Sept. 19, 1950 M. E. DEGROFF 2,522,864

BOTTLE CLOSURE

Filed June 21, 1948

Fig. 1

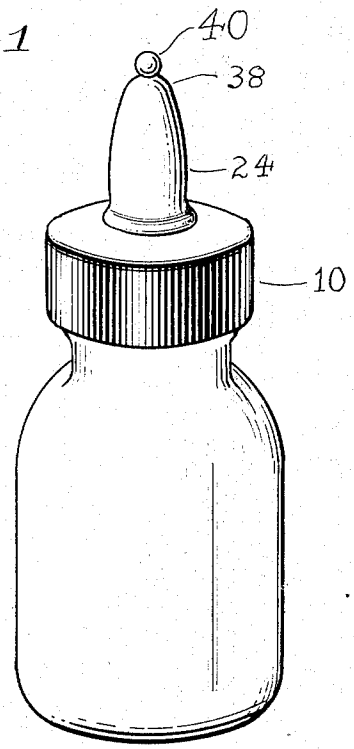


Fig. 2

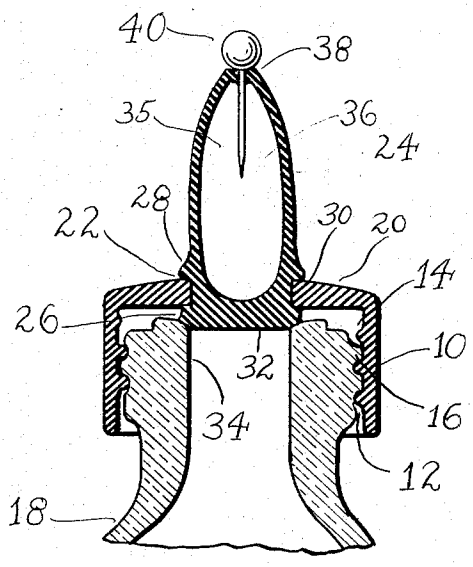
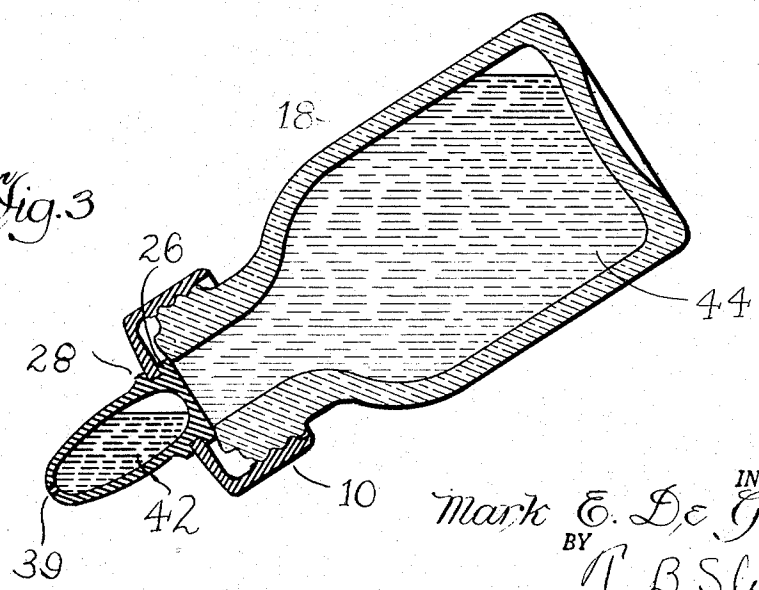


Fig. 3



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BOTTLE CLOSURE

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8 Claims. (Cl. 215—38)

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This invention pertains to a bottle closure. More specifically, it refers to that type of closures that contain medicinal ingredients that can be dispensed in minute quantities. Furthermore, it is directed specifically to a closure which contains a chamber suitable for convenient storage and dispensing of liquids. When the said chamber is empty it can be readily replaced by another which becomes a component of the closure and again functions as a bottle closure.

It therefore is an object of my invention to provide an improved bottle closure with a replaceable liquid chamber forming a part thereof.

A further object of my invention is to provide an effective bottle closure that not only will seal the contents of bottle but will also hermetically retain any liquid that must be dispensed in drop like quantities.

A still further object of my invention is to provide an improved bottle closure containing as its integral component a device for feeding liquids in minute quantities.

A still further and additional object of my invention is to provide an improved closure combining effectively the features of a dropper and still serving as a closure, and which is easy to replace when its contents have been dispensed.

These and other objects, uses, adaptations, variations, modifications and extensions will become immediately obvious to one skilled in this art particularly in light of the clear, lucid and accurate description given hereinbelow of the fundamental concepts underlying the principles of my invention and especially in light of the attached drawing illustrating the preferred embodiment of my invention. It is intended that all such objects, adaptations and modifications shall be clearly and unequivocally considered to be within the scope of the spirit of invention as described hereinbelow and claimed in the hereunto appended claims.

Therefore, Figure 1 shows the improved bottle closure in position on a bottle.

Figure 2 shows an enlarged vertical cross sectional view of my improved closure mounted on a container, while

Figure 3 shows a vertical cross sectional view of my improved closure mounted on a bottle while it is in use.

As a matter of convenience, I employ similar character references in the illustrations as well as in this disclosure, to refer to elements of the various components forming my invention.

Essentially, my improved closure consists of a body **10**, which is preferably tubular though quite

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obviously it can have any other cross sectional shape. Though it can be made of any metal, I prefer to employ one of the several well known plastics, such as phenol-aldehydes, alkyds, cellulose acetate, nitrocellulose, etc. as the material from which the closure body can be formed. Internal threads **12** are formed within the interior vertical wall **14** of the body **10**, which engage the threads **16** on the bottle **18**.

The top **20** of body **10** contains a centrally located aperture or opening **22** thru which fits the closure chamber **24**. The opening **22** rests on an annular shoulder **26** forming an integral part of the chamber wall **24**. A bead like annular rim **28** also forming an integral part of the chamber wall **24** forms an annular recess **30**. This recess **30** receives the thickness of the top **20** of the body **10** and snugly engages the same to become in combination with said top, a tightly fitting closure.

The base **32** of said chamber **24** rests snugly on the lip **34** of the bottle **18** and forms a tight seal when the cap **10** is tightly engaged by the threads **12**.

The chamber **24** contains a hollow space **35**. A pin point **36** is forced thru the apex **38** of the chamber wall into the interior **35** to form a very small hole **39** therein. The ball **40** on the pin point **36** is not only ornamental and also useful since it aids in forcing the point **36** into the space **35** when it is desired to stopper any fluid **42** that may be placed in the space **35**. It is obvious that other types of pin stoppers may also be used and still be within the scope of the spirit of this invention.

The chamber **24** is utilized for dispensing liquids **42**, such as skin softeners, soap, wetting agents, perfumes, etc. that must be dispensed in small drop like quantities. The liquid **42** to be dispensed is obtained in drop like form by either shaking the container or by slight pressure on the chamber walls **24**. The chamber is made of any flexible material like rubber, cellulose acetate, etc. When the chamber **24** is empty, a new chamber can be very readily replaced. Sometimes it is desirable to exchange the chamber **24** with others that may contain different liquids.

The bottle itself **18** may contain any diluent liquid **44** such as water, alcohol, oil, etc. that can be used with the concentrated liquid **42**.

Essentially this invention comprises a closure with a replaceable chamber which not only serves as a stopper to the liquid in the large container, but also serves itself as small vial that is capable of dispensing liquids in drop like manner.

Though the above embodiment of my invention is described and illustrated in its preferred embodiment, it is not my intention to be limited to the same for obviously it can be widely varied and still come within the purview and ambit of the fundamental concepts underlying the principles of my invention as defined in the hereunto defined claims.

I claim:

1. An improved closure comprising a cap means to engage the neck of a bottle, an aperture through said cap means, a resilient elliptical closed container nested in said aperture, a base on said container, an external annular U-shaped collar about the said base, the said collar in engaging juxtaposition with the edge of said cap means, and a flared resilient extension on said base of said container in contacting relationship with the neck of said bottle whereby the contents of said bottle are sealed.

2. In the closure of claim 1 wherein the said container has a small aperture in its apex.

3. In the closure of claim 1 wherein the said collar comprises two outstanding flanges of greater diameter than the aperture in the said cap means, the groove of said collar having a width less than the thickness of said cap means.

4. An improved bottle closure and container comprising an elastic walled container, said container having a base thereon to fit snugly against the opening of a bottle, the said base forming integrally an annular rim slightly larger than

the open mouth of said bottle, an annular recess above said base annular rim of a diameter to fit the opening in the cap, a cap means bead forming an integral part of said container above said opening in the cap and in contacting juxtaposition therewith, an opening in the apex of said container whereby liquids contained in said container can be dispensed dropwise, and a means on said cap means to engage the neck of said bottle.

5. The container of claim 4, wherein it is made of rubber.

6. In the closure of claim 4, an aperture in the apex of said container.

7. The container of the closure of claim 4 wherein the said aperture in the apex of said container is sealed with a sealing means.

8. The sealing means of claim 7 being a ball covered pin.

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