Dec. 8, 1931. F. T. WILLIAMS ET AL 1,835,362

BAROMETRIC LIQUID FEEDING DEVICE

Original Filed Oct. 28, 1929

FIG. 1.

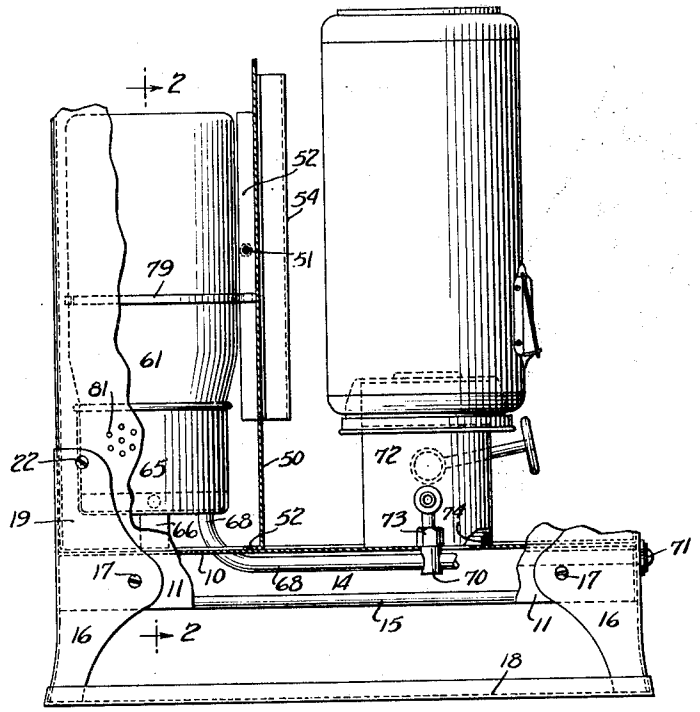
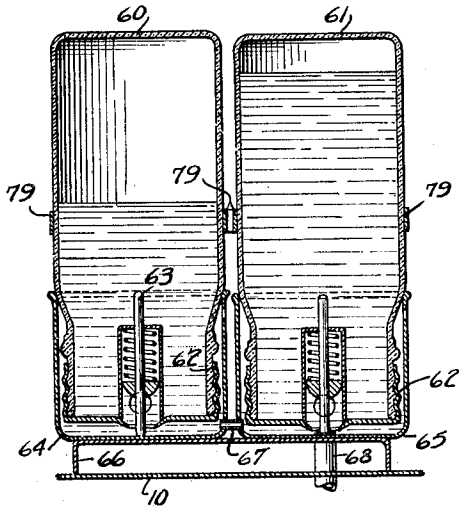


FIG. 2.



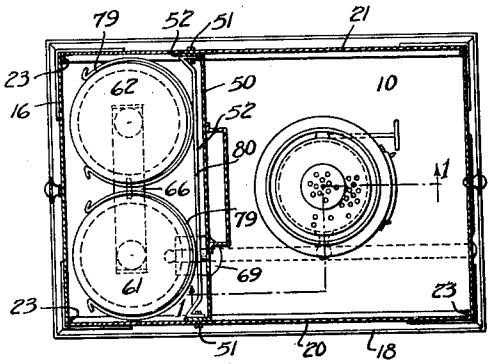


FIG. 3.

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UNITED STATES PATENT OFFICE

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BAROMETRIC LIQUID FEEDING DEVICE

Original application filed October 28, 1929, Serial No. 402,859. Divided and this application filed August 27, 1930. Serial No. 478,088.

The present invention relates to barometric liquid feeding devices, and is more particularly directed toward fuel feeding devices for portable heaters employing liquid fuel.

The present invention may conveniently be embodied in a portable heater having a body made up of sheet metal parts, designed so as to be capable of easy assembly and yet provide a structure of pleasing appearance, and with sufficient strength and rigidity to be of service as a room heater as well as an oil stove. The invention also contemplates a portable room heater provided with a burner and chimney of the type ordinarily used in oil cook stoves, and wherein the fuel supply is carried in two or more tanks.

The arrangement of the fuel supply system is such that fuel will be taken from one of the tanks before it is taken from the other tank, thus making it possible to have a tank of fuel held in reserve, and making it unnecessary to refill two partially emptied tanks. This dual tank arrangement is also applicable to other fields of use such as animal watering devices, ink wells, water coolers, lubricators, etc.

This application is a division of our application Serial No. 402,859, filed Oct. 28, 1929.

The accompanying drawings show, for purposes of illustrating the present invention, one embodiment in which the invention may take form, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In these drawings:

Figure 1 is a side elevational view with parts of a heater body broken away to show the tanks and burner;

Figure 2 is a vertical sectional view on the line 2—2 of Figure 1; and

Figure 3 is a horizontal sectional view.

The base plate of the heater is indicated at 10. It is preferably made of heavy gauge sheet metal pressed downwardly at the edges to form reenforcing walls 11. The lower edges of these walls may be doubled back, as indicated at 15 in Figure 1. Four leg forming members 16 are secured to the corners of the base plate 10 by means of bolts indicated at 17 adapted to rest on a drip pan indicated at 18. The legs 16 have upwardly extending portions indicated at 19. Side panels 20 and 21 are secured to these upper leg portions by bolts indicated at 22.

The inside of the heater body is divided into two compartments or sections by a partition 50, also made of sheet metal, and secured in place by bolts 51 passing through flanges 52. The partition is placed nearer to one end of the body than the other, as will be apparent from the drawings, and carries a channel shaped member 54 forming an air space.

The fuel supply system is here shown in the form of two independent fuel tanks or bottles 60 and 61. These bottles are made of glass and are of identical construction. They have the usual threaded cap or cover member 62 and spring pressed needle valve 63, which is adapted to close off the outlet for fuel while the bottle is inverted and until it is placed in the sub-tank. As is clearly shown in Figures 1 and 2, the device employs two sub-tanks 64 and 65. These sub-tanks are secured to a base 66, adapted to rest on top of the base 10 of the stove. The tanks are connected together by a tube 67, placed near the bottom of the tank so as to be below the level of the delivery outlet of the bottles, and so that the fuel in the tanks may seek a common level.

As shown in the drawings, the sub-tank 64, at the left of Figure 2, is deeper than the sub-tank 65 at the right. This will place the bottle 60 at a slightly higher elevation than the bottle 61 and, hence, the outlet of bottle 61 will be submerged when the outlet for the other bottle is admitting an air bubble to allow fuel to flow out.

The fuel outlet is in the form of a pipe 68, secured to the sub-tank 65 and adapted to pass down through an opening 69 in the base 10. This fuel pipe extends along underneath the base 10 and is provided with a burner connection indicated at 70. The other end of the pipe 68 extends out through the flange 12 of the base plate and is provided with a clean out plug 71.

The burner is indicated at 72. This burner

is secured to the burner connection 70 by a coupling indicated at 73. It rests on top of the base plate 10 and is held in place by a circular ring 74, as indicated in Figure 1. The burner 72 may include the usual flame spreader, chimney and other devices ordinarily employed in oil stoves.

In assembling the heater, the heater body may be completed as a unit and the fuel supply unit assembled to include the sub-tanks 64 and 65, tube 67, base 66, pipe 68, and burner connection 70. This unit is passed in through the door opening at the left and the pipe passed through the hole 69 in the base plate. The entire unit may be moved on into place and the clean out plug 71 secured on the end of the pipe. The burner is then attached and this completes the fixing of the fuel system parts in place, as claimed in the application above referred to.

In order that the bottles 60 and 61 may be held against accidental upsetting, clips 79, of bent spring metal, are provided. They are secured to a cross strap 80, attached to the flanges 52 of the partition strip 50.

It is obvious that the invention may be embodied in many forms and constructions within the scope of the claims, and we wish it to be understood that the particular form shown is but one of the many forms. Various modifications and changes being possible, we do not otherwise limit ourselves in any way with respect thereto.

We claim:

1. In a barometric liquid feeding device, a discharge pipe, a plurality of sub-tanks, one of which is connected to the pipe, the sub-tanks being cross connected at the bottom so that liquid may fill them to a common level, and an inverted vacuum sealed tank supported on each sub-tank, the delivery openings of the tanks being at different elevations to determine the order in which the tanks deliver liquid.

2. In a barometric liquid feeding device, two sub-tanks connected together near the bottom so that liquid therein may come to a common level, an inverted vacuum sealed tank supported on each sub-tank, one tank having its delivery opening below the other so that it is submerged when the other is exposed to admit air and allow liquid to flow from said other tank.

3. In a barometric liquid feeding device, a sub-tank support carrying two sub-tanks connected together by a tube so that liquid may seek a common level, two substantially identical vacuum sealed tanks having delivery openings adapted to be submerged in liquid in the sub-tanks and to deliver liquid to the sub-tank when it comes below the delivery opening, and supporting means for the tanks so that one is higher than the other.

4. In a barometric liquid feeding device, a sub-tank support carrying two sub-tanks connected together by a tube so that liquid may seek a common level, and two substantially identical vacuum sealed tanks having delivery openings adapted to be submerged in liquid in the sub-tanks and to deliver liquid to the sub-tank when it comes below the delivery opening, the upper edges of the sub-tanks being engageable with the tanks to support them in such a position that one tank is higher than the other whereby it delivers liquid first.

5. In a barometric liquid feeding device, two cylindrical sub-tanks carried on a supporting base and connected together by a tube so that liquid therein may seek a common level, one tank having its rim higher than the other, and a pair of substantially identical tanks supported on the rims of the sub-tanks, one tank being lower than the other so that its delivery end is submerged when the liquid is low enough to expose the delivery end of the other tank.

Signed at Meriden, in the county of New Haven and State of Connecticut, this 22nd day of August, 1930.

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