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P. H. STAPLEY

LIQUID SOAP DISPENSER

Filed July 22, 1922

FIG. 1.

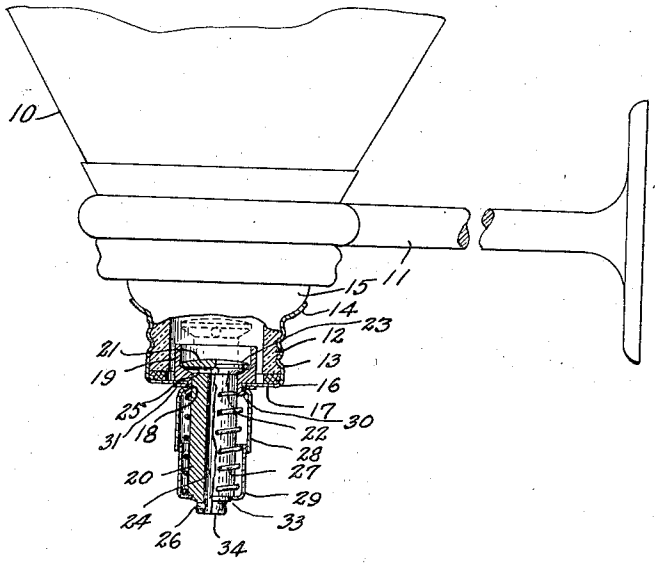
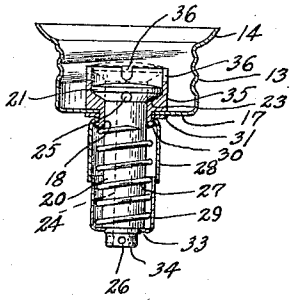


FIG. 2.



INVENTOR.

BY Philip H. Stapley

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ATTORNEYS.

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UNITED STATES PATENT OFFICE.

PHILIP H. STAPLEY, OF WATERBURY, CONNECTICUT, ASSIGNOR TO W. D. CARPENTER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

LIQUID-SOAP DISPENSER.

Application filed July 22, 1922. Serial No. 576,721.

To all whom it may concern:

Be it known that I, PHILIP H. STAPLEY, a citizen of the United States, residing at Waterbury, county of New Haven, State of Connecticut, have invented an Improvement in Liquid-Soap Dispensers, of which the following is a specification.

This invention relates to vessels or receptacles for dispensing liquids and especially to vessels for dispensing liquid soap.

It has for an object to provide an improved means for controlling the discharge of liquid soap from the vessel, one that is simple in construction and not easily gotten out of order.

It is also an object of the invention to provide a controlling means in which the spring is not surrounded by the liquid soap, and one which is not liable to become clogged in operation or leak.

With these and other objects in view I have devised the construction illustrated in the accompanying drawing, in which

Fig. 1 is a side elevation of the lower part of the receptacle mounted in a suitable bracket with my improved regulating means shown in section attached thereto, and

Fig. 2 is a sectional view of the cap and regulating means removed from the vessel showing a slightly modified construction.

The vessel 10 is preferably the usual glass container for the liquid soap which is usually held in an inverted position by any suitable form of bracket 11 attached to a suitable support as a wall. The lower end of the vessel is preferably exteriorly threaded, as shown at 12, which is adapted for engagement with the threaded cap 13, as shown in Fig. 1. This cap is preferably formed of sheet metal and has a flared upper end 14 to fit snugly around enlarged portion 15 of the vessel to provide a tight fit and also to give a neat appearance. When the cap is applied to the threaded end of the vessel a packing 16 of any suitable material is placed between the end of the vessel and the cap to prevent leakage from the vessel. The outer end 17 of the cap is provided with an opening through which projects an extension 18 of a cup 19, this cup being seated within the cap and open at its inner end as shown. Mounted to reciprocate within the extension 18 is a plunger 20 which has an enlarged inner end 21, this end and the cap being provided with opposed inclined surfaces 22 and 23 respectively providing a valve and valve seat and the plunger has extending therethrough a longitudinal passage 24 leading from a point within the cup at the underside of or below the head of the plunger where the entrance thereto is controlled by the coaction of the valve and the valve seat, the lateral portion of this passage being shown at 25, and this passage leading to the outer end of the plunger. Adjacent this outer end this passage is also preferably provided with laterally extending branches 26 to facilitate the discharge of liquid from the passage and entrance of air thereto should the extreme lower end of the passage be closed by the operator in operating the same.

Surrounding the plunger is a coil spring 27 and surrounding the spring are upper and lower telescoping shells 28 and 29 respectively. The upper end of the upper shell is adapted to receive the end of the extension 18 so that this extension may be clinched over the end of the shell, as shown at 30, to securely fasten the cup and shell to the cap. As the shell and cap are preferably of thin sheel metal, a washer 31 may be inserted between the cap and shell to give a better holding effect. The outer end of the lower shell 29 is turned inwardly and secured to the plunger preferably by rolling a portion of the plunger over the end thereof, as shown at 32, or by soldering the same thereto. The spring 27 abuts at the opposite ends of the shells and thus tends to hold the plunger in the lowermost position and the valve 22 on its seat 23.

In operation, when it is desired to take some liquid from the receptacle, the operator presses on the lower end 34 of the plunger and raises the same to the dotted line position. In the form shown in Fig. 1, the side walls of the cup 19 are cylindrical and imperforate and form a guide for the head 21 of the plunger, and the shells 28 and 29 are so proportioned as to allow the head of the plunger to be raised above the upper edge of the cup, as shown in dotted lines in Fig. 1, to allow the entrance of liquid to the cup and also its entrance within the passage in the plunger. In this form the plunger is rigidly guided by its head within the cup, the body portion thereof within the extension 18, and by the lower shell 29

in the upper shell 28 as this lower shell is secured to the lower end of the plunger. It is, therefore, apparent that there is no liability of the plunger being cramped in its guides or sticking.

In the form shown in Fig. 2, instead of the side walls of the cup 35 being imperforate as shown in Fig. 1, the upper edges thereof are provided with suitable notches 36 so that it is not necessary to have the part proportioned to allow the head 21 of the plunger to be raised above the cup to allow entrance of liquid thereto, but this head will always be guided in the cup.

It will be apparent from the foregoing description that I have devised a simple, reliable controlling means for this type of dispensing apparatus in which the spring is not exposed to the liquid and so will not be corroded thereby and one in which there is a free passage for the flow of liquid provided so that it always functions properly. The parts are so arranged that there is no likelihood of leakage and all the operating parts are enclosed so as to present a neat appearance.

Having thus described the nature of my invention, what I claim is:

1. In a device of the character described a cap adapted for attachment to a receptacle and provided with an opening, a cup mounted in the cap and having a portion extending through said opening, a plunger provided with a valve within the cup and mounted to reciprocate in said extension, said plunger having a discharge passage leading from the cup to a point adjacent the outer end of the plunger, a spring surrounding the plunger and tending to hold the valve in closed position, and a shell surrounding the spring and having an end embracing the extension, the outer end of the extension being clinched over the end of the shell to secure the cup and shell of the cap.

2. In a device of the character described a cap adapted for attachment to a receptacle and carrying a valve seat, a reciprocable plunger mounted in the cap and provided with a valve to coact with said seat, said plunger being provided with a discharge passage leading longitudinally thereof and controlled by said valve and seat, a spring surrounding the plunger and tending to hold the valve on the seat, and telescoping shells surrounding the spring and secured respectively to the cap and plunger.

3. In a device of the character described a cap adapted for attachment to a receptacle and provided with an opening, a cup mounted in said cap and having an extension in said opening, a reciprocable plunger mounted in said cup, said cup and plunger having a coacting valve and valve seat and said plunger being provided with a discharge passage controlled thereby, a spring surrounding the plunger and tending to retain the valve closed, and a shell surrounding said spring, the outer end of said extension being clinched over the end of the shell to secure the shell and cup to the cap.

In testimony whereof I affix my signature.

PHILIP H. STAPLEY.