

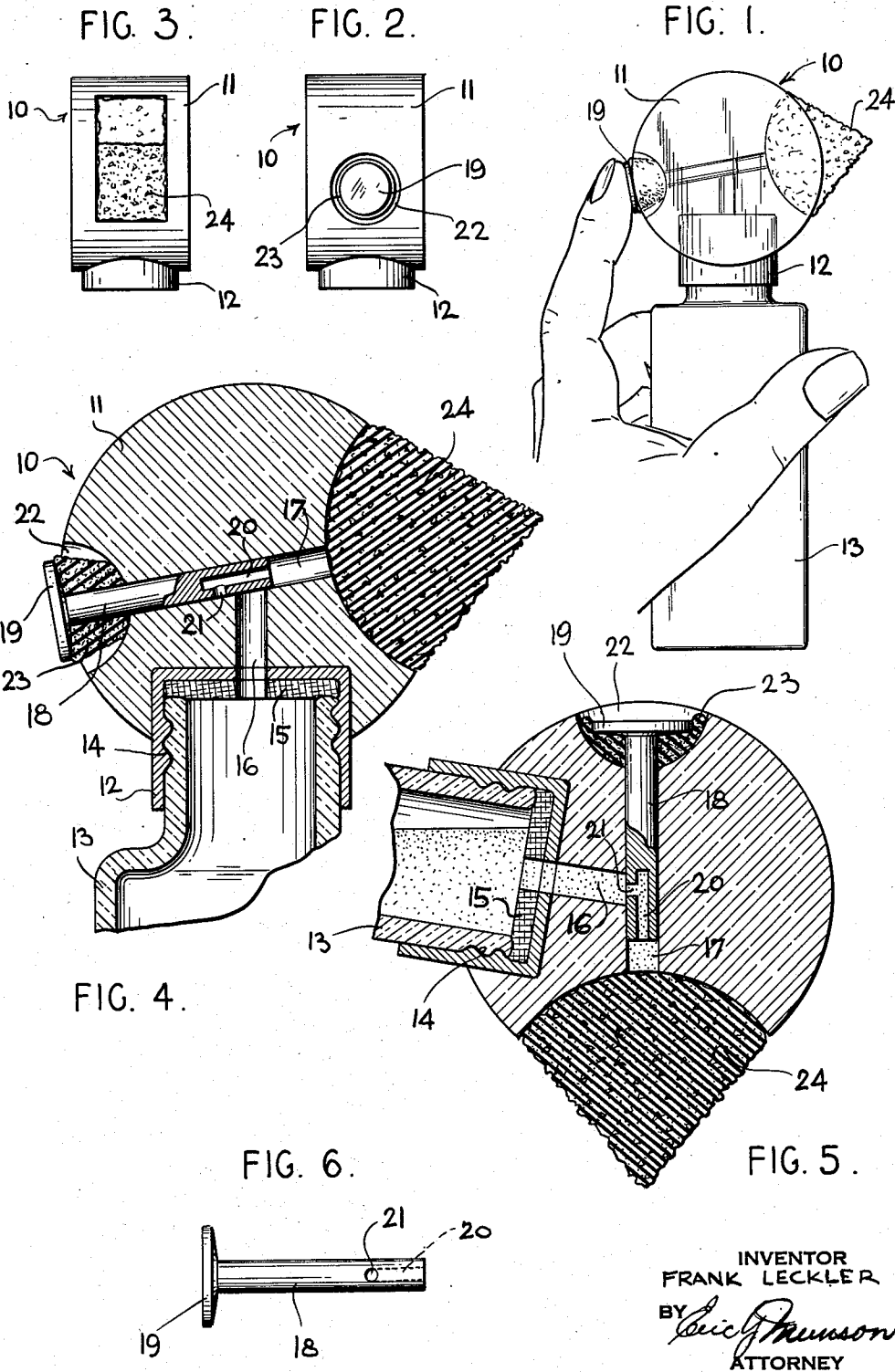
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COMBINED CLOSURE AND APPLICATOR DEVICE

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COMBINED CLOSURE AND APPLICATOR
DEVICE

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This invention relates to improvements in combined closure and applicator devices and is concerned more especially with a dispenser or applicator device which may be readily attached to a liquid container or bottle such as is commonly employed for liquid shoe polish and the like and by means of which controlled quantities of liquid may be easily withdrawn and applied to the articles being treated.

A further object of the invention is the provision of a combined closure and applicator device of exceedingly simple construction which is readily securable to a liquid container and which is provided with externally accessible plunger means operative to allow the flow of liquid upon tilting the container.

Another object of the invention is the provision of a device of the character indicated which is arranged and constructed in such a manner as to assure uniform distribution and application of the treating liquid to an article.

A further object of the invention is the provision of a combined closure and applicator device which may be fabricated easily and inexpensively from a minimum number of component elements and which is reliable and trouble-free in operation.

The foregoing objects as well as additional objects and advantages of the invention will be readily apparent in the course of the following detailed description taken in connection with the accompanying drawing which illustrates a preferred embodiment of the invention and wherein:

Fig. 1 is a side view showing the improved closure and applicator device secured to a bottle with the control plunger about to be manually depressed prior to tilting the bottle for delivery and application of the liquid contents to an article;

Fig. 2 is a rear elevation of the device illustrating the enlarged head of the manually operable control plunger;

Fig. 3 is a front elevation of the device illustrating the absorbent member or pad;

Fig. 4 is a fragmentary sectional view showing the control plunger in its retracted position normally closing off the device;

Fig. 5 is a similar view showing the bottle tilted and the control plunger depressed for delivering the liquid to the applicator pad of the device; and

Fig. 6 is a bottom plan view of the control plunger of the device.

Referring now to the drawings in greater detail, 10 designates the improved closure and applicator device of the present invention which may be made from moldable transparent synthetic plastic or any other suitable material. As may be readily seen from Fig. 1 the representation in the drawings is of a device made from transparent material, but the selection of material is of course not critical to the invention.

The device is provided with a body portion 11 which is preferably, but not necessarily, cylindrical

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in shape and with a depending cap or flange portion 12 for convenient attachment to a liquid container such as the bottle 13. For the latter purpose flange portion 12 may be internally threaded, as at 14, for secure engagement about the neck of the bottle and is preferably provided with an internal liner or gasket 15 in order to secure liquid-tight connection.

Body portion 11 is provided with an inlet channel 16 which communicates at its lower end with the interior of the bottle 13 through suitably disposed apertures in cap portion 12 and internal gasket 15. Inlet channel 16 communicates at its upper end with a diametrical outlet or delivery channel 17. A control plunger 18 is slidable within delivery channel 17 and is of sufficient length to extend forwardly of inlet channel 16 even in its normally retracted or rest position illustrated in Fig. 4. Said control plunger terminates outwardly of body portion 11 in an enlarged head or button 19 by means of which the plunger may be easily manually depressed or urged inwardly into the operative position of Fig. 5, thereby permitting flow of polish or other liquid contents of the bottle 13 upon tilting, as will be described more fully hereinbelow.

The inner end of control plunger 18 is provided with an inwardly extending axial bore or passageway 20 which opens forwardly into delivery channel 17. Adjacent the rear end of bore 20, said control plunger is provided with a laterally and downwardly extending port or aperture 21. The plunger is spring urged and in the embodiment shown in the drawing, a recess 22 is formed in body portion 11 about the externally projecting control plunger 18 for the reception of compressible, resilient pad or gasket 23 of sponge rubber or the like which surrounds the plunger stem and abuts the inner surface of plunger button 19. Resilient pad 23 may be secured in position within recess 22 by means of adhesive and serves not only as a retracting member for biasing control plunger 18 toward its normal outward position of Fig. 4 but serves additionally as a retaining member preventing removal of said control plunger from delivery channel 17. The resilient pad 23, of absorbent rubber sponge also acts as a sealing gasket around the plunger stem, not only preventing leakage of the polish around the stem, but preventing exposure of parts of the stem to the fingers, and wiping off and absorbing any polish which might coat the stem during sliding movement of the same in the delivery channel 17.

The forward or delivery end of body portion 11 opposite plunger button 19 is provided with an applicator pad 24 of absorbent material. In the preferred embodiment of the invention illustrated in the drawings, applicator pad 24 is preferably wedge-shaped or sector-shaped and is preferably sponge rubber or the like in order to absorb the liquid which emerges from delivery channel 17 and which is to be applied to the article to be treated. Said applicator pad may

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be anchored in a suitably formed recess of body portion 11 by means of adhesive.

When it is desired to apply polish or other liquid in bottle 13 to an article, control plunger 18 is manually depressed or urged inwardly from its normally retracted position of Fig. 4 to its operative position of Fig. 5. In the latter position the lateral port 21 of said plunger registers with the vertical inlet channel 16 and provides communication with the delivery channel 17. When the bottle is tilted, as shown in Fig. 5, the liquid will flow from the bottle and soak the absorbent applicator pad 24. The path of flow will be from the bottle to inlet channel 16, then through port 21 and axial passageway 20 of control plunger 18 and into delivery channel 17 and finally onto applicator pad 24. Upon releasing control plunger 18, the resilient pad or gasket 23 will automatically expand to assume its normal configuration of Fig. 4, thereby simultaneously retracting said plunger to bring port 21 out of registration with inlet channel 16 and cutting off the flow from the bottle.

The arrangement of the present invention is exceedingly simple and provides for efficient operation. In particular the manner of mounting the control plunger 18 is especially advantageous in that the compressible, resilient gasket member 23 which surrounds control plunger 18, and which is anchored on one side to said plunger and on the opposite side to body portion 11, provides for automatic retraction of the plunger cutting off the flow of liquid from the device and prevents excessive outward movement or separation of the plunger from the body portion of the device. The use of a return spring is thus obviated and it is possible to have the delivery channel 17 of uniform bore rather than providing it with an internal abutment or the like to limit the outward movement of the control plunger.

The arrangement shown in the drawings also makes it possible to harmonize the plunger design and the configuration of the body portion 11.

The combined closure and applicator device of the invention is particularly adapted for dispensing liquid polishes for shoes or the like, but may be used for dispensing and applying a large variety of liquid treating agents.

Since certain modifications may be made in the device of the present invention without departing from the scope thereof, it is intended that all matter contained in the foregoing specification and shown in the accompanying drawing be interpreted merely as illustrative and not in a limiting sense.

What is claimed is:

1. A combined closure and applicator device for liquid containers comprising, a cylindrical body portion provided with a cap member for threadable reception upon the top of a bottle, said body portion having a diametrically-extending delivery channel extending through it and opening at opposite sides of the body portion, a feed channel extending from the delivery channel through the cap member to communicate with the interior of the bottle, the body member being provided with a recess at each end of the delivery channel, a sponge seated in each of said recesses, one of the sponges constituting an applicator member projecting out of its recess and fitting over and closing one end of the delivery channel, the second sponge being absorbent and having a passage through it located in registration with the delivery channel, a plunger having a stem portion slidable through the delivery

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channel and through the passage in the last-mentioned sponge, said stem having a head at one end in contact with said sponge, whereby said absorbent sponge will wipe the stem portion and absorb liquid therefrom when said stem portion slides through it and the stem having a passage for establishing communication between the delivery and feed passages when the head of the plunger is pressed inwardly against the sponge which surrounds its stem.

2. A combined closure and applicator device for liquid containers comprising, a cap for fitment on the top of a bottle, a head portion connected to the cap, a delivery passage extending diametrically through the head, said delivery passage having a feed part communicating with the interior of the cap, a plunger slidable through the delivery passage to establish communication between the feed part and delivery passage or to shut off communication between the same, the head being recessed at the opposite ends of the delivery passage, a sponge located in each of said recesses, one of the sponges constituting an applicator pad and the other sponge constituting an absorbent gasket and a return spring for the plunger, the latter sponge having a portion of the plunger extending slidably through it.

3. A closure and applicator device for liquid containers comprising, a body having means for attaching it to the outlet of a container, a passage extending through the body and having one end in communication with the outlet of the container, the body having a recess located at the other end of the passage, an applicator of absorbing material secured in said recess and covering the latter end of the passage, a slidable valve operative in the passage between the ends thereof and having means for establishing communication between said passage and the outlet of the container, one end of the valve being exposed on the outside of the body, the body having a recess around said exposed end of the valve, a compressible, absorbent sponge secured in said recess and surrounding the exposed end of the valve and through which the valve is slidable, said sponge serving as a spring means for holding said valve in closed position and serving also as an absorbent wiper for the part of the valve that is slidable through it.

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