Oct. 28, 1924. 1,513,485

E. W. BULLARD

LIQUID DISPENSER

Filed Oct. 24, 1923

Fig. 5.

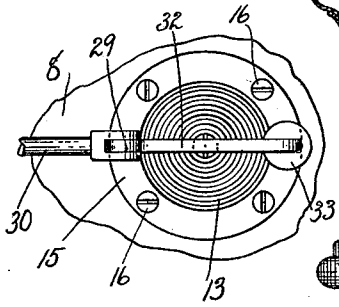


Fig. 1.

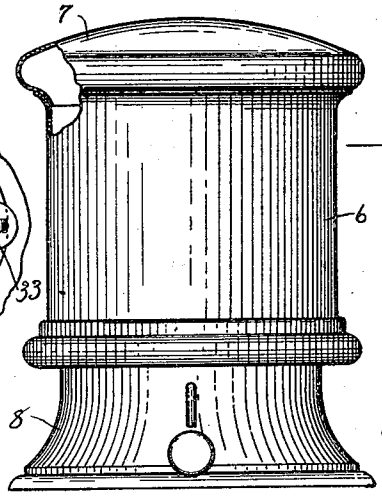


Fig. 2.

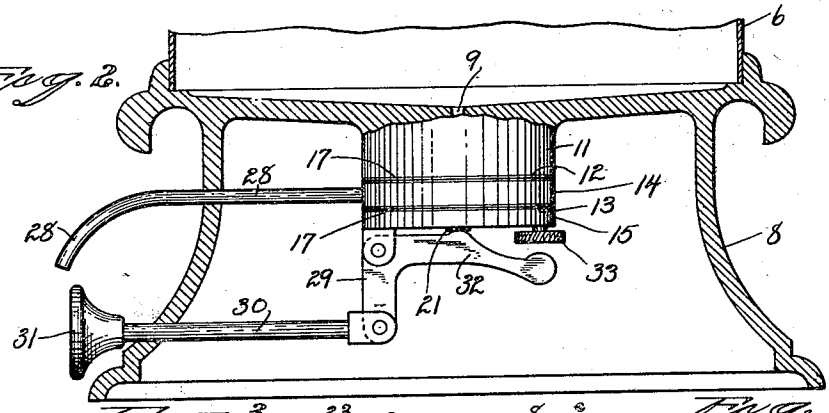


Fig. 3.

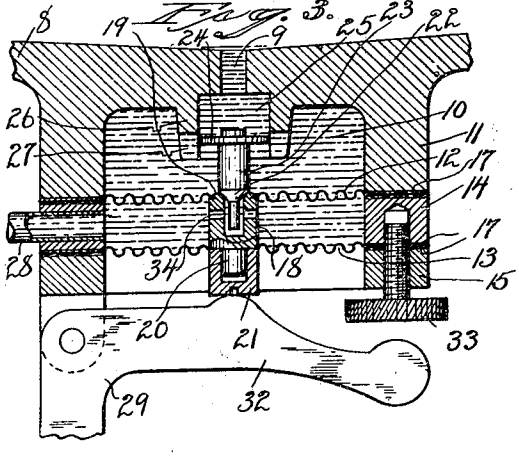
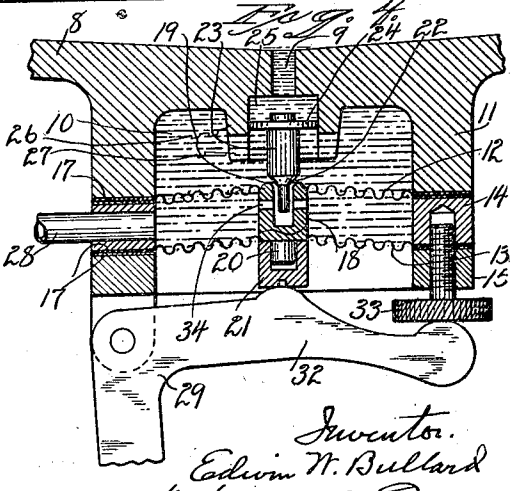


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWIN W. BULLARD, OF WHITNEYVILLE, CONNECTICUT.

LIQUID DISPENSER.

Application filed October 24, 1923. Serial No. 670,462.

To all whom it may concern:

Be it known that I, EDWIN W. BULLARD, a citizen of the United States, residing at Whitneyville, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Liquid Dispensers; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Fig. 1 a side view, partly in section, of a liquid dispenser constructed in accordance with my invention.

Fig. 2 a broken side view of the lower portion of the device on an enlarged scale.

Fig. 3 a sectional view of the liquid controlling mechanism on a still larger scale, and shown in the closed position.

Fig. 4 a similar view, showing the parts with the valve-opening ready to discharge.

Fig. 5 a broken underside view of the device, showing a plan view of one of the diaphragms, and means for securing the diaphragms in place.

This invention relates to improvement in liquid dispensers, and while particularly adapted for dispensing holy water, it is equally applicable for dispensing soap, or other liquid, where it is desired to limit the amount discharged at any one operation. The object of this invention is to provide a dispenser especially designed for use as a holy water fount, where it is desired to discharge a small amount of liquid without requiring that the fingers come in contact with the container, and the invention consists in a liquid dispenser having certain details of construction and combinations of parts as will be hereinafter described and particularly recited in the claims.

In carrying out my invention, I employ a fount 6 of any approved design, closed by a cap 7 and supported by a base 8. In the center of the bottom of the base, which is preferably inclined toward the center, is a passage 9 into a cylinder 25, which enters into a chamber 10 formed by a circular collar 11. The underside of this chamber 10 is closed by diaphragms 12 and 13, preferably annularly corrugated and separated by a spacing-ring 14, which is secured to the underside of the neck by a clamping-ring 15 held by screws 16. Preferably packing-washers 17 will be employed to make a tight fit between the spacing-ring and the end of the neck and clamping-ring. Located between the diaphragms, at the center, is a valve-block 18 provided with a valve-seat 19 opening through the diaphragm 12 and also provided with ports 34 between the diaphragms, and having a screw-stud 20 extending through the diaphragm 13 for the reception of a nut 21, by which the valve-block is located in position. Arranged to coact with the valve-seat 19 is a gate 22, formed at the lower end of a stem 23, which carries at its upper end a piston 24 closely fitting the cylinder 25, into which the hole 9 directly opens. The cylinder 25 is formed in a boss 26 depending from the under-face of the base, and the end of this is formed with radial slots 27. Mounted in one side of the ring and extending outward through the base, is a discharge-pipe 28, and suspended from one side of the clamping-ring 15 is a bell-crank-lever 29 adapted to be moved by a plunger 30 extending outward through the base and provided with a finger-piece 31 directly below the discharge-pipe 28. One arm 32 of the bell-crank-lever is adapted to engage with the nut 21, and its upward movement is limited by a set-screw 33, adjustably mounted in the clamping-ring 15 and spacing-ring 14.

In the normal position, the diaphragms 12 and 13 stand in a horizontal position, as shown in Fig. 3 of the drawings, and in this position, the pressure of water in the fount will depress the piston 24, so as to force the gate 22 into its seat 19, and hence close the passage into the space between the diaphragms. To discharge the liquid, the plunger 30 is forced inward, moving the arm 32 of the bell-crank-lever upward so as to upwardly deflect the diaphragms 12 and 13, and as the chamber 10 is filled with liquid, this compression of the liquid will force the piston 24 upward, so as to close the passage from the fount. At the same time, the valve-gate 22 will be lifted from the seat 19 and allow a small quantity of liquid to pass into the space between the diaphragms, from which it will escape through the discharge-pipe 28, it being understood that in its normal operation, the space between the diaphragms is filled with liquid. As soon as the plunger 30 is released, the diaphragms resume their horizontal position, and the pressure of liquid in the fount will force the

valve-gate 22 to its seat and permit the liquid to enter the chamber 10 in amount corresponding to that discharged by the operation of the device.

To illustrate the invention, it is shown on a much enlarged scale, so that the openings appear exaggerated, but in actual practice, the device will operate successfully as described.

I claim:

1. A liquid dispenser, comprising a fount and a base therefor, said base formed in its under-side with a chamber, a cylinder in said chamber, and a passage from the fount into said cylinder, two diaphragms mounted below said cylinder, a valve-block located between said diaphragms and formed at its upper end with a seat, a piston in said cylinder, with a downwardly-extending stem, a gate at the lower end of the stem co-acting with said seat, ports in said valve-block between said diaphragms, a discharge-opening from the space between the diaphragms, and means for upwardly deflecting said diaphragms.

2. A liquid dispenser, comprising a liquid container and a supporting base therefor, said base formed at the center with a neck providing a chamber, a cylinder in said chamber, and a passage from the container into the said cylinder, two diaphragms separated by a spacing-ring and secured to the edge of said neck, a valve-block located between said diaphragms, said valve-block formed with a seat and with ports opening into the space between the diaphragms, a piston in said cylinder having a stem forming a gate for said valve-seat, a discharge-pipe extending through said spacing-ring, and means, including a bell-crank-lever, adapted to upwardly deflect said diaphragms.

3. A liquid dispenser, comprising a container and supporting base therefor, said base formed in its under side with a neck, a downwardly-opening cylinder in said neck and opening from the container in said cylinder, two diaphragms separated by a spacing-ring and secured to said neck, a valve-block located between the said diaphragms, formed at its upper end with a seat opening through the upper diaphragm and with ports into the space between the diaphragms, said block formed with a stem extending downward through the lower diaphragm, a nut secured to said stud, a piston in said cylinder having a stem provided at its lower end with a gate to engage with the said valve-seat, a bell-crank-lever mounted below said diaphragms, one arm of which is adapted, when moved, to upwardly deflect the said diaphragms, means for limiting the upward movement of said lever, and means extending through said base for operating said lever.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

EDWIN W. BULLARD.

Witnesses:

FREDERIC C. EARLE,

MALCOLM P. NICHOLS.