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W. N. LURCOTT

LIQUID SOAP DISPENSER

Filed Sept. 17, 1926

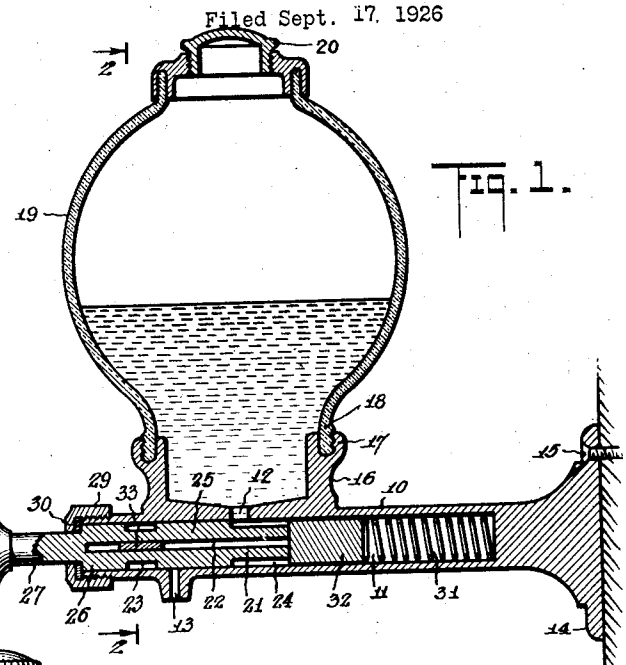


Fig. 1.

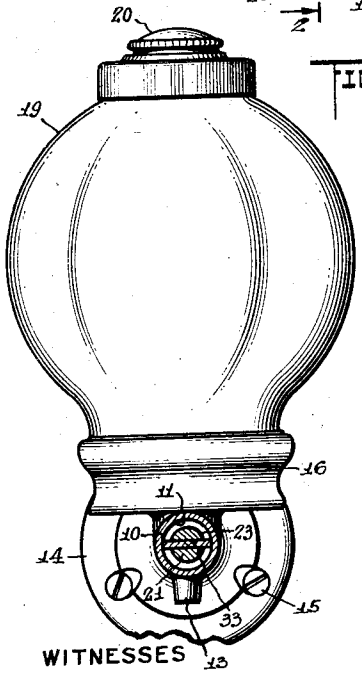


Fig. 2.

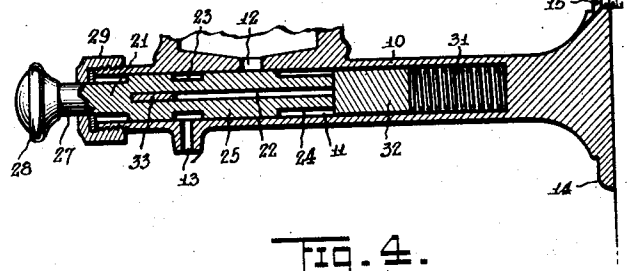


Fig. 3.

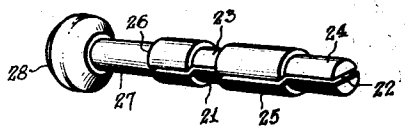


Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

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LIQUID-SOAP DISPENSER.

Application filed September 17, 1926. Serial No. 136,126.

This invention relates to the class of dispensing devices, and relates more particularly to dispensing devices capable of being operated to discharge predetermined quantities of liquid soap repeatedly or in rapid succession.

The principal object of the present invention is the production of a dispensing device of the indicated character embodying improved features of construction rendering the device more thoroughly efficient for the intended purposes.

Another object of the invention is the production of a dispensing device of the indicated character embodying structural features which permits the parts to be repeatedly assembled and disassembled for carrying out cleaning operations and which will render the device effectual against leakage.

The nature of the invention and its distinguishing features and advantages will appear when the following specification is read in connection with the accompanying drawing, in which—

Figure 1 is a central sectional view through the dispensing device of the present invention.

Fig. 2 is a sectional elevation, the section being taken on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view through the casing and its plunger, the plunger being shown in its discharging position.

Fig. 4 is a perspective view of the plunger.

Referring now more particularly to the several views of the drawing it will be apparent that the device includes a casing 10 formed with a cylindrical bore 11 and having an inlet 12 and an outlet 13 communicating with the bore 11. One end of the casing 10 has formed thereon an attaching flange 14 having openings therein for the reception of suitable fastening elements 15 for effecting the attachment of the device. The casing 10 is also formed with a neck 16 having a threaded portion 17 which accommodates the threaded portion 18 of a reservoir or receptacle 19 adapted to contain a quantity of liquid soap. The receptacle 19 is provided with a filling cap 20. The liquid soap in the receptacle 19 passes through the inlet 12 into the bore 11 at certain times. A plunger 21 is arranged for movement in the bore 11 of the casing 10. The plunger 21 is provided with a passageway 22 which extends centrally through the plunger diametrically thereof so as to open through the opposite sides. The plunger 21 is also reduced in cross sectional size as at 23 and 24. By being reduced at two points there is provided the comparatively large portion 25 which serves as a valve member. The plunger 21 is also reduced in cross sectional size to provide a shoulder 26 and a manipulating portion 27 having a knob 28. The open end of the casing 10 is externally threaded to receive a threaded cap nut 29 through which the portion 27 extends, there being a suitable gasket 30 arranged in the cap to obtain a tight joint between the cap 29 and the threaded end of the casing 10. A spring 31 is employed within the bore 11. The said spring 31 is arranged between the end wall of the bore 11 and a block 32 which is held against the inner end of the plunger 21. The block 32 closes one end of the passageway 22, and with the reduced portions 24 and the wall of the bore forms a chamber. The spring 31 constantly acts on the block 32 and has a normal tendency to yieldably maintain the plunger 21 in a normal position shown in Fig. 1. A quantity of soap finds its way behind the block 32 at the spring end thereof. The inlet 12 and outlet 13 are substantially in a vertical plane, whereas, the passageway 22 is maintained substantially in a horizontal plane with respect to the transverse axis of the bore 11. In order to maintain the relationship of the passageway 22 with respect to the disposition of the inlet 12 and outlet 13, there is provided a member 33 which extends diametrically of the bore 11 secured to the opposite side portions of the casing 10 near the open end thereof. The said member 33 is disposed in the passageway 22. The member 33 prevents the plunger 21 from having turning movement, and limits the inward movement of the plunger 21 so as to insure the registration of the reduced portion 23 of the plunger with the outlet 13, as shown most clearly in Fig. 3.

From the foregoing it will be apparent, that when the plunger 21 is in its normal position, as shown in Fig. 1, a quantity of liquid soap will be allowed to pass through the inlet 12, around the reduced portion 24 and into a portion of the passageway 22. At this particular time the valve portion 25 prevents the flow of liquid through the outlet

13. When the plunger 21 has moved inwardly against the action of the spring 31 until the end wall of the passageway encounters the member 33, the reduced portion 23 will be in registration with the outlet 13, and as a consequence the quantity of liquid soap having previously entered the passageway and the space around the reduced portion 24 will be discharged through the outlet 13. The discharge is caused by pressure exerted by the soap displaced from behind the block 32. Meanwhile, the valve portion 25 will prevent the flow of liquid soap through the inlet 12. The spring 31 serves to return the plunger to its normal position. The plunger 21 may be reciprocated rapidly, which will result in quantities of liquid soap being rapidly discharged through the outlet 13. The valve portion 25 constitutes a means for controlling the inlet 12 and outlet 13 to alternately open and close the same in the reciprocation of the plunger, whereas, the passageway 22 by virtue of the reduced portions 23 and 24, will alternately communicate with the inlet 12 and outlet 13 in the reciprocation of the plunger 21. The shoulder 26 limits the outward movement of the plunger 21 and insures the proper disposition of the reduced portion 24 of the plunger with respect to the inlet 12.

The plunger 21 will be produced from metal having a certain degree of springiness, and due to the fact that it is split longitudinally to provide the passageway 22, the devices will be caused to impinge against the wall of the bore 11 and thus set up a tight fit and therefore prevent leakage.

I claim:

A liquid dispensing device comprising a casing having an inlet and an outlet, a liquid receptacle in communication with said inlet, a plunger arranged for movement in said casing, said plunger having means for controlling said inlet and outlet to alternately open and close the inlet and outlet in the movement of said plunger, said plunger being bifurcated to provide a passageway between the furcations, said plunger being reduced in its length at two points so that the passageway will alternately communicate with the inlet and the outlet in the movement of the plunger in opposite directions, said furcations having a normal tendency to flex away from each other so as to impinge against the wall of the casing, and means extending between said furcations from the wall of the casing to prevent the plunger from turning and for limiting the longitudinal movement of the plunger in one direction.

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