June 9, 1936. W. F. SCHMALZ 2,043,678

APPLICATOR

Filed July 29, 1932

Fig. 1

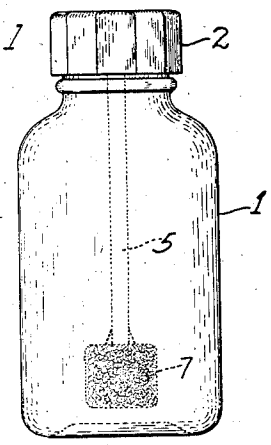


Fig. 2

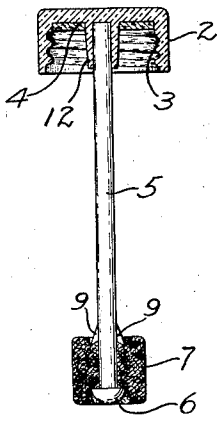


Fig. 3

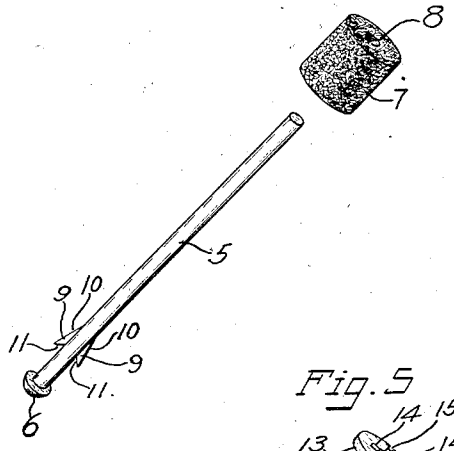


Fig. 4

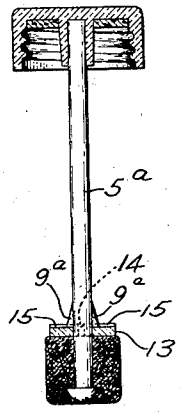
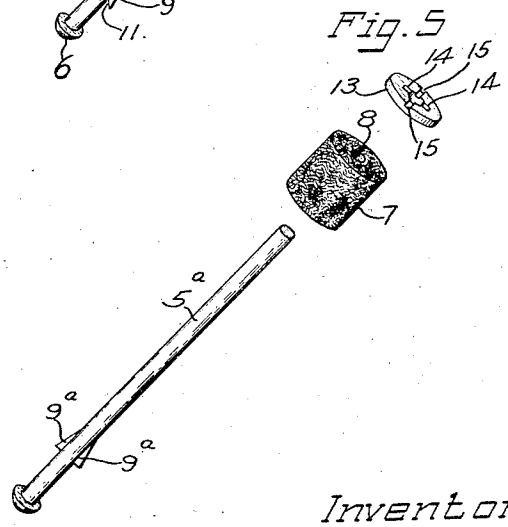


Fig. 5



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Patented June 9, 1936 2,043,678

UNITED STATES PATENT OFFICE

2,043,678

APPLICATOR

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Application July 29, 1932, Serial No. 625,687

3 Claims. (Cl. 128—269)

The invention relates particularly to an applicator adapted for use with liquid medicinal and pharmaceutical preparations such as disinfectants, deodorants and the like. The applicator is well adapted to be attached to the closure of the bottle or other container in which the liquid is packaged and sold, but the invention is not necessarily so limited.

The primary object of the invention is to provide an applicator which is effective and convenient for its intended purpose and which can be manufactured at a minimum expense and which can be conveniently attached to the container closure. Stated more specifically, the object of the invention is to provide an applicator of the class described, wherein the body of absorptive material can be readily assembled with the stem without excessive distortion, and wherein the said body when so assembled is firmly held against removal and against relative rotation.

In the accompanying drawing I have shown two embodiments of the invention, but it will be understood that the drawing is intended for illustrative purposes only and is not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

Of the drawing:

Fig. 1 is an elevational view of a bottle with an applicator therein incorporating the invention.

Fig. 2 is a vertical sectional view showing the applicator and the closure or cap to which it is attached.

Fig. 3 is a perspective view showing in separated relationship the parts of the applicator proper.

Fig. 4 is a view similar to Fig. 2, but showing a different embodiment of the invention.

Fig. 5 is a view similar to Fig. 3, but showing the same embodiment of the invention as Fig. 4.

Referring to the drawing, 1 represents a bottle or container which may be of any usual or preferred form, and 2 represents a closure or cap for the bottle, this being preferably connected with the bottle by means of suitable threads, such as shown at 3 in Fig. 2. The cap 2 may have a liner or gasket 4 of any usual or preferred type for effectively sealing the mouth of the bottle.

The applicator to which the invention particularly relates comprises a stem 5, which may be molded from a suitable material or otherwise formed. At the lower end of the stem 5 there is a head or flange 6, the upper surface of which constitutes a radially projecting abutment. I have shown a circular head, but it will be understood that as to this the invention is not limited.

Carried by the stem 5 adjacent the lower end thereof is a body 7 of resilient absorptive material. As to the material constituting the body 7 there may be wide variation and use may be made of felt, rubber sponge, natural sponge, or any other suitable material. Preferably as shown more clearly in Fig. 3 the body 7 is initially cylindrical in form with a central hole 8 therein adapted to receive the stem 5. The diameter of the body 7 is preferably considerably greater than that of the flange 6.

The stem 5 has thereon above the flange or abutment 6 at least one stop 9 and preferably a plurality of such stops. Two stops are shown in the drawing. Each of the stops 9 is preferably shaped to constitute a barb formed with an outer surface 10 inclined to facilitate downward movement of the body 7 of resilient absorptive material, and formed with a downward facing lower surface 11 which is adapted to serve as a stop to prevent upward movement of the said body. The said lower surface 11 is preferably inclined outward and downward as shown.

Prior to the assembly of the stem 5 with the cap or closure 2 the body 7 is positioned as shown in Fig. 3 and is pushed downward along the stem from the top thereof and is forced past the barbs 9, 9. The inclined surfaces 10, 10 of these barbs spread or expand the resilient material of the body 7 so as to permit it to move past the barbs. Inasmuch as the barbs 9, 9 are narrow, having a width no greater and preferably less than the diameter of the stem 5, the body 7 of absorptive material is subjected to a minimum of distortion as it is forced over the barbs. As soon as the said body has moved past the barbs it contracts to its normal condition whereupon it is engaged by the lower surfaces 11 of the barbs and is effectively held against relative upward movement. The spacing between the barbs 9, 9 and the lower abutment 6 is such that the central portion of the body 7 is somewhat compressed as clearly shown in Fig. 2. The result of this compression is that the head or flange 6 at the bottom is partially or wholly concealed within the outlines of the resilient absorptive body. The engagement of the sharp points of the barbs 9, 9 with the top of the body 7 prevents the said body from rotating on the stem 5.

After the said body 7 has been assembled on the stem as described the top portion of the stem can then be inserted in a boss 12 formed on the cap 2 and can be cemented in place.

It will be apparent that when the cap is in

place on the bottle as shown in Fig. 1 the body 7 of resilient absorptive material is immersed in the liquid within the bottle. When the cap is removed the applicator can be withdrawn carrying a supply of the liquid with it. By virtue of the resilient and pliable properties of the body 7 the liquid therein can be applied to the skin or to any suitable surface conveniently and effectively. The said body 7 is of such size that the upper part thereof is held in firm contact with the barbs, and the barbs thus serve as before stated not only to prevent relative upward movement but also to prevent relative rotative movement. It will be obvious that the prevention of relative movement is essential, as the effectiveness of the applicator would be seriously impaired if the absorptive body were permitted to rotate during use.

In Figs. 4 and 5 I have shown an embodiment of the invention which differs slightly from that shown in Figs. 2 and 3 in that it includes a washer 13 which surrounds the stem and engages the top of the absorptive body 7. As shown in Figs. 4 and 5 the stem 5^a if provided with barbs 9^a, 9^a similar to the barbs 9, 9 but preferably differently located and provided with lower surfaces which are approximately perpendicular to the axis of the stem. The washer 13 has a central hole adapted to receive the stem and in addition has slots 14, 14 therein which are of such size and position as to permit the washer to be moved downward past the barbs.

It will be understood that in assembly the absorptive body 7 is first put in place on the stem exactly as already described, and the washer 13 is then placed on the stem and moved downward into engagement with the said body 7. The washer 13 is then turned so as to be locked in place by the barbs 9^a, 9^a. If desired the washer 13 may be provided with grooves 15, 15 adapted to receive the lower edges of the barbs, the barbs thus serving to lock the washer against further turning.

It will be observed that the construction shown in Figs. 4 and 5 has the advantage that the resilient absorptive body 7 is somewhat more effectively and positively held against accidental movement upward along the stem.

What I claim is:

1. For an applicator, a stem having a radially projecting abutment adjacent its lower end adapted to engage and hold a body of resilient absorptive material and having above the abutment two oppositely positioned laterally extending retaining barbs each having a width no greater than the diameter of the stem and each formed with an outer surface inclined to facilitate downward movement of a body of absorptive material and each formed with a downward facing lower surface, the said barbs being adapted to serve to prevent upward movement of such a body and also to prevent relative rotation thereof.

2. An applicator comprising in combination, a body of resilient absorptive material having a hole therethrough, a stem extending through the hole in the body and having adjacent its lower end a radially projecting abutment engaging the said body, and two oppositely positioned laterally extending barbs formed integrally with the stem above the abutment and each having a width no greater than the diameter of the stem, the said barbs being each formed with an outer surface inclined to facilitate downward movement of the said body and with a downward facing lower surface and the said barbs serving to prevent upward movement of the said body and also to prevent relative rotation thereof.

3. An applicator comprising in combination, a body of resilient absorptive material having a hole therethrough, a stem extending through the hole in the body and having adjacent its lower end a radially projecting abutment engaging the said body, the said stem having above the abutment a plurality of separate circumferentially spaced narrow retaining barbs each formed with an outer surface inclined to facilitate downward movement of the said body and with a downward facing laterally extending lower surface, and a washer surrounding the stem and engaging the top of the body of absorptive material, the said washer having slots permitting it to be moved downward below the barbs and then turned so as to be retained by the barbs.

WILLIAM F. SCHMALZ.