M. O. REHFUSS.

LIQUID DISPENSING DEVICE.

APPLICATION FILED FEB. 7, 1910.

1,012,439.

Patented Dec. 19, 1911.

Fig. 1.

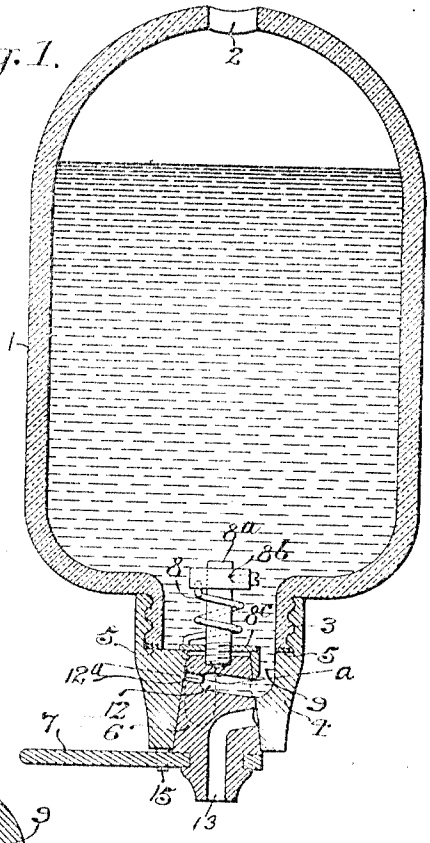


Fig. 4.

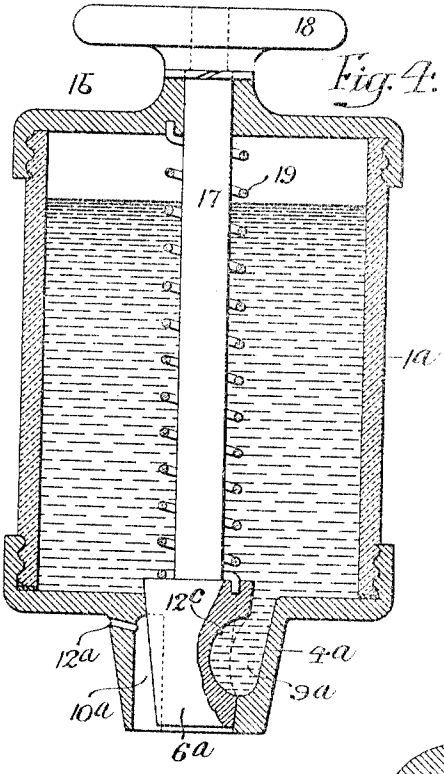


Fig. 3.

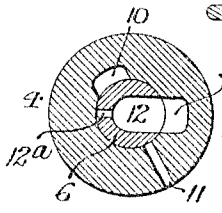
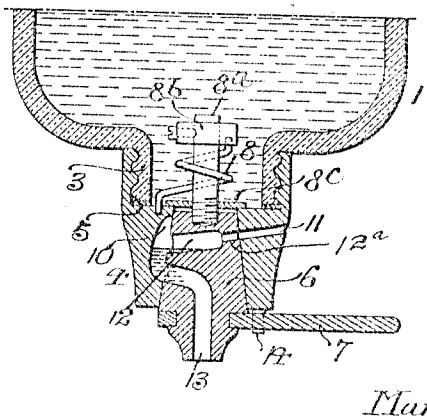


Fig. 2.



Witnesses.—

William A. Rivoir.

Wills A. Burrows

Inventor.—

Martin O. Rehfuss.

by his Attorneys:

Howson & Howson

UNITED STATES PATENT OFFICE.

MARTIN O. REHFUSS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOHN WANAMAKER, OF PHILADELPHIA, PENNSYLVANIA.

LIQUID-DISPENSING DEVICE.

1,012,439 Specification of Letters Patent. Patented Dec. 19, 1911.

Application filed February 7, 1910. Serial No. 542,410.

To all whom it may concern:

Be it known that I, MARTIN O. REHFUSS, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Liquid-Dispensing Devices, of which the following is a specification.

One object of my invention is to provide a container, particularly designed for holding liquid soap or other substance, with a relatively simple, inexpensive, and substantial device whereby a limited and predetermined quantity of liquid may be delivered from said vessel at will; the construction being such that the delivery of the liquid is certain and rapid. I also desire to provide a liquid dispensing device with a measuring valve, of such construction as to not easily be put out of order or require attention, whereby it shall be possible to secure at will a predetermined amount of liquid from the reservoir connected to said valve; the construction including means whereby the valve is normally held in and tends to return to, a definite position.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which;—

Figure 1, is a vertical section of a liquid soap dispensing device constructed according to my invention; Fig. 2, is a fragmentary vertical section of one portion of the apparatus shown in Fig. 1; certain of the parts being illustrated as turned to a position in which a measured quantity of liquid is delivered; Fig. 3, is a horizontal section on the line *a—a*, Fig. 1 and Fig. 4, is a vertical section of a modified form of my invention.

In Figs. 1 to 3 of the above drawings, 1 represents a reservoir or containing vessel which is preferably of glass and provided at its upper end with a relatively small inlet opening 2. At its lower end this vessel is provided with a contracted neck 3 attached in any desired manner to a valve casing 4;—in the present instance by being threaded into the same. A liquid tight joint is secured between the parts by use of a gasket or body of packing 5. The valve casing is provided with a downwardly flared chamber in which is revolubly mounted a conical plug valve 6, whose lower end projects beyond the valve casing and is provided with an operating arm 7. Said valve is held in position in the valve casing by means of a spring 8 mounted on a stud 8^a fixed in the valve and having a head 8^b. This head is held in any adjusted position on the stud by a set screw, and the spring has one end fixed to said head while its other end is held to the valve casing, though the lower end of the spring rests on a washer 8^c in turn supported on the valve casing.

The valve casing is provided with two passages of which the first is indicated at 9 and extends from the interior of the container 1 to the valve chamber in said casing. The second passage is indicated at 10 and the valve structure 6 has a cavity 12 so placed as to be capable of communicating either with the lower end of the passage 9 or with the upper end of the passage 10 in the valve casing, and there is in addition in said valve a second passage 13, capable of being brought into communication with the passage 10 of the casing and having an outlet opening on the lower end of the valve. In addition there is an air passage 11 extending through the wall of the valve casing and so placed as to be brought into communication with a second air passage 12^a connected to the cavity 12 of the valve when this latter connects with the passage 10. Two stops 14 and 15 are provided on the lower edge of the valve casing 4 in such positions as to limit to any desired extent the movement of the operating arm 7, and therefore of the valve to which it is fixed, so that when said handle is in the position shown in Fig. 1, the cavity 12 of the valve is in communication with the passage 9 of the valve casing and therefore receives a definite charge of liquid soap or other material from the interior of the reservoir 1. When by means of the arm 7, the valve is so turned that said arm engages the stop 14, the charge of liquid within the cavity 12 of the valve passes into the cavity 10 of the casing 4, which action is facilitated by reason of the fact that air is admitted to the upper part of said cavity 12 through the air passages 11 and 12^a. From the cavity 10, the liquid is free to flow into the passage 13 in the valve, from which it escapes for use in the well known manner. The construction shown is of such design that the spring draws the valve upward into its chamber and also tends to return it to the position

shown in Fig. 1, when it is moved therefrom. In that form of my invention shown in Fig. 4, the valve has connected to it a spindle 17 extending upwardly through the reservoir 1^a and through a cap or cover 1^b. The upper end of said spindle is provided with a knob or handle 18 whereby it, with the valve 6^a, may be turned, and there is a torsion spring 19, connected at one end to said valve and at the other end to the cover 1^b, whereby the valve is normally maintained in and returned to the position shown in Fig. 4. In this instance the valve is tapered from its upper end downwardly and has but a single cavity 12^c. The valve casing 4^a, which also serves as a bottom cover for the reservoir 1^a, has a passage 9^a opening into one side of the conical chamber for the reception of the valve 6^a, in such position as to communicate with the cavity 12^c of the valve. Said casing also has a second cavity 10^a capable of communicating with the cavity in the valve when the latter has been turned to the predetermined extent from the position shown, although in such case this second cavity is open at the lower end to permit of the direct discharge of liquid entering it. Under normal conditions the cavity in the valve is filled through the passage 9^a with the liquid in the reservoir, and when, by means of the handle or knob 18, the valve is turned sufficiently, this cavity of the valve is brought into communication with the passage 10^a into which its liquid is discharged and from which it flows out. As soon as the handle is released, the spring 19 automatically returns the valve 6^a to its normal position shown. By providing the air vent 11 for the cavity 12, in that form of my invention shown in Figs. 1 and 2, any possibility of the charge of liquid remaining in said cavity instead of passing out through the channel 13 is avoided and its discharge is made to occur quickly.

I claim:—

1. The combination of a reservoir; a valve casing mounted on the lower end of the same and provided with a valve chamber, there being a passage in the casing extending downwardly from the bottom of the reservoir and opening into the upper part of said chamber; a valve in the chamber having a cavity opening in its side so as to be capable of connecting with the passage in the casing, said valve also having a passage opening on its side and forming an outlet at its bottom, there being a cavity in the side of the valve chamber placed to simultaneously communicate with the cavity and the passage of the valve; with means for turning said valve.

2. The combination of a reservoir; a valve casing mounted on the lower end of said reservoir and having an upwardly tapering valve chamber; a valve in said chamber for controlling the delivery of liquid from the reservoir and provided with an upwardly extending stem; a helical spring on the stem acting between the same and the casing to retain the valve tightly in its chamber and connected to oppose rotation of the valve; with means for turning the valve.

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

MARTIN O. REHFUSS.

Witnesses:

WILLIAM E. BRADLEY,

WM. A. BARR.