Aug. 16, 1966 H. E. FRANKENBERG 3,266,659

EASY-OPENING RING AND SCORED CLINCH CAP

Filed Nov. 1, 1963

FIG. 1

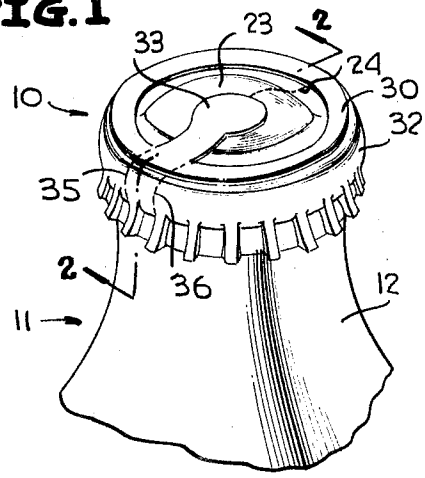


FIG. 2

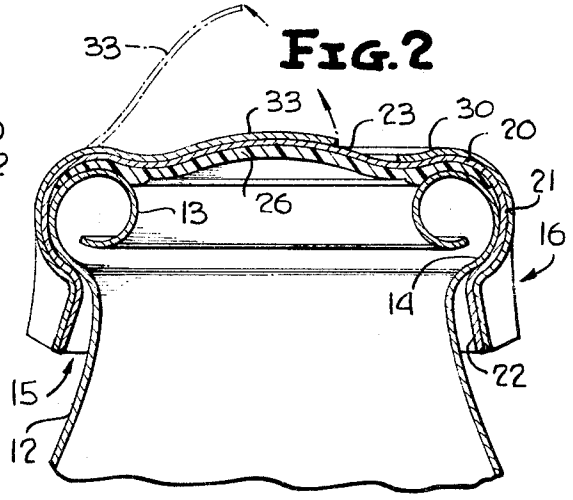


FIG. 3

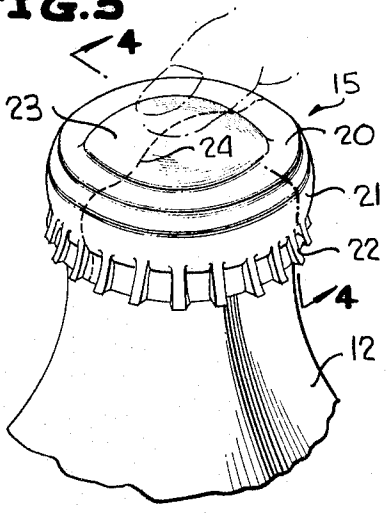
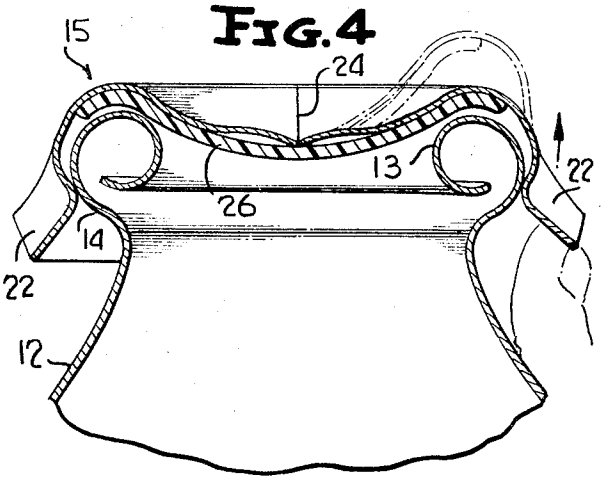


FIG. 4



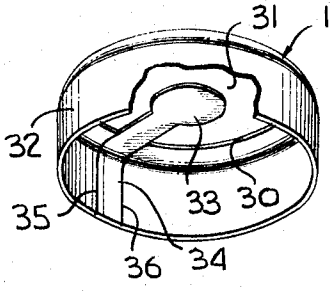


FIG. 5

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EASY-OPENING RING AND SCORED CLINCH CAP

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1 Claim. (Cl. 220—54)

This invention relates to an easy-opening closure assembly for containers, and more particularly to a non-reclosable closure for beverage-type cans or bottles, which closure can be removed without the use of special tools.

It is conventional modern-day commercial practice to provide containers, such as beverage-type glass bottles or metal cans, with a crown cap for closing the container. The conventional crown cap is generally crimped beneath a locking ring on the container so that the crown cap cannot be removed except with an opener or other special tool.

It is an object of this invention to provide a non-reclosable closure for beverage-type cans or bottles, which closure can be removed from the container without the use of special tools.

Another object of this invention is to provide a composite closure comprising a clinch-type crown cap and a protective seal ring or overcap. The crown cap has an upstanding central hump and is scored centrally across, and the overcap includes a pull tab and a tear strip. When the pull tab and tear strip are torn out of the overcap, the overcap is readily removable from the crown cap, and thereafter by depressing the hump of the crown cap, the score line therein can be broken and the crown cap divided for easy removal from a container.

Another object of this invention is to provide a composite closure for a container, the closure comprising a crown cap and an overcap, the crown cap having a hump therein and a score line along a diameter thereof, the overcap including a pull tab and a tear strip, the overcap being normally disposed over the crown cap and being manually removable therefrom, whereby a pressure may be exerted upon the hump to break the crown cap along the score line therein.

Another object of this invention is to provide a composite closure, of the type described above, wherein the crown cap includes a top end portion and a depending skirt, the skirt being provided with a corrugated edge structure for crimping the crown cap to a container.

Another object of this invention is to provide a composite closure, of the type described above, which is further characterized in that the overcap comprises an annular top piece having an opening therein, and a peripheral flange depending from the annular top piece, the tear strip in the overcap being defined by a pair of spaced score lines which extend along the annular top piece and the peripheral flange.

Another object of this invention is to provide a closure assembly having a crown cap and an overcap, of the type described above, wherein the crown cap is nested within the overcap, the hump on the crown cap extending partially through the opening in the overcap and engaging the pull tab thereof so as to position the pull tab above the plane of the annular top piece such that the pull tab may be readily grasped by a person desiring to open the container.

A further object of this invention is to provide a closure assembly comprising a crown cap and an overcap wherein a liner is disposed within the crown cap for providing a hermetic seal with the lip of a container, a depending skirt on the crown cap and a peripheral flange on the overcap, the depending skirt and the peripheral flange

being adapted to be crimped about a locking ring on the container.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by the reference to the following detailed description, the appended claimed subject matter and the several views illustrated in the accompanying drawing.

In the drawing:

FIGURE 1 is a fragmentary perspective view and illustrates the novel closure assembly, of the present invention, as it appears when assembled to a conventional beverage-type container.

FIGURE 2 is an enlarged vertical cross-sectional view, taken on line 2—2 of FIGURE 1, showing the relationship of the various parts of the novel closure and, in addition, illustrates in dotted lines the manner in which the pull tab is initially raised during removal of the overcap from the crown cap.

FIGURE 3 is a fragmentary perspective view, similar to FIGURE 1, illustrating the crown cap and container after the overcap has been removed therefrom and, in addition, shows a finger or thumb in position on the hump of the crown cap for applying a downward compressive force thereto.

FIGURE 4 is an enlarged vertical cross-sectional view, taken on line 4—4 of FIGURE 3, illustrating the crown cap after it has been fractured along the score lines therein and, in addition, shows the manner in which the crown cap is removed from the container.

FIGURE 5 is a fragmentary perspective view of the protective seal ring or overcap.

Referring to the drawing in detail, there is illustrated a novel closure assembly, generally indicated by the numeral **10**, which closure assembly **10** is shown as being attached to a well-known type of container, generally indicated by the numeral **11**. The container **11** is shown as having a tapered neck **12** terminating in a curled lip **13** which provides a locking ring or shoulder **14**.

The composite closure **10** includes a clinch-type crown cap, generally indicated by the numeral **15**, which is shown in FIGURES 1 and 2 as being nested within a protective seal ring or overcap, generally indicated by the numeral **16**.

The crown cap **15** is preferably stamped from thin metal stock and is shaped to include a top end portion **20** and a depending skirt **21**. The skirt **21** is conventionally provided with a corrugated edge structure **22** which may be crimped in a well-known manner beneath the locking ring **14** on the container **11**. The top end portion **20**, of the crown cap **15**, has an upstanding hump **23** formed centrally therein, for a purpose to be later described. A deep score line **24** is provided in the crown cap **15** and, preferably, extends completely across the dome **23**, the top end portion **20**, the depending skirt **21** and the corrugated edge structure **22** along a diameter of the crown cap **15**. It is also desirable that the crown cap **15** be provided with a conventional liner **26**, which liner **26** is preferably composed of a plastisol material but, if so desired, may also be a conventional cork-type liner.

The crown cap **15** is, by itself, capable of providing a satisfactory closure for the container **11**. However, because of the deep score line **24** which is formed in the crown cap **15**, it is desirable to provide the protective seal ring or overcap **16** so that the crown cap **15** is not inadvertently fractured along the score line **24**.

The overcap **16** is illustrated in FIGURES 1, 2 and 5 and is adapted to receive and snugly engage the crown cap **15** along the top end portion **20**, the depending skirt **21** and the corrugated edge structure **22**, thereof. The overcap **16** is shown as including an annular top piece **30**, having an opening **31** therein, and a peripheral flange **32**

depending from the annular top piece **30**. The overcap **16** also includes a pull tab **33** and a tear strip **34** which is defined by a pair of spaced score lines **35** and **36** that are formed in the annular top piece **30** and in the peripheral flange **32**.

As is illustrated in FIGURES 1 and 2, the crown cap **15** is nested within the overcap **16** such that the hump **23** is received within the opening **31** and is disposed in engagement with the pull tab **33** to position the pull tab **33** above the plane of the annular top piece **30** whereby the pull tab **33** is readily accessible to be grasped by a person desiring to open the container **11**. In order to open the closure assembly **10**, the pull tab **33** is initially pulled upwardly and outwardly, as is illustrated by the dotted line position shown in FIGURE 2, and the pull tab **33** is then pulled outwardly and downwardly so as to sever the overcap **16** along the score lines **35** and **36** to remove the tear strip **34** from the overcap **16**. After the tear strip **34** has been removed, the overcap **16** may be easily peeled away from the crown cap **15**.

After the overcap **16** has been removed from the crown cap **15**, the crown cap **15** is readily removed from the container **11** by first applying pressure on the dome **23** with a finger, as is illustrated in FIGURE 3, to cause the overcap **15** to be fractured along the deep score line **24** and be deformed to the configuration which is illustrated in FIGURE 4. The deformation of the crown cap **15** causes the corrugated edge structure **22** to swing outwardly from beneath the locking ring or shoulder **14**, thus destroying the hermetic seal which is provided by the container lip **13** and the liner **26**. The crown cap **15** may then be easily divided along the score line **24** by applying thumb pressure, as is illustrated in FIGURE 4, upwardly on the corrugated edge structure **22**.

It will be apparent from the foregoing description that there has been provided an easy-opening closure assembly for bottles or cans, which closure assembly may be removed from a container without the use of special tools or other equipment.

While preferred forms and arrangement of parts have been shown in illustrating the invention, it is to be clearly understood that various changes in detail and arrangement of parts may be made without departing from the spirit and scope of the invention as defined in the appended claimed subject matter.

I claim:

A composite closure for a container, said closure comprising a crown cap and an overcap, a liner disposed within said crown cap for providing a seal with the lip of a container, said crown cap including a top end portion and a depending skirt, said skirt being provided with a corrugated edge structure for crimping said crown cap to a container, said crown cap having a hump therein and a score line extending across the crown cap, said overcap comprising an annular top piece having an opening therein, and a peripheral flange depending from said annular top piece, said overcap including a pull tab and a tear strip, said tear strip being defined by a pair of spaced score lines in said annular top piece and said flange, said hump extending partially through said opening and engaging said pull tab so as to position said pull tab above the plane of said annular top piece, said overcap being normally disposed over said crown cap and being manually removable therefrom, whereby a pressure may be exerted upon said hump to break said crown cap along said score line.

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