July 27, 1948. E. J. SCARRY 2,446,109

SURGEON'S SOAP DISPENSER

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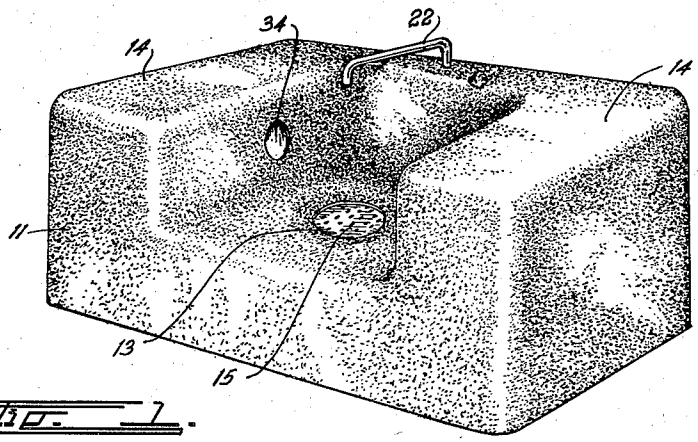

Fig. 1.

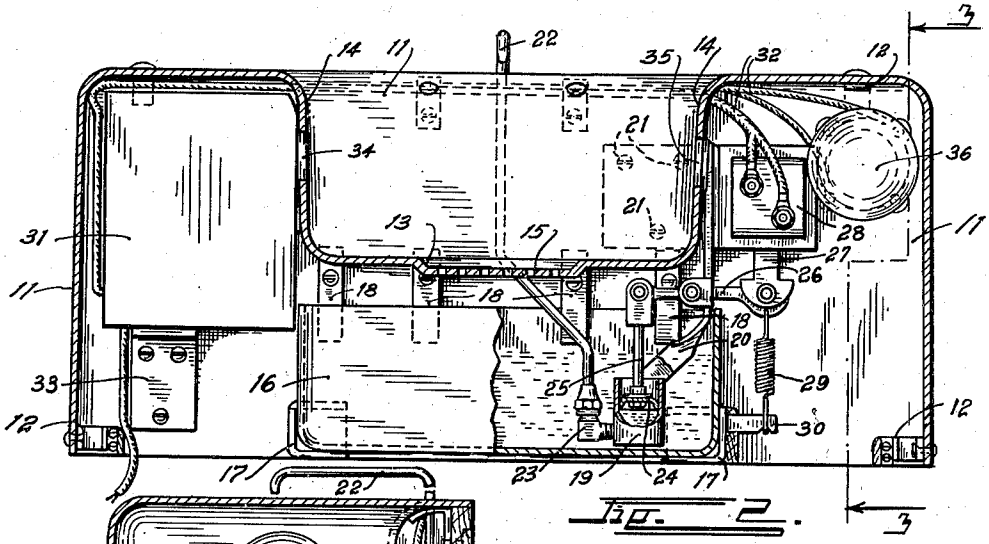

Fig. 2.

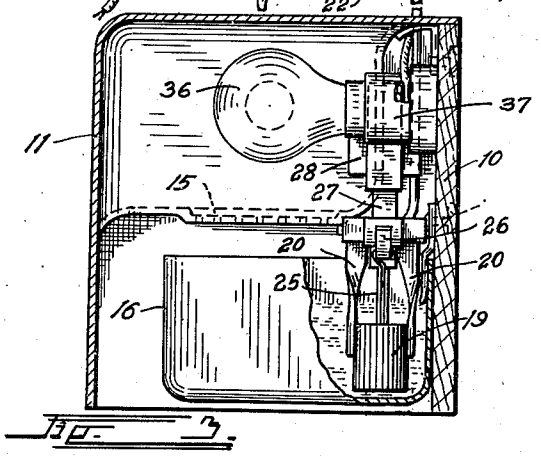

Fig. 3.

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SURGEON'S SOAP DISPENSER

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Application November 28, 1944, Serial No. 565,517

1 Claim. (Cl. 222—63)

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This invention relates to a surgeon's soap dispenser and is designed as an improvement over the construction shown in applicant's copending application Serial No. 510,057, now Patent No. 2,387,359. The principal object of the invention is to provide a highly efficient device of this character which will dispense soap upon the hands of the user without it being necessary for the hands or any other portion of the user's body coming in contact with the device or any part thereof.

Another object of the invention is to so construct the device so that all of the exposed parts will be smooth and rounded so that there will be no corners, pockets, or obstacles in which dirt or germs may collect.

A further object is to provide an electronically-operated soap dispenser in which all operating parts will be completely protected and yet will be readily accessible for replacement and repairs, and in which the soap container can be quickly and easily replaced or removed without disturbing the operating mechanism of the device.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a perspective view of the improved soap dispenser as it would appear in use.

Fig. 2 is enlarged longitudinal section therethrough.

Fig. 3 is a cross-section taken on the line 3—3, Fig. 2.

The improved dispenser is mounted on a backboard 10, and is completely enclosed within a water-proof cover 11. The cover is formed with an open back for receiving the backboard 10 and with an open bottom and is secured to the backboard 10 by means of suitable angle clips 12. The central portion of the housing is depressed as shown at 13 to form two side shoulders 14, between which is a depressed portion 13 provided with a perforated drain 15.

A soap pan 16 is positioned below the depressed portion 13 and is supported on two angle corner clips 17 secured to the backboard 10 and extending beneath the two rear corners of the pan 16. The rear wall of the pan 16 is held against the

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backboard by means of downwardly extending overlapping clips 18. Thus, the pan can be removed by simply raising its front portion to relieve it from the support of the clips 17, thence lowering it from engagement with the overlapping clips 18, and it can be replaced by simply slipping its rear wall under the clips 18 and allowing it to come to rest on the angle clips 17.

A pump cylinder 19 is supported within the pan 16 upon a bracket arm 20. The bracket arm is secured to the backboard 10 by means of suitable screws 21, and extends downwardly within the pan 16. A soap discharge tube 22 extends from the pump cylinder 19 through a suitable check valve 23. The tube 22 extends upwardly through the housing 11, thence forwardly and downwardly to a position over the perforated drain 15.

A pump piston 24 is reciprocally mounted within the cylinder 19. The piston 24 is preferably of the cup-washer type—that is, when it moves downwardly it spreads, to force soap into the tube 22, and when it moves upwardly it allows soap from the pan 16 to flow past the piston into the cylinder 19.

The piston 24 is reciprocated from a piston rod 25 which is suspended from one extremity of a rocking lever 26. The rocking lever 26 is pivoted intermediate its extremities, as shown at 27, from suitable ears on the bracket arm 20. The remaining extremity of the lever 26 is connected to an armature 27 of an electric solenoid 28 secured to the backboard 10. A tension spring 29 is stretched between the extremity of the lever 26 and a spring arm 30, secured to one of the clips 17, so as to constantly urge the piston 24 upwardly in the cylinder 19. The piston is forced downwardly by the action of the solenoid 28 in attracting the armature 27.

The current supply to the solenoid is controlled by a photo-electric relay set 31 of any of the standard commercial types. Such a set contains a window which admits light to a photo-electric cell which is responsive to light changes. The set also contains suitable amplifying apparatus and a relay controlled thereby which in turn controls the current supply to the solenoid 28 through suitable conductors 32. The detail construction of the photo-electric set is not illustrated, since these are standard pieces of apparatus which may be purchased on the open market.

The set 31 is supported upon a suitable bracket from the backboard 10 in one of the side shoulders 14 so that its light-receiving window will be positioned behind a transparent window 34 sealed in

the housing 11. A light-emitting opening covered by a suitable lens 35 is also positioned in the inner wall of the opposite side shoulder 14 so that the window 34, the lens 35, and the discharge from the spout of the tube 22 will be in alignment with each other over the perforated drain 15.

An electric light source 36 is mounted in a receiving socket 37 on the backboard 10 with its filament in alignment with the opening 35 and the window 34. This causes a beam of light to be transmitted through the lens 35 into the window 34 to energize the photo-electric cell in the photo-electric set 31, causing the relay therein to maintain the circuit to the solenoid 28 open.

In use, the user inserts his hands between the side shoulders 14 of the cover. When the hands reach a position beneath the spout of the tube 22, they will interrupt the light beam controlling the set 31, causing the latter to energize the solenoid 28. This actuates the pump piston 24 to discharge a predetermined quantity of soap from the cylinder 19 through the spout 22 onto the hands of the user. It can be readily seen that the hands contact nothing but the light beam when using the device.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claim, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

In a soap dispenser, of the type having a soap pump actuated in consequence of the interruption of a beam of light entering a photo-electric cell, means for supplying liquid soap to said pump comprising: an open-bottomed housing; a pump; means for supporting said pump from above in said housing so that it will depend downwardly therein; an open-topped soap reservoir; and means for removably supporting said reservoir in said housing with its upper edge above said pump, and with its bottom in close proximity to said pump, said reservoir being unattached to said pump so that it may be lowered through the open bottom of said housing without disturbing said pump, and so that when said reservoir is lifted into said housing, it will envelop said pump in liquid soap.

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