

Dec. 17, 1935.

T. J. DYKEMA

2,024,723

FITMENT

Original Filed June 8, 1933

Fig. 1.

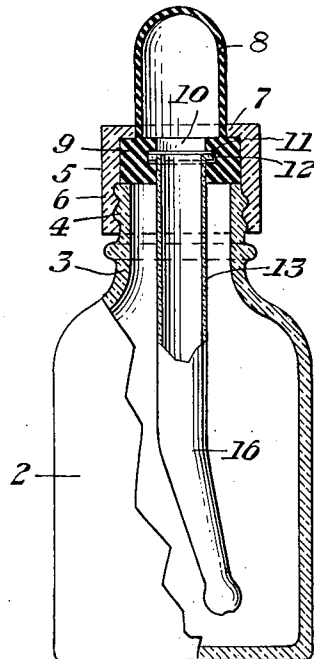


Fig. 2.

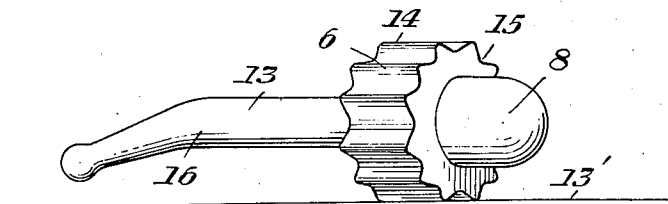
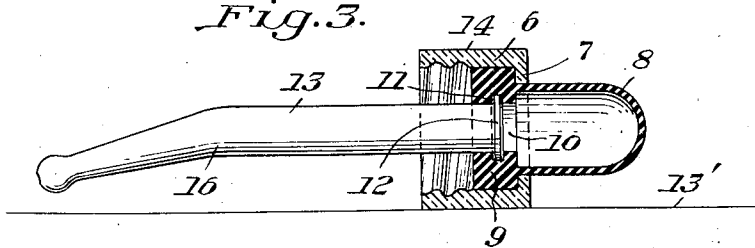


Fig. 3.



INVENTOR

T. J. Dykema
by *D. J. Dykema*
his attorney

UNITED STATES PATENT OFFICE

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FITMENT

Tunis J. Dykema, Pittsburgh, Pa.

Continuation of application Serial No. 674,867,
June 8, 1933. This application May 15, 1935,
Serial No. 21,498

16 Claims. (Cl. 221-148)

This invention relates broadly to fitments for bottles and the like, and more particularly to fitments comprising a closure member for the bottle or the like and an applicator adapted to extend within the bottle. For example, a fitment of this character is disclosed in my Reissue Patent No. 19,520, reissued April 9, 1935. This application is a continuation of my copending application Serial No. 674,867, filed June 8, 1933.

A difficulty which has attended fitments of the type mentioned is that when such a fitment is laid down on its side on a flat surface the weight of the applicator overbalances the fitment and causes it to tilt so that the applicator comes in contact with the surface upon which the fitment is laid down. This is highly undesirable as the applicator may come in contact with substances which may pollute the contents of the bottle or cause injury when the applicator is used. Furthermore, such fitments have a tendency to roll when thus laid down, resulting in inconvenience.

I provide a fitment of the type mentioned which when laid down on a flat or generally horizontal surface will assume and maintain a position with the applicator out of contact with the surface. I also provide such a fitment which will not roll when laid down on its side. In short, I provide a non-tiltable non-rollable fitment of the type comprising a closure member for a bottle or the like and an applicator connected with the closure member and adapted to extend within the bottle.

My invention is applicable to fitments of the type mentioned employing applicators of various different kinds as, for example, dropper tubes, solid glass rods, brushes, etc., but purely for purposes of explanation and illustration I shall describe the invention as embodied in a fitment having a bulb and a dropper tube associated therewith such as is used for eye and nose preparations and various other medicines. The invention has certain peculiar advantages as applied to fitments employing droppers as such fitments cannot be inverted and set down on the top of the cap as can fitments employing solid glass rods or brushes which do not have any bulb extending above the top of the cap. Furthermore, the mass of the dropper tube is greater than the mass of applicators of other types, rendering the problem particularly difficult of solution as applied to fitments employing droppers.

I provide a fitment having a closure member for a bottle or the like and an applicator connected therewith and adapted to extend within the bottle which when laid down on its side will assume a position with the applicator extending gener-

ally parallel to the surface upon which the fitment is laid down and out of contact with such surface. I preferably accomplish this result by fashioning the portion of the fitment which will come in contact with the surface when the fitment is laid down on its side of such longitudinal and transverse dimensions relative to the other parts of the fitment that the fitment as a whole is maintained in a fixed position thereby and will not tilt unless disturbed from that position. I also preferably so shape the surface of the fitment upon which it is laid down as to resist rolling of the fitment and the consequent inconvenience caused thereby.

Other details, objects and advantages of the invention will become apparent as the following description of a present preferred embodiment thereof proceeds.

In the accompanying drawing I have shown a present preferred embodiment of the invention, in which

Figure 1 is an elevational view, largely in central vertical cross section, through a bottle having a fitment applied thereto;

Figure 2 is a perspective view of the fitment shown in Figure 1 when laid down on its side; and

Figure 3 is a central vertical longitudinal cross-sectional view through the fitment.

Referring more particularly to the drawing, there is shown a glass bottle 2 having a reduced neck 3 provided with the usual external screw threads 4. Applied to the bottle is a fitment designated generally by reference numeral 5 and which comprises a bottle cap 6 interiorly threaded to adapt it to be screwed down on the neck of the bottle and having a top portion 7. In the particular form shown in the drawing the top portion 7 of the cap 6 has a circular central opening therethrough which receives a rubber bulb 8 which is formed integrally with a rubber flange 9 adapted to seat on the top of the neck of the bottle to form a seal. The top portion 7 of the cap 6 presses down on the upper surface of the flange 9 when the cap is screwed down on the bottle to insure a tight fit. The flange has a central hole 10 therethrough and which communicates with the bulb 8 and opening into the wall surrounding such hole is an annular recess 11 adapted to receive an outwardly extending annular flange 12 at the upper extremity of an applicator 13 shown as a hollow glass dropper tube or pipette.

In assembling the parts the upper end of the dropper tube or pipette is forcibly introduced through the bottom of the hole 10 until the flange 12 enters the recess 11. The bulb 8 is then in-

roduced upwardly into and through the cap 6 until the top of the flange 9 engages the top portion 7 of the cap. The thus assembled fitment is then adapted to be screwed down on the neck of the bottle to seal the same as above mentioned.

The rubber member of the fitment is adapted to be maintained tightly in fixed assembled relationship with the cap 6 by being tightly or snugly received therein. The tight fit may be either between the lower portion of the bulb 8 and the portion of the top 7 of the cap surrounding the opening therein or between the periphery of the flange 9 and the inner surface of the skirt of the cap or both. In any event, the fit between the rubber member and the cap is such that the two remain together substantially as a unit.

The hole in the flange 9 is of such size relative to the upper end of the dropper tube as to tightly receive the same and, especially when the rubber member is introduced into the cap, the top of the dropper tube is held firmly and positively thereby. Thus the assembled fitment is in effect a rigid unitary structure.

When the fitment is not in place in the bottle it is adapted to be laid down on a generally flat surface, such as a horizontal surface 13', which may represent a table top. The portion of the fitment coming in contact with such surface is the outer peripheral surface 14 of the cap 6. The surface 14 is preferably of greater transverse dimension than any other portion of the fitment and of sufficient longitudinal dimension that when the fitment is laid down as shown in Figures 2 and 3 it will be maintained in fixed position, the mass of the dropper tube being insufficient to overbalance the fitment so that the end of the dropper tube will come in contact with the surface 13'. The dropper tube extends generally horizontally and by reason of the tight fit between the parts does not sag sufficiently to touch the surface 13'.

I preferably form in the peripheral surface 14 of the cap 6 one or more relatively wide grooves 15 as shown in Figure 2 which serve the joint function of enabling firm gripping and handling of the cap and preventing the fitment from rolling when laid down on its side. The fitment will assume a position with the portions of the surface 14 at opposite sides of one of the grooves 15 in contact with the surface 13', the grooves being wide enough to at least resist to a desirable extent accidental rolling of the fitment. Preferably the grooves 15 are provided around the entire periphery of the surface 14.

The dropper tube 13 is preferably bent at 16 as shown, this feature also having a two-fold function. It enables easier use of the fitment in applying medicine, for example, to the nose and eyes, and it also tends to make the fitment slightly heavier at one peripheral portion, and when the fitment is laid down on its side the peripheral portion toward which the lower extremity of the dropper tube extends will be acted on by gravity and will tend to assume a position next the surface 13'. When the wide grooves 15 are provided this tendency due to bending of the dropper tube will probably be overcome and the fitment can be set down with the bent end of the tube extending in any direction. However, if the fitment is laid down with the bent end of the dropper tube extending downwardly it will be more secure against accidental rolling. Furthermore, when the dropper tube is bent as above mentioned the peripheral surface 14 of the cap

need not be grooved at all but may be made smooth, and rolling of the fitment will be resisted, to some extent at least, by its tendency to assume a position of rest with the bent end of the dropper tube extending downwardly.

While I have shown and described certain present preferred embodiments of the invention, it is to be distinctly understood that the same is not limited thereto but may be otherwise variously embodied within the scope of the following claims.

I claim:

1. A combined bottle closure and liquid dropper comprising a rigid screw type cap adapted to fit over the top of a bottle, and a liquid dropper consisting of a suction bulb and pipette fitted in an opening in the top of the cap in a manner to move with the cap as a unit, said cap, suction bulb and pipette being so proportioned as to adapt the cap to retain the pipette in a horizontal plane out of contact with the plane of support when the cap is laid on its side on a flat surface.

2. A combined bottle closure and liquid dropper comprising a rigid screw type cap adapted to fit over the top of a bottle, and a liquid dropper consisting of a suction bulb and pipette fitted in an opening in the top of the cap in a manner to move with the cap as a unit, said cap being provided with a length sufficient to prevent the weight of the pipette or the bulb tilting the cap so as to permit the end of the pipette to contact the plane of support when the cap is laid on its side on a flat surface.

3. A combined bottle closure and liquid dropper comprising a rigid screw type cap adapted to fit over the top of a bottle, and a liquid dropper consisting of a suction bulb and pipette fitted in an opening in the top of the cap in a manner to move with the cap as a unit, said cap, suction bulb and pipette being so proportioned as to adapt the cap to retain the pipette in a horizontal plane out of contact with the plane of support when the cap is laid on its side on a flat surface, and the cap also being provided with a non-circular periphery adapted to prevent it from rolling.

4. A combined bottle closure and liquid dropper comprising a rigid screw type cap adapted to fit over the top of a bottle, and a liquid dropper consisting of a suction bulb and pipette fitted in an opening in the top of the cap in a manner to move with the cap as a unit, said cap, suction bulb and pipette being so proportioned as to adapt the cap to retain the pipette in a horizontal plane out of contact with the plane of support when the cap is laid on its side on a flat surface, and the cap also being provided with a contiguous series of axially disposed grooves of sufficient depth extending about its periphery to prevent it from rolling.

5. A combined bottle closure and liquid dropper comprising a rigid screw type cap adapted to fit over the top of a bottle, and a liquid dropper consisting of a suction bulb and pipette fitted in an opening in the top of the cap in a manner to move with the cap as a unit, said cap being provided with a length sufficient to prevent the weight of the pipette or the bulb tilting the cap so as to permit the end of the pipette to contact the plane of support when the cap is laid on its side on a flat surface, and the cap also being provided with a non-circular periphery adapted to prevent it from rolling.

6. A combined bottle closure and liquid dropper comprising a rigid screw type cap adapted to fit over the top of a bottle, and a liquid dropper

consisting of a suction bulb and pipette fitted in an opening in the top of the cap in a manner to move with the cap as a unit, said cap being provided with a length sufficient to prevent the weight of the pipette or the bulb tilting the cap so as to permit the end of the pipette to contact the plane of support when the cap is laid on its side on a flat surface, and the cap also being provided with a contiguous series of axially disposed grooves of sufficient depth extending about its periphery to prevent it from rolling.

7. A fitment for bottles and the like comprising a closure member for the bottle having a flexible bulb and a hollow applicator associated therewith as a unit, the fitment having a portion of greater transverse dimension than the bulb serving to support the fitment when laid down on a flat surface, such portion being of such length as to maintain the fitment in position with the applicator out of contact with said surface.

8. A fitment for bottles and the like comprising a closure member for the bottle having a flexible bulb and a hollow applicator associated therewith as a unit, the fitment having a portion of greater transverse dimension than the bulb serving to support the fitment when laid down on a flat surface, such portion being of such length as to maintain the fitment in position with the applicator out of contact with said surface and being shaped to resist accidental rolling of the fitment.

9. A fitment for bottles and the like comprising a cap portion adapted to fit over the top of the bottle, a flexible bulb portion adapted to extend thereabove and a hollow applicator portion adapted to extend within the bottle, the fitment being shaped so that when laid down on a flat surface the applicator will be maintained out of contact with said surface.

10. A fitment for bottles and the like comprising a cap portion adapted to fit over the top of the bottle, a flexible bulb portion adapted to extend thereabove and a hollow applicator portion adapted to extend within the bottle, the fitment being shaped so that when laid down on a flat surface the application will be maintained out of contact with said surface, the supporting portion of the fitment also being shaped to resist accidental rolling thereof.

11. A combined bottle closure and liquid dropper comprising a cap portion adapted to fit over and about the top of a bottle and a suction bulb portion and pipette portion associated therewith as a unit, said cap portion, suction bulb portion and pipette portion being so proportioned as to adapt the cap portion to retain the pipette portion generally horizontal and out of contact with the plane of support when the cap is laid on its side on a generally horizontal flat surface.

12. A fitment for bottles and the like comprising a closure portion for closing the bottle and a curved applicator whose center of gravity lies to one side of the axis of the closure portion connected with the closure portion and adapted to

extend within the bottle, the fitment being shaped so that when laid down on a flat surface it will be maintained in position generally parallel to said surface and with the applicator out of contact with said surface.

13. A fitment for bottles and the like comprising means for cooperation with the neck of a bottle to seal the same, means for tightening the fitment to the bottle to render the sealing means effective, an applicator adapted to extend within the bottle, a grip portion adapted to extend outwardly of the bottle and an intermediate portion which supports the fitment when laid down on a flat surface, said intermediate portion being of such length as to maintain the fitment in position generally parallel to said surface and with the applicator out of contact with said surface.

14. A fitment for bottles and the like comprising a cap portion adapted to fit over the top of a bottle, means within the cap portion for cooperation with the neck of the bottle to seal the same, means for tightening the cap portion to the bottle to render the sealing means effective and an applicator connected with the cap portion and adapted to extend within the bottle, said cap portion also serving to support the fitment when laid down on a flat surface and being of such length as to maintain the fitment in position generally parallel to said surface and with the applicator out of contact with said surface.

15. A fitment for bottles and the like comprising a closure member for a bottle, means associated with said closure member for cooperation with the neck of the bottle to seal the same, means for tightening the closure member to the bottle to render the sealing means effective and an applicator connected with the closure member and adapted to extend within the bottle, the fitment having a portion of greater transverse dimension than the upper extremity thereof serving to support the fitment when laid down on a flat surface, such portion being of such length as to maintain the fitment in position generally parallel to said surface and with the applicator out of contact with said surface.

16. A fitment for bottles and the like comprising a closure member for a bottle, means associated with said closure member for cooperation with the neck of the bottle to seal the same, means for tightening the closure member to the bottle to render the sealing means effective and an applicator connected with the closure member and adapted to extend within the bottle, the fitment having a portion of greater transverse dimension than the upper extremity thereof serving to support the fitment when laid down on a flat surface, such portion being of such length as to maintain the fitment in position generally parallel to said surface and with the applicator out of contact with said surface and being shaped to resist accidental rolling of the fitment.

TUNIS J. DYKEMA.