

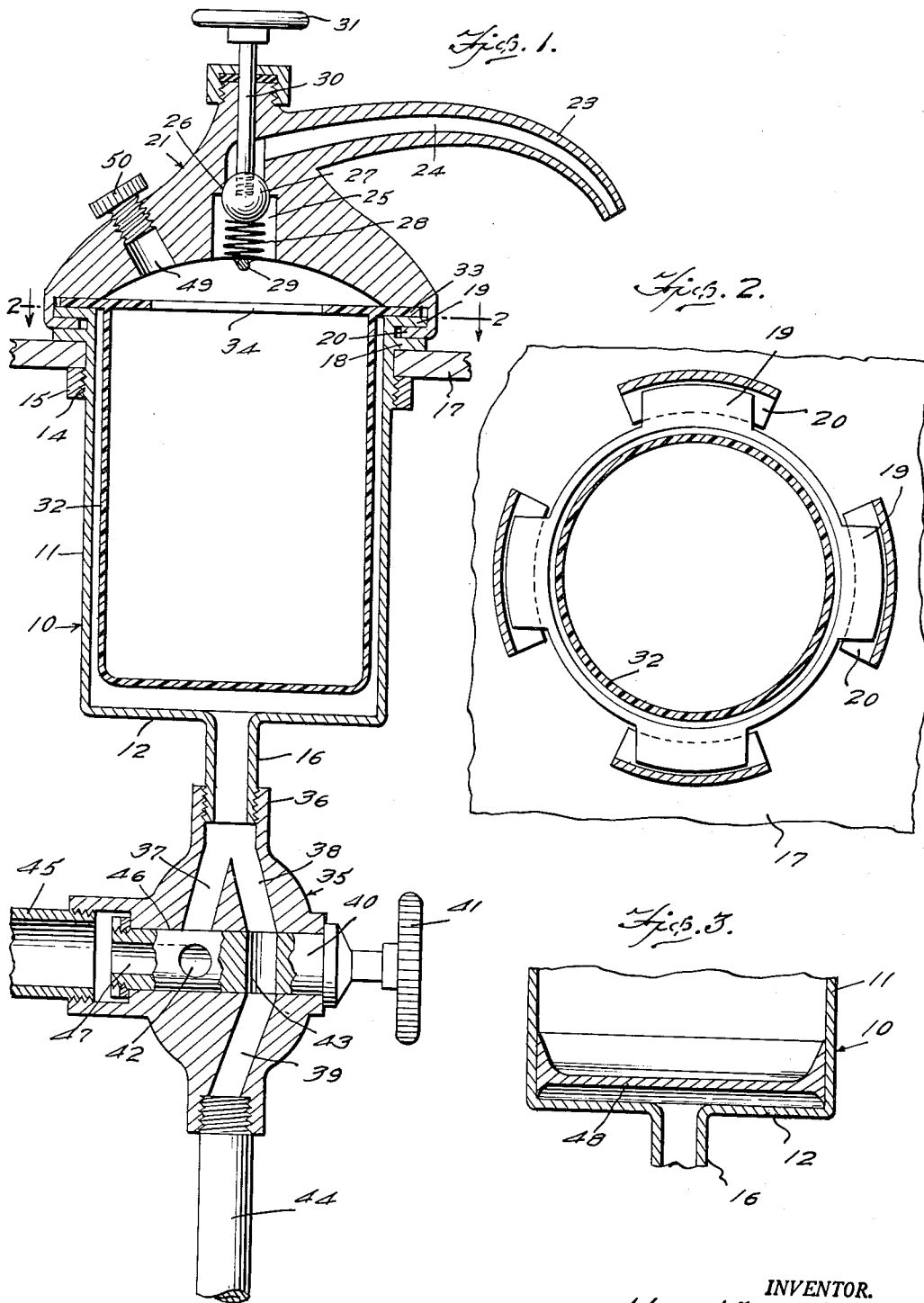
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LIQUID SOAP DISPENSER

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LIQUID SOAP DISPENSER

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2 Claims. (Cl. 222—386.5)

This invention relates to a dispensing mechanism, and more particularly to a mechanism for dispensing liquid soap.

The object of the invention is to provide a mechanism for dispensing liquid soap, which is adapted to be mounted on a sink or other support whereby a person can readily dispense soap onto his or her hands to facilitate the washing of the hands and face or other parts of the body.

Another object of the invention is to provide a dispensing device which is especially suitable for dispensing liquid soap, the device adapted to be connected to a water line whereby water pressure from the line will cause discharge of material from the dispenser when a valve is manually actuated.

Still another object of the invention is to provide a soap dispenser which includes a valve that permits water to enter the dispenser or be drained therefrom, the device of the present invention being adapted to be used in a sink, wash bowl, or bath tub, the dispensing mechanism being adapted to be either filled at a factory or else filled in place when desired.

Another object of the invention is to provide a liquid soap dispenser which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a longitudinal sectional view taken through the soap dispensing mechanism, constructed according to the present invention;

Figure 2 is a sectional view taken on the line 2—2 of Figure 1; and

Figure 3 is a fragmentary sectional view showing a modified form of the invention.

Referring in detail to the drawings, the numeral 10 designates a housing which may be fabricated of any suitable rigid material such as metal, and the housing 10 includes an annular side wall 11 and a horizontally disposed bottom wall 12. Arranged on the exterior of the side wall 11 is an annular threaded portion or shoulder 14, and a lock nut 15 is arranged in threaded engagement with the shoulder 14, Figure 1. Depending from the bottom wall 12 is a neck 16 for a purpose to be later described.

The dispensing mechanism of the present invention is adapted to be used for dispensing liquid soap and the mechanism is adapted to be mounted on a sink 17. However, the mechanism of the present invention can also be mounted on a wash bowl, bath tub, or other supporting structure.

Formed integral with or secured to the side wall 11 is a plurality of radially extending spaced ears 18. Arranged above each of the ears 18 is a second ear 19 and the ears 18 and 19 coact to provide a space therebetween for receiving therein lugs 20 which extend from the bottom of a cap 21.

The cap 21 includes a body 22 which may be made of

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any suitable material. Extending from the body 22 is a nozzle 23 which is provided with a passageway 24 therein. A chamber 25 is also arranged in the body 22, and a valve seat 26 is arranged contiguous to the chamber 25. A ball valve 27 is mounted for movement into and out of closing relation with respect to the valve seat 26, and a coil spring 28 normally urges the ball 27 into closing or bridging relation with respect to the valve seat 26. The lower end of the coil spring 28 engages a stop pin 29.

A means is provided for manually moving the ball 27 away from the valve seat 26 so as to permit liquid soap to flow through the chamber 25 and out through the passageway 24. This means comprises a rod 30 which has its lower or inner end arranged in engagement with the ball 27, and a knob 31 is mounted on the outer end of the rod 30. The rod 30 is slidably arranged in the body 22, so that by depressing the rod 30 the ball 27 will be moved away from the valve seat 26.

Arranged within the housing 10 is a casing 32 which may be made of any suitable material such as a flexible piece of rubber. The flexible casing 32 includes an annular flange 33 which is interposed between the body 22 and the ears 19. An opening 34 is arranged in the top of the casing 32.

A means is provided for controlling the flow of fluid, such as water, through the neck 16 into the housing 10. Thus, by permitting water under pressure to flow from a water pipe or line into the housing 10, the flexible casing 32 will be compressed so that the liquid soap therein will be normally urged out through the passageway 24 in the nozzle 23. This means comprises a valve assembly which is indicated generally by the numeral 35. The valve assembly 35 includes a collar 36 which is arranged in threaded engagement with the lower end of the neck 16, and arranged in the valve 35 are passageways 37, 38, and 39. A bore 46 extends through the valve 35, and a valve member 40 is rotatably arranged in the bore 46. A handle 41 is provided for rotating the valve member 40. The valve member 40 is provided with a pair of right angularly arranged spaced ports 42 and 43 which are adapted to be moved into and out of registry with the passageways 37, 38, and 39. The valve member 40 is provided with a longitudinally extending passage 47 which opens through the rear end thereof and communicates with the port 42.

Arranged in threaded engagement with the lower end of the valve assembly 35 is a pipe 44 which is adapted to convey water from a suitable source of supply to the housing. An outlet pipe 45 is arranged in engagement with the valve assembly 35 and communicates with the passage 47. This pipe 45 is adapted to convey water or other fluid from the housing to a drain or other location.

Referring to Figure 3 of the drawings, there is shown a modified form of the invention wherein a plate or follower 48 is slidably arranged in the housing 10. The plate 48 is used in lieu of the flexible casing 32. Thus, when water is permitted to flow into the housing 10 through the neck 16, the plate 48 will be raised in the housing 10 to thereby urge the liquid soap out through the passageway 24 in the nozzle 23.

The body 22, Figure 1, is provided with an opening 49 which can be used when the casing 32 is to be replenished or refilled with liquid soap. A plug 50 is provided for closing the opening 49. Instead of refilling the casing 32, the unit can be disassembled and a new filled casing 32 installed therein.

In use, liquid soap is placed in the flexible casing 32. Then, the valve member 40 is arranged as shown in Figure 1 so that water will flow from the conduit or pipe 44 through the passageway 39, then through the port 43, then through the passageway 38 and through the neck 16

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into the housing 10. Thus, the flexible casing 32 will be maintained under pressure so that by depressing the rod 30 by means of the knob 31, the ball 27 will be moved away from the valve seat 26. Thus, when the knob 31 is depressed, there will result a flow of liquid soap from the casing 32, through the chamber 25, then through the passageway 24 and onto the person's hand. After a sufficient quantity of liquid soap has been dispensed through the nozzle 23, pressure on the knob 31 is released whereby the coil spring 28 will move the ball 27 into closing relation with the valve seat 26, so that no further liquid soap will be dispensed until desired.

The plug 50 can be removed if it is desired to refill the casing 32, or if desired an entirely new casing 32 which has been previously filled at a factory or other locality can be installed in the unit after the unit has been disassembled.

The cap 21 is maintained connected to the housing 10 by means of the lugs 20 which are seated between the ears 18 and 19. Thus, when the cap 21 is to be assembled the cap 21 can be merely rotated until the lugs 20 engage between the coacting pairs of ears 18 and 19.

As shown in Figure 3, the plate 48 can be used in lieu of the flexible casing 32. The pipe 45 can be used for leading water from the valve assembly to a drain or other location and the valve member 40 can be rotated so that the port 42 registers with the passageway 37. This will permit water to drain from the housing 10 through the neck 16, then through the passageway 37, finally through the port 42 and out through the passage 47 and through the pipe 45. Thus, the water can be entirely drained from the unit when the unit is to be refilled or replenished with liquid soap.

It is to be understood that the dispensing mechanism of the present invention can be used for dispensing other substances besides liquid soap, such as hand lotions. The casing 32 can be made of any suitable material such as a soft plastic or rubber and the pressure from the water line surrounding the exterior of the casing 32 serves to force the contents from the casing or container when the faucet is opened. The pipe 45 can lead to the sewer line. The container 32 can be filled at the factory and when it is to be used a portion of the top may be punched out to provide the opening 34.

Having described the invention, what is claimed as new is:

1. In a mechanism for dispensing liquid soap, a housing adapted to be attached to a sink and including an annular side wall and a horizontally disposed bottom wall, an annular threaded shoulder on said side wall, a lock

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nut positioned below said sink engaged with said shoulder, a plurality of spaced ears on said housing above said shoulder, a cap having a plurality of lugs for engagement with the ears, said cap having a filling opening, a plug for said filling opening, a nozzle extending from said cap, a spring pressed valve for controlling the flow of liquid soap through said nozzle, manually operable means for actuating said spring pressed valve, a flexible casing within said housing for holding a supply of the liquid soap therein, a flange extending from the top of said casing and interposed between said ears and cap, said casing having an opening in its top, a nipple extending from the bottom of said housing, a valve assembly including a body providing a plurality of passageways, a valve member rotatably mounted in said body and provided with a pair of spaced ports for movement into and out of registry with said passageways, said nipple being connected to said body and communicating with said passageways, and conduits for conveying fluid to and from said valve assembly.

2. In a liquid soap dispenser, a cylindrical housing open at its top end depending through an opening in the bottom wall of a kitchen sink or the like, means carried by said housing for clampingly engaging the edge of said opening to support the housing in place, a nipple opening through the center of the bottom of said housing, a cylindrical flexible casing for the liquid soap open at its top end within said housing, an annular flange encircling the open end of said casing and engaged between the open end of said housing and said cap, a two-way valve connected with said nipple and with a service water supply line and with a drain outlet, and a second valve for controlling the discharge of the liquid soap from said casing outward through said cap and the nozzle, said casing being compressed when subjected to the pressure of the water admitted to the housing upon the opening of the two-way valve to connect the water supply line with the housing, the water being discharged from said housing upon the opening of the two-way valve to connect the housing with said drain outlet.

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