No. 847,000. PATENTED MAR. 12, 1907.

J. F. HELMOLD.

LIQUID SOAP HOLDER.

APPLICATION FILED FEB. 12, 1906.

Fig. 1.

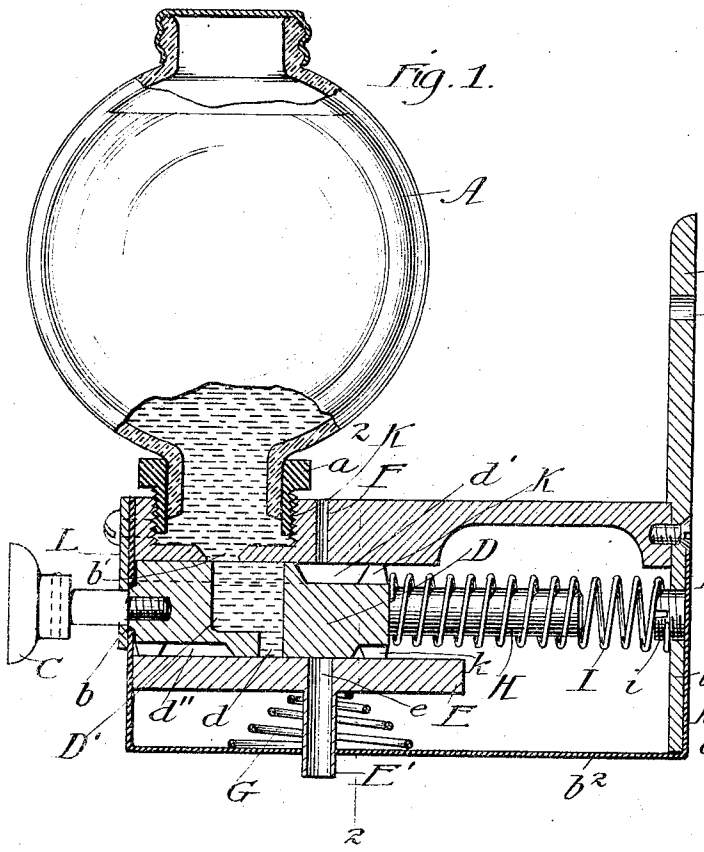



Fig. 2.

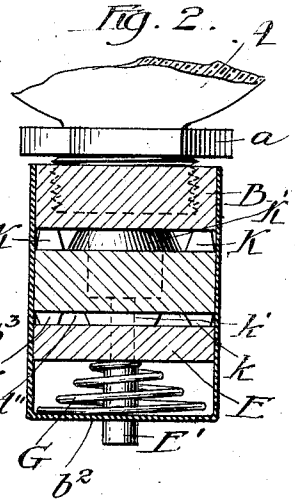



Fig. 3.

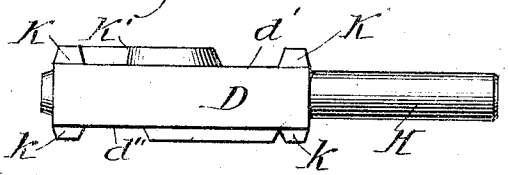



Fig. 4.

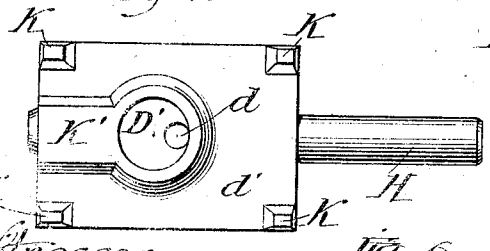
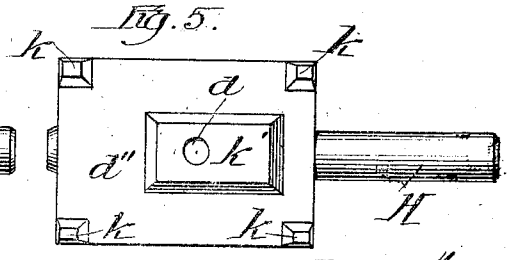



Fig. 5.

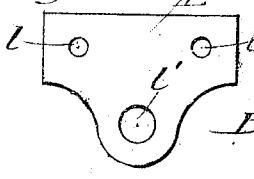



Witnesses:

Frank B. Blanchard

M. L. Moyer

Fig. 6.




Inventor:

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# UNITED STATES PATENT OFFICE.

JULIUS F. HELMOLD, OF CHICAGO, ILLINOIS.

## LIQUID-SOAP HOLDER.

No. 847,000. Specification of Letters Patent. Patented March 12, 1907.

Application filed February 12, 1906. Serial No. 300,754.

*To all whom it may concern:*

Be it known that I, JULIUS F. HELMOLD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Liquid-Soap Holders, of which the following is a specification.

The present invention relates to a lavatory appliance or fixture for containing liquid soap and for discharging it in measured quantities as it is wanted for use. A device of the class referred to and upon which the present invention is an improvement is shown in Patent No. 804,468, granted November 14, 1905, to me and George A. Schmidt, Jr.

Generally described, the device comprises a reservoir or receptacle open at bottom for the discharge of the soap, means for normally confining the soap, and means for discharging a measured quantity thereof, having a stem or other movable part which is operated by manual pressure.

In the device shown in the patent aforesaid the reservoir opens into a tubular casing of cylindrical cross-section, and within this casing is a double piston-valve which fits it snugly and is adapted to be moved in one direction by manual pressure against its stem and in the opposite direction by a spring. It is manifest that in order to be operative in the double sense of confining the soap when it is desirable to do so and of having a freedom of action which will not require a heavy pressure on the valve, either the manual pressure or the spring-pressure, the parts must be constructed and fitted together with great nicety.

It is found that by reason of unequal expansion and contraction of the parts under some climatic conditions and in some instances because of the tendency of the soap to dry and harden it is difficult to maintain the device in satisfactory working condition; and the object of the present invention is to overcome these difficulties. To this end I have departed from the cylindrical form of the casing and the corresponding form of the valve and have adopted a form in which the relatively movable parts, or, more specifically, the valve and the parts with which it has movable contact, have flat engaging surfaces, and the said parts are held in firm but yielding contact with each other by means of a cushion, preferably in the form of a spring.

To these ends the invention consists in the features of novelty that are herein described.

In the accompanying drawing, which is full scale and which is made a part of this specification, Figure 1 is a vertical section of liquid-soap holder embodying the invention. Fig. 2 is a vertical transverse section thereof, a portion of the reservoir being broken away. Figs. 3, 4, and 5 are respectively a side elevation, a top plan, and a bottom plan of the valve. Fig. 6 is a detail view.

A represents the reservoir, the bottom of which is in the form of a neck secured by any suitable means to a nut *a*, which has threaded engagement with a plate or block B. This plate or block in the construction shown in the drawing forms the top of a rectangular box or casing which contains and conceals all of the moving parts with the exception of a stem terminating in an enlarged head or push-button C. This stem passes through an opening *b* in one end of the box, and this opening is enlarged vertically in order to permit a slight vertical lateral movement of the stem. On the inside of the box the stem has threaded engagement with a valve D, and this valve has a chamber D′, hereinafter called the "measuring-chamber." It is of the capacity necessary to contain what would ordinarily be the quantity of soap which it would be desired to discharge at each operation of the device. The measuring-chamber is open at top and communicates with an opening *b*′, formed through the bottom of the socket in which the nut *a* is screwed and constituting what may properly be called the "inlet-opening," being the opening through which the interior of the reservoir communicates with the measuring-chamber and through which the soap flows from the reservoir to the chamber. It will be observed that, as shown in the drawing, the valve at the outer side of the measuring-chamber partly obstructs the inlet-opening. This is for the reason that it is found in practice that if the inlet-opening were clear of the valve and in direct and full open communication with the measuring-chamber the soap has a tendency to remain suspended in the inlet-opening; but by partially interrupting said opening the vertical wall of the measuring-chamber acts by capillary attraction to draw the soap out of the inlet-opening. The measuring-chamber is also open at bottom, as shown at *d*, in order to permit the discharge of its contents when the valve is shifted to such po-

sition that said opening *d* registers with an opening *e* through a plate E, upon which the valve rests. From the opening *e* a discharge-tube E′ extends downward and passes out through the bottom $b^2$ of the box. Opposite this opening *e*, which may be called the "outlet-opening," the plate B is provided with an opening F, which will place the measuring-chamber in communication with the atmosphere when the parts are in such position that the opening *d* registers with the opening *e*. The plate E is, in fact, a false bottom of the box and is held up above the main bottom of the box by means of a coiled spring or other cushion G. This cushion presses the plate or false bottom E against the bottom of the valve and holds the top of the valve in contact with the bottom of the plate B. At its inner end the valve has a stem H, which is surrounded by a coiled spring I, bearing in one direction against the valve and in the other direction against the rear end $b^3$ of the box, a stud *i* being secured to said end and being surrounded by the rear end of the spring in order to hold the latter in proper position. The device as a whole is secured to a wall, slab, or other suitable support by means of a hanger J, having an opening *j* for the passage of the securing screw or bolt.

It will be seen that the end of the plate B to which the reservoir is directly secured is thicker than the other end. In one instance the thickness is necessary in order to afford a firm connection between the reservoir and plate, and this thick portion is continued far enough to provide a bearing for the valve throughout its entire inward travel. The purpose of reducing the thickness of the plate is to minimize weight.

The top and bottom faces of the body of the valve D are recessed or sunken, as shown at *d′* and *d″*, respectively, so as to leave only comparatively limited portions of it in contact with the plates B and E, respectively. Referring to Figs. 3, 4, and 5, it will be seen that on the top side of the valve are four raised portions K, one located at each corner, and a raised portion K′, comprising a circular part surrounding the measuring-chamber and forming, in fact, the upper portion of the wall thereof, and a straight part extending to the outer end of the valve. These raised portions K and K′ terminate in the same plane, so that they all contact with the flat bottom surface of the plate B, so as to be capable of sliding thereon. The under side of the valve is similarly constructed, the corresponding parts being indicated by the reference-letters *k* and *k′*, respectively, excepting that the circular part of the raised portion K′ is not necessary on the portion *k′*. These raised surfaces K′ and *k′* are, in fact, the working faces of the valve which contact with the plates B and E, respectively, and close the inlet and outlet openings *b′* and *e*. There are several reasons for having these working surfaces thus raised. One is that friction between the valve and the plates B and E is reduced. Another is that the sharp shoulders presented at the inner end of the valve-surface K′ and the outer end of the valve-surface *k′* serve to scrape the surface of the plates B and E, and thus cut away any soap that may have hardened on said surfaces and have a tendency to interfere with the operation of the device. The soap thus cut away will occupy the recesses *d′* and *d″*.

I have described the device as having a box which contains the principal moving parts; but it is perfectly obvious that the principal functions of this box are to afford a support for the reservoir and the moving parts and to afford means for attaching the device as a whole to the slab or other support. Another of its functions is to conceal the parts and protect them; but this is not regarded as any part of the invention.

As already described, the opening *b*, through which the stem C passes, is enlarged vertically in order to permit a slight lateral movement of the stem. This is for the purpose of enabling the valve to be firmly seated against the bottom side of the plate B. This done, however, it is necessary to restrain the movement of the valve away from the plate B under the influence of the manual pressure upon the stem. To this end a plate L is secured to the end of the box by means of screws passing through vertical slots *l* in the plate L, the slots being sufficiently long to permit of the attachment of the plate L in order to accommodate it to the position of the stem C, the plate L being provided with a circular opening *l′*, through which the stem passes.

I have described the invention as being a liquid-soap holder; but it is manifest that it may be used for other liquids, and even for granular or pulverulent substances.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the class described the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being also open at bottom, means for yieldingly holding said valve in contact with said plate, and means for reciprocating the valve, substantially as described.

2. In the device of the class described, the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being also open at bottom, means for yieldingly holding said

valve in contact with the under side of the plate, and means for reciprocating the valve, the contacting faces of the plate and valve being flat, substantially as described.

3. In a device of the class described, the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being open at bottom, means for yieldingly holding the valve in contact with the under side of the plate, and means for reciprocating the valve, the engaging surfaces of the plate and valve being flat and said surfaces of the valve being raised above the body thereof, substantially as described.

4. In a device of the class described, the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber opening at the bottom, a second plate movable toward and from the valve, and means for yieldingly holding the second plate in contact with the valve, the engaging faces of the valve and plates being flat, substantially as described.

5. In a device of the class described the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being open at bottom, a second plate engaging the bottom side of the valve, the engaging faces of the valve and plate being flat, and means for yieldingly pressing one of the plates toward the other, substantially as described.

6. In a device of the class described, the combination of a reservoir having an opening at bottom, a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being open at bottom, a second plate having contact with the bottom side of the valve, and having an opening with which the opening of the chamber is adapted to register, means for reciprocating the valve so as to alternately bring the chamber into and out of register with the openings of the plate and a spring for yieldingly forcing one of the plates toward the other, substantially as described.

7. In a device of the class described, the combination of a reservoir having an opening at bottom, a box, the top of which is formed by a plate having an opening registering with the opening of the reservoir, a reciprocable slide-valve having a measuring-chamber adapted to register with the opening of the plate, said chamber being open at bottom, a second plate engaging the bottom side of the valve and having an opening through which the opening on the bottom of the chamber may be brought to register, and a spring interposed between the second plate and the bottom of the box, substantially as described.

JULIUS F. HELMOLD.

Witnesses:
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JESSIE E. LITSEY.