Jan. 30, 1934. J. E. FOWLER 1,945,429

LIQUID LEVEL REGULATOR

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Fig. 1.

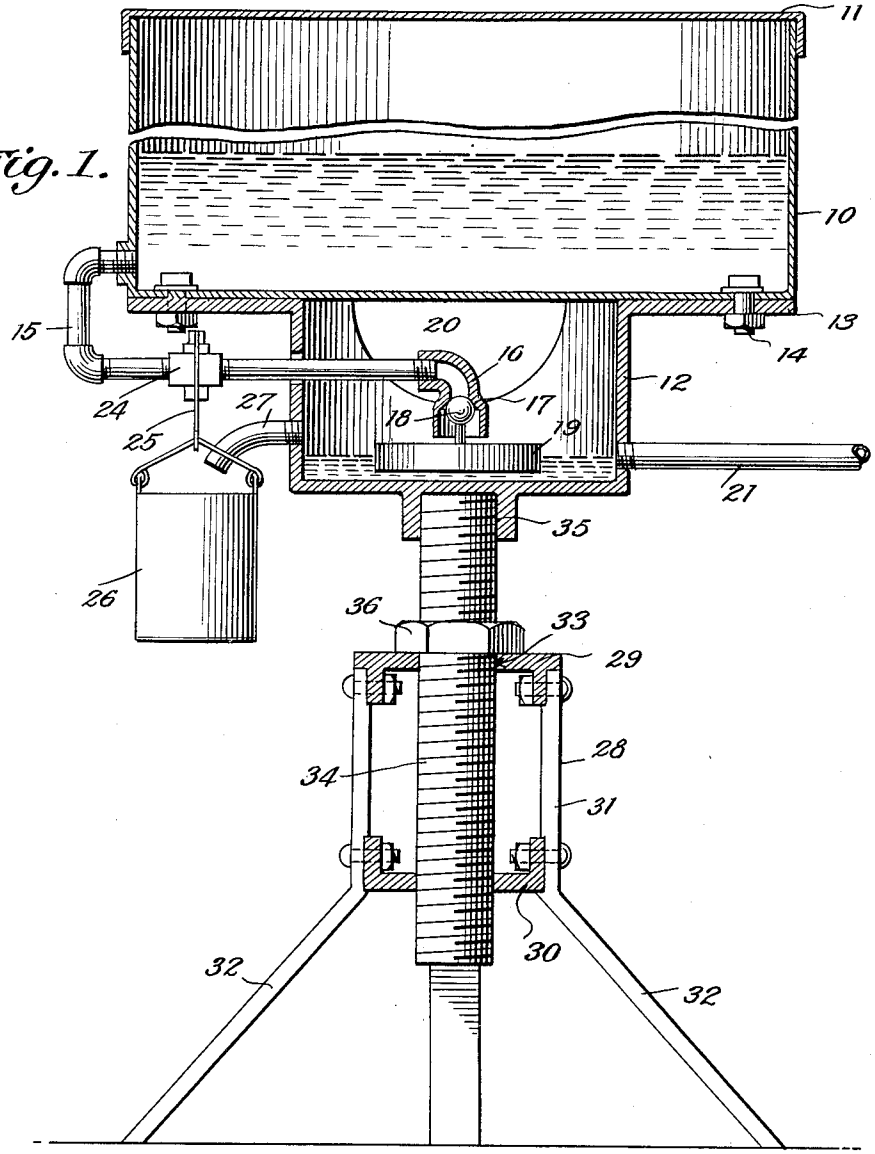
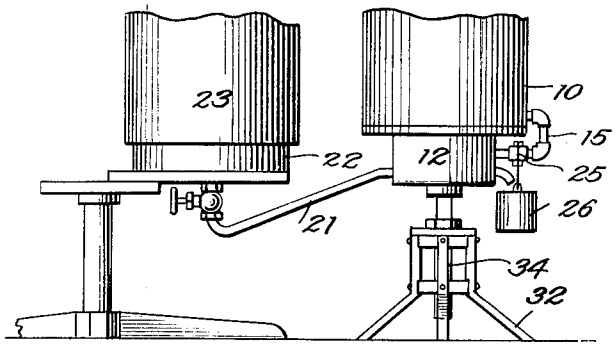


Fig. 4.



Joseph E. Fowler
INVENTOR

BY Victor J. Evans
ATTORNEY

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Fig. 2.

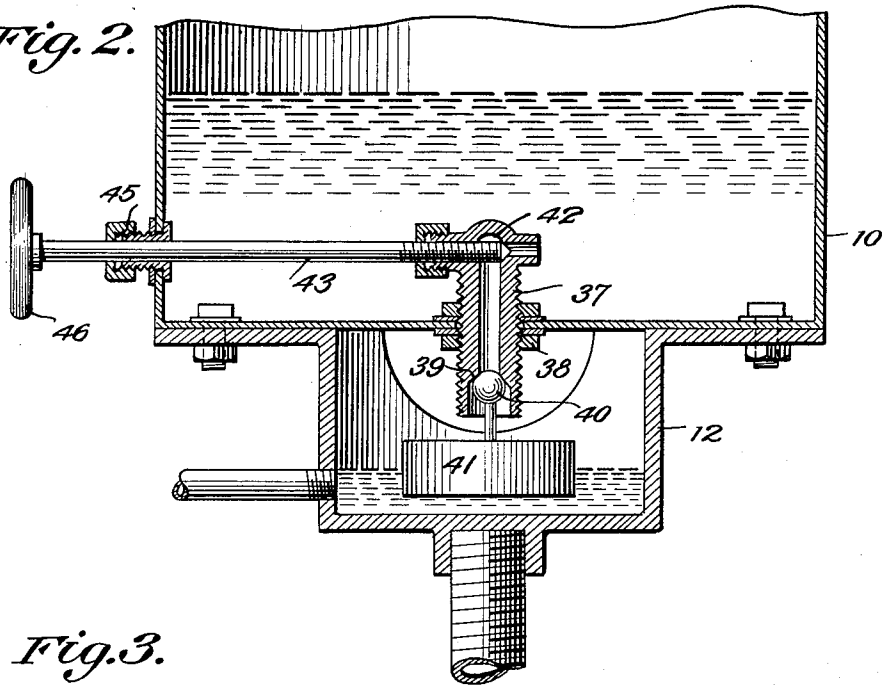
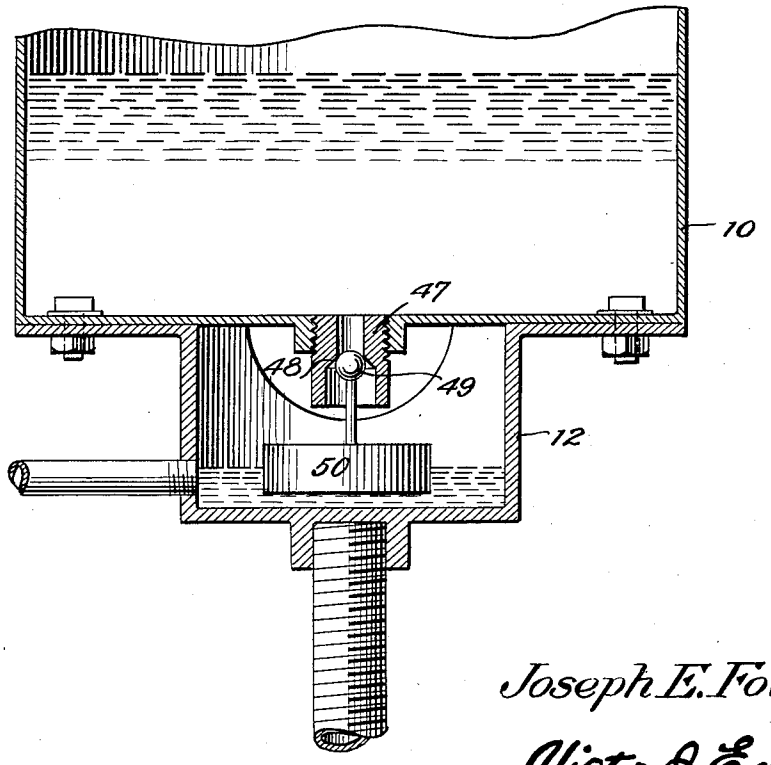


Fig. 3.



Joseph E. Fowler
INVENTOR

BY Victor J. Evans
ATTORNEY

Patented Jan. 30, 1934 1,945,429

UNITED STATES PATENT OFFICE

1,945,429

LIQUID LEVEL REGULATOR

Joseph E. Fowler, Worcester, Mass.

Application July 23, 1930. Serial No. 470,211

1 Claim. (Cl. 137—68)

This invention relates to liquid level regulating devices for automatically maintaining a constant level of liquid in a container or compartment, the invention being especially adapted for use in connection with oil burners to regulate the supply of fuel thereto.

An object of the present invention is the provision of means for use in connection with an oil burner to control the supply of oil to said burner, and includes means for adjusting the height of the device to regulate its level with respect to the level of the oil burner and thus regulate the amount of fuel in the burner.

Another object of the invention is the provision of a liquid level regulator which includes an oil well and a tank or reservoir mounted thereon and forming a closure for the well, together with means for automatically feeding liquid from the reservoir to the well in regulated quantities, and for automatically cutting off the flow of liquid in the event of flooding.

Another object of the invention is the provision of a device of the above character which is simple in construction and efficient and reliable in use.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings:—

Figure 1 is a sectional view partly broken away illustrating the invention.

Figure 2 is a similar view of a modified form of the invention.

Figure 3 is a like view of another form.

Figure 4 is a view illustrating the invention in connection with an oil burner.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates a liquid reservoir or tank having a loose or removable cover 11. This tank is mounted upon a container or well 12, and for this purpose the container or well is provided with a laterally extending annular flange 13 of a diameter of the reservoir and upon which the bottom of the reservoir 10 rests. The reservoir is secured to the flange by means of bolts 14 or other fastening devices. As will be seen from the drawings, the bottom of the reservoir forms a top or closure for the well 12.

In Figure 1 of the drawings, communication between the reservoir and well is provided by a pipe 15. One end of this pipe communicates with the reservoir and the opposite end extends into the well and is provided with a nipple 16 having a valve seat 17 therein. This seat is adapted to be engaged by a valve 18 whose stem is secured to a float 19, so that when a proper level of liquid is provided in the well, the valve 18 will cut off the supply from the reservoir 10.

A semi-circular opening 20 is provided in one wall of the well and opens out through the upper edge thereof whereby access may be had to the interior for any desired purpose.

A pipe 21 extends from the well 12 to the oil chamber 22 of an oil burner 23, so that the invention may be used for the supply of oil to the burner.

A normally open weight operated valve 24 is provided in the pipe 15 and connected to the stem of this valve as shown at 25 is an overflow cup 26. An overflow pipe 27 extends from the well 12 above the normal liquid level of said well and empties into this cup, so that in the event of flooding the well, the surplus liquid will flow into the cup. The weight of this liquid within the cup will operate the valve 24 and cut off the supply of liquid from the reservoir 10.

In order to regulate the height of the liquid level in the well 12 with respect to the oil chamber 22 and thus control the amount of oil supplied to this chamber, the invention provides a stand 28. This stand comprises upper and lower disks 29 and 30 respectively which are connected by extensions 31 of supporting legs 32. The disks 29 and 30 are provided with openings 33 for the passage of a threaded stem 34. The upper end of this stem is connected to the well as at 35, while a nut or stop 36 is threadedly engaged with the stem and bears upon the upper disk 29 to adjust the height of the well.

In Figure 2 of the drawings, communication between the reservoir 10 and the well 12 is provided by means of a threaded nipple 37. This nipple is secured in place by clamping nuts 38 and extends from the bottom of the reservoir into the well. The lower open end of the nipple is provided with a valve seat 39 for engagement by a valve 40 and this valve is carried by a float 41, similar to the float 19.

The upper end of the nipple is provided with an angle cock 42 which communicates with the interior of the reservoir, and the stem 43 of this cock extends through a packing gland 45 and is provided with an operating handle 46 whereby the cock may be manually controlled.

In Figure 3, a nipple 47 has its inner end in

communication with the reservoir 10 and its opposite end provided with a valve seat 48. A valve 49 is adapted to engage this seat and is controlled by a float valve 50. In this form of the invention, the valve 49 is the sole means for controlling the flow of liquid from the reservoir 10 to the well 12.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is claimed is:—

In a liquid level regulating device, a well having an open top and a semi-circular opening in one of its side walls opening out through the top edge of the well, a laterally extending annular flange formed integral with the well, a liquid reservoir mounted upon the annular flange of the well for closing the open top thereof, means passing through the flange and the bottom of the liquid reservoir for securing the latter to the flange, the said flange being of a diameter equaling the diameter of the reservoir, means providing communication between the reservoir and well, and a float-controlled valve positioned in the well in alignment with the semi-circular opening to regulate the level of liquid in said well.

JOSEPH E. FOWLER.