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LIQUID SOAP HOLDER.

APPLICATION FILED APR. 17, 1905.

Fig. 1

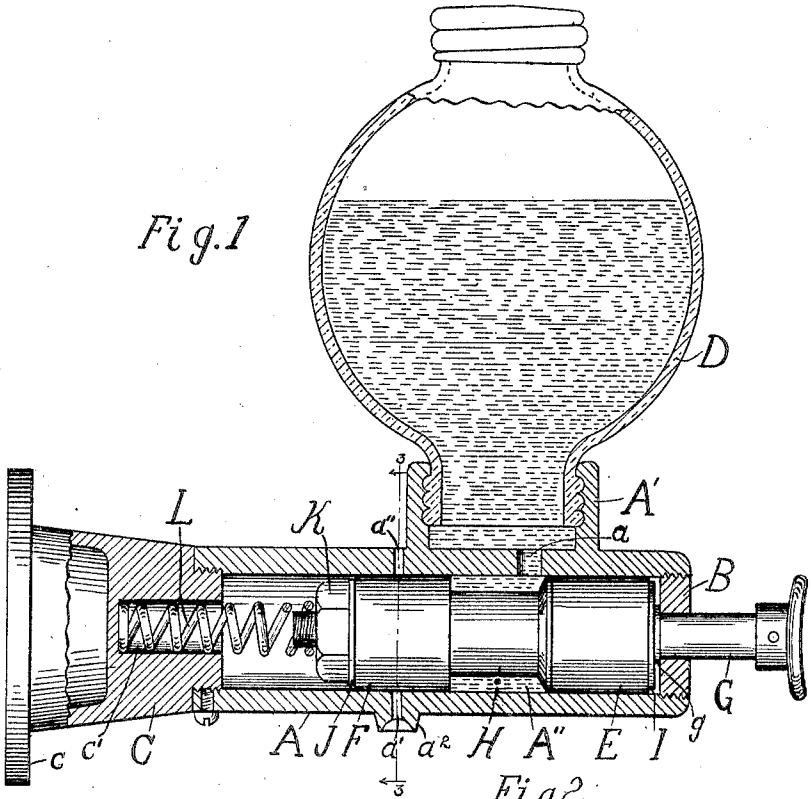


Fig. 2

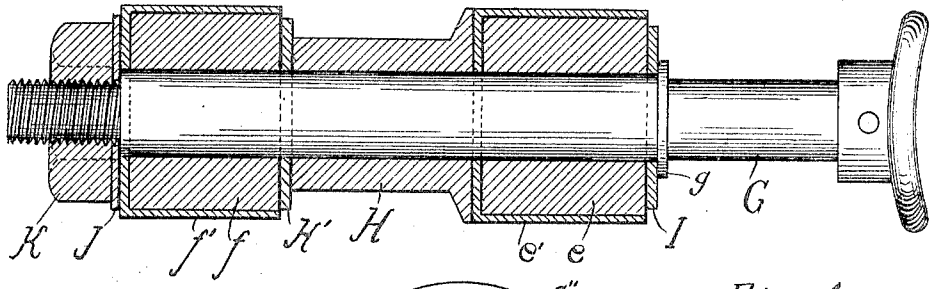


Fig. 3

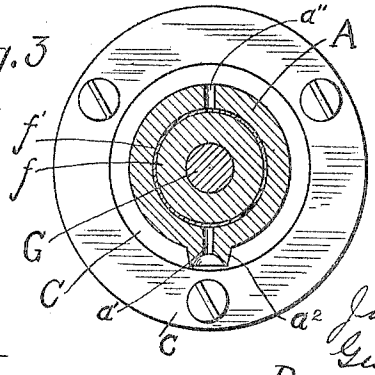
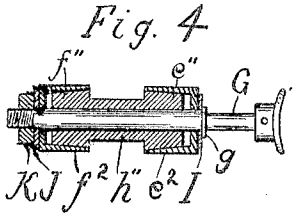


Fig. 4



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LIQUID-SOAP HOLDER.

No. 804,468. Specification of Letters Patent. Patented Nov. 14, 1905.

Application filed April 17, 1905. Serial No. 256,095.

To all whom it may concern:

Be it known that we, JULIUS F. HELMOLD and GEORGE A. SCHMIDT, Jr., citizens 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.

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

We are aware that, broadly considered, a device having the features above described is not new; but all such devices as heretofore constructed have been open to objections.

The object of our present invention is to provide an improved device that is not open to these objections; and to this end the invention consists in the features of novelty that are hereinafter described with reference to the accompanying drawings, which are made a part of this specification, and in which—

Figure 1 is a sectional elevation of a device embodying the invention, the valves and their accessories being shown in elevation. Fig. 2 is a longitudinal section of the valves and their accessories. Fig. 3 is a vertical section on the line 3 3, Fig. 1, looking in the direction of the arrow. Fig. 4 is a longitudinal section of the valves and their accessories under a modification.

A represents a tube the interior of which is reamed out to make it perfectly true and smooth. At one end it is threaded for the reception of a screw-plug B, by which it is closed, said plug being provided with a central opening for the passage of a valve-stem, hereinafter described. At its other end it is threaded for the reception of a threaded boss on a fitting C, which has a flange *c*, perforated for the passage of screws, by which it is fastened to a suitable support, whereby the tube A is supported in horizontal position. We desire to have it understood, however, that the invention is not limited to this or any other particular means for supporting the device.

The tube A performs the functions of a valve-casing and also of a support for a reservoir D, which is preferably made of glass. The reservoir terminates at bottom in an open neck, which has an external screw-thread for engagement with a corresponding internal thread on a hollow spud A′, projecting from the top of the tube A, (hereinafter called the "casing" or "valve-casing,") and within this spud the casing has through it an opening *a*, through which the soap may run into it. The reservoir terminates at top in a similar open screw-threaded neck which is closed by a cap. The two necks are in all respects similar, so that either may be screwed into the spud A′. Within the casing are two piston-valves E and F, which are made up, respectively, of blocks of elastic rubber *e f* and facings *e′ f′* of thin metal, such as tin-foil, copper-foil, brass, or the like. In each instance the facing necessarily covers the sides of the block and preferably covers one end also, although this is not essential. In the drawings the thickness of the facing is exaggerated for the sake of clearness. It is used because it is found that in practice a valve made wholly of rubber sticks to the walls of the casing and prevents the valve from moving with the necessary freedom. The valves thus constructed are perforated for the passage of a stem G and are held at the necessary distance apart by a spacing-block H, preferably made of metal. At one end the spacing-block has an enlarged head which bears against the thin sheet-metal facing of the elastic block *e*, the head being sufficiently large to prevent injury to the facing, while at the other end the spacing-block bears against the elastic block *f* through the medium of a washer H′. At its outer end the elastic block *e* is borne upon by a washer I surrounding the valve-stem, and this washer bears upon a shoulder *g* on the stem, so as to stop the washer. This shoulder also engages the cap B and stops the outward movement of the stem. The inner end of the stem is threaded and projects beyond the valve F far enough to receive a washer J, which bears upon the facing of the valve, a tightening-nut K, and one end of a coiled spring L, the other end of which occupies a socket *c′* in the fitting C. Thus it will be seen the valves and spacing-block are con-

fined between the shoulder g on the valve-stem and the nut K. By tightening the nut the elastic blocks e and f may be expanded, and thus expand the facings e' and f', so as to make them bear against the inner surface of the casing with any desired amount of friction. It is found in practice that a joint tight enough to positively prevent leakage of the liquid soap may be made with a degree of friction that is easily overcome by the spring L, although the latter be comparatively light, requiring only a moderate amount of pressure on the stem to overcome it. The spring holds the valves normally in the positions in which they are shown in Fig. 1 and returns them to those positions upon the removal of pressure from the stem.

The spacing-block H is of such diameter that the annular space A'' surrounding it (hereinafter called the "measuring-chamber") is of just sufficient capacity to hold the maximum quantity of soap that is required at one time. When the valves are in normal positions, the reservoir is in open communication with the measuring-chamber through the opening a and the chamber is kept full of soap. By pushing the valve-stem inward the valve E covers the opening a and the valve F uncovers two other openings a' and a'' of the casing, and of course the body of soap between the valves in the measuring-chamber will be carried along with them. The opening a' is an outlet through which the soap runs from the casing, and the opening a'' is a vent for admitting air to the measuring-chamber. The pressure upon the stem is maintained until so much of the contents of the measuring-chamber as is wanted, whether this be only a few drops or the entire contents, is discharged. Upon releasing the pressure the spring L will return the valves to normal positions and the measuring-chamber will be replenished. After each operation there is usually a drop or two remaining in the outlet. In order to save this, we form the outlet through a teat a^2 and form in the end thereof around the outlet a concavity in which the drop will be held by capillary attraction.

In the foregoing description the blocks e and f, which are, in fact, the main body portions of the two valves, are spoken of as "elastic," and the spacing-block has been described as made of separate pieces of material; but, if desired, they may all be made of a single piece, as shown in Fig. 4, where e'' and f''' represent the body portions of the valves E and F, respectively, and h'' the spacing-block integral therewith. Furthermore, the body portions e'' and f''' may be of inelastic material—say steel—in which case they preferably taper slightly and fit in correspondingly-tapering sockets in the facings e^2 and f^2, which have cylindrical exteriors that fit the casing snugly. Space is left between the ends of the body portions e'' and f''' and the ends of the facings, so that by tightening up the nut K the facings are expanded. There are, however, advantages in having the spacing-block separate. One of these advantages is that when they are made of separate pieces the measuring-chamber may be made of any desired capacity by selecting a block of the appropriate diameter. Another is that a rigid spacing-block positively maintains the elastic blocks of the valves in normal shape.

The foregoing description has been confined to the use of the device for dispensing liquid soap; but it is manifest that it is equally useful for dispensing other liquids, and even granular or pulverulent materials. We desire to have it understood, therefore, that we reserve to ourselves the exclusive right to use our said invention for any and all purposes for which it may be useful.

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

1. In a device of the class described, the combination of a valve-casing, a pair of piston-valves therein, a stem carrying said valves, means for spacing them apart, a spring for holding them in normal positions and a reservoir, the casing having an inlet-opening through which the reservoir is in internal communication with the casing at a point between the valves, and an outlet-opening and a vent-opening normally covered by one of the valves, substantially as described.

2. In a device of the class described the combination of a valve-casing, a pair of piston-valves therein, a spacing-block between them, said valves and block being perforated, a stem passing through them, means for securing them to the stem, a spring for holding them in normal positions, and a reservoir, the casing being provided with an inlet-opening normally uncovered and an outlet-opening normally covered by the valves, said inlet and outlet being so disposed that the former is covered and the other uncovered by a movement of the valves from normal positions, substantially as described.

3. In a device of the class described, the combination of a casing having an inlet and an outlet, a reservoir with which the inlet communicates, a piston-valve, and a stem carrying it, said valve having a body made of a block of elastic rubber fitting on the stem, a facing of thin metal surrounding said body and means on the stem for compressing the body endwise and thereby expanding it within the facing, substantially as described.

4. In a device of the class described the combination of a casing having an inlet and an outlet, a reservoir with which the inlet communicates, a piston-valve, and a stem carrying it, said valve having a body made of a block of elastic rubber fitting on the stem, a facing of thin metal surrounding said body and covering one of its ends, a washer on the stem engaging the end facing, a nut engag-

ing the washer and means on the stem directly engaging the elastic body at its other end, substantially as described.

5. In a device of the class described, the combination of a casing having an inlet and an outlet, a reservoir with which the inlet communicates, a pair of piston-valves, a spacing-block between them, said valves and block being perforated, a stem occupying said perforations, and means on the stem for compressing the valves endwise, each of said valves having a body of elastic rubber and a facing of thin sheet metal surrounding it, substantially as described.

6. In a device of the class described the combination of a horizontal casing having an inlet and an outlet, a reservoir communicating with the inlet, a pair of piston-valves each made of a body of elastic rubber and a facing of thin metal surrounding it, a spacing-block between them, the valves and block being perforated, a stem passing through said perforations, washers on the stem engaging the valves, a shoulder on the stem engaging one of said washers and a nut on the stem engaging the other of said washers, substantially as described.

7. In a device of the class described, the combination of a casing having an inlet and an outlet, a reservoir with which the inlet communicates, a piston-valve having a body portion and an expansible facing, a stem carrying said valve, and means on the stem for exerting endwise pressure upon the body and thereby expanding the facing, substantially as described.

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