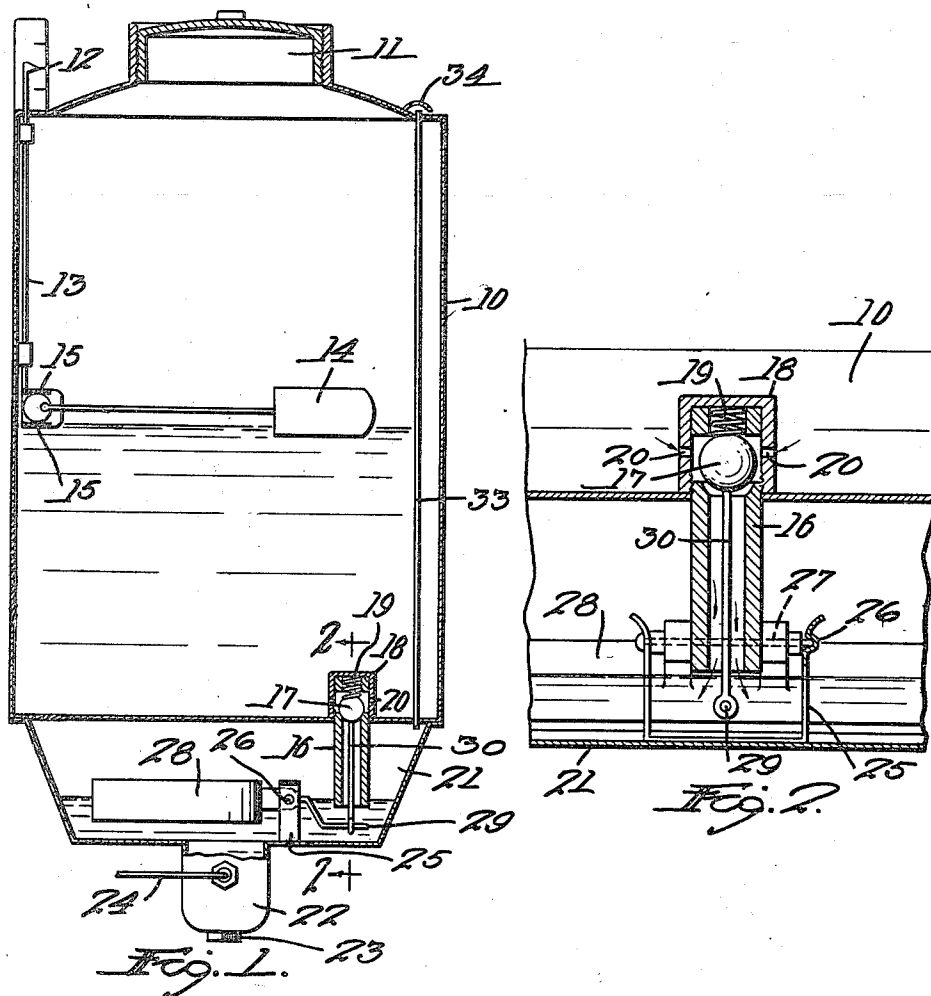
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N. R. THIBERT

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FEED TANK

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Inventor
 Napoleon R. Thibert
 By Attorneys
 Southgate Fay & Harber

UNITED STATES PATENT OFFICE

NAPOLEON R. THIBERT, OF WORCESTER, MASSACHUSETTS

FEED TANK

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This invention relates to a device for storing a liquid and feeding it to a desired point and is particularly adapted for storing fuel oil for domestic use and feeding it to a burner.

The principal objects of the invention are to provide a storage tank which will be of metal and therefore not easily injured and to connect with it a means for receiving the oil from the tank and distributing it to the burners with a float actuated means for controlling the flow of the oil from the tank into said distributing means and to provide means for operating the valve for controlling the discharge from the storage tank, reduced to its simplest terms.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a central vertical sectional view of a preferred embodiment of this invention;

Fig. 2 is an enlarged sectional view on the line 2—2 of Fig. 1; and

Fig. 3 is a plan of the distributing tank.

The storage of fuel oil and the feeding of it to the burners of a kitchen range has presented several difficulties. The usual way, where the laws allow it, is to provide glass bottles which are inverted for feeding purposes. These bottles are easily broken and, when there are small children around, have caused many fires and other troubles. It is necessary to have a device which will show the level of the liquid in the storing tank and to provide means to control the discharge of the liquid therefrom in accordance with the requirements of the burner.

In accordance with this invention, a metal storage tank 10 is provided having a cover 11 adapted to hermetically seal the tank when it is closed. In this way the feed from it is the same as from the inverted glass bottle. In order to show the level of the liquid in the tank, an indicator 12 is used which involves a vertical frame 13 having two horizontal plates 15 between which projects the circular end of the arm of a float 14.

This indicator shows directly on the scale the level of the liquid in the tank.

The storage tank 10 discharges through a pipe 16 at the bottom, this pipe being open at both ends. At the top it has a spherical valve seat closed by a ball valve 17 and it is surrounded inside the tank 10 by a hollow body 18 having a spring 19 pressing down on the ball valve 17. When the air is allowed to enter the bottom of the pipe 16 and the valve 17 is raised, the air will bubble up and out through perforations 20 in the body 18 and allow the liquid to escape.

In order to control the valve 17 and provide for keeping the pressure of liquid on the burners the same at all times, irrespective of the level of liquid in the tank 10, a distributing tank 21 is used. This tank is provided with a hollow projection 22 for the reception of sediment, having a plug 23 which can be removed for cleaning. It delivers to the burner through a pipe 24 without any valves.

Inside this tank 21 is a sheet metal plate 25 bent up to U-shaped form and having a pair of pivot depressions 26 located opposite each other. This is made of spring metal, or at least yielding metal, so that a shaft 27 can be forced down into the depressions 26 and be pivoted thereby. This shaft is provided with an arm fixed thereto carrying a large float 28 and with another arm 29 which passes through an opening in the bottom of a rod 30 which is itself screwed into the bottom of the valve 17. The tank 21 is secured to the bottom of the tank 10 by soldering all around to seal it hermetically.

The distributing tank 21 may be conveniently soldered all around to the bottom of the storage tank 10. The reason for hermetically sealing the top of the tank 21 is to avoid all possibility of spilling of the fluid and thus causing possible damage. This tank, however, has to be open to the air and for that purpose a vent pipe 33 is mounted in the tank 10 extending from above the top to below the bottom where it opens into the tank 21. This pipe has nothing to do with the operation of the tank 10 but is merely to insure the presence of atmospheric air in the tank 21 at all times and accomplish this with-

out the spilling or discharge of the contents. At the top it is preferably provided with a small hood 34 to prevent the entrance of dust.

It will be obvious that the float 28, being large and having considerable weight, will, when the level of the oil in the tank decreases and goes down below the bottom of the pipe 16, raise the valve 17 and open it. This lets air into the tank 10 and, the valve 17 being raised, the oil will come out until the float gets back to normal position which is after the level of the liquid gets above the bottom of the pipe 16. The spring 19 assists in closing the valve 17. In this way the level of the liquid in the tank 21 is practically constant. It varies only a very small amount and so the variations in level of the liquid in the tank 10 have no effect on the amount of flow of oil to the burners. This is a very simple mechanism, has few parts likely to get out of order, and is practically sure to work at all times.

This furnishes a fine and effective control of the discharge of liquid from the storage tank. As soon as the cover 11 is properly closed, it forms a vacuum tank. When this cover is opened for filling the tank, of course there is atmospheric pressure on the oil left herein, but this acts on the valve 17 to keep it closed. If the float 28 should happen to descend due by the lowering of the level in the tank 21, atmospheric air is present both above and below the valve 17. The valve is operated directly by the float anyway and it will be opened and the feeding of the oil to the burner will go on during filling of the storage tank just as if things were in their usual running condition.

Although I have illustrated and described only a single form of the invention, I am aware of the fact that modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to all the details of construction herein shown and described, but what I do claim is:—

1. The combination with a storage tank adapted to be hermetically sealed and having port in the bottom, a valve closing said port, and a pipe extending downwardly from said port, of a distributing tank into which said pipe extends, a float in the distributing tank, and means connected with said float for operating the valve, whereby when the float descends the valve will open and when the level of liquid in the distributing tank descends low enough to bring the float down to open the valve, the lower end of said pipe will be unsealed and air will be admitted into the storage tank.

2. In a liquid feeding system, the combination with a storage tank, a pipe projecting below the bottom of the tank, and a valve in the upper end of the pipe, and a spring for assisting gravity in holding the valve closed,

of a distributing tank at the bottom of the storage tank surrounding said pipe, means for distributing the fuel from the distributing tank, a U-shaped frame in the distributing tank having yielding arms provided with opposite depressions constituting bearings, a shaft supported at its ends in said bearings, a float in the distributing tank fixed to said shaft, and an arm projecting from the shaft and connected with said valve for opening it when the float descends, the pipe extending down to a point below the normal level of liquid in the distributing tank.

3. The combination with a supply tank having a discharge port in the bottom, and a valve for closing said port, of a distributing tank hermetically sealed to the bottom thereof, a vent pipe carried by the supply tank and projecting above the top of it into the air and also projecting below the bottom of the supply tank into the top of the distributing tank and float operated means in the distributing tank for operating said valve.

In testimony whereof I have hereunto affixed my signature.

NAPOLÉON R. THIBERT.