May 31, 1966 P. E. VIRANY 3,253,729

CLOSURE MEANS FOR BOTTLES AND THE LIKE

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Fig. 1

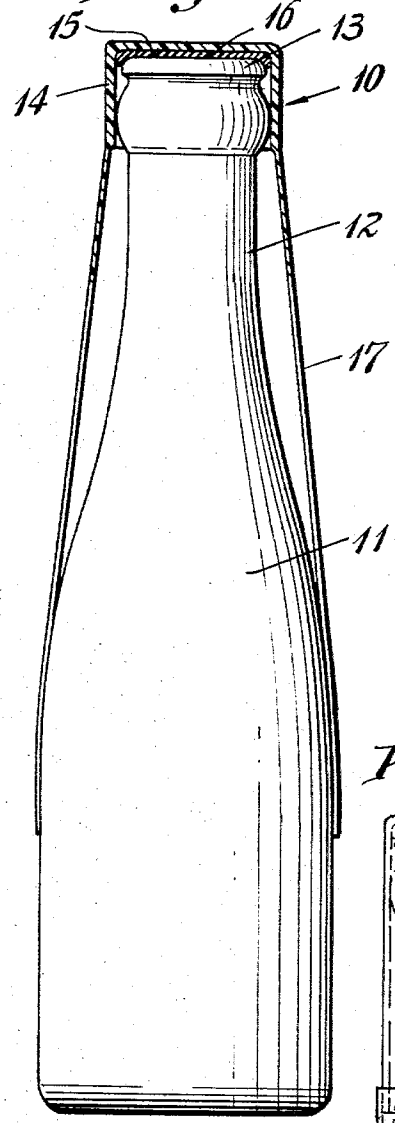


Fig. 2

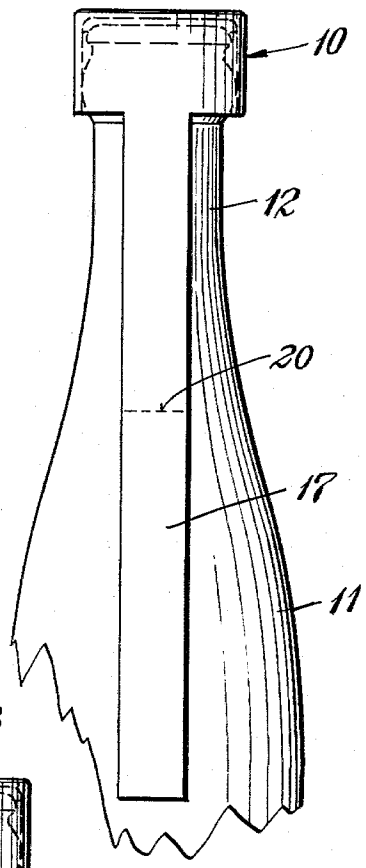
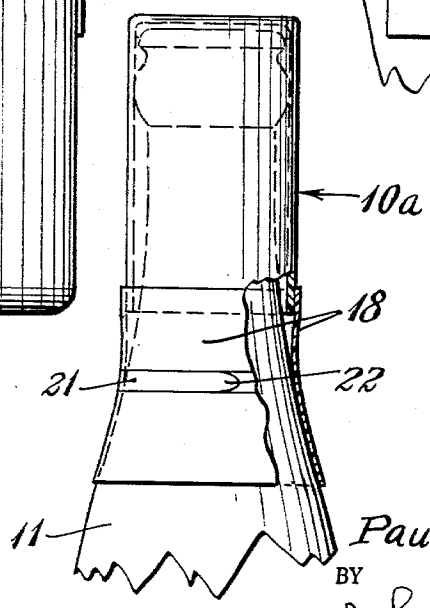


Fig. 3



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Fig. 4

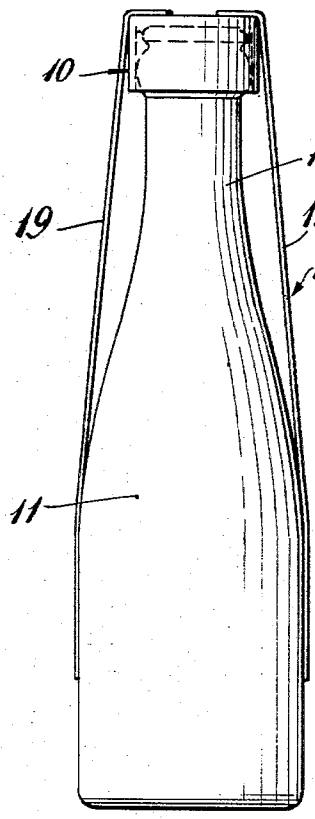


Fig. 5

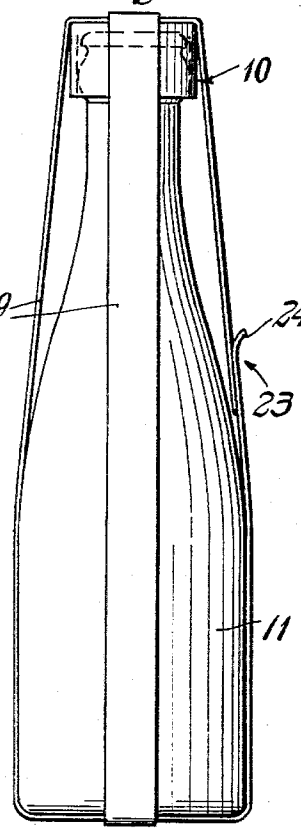


Fig. 7

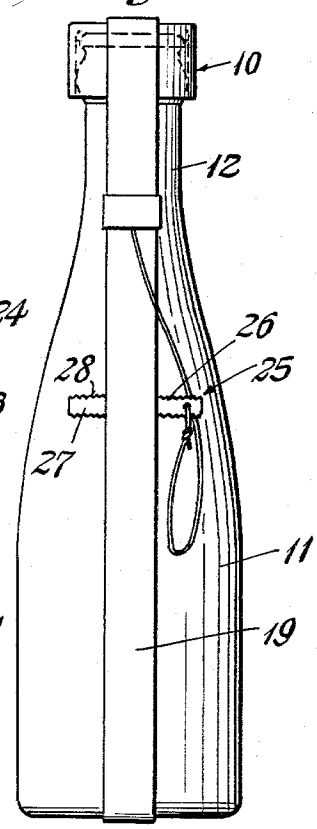
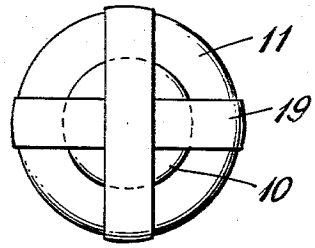


Fig. 6



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CLOSURE MEANS FOR BOTTLES AND THE LIKE

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3 Claims. (Cl. 215—84)

This invention relates to a novel closure means for bottles and more particularly for bottles having pressurized material therein.

It has been the usual practice in closing bottles, particularly those having pressurized material therein, to employ sheet metal crown caps which have dependent skirts which are deformed and crimped into locking relation with a portion of the bottle. These require considerable pressure to crimp the skirts in applying the cap and necessitate the use of a tool or bottle opener to partially uncrimp the skirt to remove the cap from the bottle.

The present invention has as its object the overcoming of these difficulties by providing a preformed rigid cap and securing the cap in sealing relation over the neck of the bottle by non-stretchable tape means, and by providing a simple means for severing the tape whereby the cap can be removed.

A feature of the invention resides in the fact that in applying the cap it is unnecessary to deform the cap member to secure it in position.

Another feature of the invention resides in the fact that the severing means can quickly sever the strap means holding the cap in sealing relation whereby the cap can be readily removed without the necessity of deforming the cap in any manner.

Other features and advantages of the invention will be apparent from the specification and claims when considered in connection with the accompanying drawings in which:

FIGURE 1 shows a closure of the present invention having integral strips projecting therefrom.

FIG. 2 is a partial side view of FIG. 1.

FIG. 3 is a partial view of another form of enclosure having a circumferential tape around the bottom thereof.

FIG. 4 is another form of the invention in which a pair of straps are provided on opposite sides of the bottle to hold the cup in position.

FIG. 5 is a view of another form of the invention in which two pairs of tapes are employed in loop form located 90° apart and in which the severing means comprises a pull tape.

FIG. 6 is a top view of FIG. 5 showing the crossed straps.

FIG. 7 is a view of the strap arrangement of FIG. 5 showing a severing means secured to the tape.

As shown in the drawings, the present invention comprises a closure **10** for a bottle **11** having an elongate neck **12** with the end of the neck formed with the usual mouth **13** adapted to receive the closure. While the bottle may have non-pressurized material therein, it is particularly suitable for pressurized or carbonated beverages where substantially high pressures are developed by the released gases of the material.

The novel closure of the present invention comprises a cup-shaped member **14** which may be preformed from any suitable rigid material, i.e., having sufficient rigidity to maintain a seal under the pressure of the pressurized material. It may be a metal or a plastic material such as a high impact styrene. The cup is inverted and has the end of the neck of the bottle inserted therein and into engagement with the bottom **15** of the cup. In some instances it may be desirable to provide a sealing medium **16**, such as cork or suitable plastic material, over the bottom of the cup for engaging the end of the bottle to insure the seal in the event of unevenness of the end of the bottle or chips in the mouth of the bottle.

The side walls of the cup extend downwardly over the neck and in accordance with the present invention are held in sealing relation by non-stretchable tape means extending from the cup and secured to the bottle. The tape means may be made of any suitable non-stretchable moisture-proof material, such as a linear polyester, suitable paper, metal and Fiberglas tape which will withstand substantial pressure, in the range of 90 pounds per square inch pressure, in the bottle. The tapes can be separate tapes or can be formed integral with the cup and extend down to and are secured to the body.

In the form of the invention shown in FIG. 1 the tape means is formed as integral non-stretchable strips **17** depending from the side walls of the cup and ending down and secured to the sides of the bottle.

In the form of the invention shown in FIG. 3 the cup is a substantially deep cup **10***a* in which the sides extend down the neck to a point at which it substantially engages the flaring neck of the bottle. A circumferential tape **18** of non-stretchable material extends around and engages the bottom of the cup and the adjacent neck of the bottle and effectively holds the cup in sealing relation over the bottle.

In the forms of the invention shown in FIGS. 4–7, the non-stretchable tape means is formed as separate strips **19** which hold the cap in sealing relation. Under some circumstances, one pair of separate strips of tape extending along and secured to the sides of the bottle and the cup, as shown in FIG. 4, is sufficient. However, it is at present preferred to use two strips of tape disposed at 90° with respect to each other with the tapes passing under the bottle, along the sides of the bottle and over the closure cup in the manner shown in FIGS. 5 and 6. The foregoing tapes, in effect, form a loop extending over the top and bottom and securely hold the cup in sealing relation with the end of the neck of the bottle even though substantial pressures may be present in the bottle. The closure can thus be readily applied and held in sealing relation without the necessity of crimping or otherwise deforming the cup.

When it is desired to remove the cup, severing means can be provided in the tapes for readily severing the tape and permitting the cup to be removed. In the form of the invention shown in FIGS. 1, 2 and 4, this severing means comprises a tear or weakened line **20** formed in the tape which can be broken by a transverse pressure applied thereto. In the form of the invention shown in FIG. 3 there is provided a tear strip **21** in the tape having a finger-grip portion **22** which may be gripped and the tear strip readily removed, thus severing the tape and permitting the closure to be removed from the bottle. In the form of the invention shown in FIG. 5 the ends of the strip are overlapped and one end **23** of the tape is provided with a surface which is non-adhering so that it produces a finger grip **24** which will permit the loop of tape to be severed by a pull on the finger grip **24**. In the form of the invention shown in FIG. 7 a cutting implement **25** can be attached to the tape by a flexible element **26** or the like and can be used to sever the tape. While this may be a sharp knife or the like, in the illustrated form of the invention it is indicated as being a strip **27** with a saw-tooth edge **28** capable of severing tape.

Thus it will be seen that the closure means of the present invention can be readily applied by pressing down the rigid cap over the end of the bottle and holding it in sealing relation while the non-stretchable tape means are applied to the cap and secured in position on the bottle by any suitable means, such as adhesives, heat, irreversible chemical bonding action and the like, to effectively hold the cap in sealing relation even when pressures are built

up in the bottle due to the pressurized material being included therein. The sealing is achieved without the necessity of deforming the cup in any manner. When it is desired to remove the closure, it is merely necessary to sever the tape and remove the cup from its sealing position. This, according to the present invention, can be done in a simple and effective manner without the necessity of uncrimping or deforming the cap in any respect.

Variations and modifications may be made within the scope of the claims and portions of the improvements may be used without others.

I claim:

1. In combination, a bottle having pressurized material therein and a closure therefor comprising a rigid cup-shaped member having the neck of the bottle inserted therein with the inner surface of the bottom of the cup engaging the end of the neck, and non-stretchable means disposed over the outer side of the bottom of the cup and extending from the cup and engaging and adhering to the side of the bottle and forming the sole means holding the bottom of the cup in sealing engagement with the end of the neck.

2. The invention as defined in claim **1** wherein there

are means for severing the non-stretchable means for releasing the cup for removal from the neck.

3. The invention as defined in claim **1** wherein the non-stretchable means comprise a plurality of separate elongate plastic tapes attached to the cup and adhesively secured to the side of the bottle, and means for severing the tapes for releasing the cup for removal from the neck.

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