Aug. 4, 1970 F. A. SIEMONSEN ET AL 3,522,899

EASY OPEN MEANS FOR BOTTLES AND THE LIKE

Filed Feb. 3, 1969 3 Sheets-Sheet 1

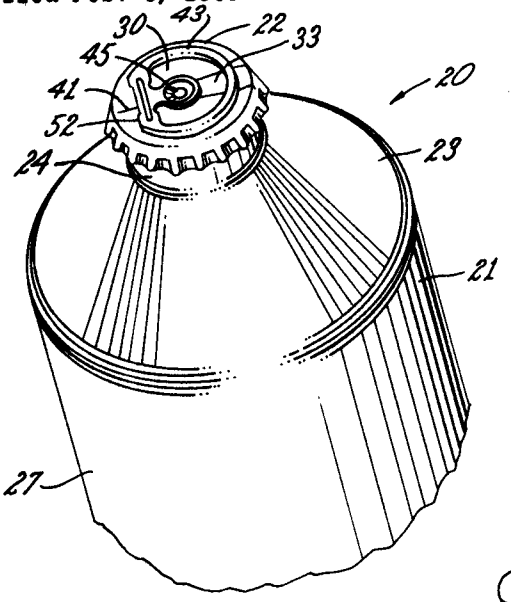


FIG. 1

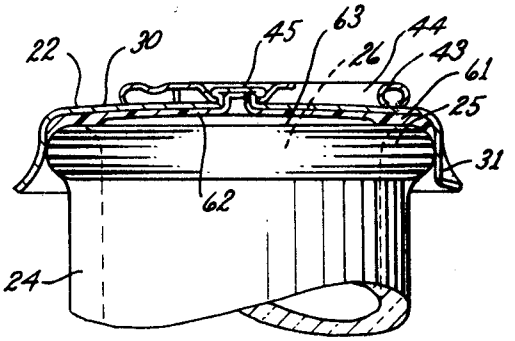


FIG. 2

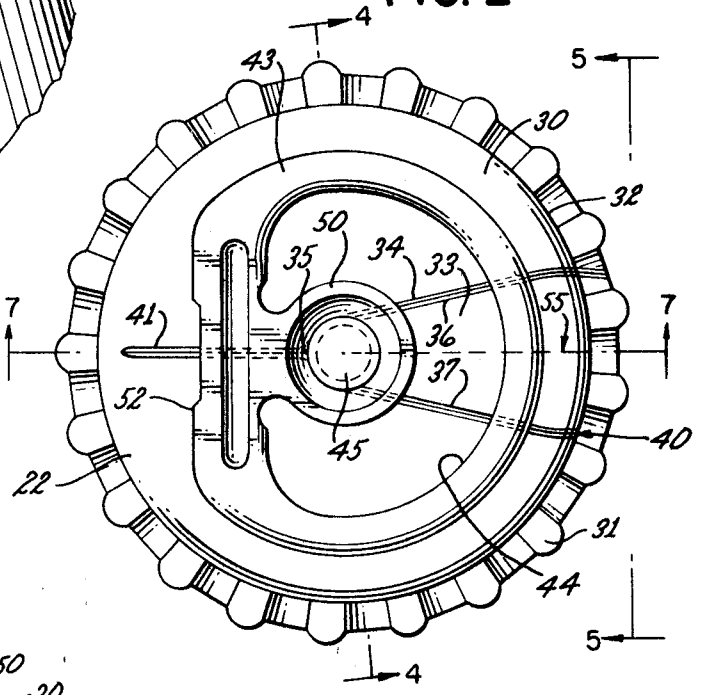


FIG. 3

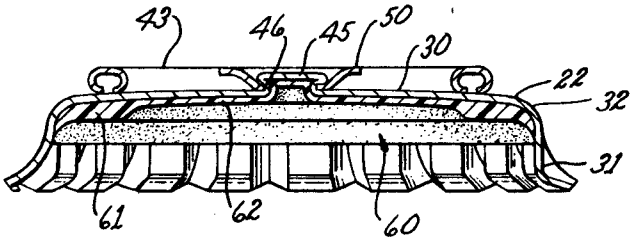


FIG. 4

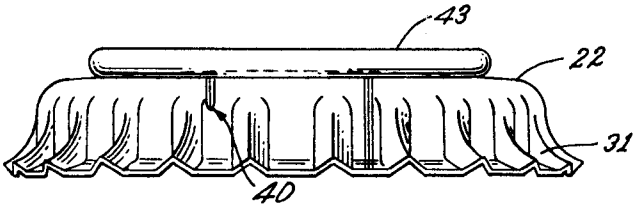


FIG. 5

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EASY OPEN MEANS FOR BOTTLES AND THE LIKE

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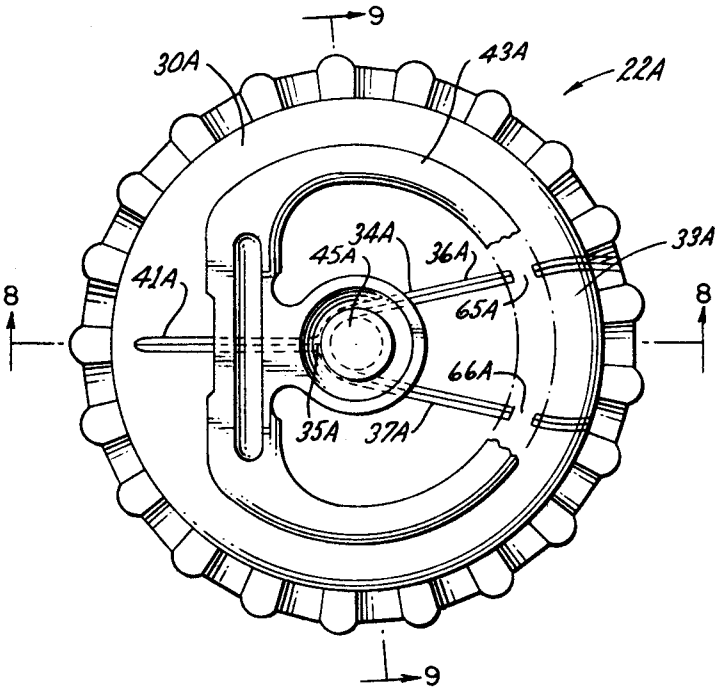


FIG. 6

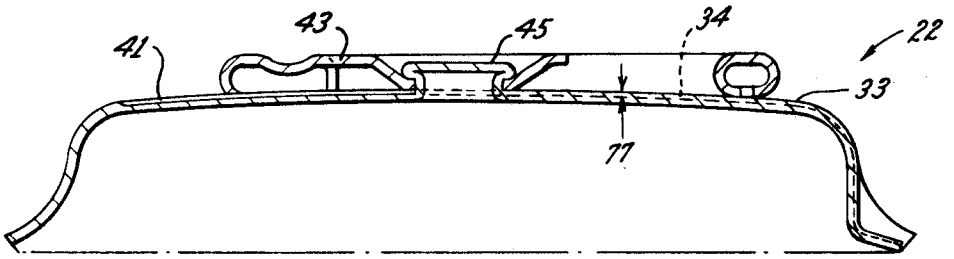


FIG. 7

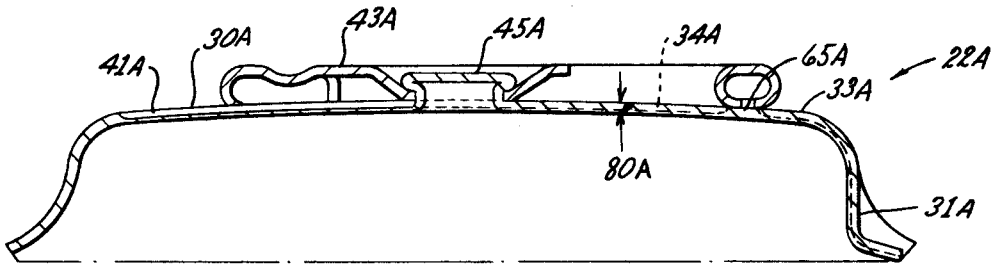


FIG. 8

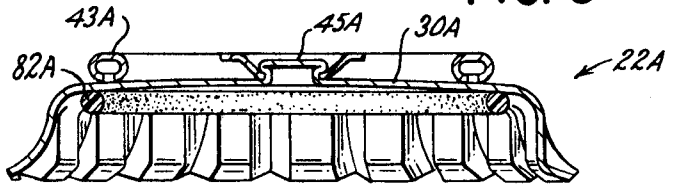


FIG. 9

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EASY OPEN MEANS FOR BOTTLES AND THE LIKE

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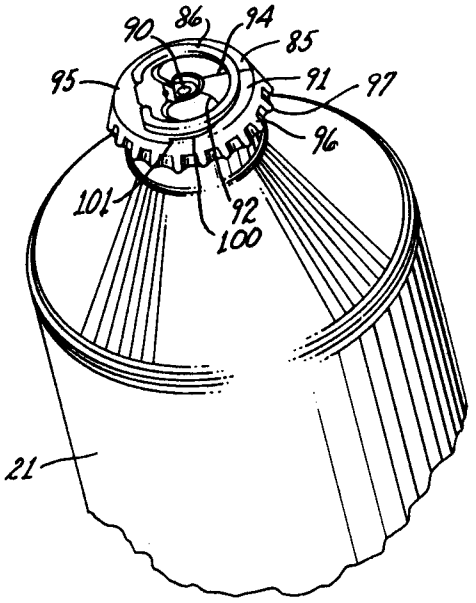


FIG. 10

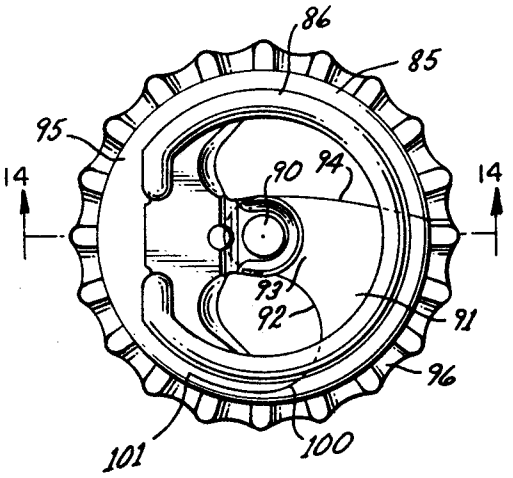


FIG. 11

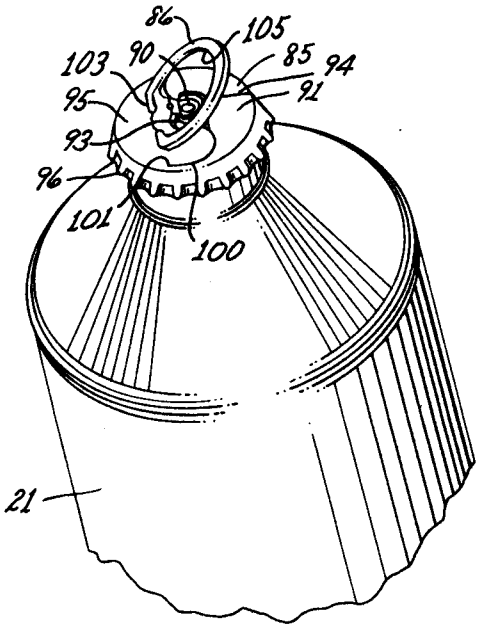


FIG. 12

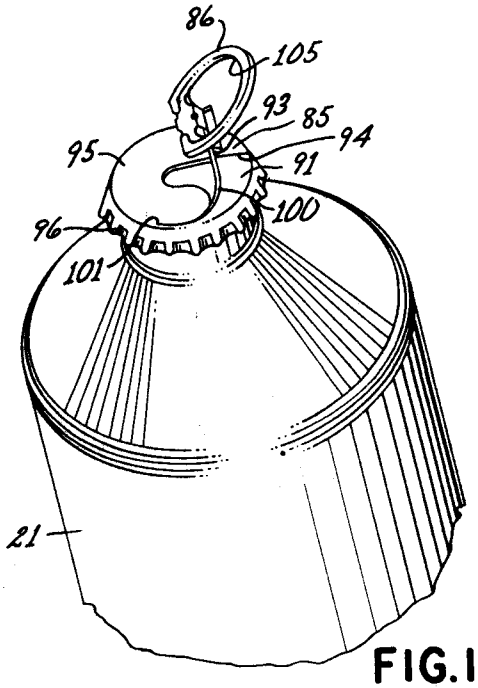


FIG. 13

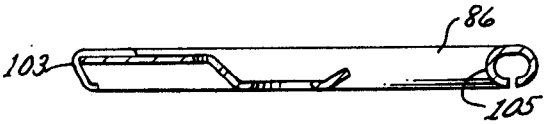


FIG. 14

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3,522,899

EASY OPEN MEANS FOR BOTTLES AND THE LIKE

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Continuation-in-part of application Ser. No. 587,170, Oct. 17, 1966, now Patent No. 3,462,036. This application Feb. 3, 1969, Ser. No. 796,002

The portion of the term of the patent subsequent to Aug. 19, 1986, has been disclaimed

Int. Cl. B65d 41/10, 43/02

U.S. Cl. 215—46 24 Claims

ABSTRACT OF THE DISCLOSURE

This disclosure relates to an improved easy open crown type closure cap for a bottle which is made as one unitary assembly or piece and includes a pull ring fastened thereto which enables easy opening by tearing a section in the cap and removal of the entire cap as one piece.

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of application Ser. No. 587,170, filed Oct. 17, 1966.

BACKGROUND OF THE INVENTION

Many liquid products, such as beverages, for example, are sold in bottles which utilize comparatively small diameter crown type closure caps. Although it has been previously proposed to provide a tear section in a small diameter crown type closure cap to enable opening without requiring a separate opener, it still requires a comparatively large force to sever such a tear section and open the associated bottle. In addition, many present caps of the character mentioned are made in two or more separate pieces which are more difficult to install in position to provide an effective seal on an associated bottle and upon removing such present caps many undesirable sharp edges and loose parts are created.

SUMMARY

This invention provides an improved closure cap for a bottle which is easier to open than previously proposed caps. Further this invention provides an improved one piece easy open cap which is also removed in one piece.

Other details, uses, and advantages of this invention will become apparent as the following description of the embodiments thereof presented in the accompanying drawings proceeds.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings show present preferred embodiments of this invention, in which:

FIG. 1 is a fragmentary perspective view illustrating an improved closure cap of this invention fastened in position on an associated bottle;

FIG. 2 is a fragmentary view illustrating the top portion of the neck of the bottle of FIG. 1 with its closure cap fastened in position;

FIG. 3 is an enlarged view looking normally downwardly toward the closure cap of FIG. 1;

FIG. 4 is a sectional view on the line 4—4 of FIG. 3;

FIG. 5 is a view on the line 5—5 of FIG. 3;

FIG. 6 is a view similar to FIG. 3 illustrating another embodiment of the improved closure cap of this invention;

FIG. 7 is an enlarged sectional view on the line 7—7 of FIG. 3 prior to bonding a sealing material against the inside surface of the closure cap and particularly illustrating the depth of various score lines provided in such closure cap;

FIG. 8 is a sectional view similar to FIG. 7 and on the line 8—8 of FIG. 6 which particularly illustrates the comparatively deeper score lines provided in the closure cap of FIG. 6;

FIG. 9 is a sectional view similar to FIG. 4 and taken on the line 9—9 of FIG. 6;

FIG. 10 is fragmentary perspective view similar to FIG. 1 essentially illustrating a closure cap and associated bottle as presented in the above-referenced copending patent application;

FIG. 11 is an enlarged view looking normally toward the closure cap of FIG. 10;

FIG. 12 is a view similar to FIG. 10 and illustrating the pull ring of the closure cap of FIG. 10 in its initially raised position;

FIG. 13 is a view similar to FIG. 12 illustrating a portion of the closure cap of FIG. 12 partially torn away; and

FIG. 14 is a cross-sectional view of the pull ring of FIG. 10 taken on the line 14—14 of FIG. 11.

DESCRIPTION OF ILLUSTRATED EMBODIMENTS

Reference is now made to FIGS. 1–5 of the drawings wherein one exemplary embodiment of this invention is illustrated and designated generally by the numeral **20** and comprises a bottle **21** which utilizes an improved easy open crown type closure cap designated generally by the numeral **22**.

Bottle **21** of this example is shown as a conventional glass bottle which has a lower cylindrical portion **27** and a frustoconical upper end portion **23** which terminates in a conventional neck **24** at its upper end. Neck **24** has an annular bead **25** surrounding its terminal upper end and a dispensing opening **26** is provided through the neck **24** which defines the open end for bottle **21** enabling a liquid product such as a beverage, or the like, to be dispensed therethrough. Bottle **21** may be made of any suitable material such as glass, plastic, metal, or the like, and in those applications where bottle **21** is made of glass it may be of the throw-away type if desired.

The closure member or closure cap **22** has a top portion **30** which is adapted to be placed over the dispensing opening **26** and an integral skirt **31** depending from the peripheral edge **32** of the top portion **30** and skirt **31** is fastened around annular bead **25** of neck **24** in a known manner to secure the closure cap **22** to the bottle **21**.

The closure cap **22** has a roughly triangular tear section **33** provided therein and defined by a substantially V-shaped score line **34** which has a pair of diverging leg portions which diverge in one direction from a point indicated at **35** adjacent the center of the top portion **30** of cap **22**. One of the leg portions designated by the numeral **36** extends from point **35** across top portion **30** and along the full height of skirt **31** while the other leg portion **37** of the V-shaped score line **34** extends from point **35** to a location indicated by the numeral at **40** adjacent the upper edge of skirt **31**.

Closure cap **22** has a second score line **41** provided in its top portion **30** which extends from point **35** in an opposite direction from the direction of the outwardly extending legs **36** and **37**. The score line **41** cooperates with the V-shaped score line **34** to assure that the closure cap **22** is opened in a simple and substantially effortless manner and as will be described in detail subsequently.

The closure cap **22** has a pull ring **43** fastened to the tear section **33** which is confined within V-shaped score line **34** and as will be seen particularly in FIG. 3 the pull ring **43** is fastened to tear section **33** adjacent point **35**. Pull ring **43** has a finger-receiving opening **44** which enables a user desiring to open bottle **21** to insert a finger within opening **44** to tear out tear section **33** and thereby unfasten the closure cap **22** from bottle **21** in a simple and effortless manner.

As seen in FIGS. 3 and 4 the pull ring **43** of this exemplary embodiment of the invention is fastened to the closure cap **22** utilizing an integral rivet **45** comprising cap **22** and which extends through a cooperating opening **46** provided in a fastening flange portion **50** of pull ring **43** and the top portion of rivet **45** is riveted in position against the top surface of fastening flange portion **50** adjoining opening **46**.

The closure cap **22** may be removed from bottle **21** in a simple and substantially effortless manner by inserting an object such as a fingernail beneath the pull ring **43**, lifting ring **43**, and then inserting a finger through the finger-receiving opening **44**. The bottle **21** is then firmly held and an outward pull against ring **43** causes its end portion **52** to be fulcrumed against top portion **30** to provide an easier initial popping or severing of the tear strip **33** adjacent point **35**. This popping serves to immediately provide a vent for the bottle **21** to relieve any pressure that may have built up within such bottle and assures a safer operation in that it assures that the closure cap **22** will not fly off as might otherwise be possible if the construction of the closure cap did not provide such initial venting.

Upon continuing to pull the pull ring **43** outwardly an edge of tear strip **33** which adjoins leg portion **36** of score line **34** is completely severed from the remaining portion of the closure cap **22** while simultaneously the edge of tear strip **33** adjoining leg **37** is also severed until point or location **40** is reached. Once location **40** is reached the tear strip **33** is lifted away from the plane of the top portion **30** of cap **22**. A continued pull against pull ring **43** results in severing the closure cap **22** along score line **41** which practically simultaneously therewith releases the depending skirt **31** from beneath bead **25** over a substantial arc which is defined by the distance between the terminal end of leg portion **36** and the terminal end of score line **41**. This provides an immediate release of the closure cap **22** enabling it to be lifted away from bottle **21** simply and easily.

It might appear from the above description that the opening of cap **22** is achieved in interrupted sequential steps; however, the unique construction of cap **22** enables it to be opened in one smooth pulling motion. Also, the ring **43** may be pulled in any desired direction away from the bottle **21** to provide easy removal of cap **22** as described above.

The closure cap is held together as a unitary assembly which may be thought of as one piece and is comprised of an integral metallic portion, pull ring **43**, and a seal (to be later described) bonded within such closure cap. Further, upon pulling the pull ring **43** outwardly in the manner described above the severing that takes place along the V-shaped score line **34** and substantially rectilinear score line **41** results in releasing the closure cap **22** from bottle **21** so that it is still held together as one piece or unitary assembly whereby numerous separate cutting edges and loose parts are eliminated by cap **22** to help avoid the likelihood of injury to a person opening bottle **21**.

It will also be appreciated that in many previously proposed small crown type closures provided for a bottle the seal is generally provided in such previous closures utilizing a separate inner sealing member which is held against the neck of the bottle by an outer member and these inner and outer members are not fastened together. In many of such previous closure caps upon pulling a pull tab

which is provided in association with the outer member of the cap the opening action is achieved by tearing away a strip in the outer member thereby resulting in the outer member of such previously proposed cap being severed into at least two pieces while the inner sealing member still must be lifted away from the bottle. In addition, in such a previous closure cap once the outer member is removed, whether in one or more pieces, the inner separate member is substantially free to be removed; however, if there is a pressure buildup within the container it is entirely likely that such pressure could expel the inner member outwardly with great force and could cause injury to a person opening the bottle using such a previous closure cap.

By contrast, the likelihood of an injury as described in connection with previously proposed closure caps is not possible with the improved closure cap **22** of this invention. With closure cap **22** there is initial venting provided upon initially lifting the pull ring **43** upwardly as aided by the unique fulcruming by end portion **52** of pull ring **43** against top portion **30**. Once this initial venting has been achieved and pull ring **43** is pulled outwardly the V-shaped score line **34** and score line **41** cooperate in a manner as perviously described to enable easy removal of the closure cap **22** in a substantially easier manner than has been previously possible and in one piece.

In the exemplary embodiment of this invention shown in FIG. 1 the closure cap **22** has its second score line **41** extending in a direction opposite the direction of the outwardly extending legs of V-shaped score line **34**. In particular, the score line **41** is a rectilinear score line, as previously mentioned, which extends from point **35** on a line diametrically opposite a center line **55** which bisects the V-shaped score line **34**, i.e., bisects the included angle between legs **36** and **37** of score line **34**.

However, although score line **41** is arranged on such a diametrically opposite line **55** it will be appreciated that score line **41** may be displaced at any desired angular position relative to line **55** to in effect provide severing of a substantially large area portion of cap **22** to release a substantial portion of its skirt **31** from against neck **24** and thereby achieve an easy opening which was heretofore not possible utilizing presently known constructions.

The closure cap **22** has a suitable sealing material designated generally by the numeral **60** bonded to the inside surface of its top portion **30**. The sealing material may be comprised of any suitable sealing material which is capable of being bonded to the inside surface of the closure cap **22** and once the cap is pulled away by pulling pull ring **43** and severing tear section **33** the sealing material **60** is also pulled away and removed as an integral part of the severed or split cap **22**.

The sealing material **60** illustrated in FIG. 4 of the drawings is shown in the form of a flow-in type of sealing material which is comprised of a comparatively thick annular strip **61** and an integral substantially thinner central section **62** adjoining the annular strip **61**. The annular strip **61** is adapted to be aligned above and sealed against a cooperating annular surface **63** defining the top portion of bottle neck **24** to provide an optimum seal for the contents within bottle **21**. The annular strip **61** is held firmly against the bottle neck **24** by the depending skirt **31** in a known manner and as previously mentioned. The substantially thinner central portion **62** of seal **60** is such that it is readily severed upon initially pulling the pull ring **43** outwardly to thereby immediately provide a vent to relieve any pressure buildup within the bottle **21** and for reasons as were previously described earlier in this specification.

Another exemplary embodiment of a closure cap of this invention is illustrated in FIG. 6 of the drawings. The closure cap of FIG. 6 is quite similar to the closure cap **22** and may be used interchangeably with the closure cap **22**; therefore, the closure cap of FIG. 6 will be designated generally by the reference numeral **22A** and parts

thereof which are similar to corresponding parts of closure cap **22** which will be designated by the same numeral as closure cap **22** also followed by the letter designation "A" and not described again. Only those component parts which are different from corresponding parts of closure cap **22** will be designated by a new numeral also followed by the letter designation "A" and described in detail.

The main differences between closure cap **22A** and closure cap **22** is in the construction of the top portion **30A** of closure cap **22A** and the seal bonded against the inside surface of the top portion **30A**. In particular, it will be seen in FIG. 6 that the V-shaped score line **34A** has an interruption at **65A** along its leg portion **36A** and similarly leg portion **37A** of score line **34A** has an interruption at **66A**. The interruptions **65A** and **66A** provided in legs **36A** and **37A** respectively of V-shaped score line **34A** provide a pair of corresponding strengthened areas, which will also be referred to as strengthened areas **65A** and **66A**, in the top portion **30A** of the closure cap **22A**.

The provision of such strengthened areas **65A** and **66A** enable the V-shaped score line **34A** to be scored comparatively deep as compared to the thickness of the top portion **30A** defining closure cap **22A**. This comparatively deep scoring enables easier severing of the tear strip **33A** yet the areas **65A** and **66A** assure that the overall structural intergrity of the closure cap particularly in its susceptible top portion **30A**, which is more susceptible to rupture due to pressure buildup within an associated container, is maintained substantially undiminished.

Reference is now made to FIGS. 7 and 8 of the drawings wherein the sectional views presented highlight the comparative depth of scoring provided in cap **22** and **22A** respectively. For example, it will be seen that in FIG. 7 the score line provided in the closure cap **22** has a depth indicated at **77** and such depth is substantially uniform for the V-shaped score line **34** as well as the substantially rectilinear oppositely arranged score line **41**. The closure cap **22A** illustrated in FIG. 8 has a depth of scoring indicated at **80A** which is shown as being substantially uniform for its V-shaped score line **34A** and rectilinear score line **41A**.

As will be readily apparent by comparing FIGS. 7 and 8 of the drawings, the depth shown at **80A** for closure cap **22A** is substantially greater than the depth shown at **77** for closure cap **22**. Although the severing of tear section **33A** in closure cap **22A** is substantially the same as described in connection with section **33** of cap **22**, the increased depth of scoring enables easier severing of the tear strip **33A** and hence easier opening of cap **22A** as mentioned earlier.

The increased depth of scoring illustrated at **80A** in connection with closure cap **22A** has been shown as being provided along the depending skirt portion **31A** of the closure cap **22A** in addition to being provided in the top portion **30A** of such closure cap. However, it will be appreciated that such increased depth of scoring may be provided only in the top portion **30A** if desired and may be utilized in connection with V-shaped score line **34A** and/or rectilinear score line **41A**.

To provide a more effective severing of the closure cap **22A** from an associated bottle the strengthened areas **65A** and **66A** are located at a corresponding radial position from point **35A**. In particular, it will be seen from FIG. 6 of the drawings that the strengthened areas **65A** and **66A** are arranged to be intersected by a common uniform radius arc.

Reference is now made to FIG. 9 of the drawings wherein the closure cap **22A** is shown in cross section with its sealing material bonded in position against the inside surface of its top portion **30A**. The sealing material provided for closure cap **22A** is in the form of an annular bead **82A** which is suitably bonded against the inside surface **30A** and is adapted to be sealed against an associated annular surface such as annular surface **63** provided on bottle neck **24** of bottle **21**.

With the provision of an annular bead type sealing surface such as surface **82A** it will be appreciated that upon pulling upwardly on pull ring **43A** the central portion of the closure cap **22A** does not have any sealing material therebeneath and thereby the initial severing of that portion of the tear strip **33A** adjoining point **35A** provides an immediate venting without necessitating that any sealing material that might otherwise be bonded thereunder be punctured. Thus, the initial venting is more efficiently provided with the seal configuration illustrated in FIG. 9 of the drawings.

The closure members or closure caps **22** and **22A** are thus provided in the form of a small crown type closure cap each having an associated pull ring fastened thereto. The pull ring may be fastened in position by an integral rivet provided in the closure cap **22** or **22A** or may be fastened in position in any suitable manner. In addition, it will be appreciated that, except for the pull ring in each instance, each closure cap **22** and **22A** is made from a single thickness of material, preferably of a material containing aluminum.

The use of aluminum enables provision of a closure cap which is rust proof, and which may be protected inexpensively as by anodizing, for example, to assure that a product, such as a carbonated beverage, contained within a bottle on which the closure cap **22** and **22A** may be used will not attack or detrimentally affect its associated closure cap. In addition, by utilizing metal containing aluminum the score lines and the skirt in each of the closure caps is provided in an easier and more efficient manner.

Any suitable sealing material such as cork, plastic materials, etc., may be bonded or otherwise secured against the inside surface of the closure caps **22** and **22A**. When utilizing a cork sealing material it is preferably bonded as an integral part of the closure cap utilizing an albumin glue. When utilizing a plastic sealing material it is desirable that the plastic be capable of easy securing to its associated cap.

Any suitable plastic material may be utilized; however, one plastic material that has proven successful is a microcellular vinyl compound that bonds to aluminum and which is sold under the trade name of Darex by the Dewey and Almy Chemical Division of W. R. Grace and Company located at Cambridge, Mass.

Thus, it is seen that closure caps **22** and **22A** are each essentially defined and formed as one piece (unitary assembly). Also, the unique construction and arrangement of the V-shaped score line and cooperating rectilinear score line in the top portion of each closure cap enables it to be initially vented immediately, to prevent the cap from blowing off, and simply and readily removed by a continuous outward pulling motion against an associated pull ring provided on each closure cap. Further, such opening is achieved in an easier manner than was possible heretofore.

It was previously proposed in the above-referenced patent application to provide a closure cap with a tear section similar to the tear section provided in each of the closure caps **22** and **22A** and such previously proposed construction is shown in FIGS. 10–14 of the drawings. A brief description will now be made to highlight the problem that still exists utilizing such previously proposed closure cap construction. Specifically it is still comparatively difficult to open a bottle that utilizes the cap construction shown in FIG. 10.

In particular, FIG. 10 illustrates a bottle which is very similar to the bottle **21** shown in FIG. 1; therefore, the bottle of FIG. 10 will also be designated by the reference numreal **21** and its component parts will be designated by the same numerals as previously. Bottle **21** has a closure cap designated generally by the reference numeral **85** fastened thereagainst essentially in a similar manner as described previously in connection with closure cap **22**. The description will now proceed with a description of

closure cap **85** which will be described only in sufficient detail to enable a ready understanding of the differences between such closure cap and the improved closure cap of this invention.

Closure cap **85** has a pull ring **86** which is substantially identical to pull ring **43**. The pull ring **86** is fixed to closure cap **85** by an integral rivet **90** provided in the closure cap **85** which is similar to rivet **45** provided in closure cap **22**; therefore, the detailed description of the pull ring **86** and rivet **90** will not be made in detail due to their similarity to corresponding components of closure cap **22**.

The closure cap **85** has a tear section **91** defined therein by a score line **92** and tear section **91** has an inner end portion **93** arranged adjacent the center portion of the cap **85**. The pull ring **86** is secured to the inner end portion **93** by the integral rivet **90**.

The tear section **91** is defined by score line **92** in such a manner that one edge **94** of the tear section **91** extends from the inner end **93** of tear section **91** across the top portion **95** of closure cap **85** and down the rim portion or skirt **96** of cap **85** to the free end edge shown at **97**. The other edge of the tear section **91** designated by the numeral **100** is defined by an opposite portion of score line **92** which extends from end portion **93** toward the top edge or rim of the skirt **96** and then loops back or reversely turns to run substantially concentrically with the outer periphery of the top portion **95** to terminate at a point **101**.

As illustrated in FIGS. 10–13 of the drawings, the pull ring **86** is disposed substantially concentrically on the top portion **95** of the closure cap **85** and is firmly attached to the inner end **93** of tear section **91** by the integral rivet **90** as previously mentioned. To open the bottle **21** the ultimate consumer lifts upon the pull ring **86** in the manner illustrated in FIG. 12 to cause fulcrum points or area **103** of pull ring **86** to fulcrum against the top portion **95** of closure cap **86** and raise and separate the inner end **93** of the tear section **91** from the cap **86**.

With the pull ring **86** disposed in the raised position illustrated in FIG. 12, the ultimate consumer can now fully insert a finger into the finger-receiving opening **105** of the pull ring **86** and pull outwardly and upwardly on the same in the same manner illustrated in FIG. 13 to cause the tear section **91** to begin to separate from the remainder of the closure cap **85** along opposed edges **94** and **100** thereof. Further outward movement of the pull ring **86** causes the edge **94** of tear section **91** to tear or separate completely from the closure cap **85** along the top portion **95** and skirt portion **96** thereof and then to begin to tear along the reversely turned part of the edge **100** until the particular point shown at **101** is reached. This severing relieves the holding tension of the skirt **96** from around the bead **25** of bottle neck **24** and enables the cap **85** to be pulled away from bottle **21**.

However, with this previously proposed closure cap **85** considerably more force is required to tear the tear section **91** first along that portion of the score line **92** defining edge **94** and then along the reversely turned portion of score line **92** defining edge **100**. By contrast after severing the tear strip **33** from the improved closure cap **22** of this invention cap **22** is, in effect, substantially instantaneously split along its rectilinear score line **41** to thereby enable easy and immediate lifting of cap **22** from its associated bottle **21** in a simpler and easier manner than is possible with cap **85**. Similarly, and as described earlier, cap **22A** would also be easier to open.

While present preferred embodiments of this invention, have been illustrated and described, it will be recognized that this invention may be otherwise variously embodied and practiced within the scope of the following claims.

What is claimed is:

1. A one-piece closure member for a container having an open end for dispensing a product contained therein, said closure member comprising, a top portion adapted to be disposed over said open end, an integral skirt depending from the peripheral edge of said top portion and adapted to be disposed around said container adjacent said open end to secure said closure member to said container, a tear section in said closure member extending across the major portion of said top portion and defined by a score line having a bight and a pair of leg portions which extend from said bight, one of said leg portions extending across said top portion and along the full height of said skirt and the other of said leg portions extending to a location adjacent the uper edge of said skirt, and a pull ring fastened to said tear section adjacent said bight and having a finger receiving opening to enable easy grasping and tearing, said closure member being adapted to be easily removed from an associated container by pulling said pull ring outwardly to sever said tear section and release a portion of said skirt with a portion of said tear section adjoining the outer end of said other leg portion remaining attached to said closure member to enable said closure member to be lifted away from said container in one piece.

2. A closure member as set forth in claim **1** in which said score line comprises a V-shaped score line having said leg portions in the form of diverging leg portions which diverge in one direction from a point in said top portion and further comprising a second score line in said top portion extending from said point in an opposite directon from said one direction, said second score line having a depth which is a fractional part of the thickness of said top portion, said second score line enabling said closure member to be sheared therealong substantially simultaneously with shearing of said tear section to release a large portion of said skirt and enable easier removal of said closure member from said container in said one piece.

3. A closure member as set forth in claim **2** in which said point is common to the bight of said V-shaped score line and the inner edge of said second score line to thereby comprise a scored area which is more easily severed.

4. A closure member as set forth in claim **1** further comprising a sealing material secured on the inside surface of said top portion, said sealing material being removed as an integral part of said closure member upon pulling said pull ring.

5. A closure member as set forth in claim **4** in which said sealing material is in the form of an annular bead bonded against said inside surface and adapted to be sealed against an associated annular surface of said container adjacent said open end.

6. A closure member as set forth in claim **1** made of metal containing aluminum and further comprising a sealing material made of plastic which is bonded to said metal containing aluminum, said plastic sealing material being removed as an integral part of said closure member upon pulling said pull ring.

7. A closure member as set forth in claim **1** further comprising a sealing material secured on the inside surface of said top portion in a comparatively thick annular strip which is adapted to be sealed against an associated surface of said bottle surrounding said open end and said sealing material having a thinner central section adjoining said annular strip which is adapted to be readily severed upon initially pulling said pull ring to immediately provide a vent for said container to relieve any pressure buildup within said container.

8. A closure member as set forth in claim **2** in which said V-shaped score line is interrupted at a location along each of its leg portions to define a pair of strengthened areas in said top portion which enable said V-shaped score line to be comparatively deep as compared with the thickness of said top portion, said strengthened areas assuring the overall structural integrity of said closure member is maintained and said comparatively deep V-shaped score line enabling easy severing of said tear section.

9. A closure member as set forth in claim 8 in which each of said strengthened areas is located at a corresponding radial position from said point.

10. A closure member as set forth in claim 9 made of metal containing aluminum and further comprising a sealing material made of plastic which is bonded to said metal containing aluminum, said plastic sealing material being removed as an integral part of said closure member upon pulling said pull ring.

11. In combination: a bottle having a dispensing opening for dispensing a product contained therein and a one-piece closure cap secured over said opening, said cap comprising, a top portion disposed over said opening, an integral skirt depending from the peripheral edge of said top portion and being radially inwardly compressed around said bottle adjacent said opening to secure said cap to said bottle, a tear section in said cap extending across the major portion of said top portion and defined by a score line having a bight and a pair of leg portions which extend from said bight, one of said leg portions extending across said top portion and along the full height of said skirt and the other of said leg portions extending to a location adjacent the upper edge of said skirt, and a pull ring fastened to said tear section adjacent said bight and having a finger receiving opening to enable easy grasping and tearing, said cap being easily removed from said bottle by pulling said pull ring outwardly to sever said tear section and release a portion of said skirt with a portion of said tear strip adjoining the outer end of said other leg portion remaining attached to said cap to enable said cap to be lifted away from said bottle in one piece.

12. A combination as set forth in claim 11 in which said score line comprises a V-shaped score line having said leg portions in the form of diverging leg portions which diverge in one direction from a point in said top portion and further comprising a second score line in said top portion extending from said point in an opposite direction from said one direction, said second score line having a depth which is a fractional part of the thickness of said top portion, said second score line enabling said cap to be sheared therealong substantially simultaneously with shearing of said tear section to release a large portion of said skirt and enable easier removal of said cap from said bottle in said one piece.

13. A combination as set forth in claim 12 in which said point is common to the bight of said V-shaped score line and the inner edge of said second score line to thereby comprise a scored area which promotes said substantially simultaneous shearing along said second score line.

14. A combination as set forth in claim 12 in which said cap further comprises a sealing material secured on the inside surface of said top portion, said sealing material being removed as an integral part of said cap upon pulling said pull ring.

15. A combination as set forth in claim 14 in which said pull ring has an edge which provides a fulcrum therefor against said top portion adjacent said second score line so that a small area of said tear section is severed at a location adjacent said point to provide a vent for any pressure buildup within said bottle immediately upon pulling said pull ring.

16. A combination as set forth in claim 14 in which said sealing material in said cap is in the form of an annular bead bonded against said inside surface and sealed against an associated annular surface of said bottle adjacent said opening.

17. A combination as set forth in claim 11 in which said cap is made of metal containing aluminum and further comprises a sealing material made of plastic which is bonded to said metal containing aluminum, said plastic sealing material being removed as an integral part of said cap upon pulling said pull ring.

18. A combination as set forth in claim 11 in which said cap further comprises a sealing material secured on the inside surface of said top portion in a comparatively thick annular strip which is sealed against an associated annular surface of said bottle which surrounds said opening, said sealing material having an integral comparatively thinner central section adjoining said annular strip which is readily severed upon initially pulling said pull ring to immediately provide a vent for said bottle to relieve any pressure buildup within said bottle.

19. A combination as set forth in claim 12 in which said V-shaped score line in said cap is interrupted at a location along each of its leg portions to define a pair of strengthened areas in said top portion which enable said V-shaped score line to be comparatively deep as compared with the thickness of said top portion, said strengthened areas assuring the overall structural integrity of said cap is maintained and said comparatively deep V-shaped score line enabling easier severing of said tear section.

20. A combination as set forth in claim 19 in which each of said strengthened areas in said top portion of said cap is located at a corresponding radial position from said point.

21. A combination as set forth in claim 12 in which said second score line extends in said opposite direction and on a line substantially diametrically opposite a line bisecting said V-shaped score line.

22. In combination, a container having an open end for dispensing product means disposed in said container, and a one-piece closure member secured to said open end of said container to close said open end, said closure member having a top portion disposed over said open end and a depending peripheral rim portion disposed around said container at said open end thereof to secure said closure member to said container, said closure member having a tear section integral therewith throughout the entire juncture of said tear section with the remainder of said closure member and provided with two edges that join together at adjacent ends thereof to define one end of said tear section with one edge thereof extending from said top portion to the free edge of said rim portion and with the other edge being spaced oppositely from said one edge along its full length and terminating short of said free edge of said rim portion so that said tear section remains integral with said closure member even though its opposed edges have been separated from said closure member, and a ring pull tab means secured to said tear section at said top portion of said closure member and having a finger-receiving opening passing therethrough to facilitate the pulling of said one edge of said tear section from said closure member.

23. A combination as set forth in claim 22 in which said tear section extends across the major portion of said top portion.

24. A one-piece closure member for a container having an open end for dispensing product means disposed in said container, said closure member having a top portion adapted to be disposed over said open end and a depending peripheral rim portion adapted to be disposed around said container at said open end thereof to secure said closure member to said container, said closure member having a tear section integral therewith throughout the entire juncture of said tear section with the remainder of said closure member and provided with two edges that join together at adjacent ends thereof to define one end of said tear section with one edge thereof extending from said top portion to the free edge of said rim portion and with the other edge being spaced oppositely from said one edge along its full length and terminating short of said free edge of said rim portion so that said tear section remains integral with said closure member even though its opposed edges have been separated from said

closure member, said tear section extending across the major portion of said top portion.

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GEORGE T. HALL, Primary Examiner

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215—39

Notice of Adverse Decision in Interference

In Interference No. 97,684 involving Patent No. 3,522,899, F. A. Siemonsen and A. L. Garriques, EASY OPEN MEANS FOR BOTTLES AND THE LIKE, final judgment adverse to the patentees was rendered June 4, 1974, as to claims 22–24.

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