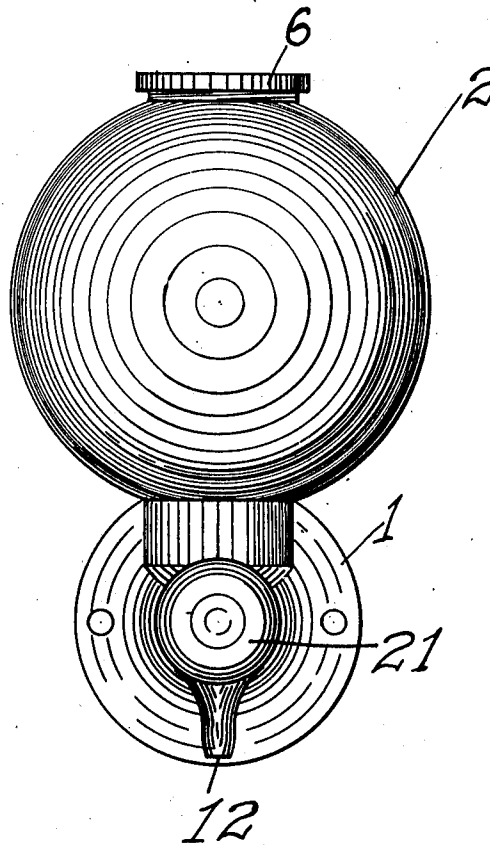


T. J. DUNN.
LIQUID SOAP DISPENSER.
APPLICATION FILED FEB. 21, 1910.

982,768.

Patented Jan. 24, 1911.
2 SHEETS—SHEET 1.

Fig. 1.



Witnesses.
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Sidney Hotchner

Inventor.
T. J. Dunn, by,

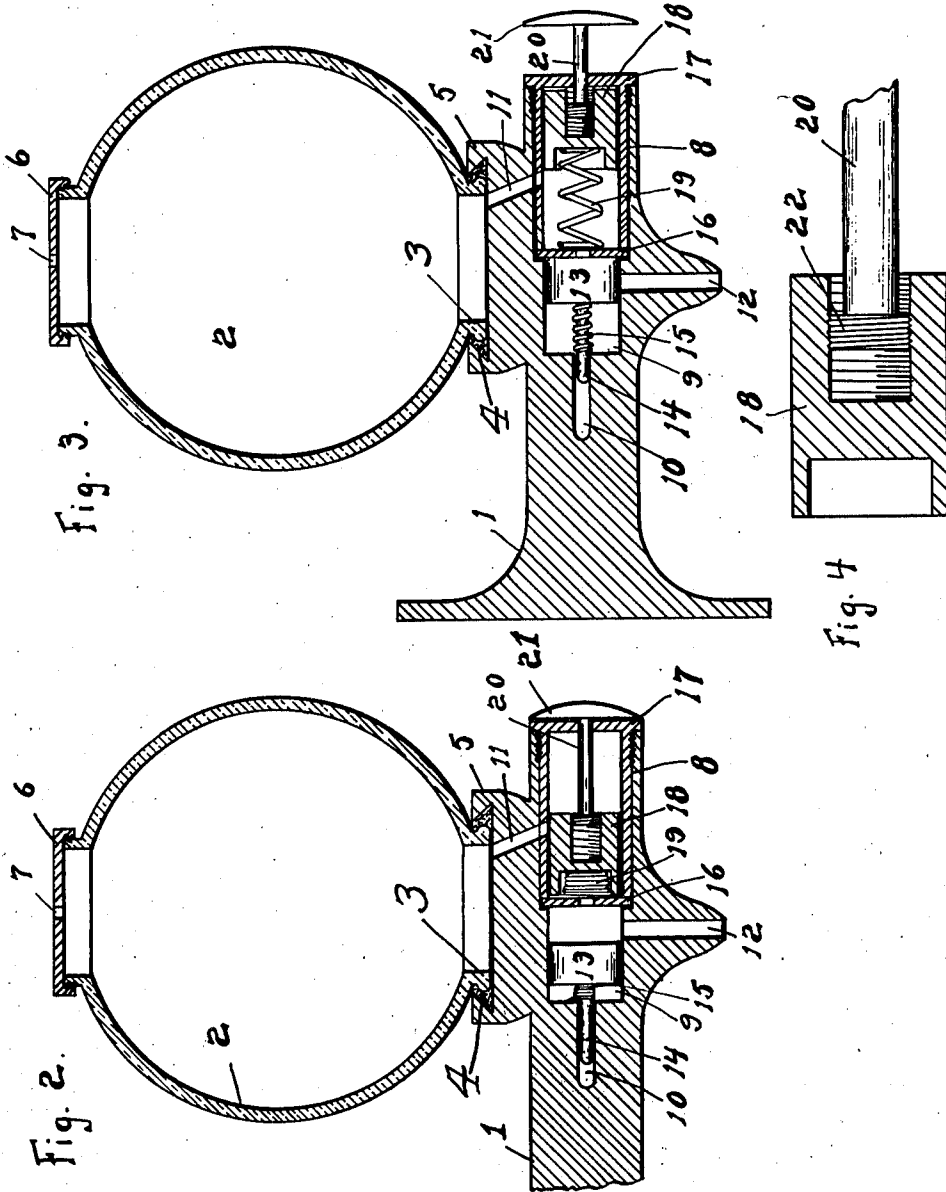
C. P. Griffin Atty.

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UNITED STATES PATENT OFFICE.

THOMAS J. DUNN, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO J. S. McANANY, OF
SAN FRANCISCO, CALIFORNIA.

LIQUID-SOAP DISPENSER.

982,768.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed February 21, 1910. Serial No. 545,208.

To all whom it may concern:

Be it known that I, THOMAS J. DUNN, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Liquid-Soap Dispenser, of which the following is a specification in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a liquid dispenser, and its object is to deliver any predetermined quantity of liquid soap or other fluid compounds to a person desiring to use the same.

An object of the invention is to prevent the waste of the material delivered by the device, to produce a device which may be readily refilled with the liquid when empty, and which will not leak either at the supply tank or at the delivery nozzle.

A further object of the invention is to produce a dispensing device which will dispense more or less of a predetermined quantity of liquid as may be desired, at the will of the user.

In the drawings, in which the same numeral of reference is applied to the same portion throughout the several views, Figure 1 is a front view of the dispensing apparatus; Fig. 2 is a vertical sectional view of the device, with a portion of the supporting standard broken away, the apparatus being shown in the position of discharging a small quantity of liquid therefrom; and Fig. 3 is a vertical sectional view of the device in its normal condition. Fig. 4 is a longitudinal sectional view of the liquid feed plunger, illustrating the manner of adjusting the same.

The numeral 1 represents a support for the liquid-holding receptacle 2, said receptacle comprising a globe having a neck 3 which is held to the upper portion 5 of the arm 1 by means of cement 4. The globe is provided with a screw cap 6, which has an air opening 7 therein, in order that the liquid may be withdrawn from the receptacle. The arm 1 has an opening of three different diameters therein; first, the large portion 8; second, a smaller portion 9; and third, a very small portion 10. Leading from the upper portion 5 of the arm 1 is a passage 11, said

passage leading into the neck of the receptacle. Slidable in the hole 9 is a plunger 13 having a small shank 14, which slides in the small hole 10, said shank 14 being surrounded by a spring 15 to hold the plunger normally in the position shown in Fig. 3, and to prevent said spring from pushing said plunger out of that position, a plate 16 is inserted in the hole 8, said plate being held in place therein by means of a tube 17, said tube being threaded at its outer end, and having an opening to correspond with the opening through the portion 5 of the arm 1. This tube contains a plunger 18, which is normally held in the position shown in Fig. 3 by means of a spring 19, which is pushed into the position shown in Fig. 2 by means of a rod 20 having a button 21 thereon. This rod 20 is adjustable in the plunger 18 by means of a threaded head 22, said head providing the means whereby the stroke of the piston may be varied in its total throw.

The operation of the device is as follows: The button 21 is pushed up against the end of the tube in which it slides, and the pressure of the plunger 18 on the body of liquid pushes it through the hole in the plate 16; and the pressure of the liquid pushes the plunger 13 back enough to uncover the opening 12, causing the liquid to be projected therefrom. Since the rod 20 is movable with respect to the piston 18, and since the length of that rod determines the stroke of the plunger, the quantity of material ejected from the device may be varied by changing the position of the head 22 with respect to the plunger 18, since when it is in the bottom of the opening in which it is threaded, the stroke of the piston 18 will be short, while if it is near the mouth of said opening in the piston 18, the stroke will be much longer, thus measuring the predetermined quantity of liquid desired.

In operation the plunger 18 is pushed in by the rod 20, the plunger at once closing the channel 11. Further movement of the plunger 18 forces the liquid through the hole in the plate 16 and causes the movement of the plunger 13 away from said plate, said movement continuing until the channel 12 is opened, when the combined pressures

of the plungers 13 and 18 cause a small quantity of the liquid to be forced from the dispenser. Immediately on the release of the piston 18 the pressure is removed from the liquid in the chamber of the tube 17 and the plunger 13 seats on the plate 16, closing the opening in said plate and also closing the passage 12. The spring 19 is heavy enough to cause the return of the plunger 17 and form a vacuum in the chamber within the tube until the opening 11 is uncovered, at which time the chamber will be forcibly filled with a fresh charge of liquid.

The advantage of this construction is that very stiff or viscous liquids can be easily handled by the device. The particular necessity for this lies in the fact that soap, the substance most frequently handled by such a device as this often becomes quite stiff and viscous about the discharge openings. Another advantage of this construction is that a great pressure may be exerted on the material in front of the plunger 18 to expel it from the dispenser.

It will be noted that the operating parts of this dispenser are all assembled from the front, and may be readily taken out without disturbing the connection of the arm with the wall to which it is secured.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is as follows:

1. In a liquid dispenser, an arm having two communicating chambers therein, a plunger in each of said chambers, means extending from one of said plungers to the outside of the device, and adapted to manually move the plunger, and a liquid soap receptacle having communication with the chamber surrounding said manually movable plunger, said chambered arm having openings whereby material may be ejected from the chambers upon the movement of said plungers, as described.

2. In a liquid dispenser, an arm having two communicating chambers therein, a spring pressed plunger in each of said chambers, a plate having an opening therein, and against which one of said plungers is normally seated, a receptacle having a passage communicating with the other of said chambers, and a rod connected with the plunger in the latter chamber and extending outside the device, whereby said plunger may be manually moved, as set forth.

3. In a liquid dispenser, an arm having two communicating chambers therein, a soap receptacle having an opening into one of said chambers, said arm also having an opening from the other of said chambers into and through a spout carried thereby, a spring pressed plunger in the latter of

said chambers, a plate adapted to hold said spring pressed plunger normally over the opening into said spout, a spring pressed plunger in the chamber opening into the liquid receptacle, and manual means for operating the last-mentioned plunger, as set forth.

4. In a liquid dispenser, an arm having two communicating chambers therein, a spout having an opening into one of said chambers and carried by said arm, a plunger in one of said chambers and adapted to cover the opening into the spout, a plate having an opening therein and adapted to hold said plunger over the opening into said spout, and a manually movable spring pressed plunger in the other chamber and a liquid receptacle having an opening into the last mentioned chamber, substantially as set forth.

5. In a liquid dispenser, an arm having two communicating chambers therein and having an opening from one of said chambers into a spout carried by said arm, a spring pressed plunger in one of said chambers to cover the opening into said spout, a plate having an opening therein to hold said plunger over the opening into said spout, a tube in the other chamber and having an opening therein, a spring pressed plunger in said tube, manual means for moving said plunger, and a liquid receptacle secured to said arm and having communication with said tube through openings in said arm and in said tube, substantially as described.

6. In a fluid dispenser, a liquid supply receptacle, an arm having a spout and supporting said receptacle, said arm also having two communicating chambers therein, an opening from one chamber to the liquid supply, and an opening from the other chamber to the spout, a plate having a small opening therein and forming a partition between the two chambers, a spring pressed plunger in one of the chambers and adapted to leave the opening into the liquid supply normally open, a spring pressed plunger in the other chamber and adapted to normally close the discharge opening and the opening in said plate and means to manually operate the first-named plunger, as set forth.

7. In a fluid dispenser, a liquid supply receptacle, an arm having a spout and supporting said receptacle, said arm also having two communicating chambers therein, an opening from one chamber to the liquid supply, and an opening from the other chamber to the spout, a plate having a small opening therein and forming a partition between the two chambers, a spring pressed plunger in one of the chambers and adapted to leave the opening into the liquid supply

normally open, a spring pressed plunger in the other chamber and adapted to normally close the discharge opening and the opening in said plate, and adjustable means to manually move the first-named plunger.

In testimony whereof I have hereunto set my hand this 15th day of January A. D.

1910, in the presence of the two subscribed witnesses.

THOMAS J. DUNN.

Witnesses:

C. P. GRIFFIN,
R. P. ROGERS.