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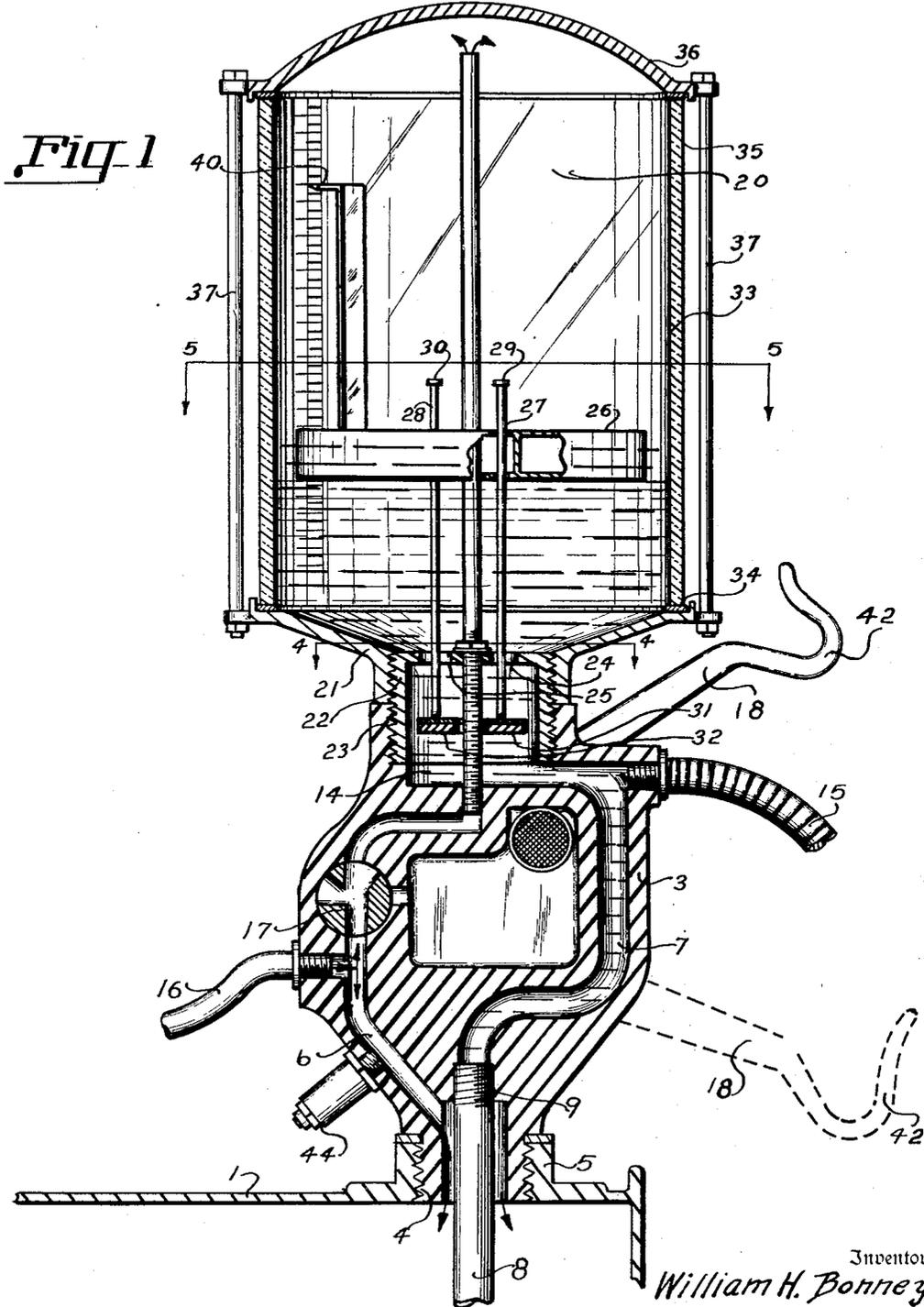
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1,945,725

LIQUID DISPENSING DEVICE

Filed July 29, 1932

2 Sheets-Sheet 1



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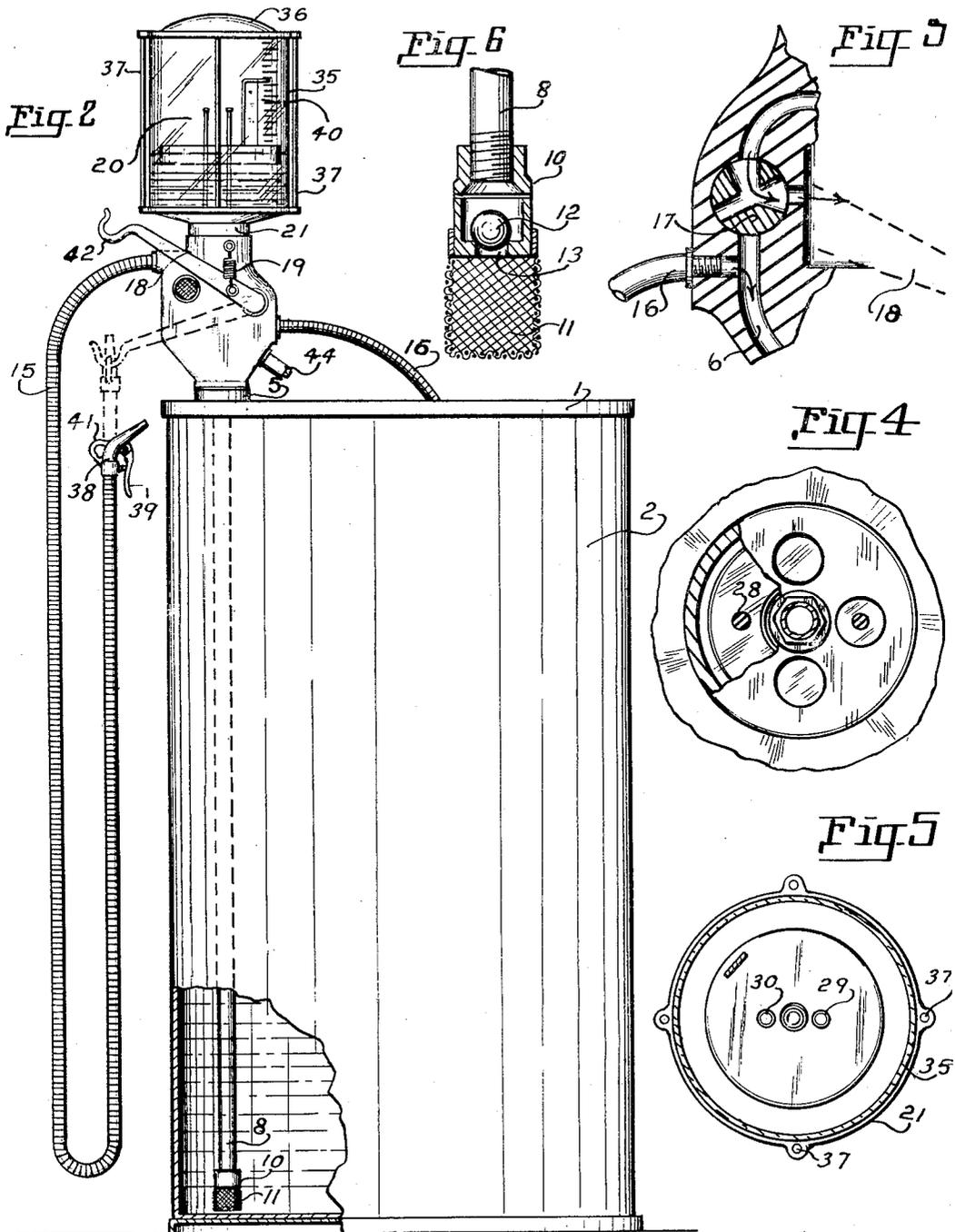
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LIQUID DISPENSING DEVICE

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4 Claims. (Cl. 221—100)

My invention relates to dispensing devices. It has for its primary purpose and object the dispensing, by pneumatic means of measured amounts of fluids from a container as a tank, or barrel through the device into a hermetically sealed transparent sided holder that is superposed the device. The transparent sided holder has graduations disposed thereupon for indicating the measured amount of material that has been disposed therefrom. A float is disposed within the holder that automatically closes the valve at a predetermined height of liquid. Pneumatic means is provided for forcing the materials, to be dispensed, from the holder and pneumatic means is also provided for forcing the materials to be dispensed from the holder. A multiple ported valve is formed within the body element for pre-determining the direction of flow of the materials to be dispensed from the holder.

The primary object of my invention consists in providing a completely assembled device that is adapted for being removably secured to a support and for having a tube, or pipe depending therefrom adapted for placement within a container and for admitting air through the device into the container to force the materials to be dispensed from the container into a holder, and for also providing settable means for admitting air into the holder to force the materials to be dispensed therefrom.

A further object of my invention consists in providing a completely assembled unit that may be utilized for the dispensing of fluids with maximum dispatch.

And a still further object of my invention consists in so constructing the device that it will be comprised of few parts and one that may be constructed at minimum cost, and one that will have a long and useful life with practical freedom from mechanical operating annoyances.

With these and incidental objects in view, the invention consists in certain novel features of construction and combination of parts, the essential elements of which are set forth in the appended claims, and a preferred form of embodiment of which is hereinafter shown with reference to the drawings which accompany and form a part of this specification.

In the drawings:

Fig. 1 is a sectional, side elevation, of the holder, the body assembly associated therewith and the valves and valve assembly disposed within the body element and within the fluid holder.

Fig. 2 is a side elevation, of one of my new and improved dispensing devices illustrated in place

upon a reservoir in which the fluid to be dispensed is disposed and illustrating a part of the jacket of the fluid holder broken away to illustrate the foot valve of the dispensing pipe that extends from the body element through the head of the reservoir into the base of the reservoir.

Fig. 3 is a fragmentary, sectional, side view, of a multiple ported valve disposed within the body element and of the pipe connection leading thereto. The valve in the position here shown is set for the forcing of the material from the holder.

Fig. 4 is a sectional, plan view of the assembled device. This view is taken on line 4—4 of Fig. 1, looking in the direction indicated.

Fig. 5 is a sectional, plan view, of the assembled device. This view is taken on line 5—5 of Fig. 1, looking in the direction indicated.

Fig. 6 is a side view, partially in section of the foot valve disposed at the base, or bottom end of the pipe leading therefrom to the body element.

Like reference characters refer to like parts throughout the several views.

I have here illustrated my assembled unit as being secured to the head 1 of a container 2. My device is primarily comprised of a body element 3. Suitable means is provided at the base of the body element for removably securing the same to the head 1 of the container, or to any other suitable support.

I have here shown the bottom of the body element as being threaded, as illustrated at 4, to adapt the same for being threadably secured to a threaded flanged boss 5 disposed upon the head of the container. The body element has a passageway 6 extending longitudinally of the body element for the passage of air, or steam, or any other suitable compressible fluid there-through and a passageway 7 that extends longitudinally of the device adapted for the passage of the fluid from the holder to be dispensed therethrough.

A pipe 8 intercommunicates with the passageway 7. The tube 8 being removably secured to the body element as by being threaded thereto, as illustrated at 9. A valve 10 is removably secured to the bottom of the pipe, or tube 8. A screen 11 is disposed over the valve to prevent unstrained matter entering the valve and tube. I have shown here the valve as being comprised of a ball valve 12 that is normally seated by gravity at the entrance port 13 of the valve, but I do not wish to be limited to the ball type valve,

as any other valve suitable for the purpose may be utilized with equal facility. The passageway 7 communicates with a reservoir 14 disposed within the head of the body element and a dispensing flexible hose 15 is threadably disposed to the discharge outlet of the reservoir. Once the tube 8 and the passageway 7 are filled with fluid to be dispensed, the valve 10 prevents the back flow of the fluid to the reservoir 2.

A compressible fluid is admitted into the passageway 6 through an entrance tube 16. The compressible fluid, as air, is obtained from any suitable source, and is admitted into the passageway 6. A multiple ported valve 17 is seated within the body element. An arm 18 is secured to the stem of the multiple ported valve 17, and a reacting element, as a coil spring 19, normally maintains the arm 18 in the position, as illustrated in full line position, in Fig. 2, in which position materials will be forced pneumatically from the holder 20.

The holder 20 is comprised primarily of a base 21. The base 21 is secured to the body element by any suitable connecting means. I have found a suitable working connection may be accomplished through the use of a short nipple 22. One end of which is threadably secured to a boss 23 of the body element. The oppositely disposed end of the nipple is threadably secured to the boss 24 of the base 21. The nipple 22 has a plurality of ports 25 disposed in its upper end. A float 26 is disposed within the holder. Valve stems 27 and 28 pass through the float and the float is free to move longitudinally of the valve stems. Heads 29 and 30 are disposed upon the valve stems to limit the upward movement of the float relative to that of the valve stems.

Valves 31 and 32 are disposed upon the oppositely disposed ends of the valve stems and as the float is raised and it engages the heads of the valve stems the valves are raised and seated relative to the head of the nipple 22 and closes the ports 24. The seating of the valves relative to the length of the valve stems predetermines the amount of fluid that may be permitted to enter the holder 20.

The holder 20 is comprised of a transparent cylinder 33 that rests upon a gasket 34. A gasket 35 is disposed upon the upper end of the transparent cylinder 33 and a dome shaped head 36 closes the upper end. A tight working relationship is maintained between the base 21, the transparent cylinder 33 and the head 36 through the use of bolts 37.

With the valve 17 in the position, as illustrated in Fig. 1, the dispensing air is admitted into the reservoir 2 and also into the holder 20. This forces the fluid from the holder 20 into the dispensing hose 15. A self-closing nozzle 38 terminates the discharge end of the hose. On the manual manipulation of the release valve 39 material will flow from the holder and the hose.

A graduated scale 40 is provided for automatically indicating the top level of the fluid, and also enables the dispenser to determine the amount of fluid that he has dispensed at each serving. A ring 41 is provided upon the discharge nozzle and a hook 42 terminates the free end of the arm 18. The hanging of the free end of the hose assembly and the nozzle upon the hook 42 lowers the arm and actuates the valve 17 into the position, as illustrated in Fig. 3. In this position the air disposed within the holder 20 is exhausted through the exhaust port to the

atmosphere and simultaneously therewith the air flows through the passageway 7 into the container 2 and forces the material from the container into the holder until the valves are closed.

To prevent the development of undue pressure within the assembly I place a blow-off valve 44 through the side wall of the body element and connect the same with the air passageway 7.

While the form of mechanism here shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form of embodiment herein shown and described, as it is susceptible of embodiment in various forms, all coming within the scope of the claims which follow.

What I claim is:

1. In a device of the class described, the combination of a body element, means associated therewith for removably securing the same in open communication with a container, a fluid holder superposed upon the body element and hermetically sealed relative thereto, an air duct extending through the body element and in open communication with the container and the fluid holder, a fluid duct intercommunicating between the container and the fluid holder through a float actuated valve, a multiple way valve arranged within the body element and adapted to direct air pressure through the air duct or to exhaust the same.

2. In a device of the class described, the combination of a liquid measuring receptacle, a valve carrying float disposed within the receptacle, a port disposed in the bottom of the receptacle and adapted to be opened or closed by the rise or fall of the float, a body element interposed between the receptacle and a container, an air duct intercommunicating between the container and the receptacle, a fluid duct in open communication with the container and the body element and adapted to receive fluid under pressure from the container, outlet means communicating with the fluid duct and a multiple way valve arranged within the body element for directing air pressure simultaneously to the receptacle and the container or to the atmosphere to exhaust the air pressure.

3. A device for dispensing metered quantities of fluid comprising a fluid container in open communication with a measuring receptacle through a float actuated valve, an air duct intercommunicating said receptacle and container and adapted to force fluid from the container into the receptacle a dispensing outlet communicating with the underside of said float actuated valve and a multiway valve adapted to direct air pressure through the air duct into the container and into the receptacle or to exhaust air pressure.

4. In a device of the class described, the combination of a body element, means associated with the body element for removably securing the same to a container, a fluid holder superposed upon the body element and hermetically sealed relative thereto, a plurality of passageways extending longitudinally through the body element, a multiple way valve disposed within one of the passageways, a float disposed within the fluid holder, valves carried by the float, passageways disposed within the head of the body element and adapted to be closed by the valve when the float arises to a predetermined height.