The present invention provides a protective beverage cover for use in combination with a beverage can having a rim wall, a top wall, an unpunctured score-line defining an opening, a recessed base surrounding the unpunctured score-line, an annular groove formed by the junction of the rim wall and the top wall, and a ring pull tab. The protective cover comprises an overhanging lip which extends downward into the groove to allow rotation of the cover along the top wall and which permits covering of the area of the top wall which directly or indirectly engages a consumer's mouth during drinking of the beverage contents. A protrusion is formed by the upward extension of a central portion of the overhanging lip allows for rotation of the cover. A depression countered to sealably rest inside the recessed base surrounding the opening. The protective cover permits a second beverage container to be stacked on top of the first container by not interfering with the rim wall and by utilizing the annular groove.
BEVERAGE CONTAINER PROTECTIVE COVER

FIELD OF THE INVENTION

[0001] The present invention relates to beverage containers, and more particularly a beverage container protective cover.

BACKGROUND OF THE INVENTION

[0002] The conventional beverage container is one of the standard methods of delivering beverages to consumers. Despite the universal use of beverage containers, a myriad of problems continue to affect their use and enjoyment. Conventional beverage containers do not permit consumers to reseal the container opening once the score-line has been punctured, thereby drastically reducing the life of a typical carbonated beverage. Insects and other foreign objects that may enter the container through the opening can pose a health risk to unsuspecting consumers. Furthermore, the contents of beverage containers often spill from the slightest disturbance to the container and therefore cause temporary to permanent disfiguring of effected objects. Lastly, the area of the can that engages a consumer’s mouth may come into contact with undesirable objects during distribution and storage of the container.

[0003] The prior art discloses several approaches to solve the aforementioned problems. U.S. Pat. No. 5,080,249 discloses a metal pull tab for a container having a body and top wall with a riperasurable score line that defines an opening, and a pivot post. The pull tab has a first section with a cover portion of a size at least as large as the opening, a second section integrally formed with the first section, and a pull tab ring integrally formed with the second section. Once the pull tab ring has been pivoted upwardly in the normal manner to open the drink opening, rotation of the pull tab moves the cover port along the top wall to a position overlying the opening.

[0004] U.S. Pat. No. 6,098,830 discloses a resealable flip-top beverage can lid that has a rim disposed on the peripheral edge of the lid, a swinging seal attached to the lid that is moved to uncover an opening, a rotating tab attached to the lid by a rivet, a hole punching lip attached to the tab, and an extended lifting section which has a contoured sealing section that is shaped to seal the opening when the tab is rotated about the rivet to cover the opening. The extended lifting section extends at least to the rim and has a rim locking section that locks onto the rim of the lid. The lid is preferably integrated into the manufacturing of the flip-top can.

[0005] U.S. Pat. No. 6,059,137 discloses a resealable ring-pull opener for a can. The ring-pull opener has a grippable ring which overlies a closure that sits on top of the top wall. A connecting nose attaches the ring and a closure portion to form a unitary main body. The closure has a peripheral flange and a depending skirt that, when rotated about a rivet, seals the opened can. The peripheral flange is shaped to overlie the perimeter of the opening.

[0006] U.S. Pat. No. 5,779,087 discloses an improved can closure device for closing of a metal can end wall which includes a closing tab having a central body, circumferential flange, annular sealing ring, semi-annular locking channel, tab opening strip, and a hole for attachment to a can end wall. The closing tab has a central body of predetermined size and shape to include a hole for rotationally joining said closing tab to the can end wall and corresponding in size and shape to the opening in the can end wall. The closing has a circumferential flange projecting outwardly from the central body of the closing tab, the circumferential flange is integral with the closing tab and of sufficient size and shape to prevent the closing tab from completely passing through the opening.

SUMMARY OF THE INVENTION

[0009] The present invention provides a protective beverage cover for use in combination with a beverage can having a rim wall, a top wall, an unpunctured score-line defining an opening, a recessed base surrounding the unpunctured score-line, an annular groove formed by the junction of the rim wall and the top wall, and a ring pull tab. The protective cover comprises an overhanging lip which extends downward into the groove to allow rotation of the cover along the top wall, a protrusion formed by the upward extension of a central portion of the overhanging lip, a depression counter to sealably rest inside the recessed base surrounding the opening, and an aperture.
A rivet extends through an opening in the ring pull tab, the aperture, and a rivet hole in the top wall, thereby movably affixing the ring pull tab, protective cover and top wall to each other, and forming a rivet-axis.

The protective cover rotates freely about the rivet-axis. The protective cover does not extend above the top of the rim wall. The protective cover is dimensioned to cover an area of the top wall extending from the rivet hole to the groove. The downward extension of the overhanging lip inside the groove allows a second beverage container to be stably stacked on top of the beverage container.

The protective cover has a first position overlying the unpunctured score-line to prevent contact with undesirable objects during distribution and storage of the container; a second position underlaying the ring pull tab after the score-line has been punctured; and a third position residing inside the recessed base surrounding the opening to form a seal between the cover and the container.

The protrusion allows for rotation of the protective cover about the rivet-axis. The protrusion forms an angle with the central portion cover between the overhanging lip and depression, the angle permitting a second container to be vertically stacked on the beverage container.

The lower surface of the protective cover has an undercoating to sweep debris away from the area of the top wall that engages a consumer’s mouth. The undercoating enhances the seal between the depression and the recessed base surrounding the opening.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The features of this invention will be understood more fully and clearly apparent from the following description made in connection with the accompanying drawings wherein like reference numbers and characters refer to similar parts throughout the several views, and in which:

**FIG. 1** is a perspective view of the protective cover and beverage container;

**FIG. 2** is a cross-sectional view of the beverage cover placed above the can opening;

**FIG. 3** is an enlarged view of the circle area 3 of FIG. 2;

**FIG. 4** is a perspective view of the protrusion with supporting arm;

**FIG. 5** is an exploded view of the rivet, ring pull tab, cover and opened beverage container;

**FIG. 6** is a bottom side view of the protective cover;

**FIG. 7** is a partial top plan view of the opened beverage container, cover, and ring pull tab;

**DETAILED DESCRIPTION OF THE INVENTION**

Turning now to the drawings, and particularly FIGS. 1, 6, and 7, what is shown is a beverage protective cover 10 comprising an overhanging lip 10a, a protrusion 10b, a depression 10c, an aperture 10d and an undercoating 10e. The cover 10 is used in combination with a beverage container 70 having a groove 20, a rim wall 30, a top wall 40 and a ring pull tab 50. The top wall 40 has an unpunctured score-line 40a defining an opening 40b which is surrounded by a recessed base 40c. The groove 20 is located between the junction of the rim wall 30 and top wall 40.

The overhanging lip 10a movably rests inside the groove 20 as shown in FIGS. 2 and 3, wherein the lip 10a does not make contact with the floor of the groove 20. A central portion of the overhanging lip 10a extends upward and centrally inward to form a protrusion 10b which allows rotation of the cover 10 about the rivet axis as shown in FIGS. 2 and 3. The protrusion preferably forms a 22 degree angle with the area of the cover 10 between the overhanging lip 10a and depression 10c. In another embodiment, the protrusion has a support arm 10f that preferably forms a 22 degree bend as shown in FIG. 4.

The cover 10 is dimensioned to encompass the unpunctured score-line 40a defining the opening 40b, as shown in FIG. 7. The cover 10 is defined by four edges. A first edge is proximal to the rivet. The second and third edges taper outwards from their junction to the first edge. The fourth edge contains the overhanging lip 10a. The depression 10c is dimensioned to rest inside the portion of the recessed base 40c which immediately surrounds the opening 40b, as shown in FIGS. 6 and 7. The cover 10 is further dimensioned to sealably cover the opening 40b once the score-line 40a has been punctured, thereby providing a seal to keep beverage contents inside the container 70 and to prevent objects from entering the container 70 as shown in FIGS. 2, 5 and 6. A plastic undercoating 10e is affixed to the entire lower surface of the cover 10 as shown in FIG. 6.

The cover 10 is placed in an intermediate position between the overlying ring pull tab 50 and the underlying top wall 40 as shown in FIG. 5. The top wall 40 further has a hole 40d to accommodate a rivet 60. The ring pull tab 50 has a reinforced handle 50a, piercing region 50b, and an opening 50c to accommodate the rivet 60. The rivet 60 extends through the opening 50c, aperture 10d, and hole 40d, thereby movably affixing the ring pull tab 50, cover 10, and top wall 40 to each other and further enabling the cover 10 to rotate 360 degrees about the rivet-axis.

The cover 10 permits the beverage container 70 to be shipped to the consumer with the cover in a first position overlying the unpunctured score-line 40a, thereby preventing undesirable objects such as rod droppings and unsanitary hands from contaminating a substantial portion of the top wall 40 which directly or indirectly engages a consumer’s mouth during consumption of the beverage contents. The upward pulling of the handle 50a causes the piercing region 50b to puncture the score-line 40a causing a portion of the top wall to descend into the container 70 and thereby form the opening 40b. The cover 10 impedes the descending portion of the top wall from introducing contaminants, which may have come into contact with the descending top wall during distribution and storage of the container, into the beverage container.

The protrusion 10b allows the consumer to rotate the cover 10. The protrusion 10b is lifted upward and then bent to form an angle with the area of the cover 10 between the overhanging lip 10a and depression 10c, the angle preferably measuring 22 degrees, to permit the countersink to accommodate a second beverage container being stacked on the beverage container. The standard countersink depth on a 202 can end is between 0.270±0.005 inches. It is to be understood that the angle may be altered based on variations in countersink depths. In another embodiment, the protrusion 10b has a supporting arm 10f to prevent the protrusion from being crushed below the 22 degree angle. The support arm 10f is formed by bending the protrusion to form a second angle measuring no more than 22 degrees. The undercoating 10e beneath the protrusion 10b is undisturbed and forms a con-
tinuous layer below the overhanging lip 10a. In another embodiment, the undercoating 10e remains affixed to the protrusion 10a.

[0029] The cover 10 is rotated to a second position underlying the ring pull tab 50 to permit a consumer to enjoy the beverage. When the opening 40b is ready to be sealed, the cover 10 is rotated about the rivet-axis to a third position overlying the opening 40b wherein the depression 10e takes a resting position inside the recessed base 40c surrounding the opening 40b.

[0030] Rotation of the cover 10 is made possible by the overhanging lip 10a resting inside the annular groove 20. The location of the overhanging lip 10a inside the groove 20 permits a second beverage container to be vertically stacked on the beverage container 70 since the protective cover 10 does not interfering with the rim wall 30.

[0031] The protective cover 10 is preferably dimensioned for use with the standard 202 can end, though it is to be understood that the cover 10 may be dimensioned to be employed with current or future variations in can end dimensions. The cover 10 is formed from a sheet of aluminum or thin metal, though it is to be understood that a material with sufficient tensile strength and formability can be substituted. The undercoating 10e is formed by a continuous application of plastic which is bonded to the sheet by methods known in the art. The undercoating 10e measures no more than 1 mm in thickness. The compound is then stamped to form the cover 10 and placed on a can end where a conversion press affixes the cover 10 to the ring pull tab 50 and the upper surface of the can end, also referred to as the top wall 40. The undercoating 10e sweeps away debris from the top wall that engages a consumer’s mouth in addition to preventing the top wall and cover from degrading due to rotation of the cover. Furthermore, the undercoating enhances the affinity of the depression 10e to take a resting position inside the recessed base 40c.

[0032] The can end supporting the riveted cover and pull tab ring are affixed to a flange by double seaming. To permit the formation of a hermetic seal between the flange and the can end supporting the cover, a deflecting arm rotates the cover around the rivet-axis to prevent the cover from interfering with the first operation and second operation rollers, respectively.

[0033] While in the foregoing specification a detailed description of an embodiment of the invention has been set down for the purpose of illustration, it is to be understood that the embodiment herein shown. Accordingly, many variations of the details herein given may be made by those skilled in the art without departing from the spirit and scope of the invention.

What is claimed is:

1. A protective cover for use in combination with a beverage container having a rim wall, a top wall, an unpunctured score-line defining an opening, a recessed base surrounding the unpunctured score-line, an annular groove formed by the junction of the rim wall and the top wall, and a ring pull tab, the protective cover comprising:
   an overhanging lip extending downwardly into the groove to allow rotation of the cover along the top wall;
   a protrusion formed by the upward extension of a central portion of the overhanging lip;
   a depression countered to sealably rest inside the recessed base surrounding the opening; and
   an aperture.

2. The protective cover of claim 1, wherein a rivet extends through an opening in the ring pull tab, the aperture, and a rivet hole in the top wall, thereby movably affixing the ring pull tab, protective cover and top wall to each other, and forming a rivet-axis.

3. The protective cover of claim 2, wherein the protective cover rotates about the rivet-axis.

4. The protective cover of claim 1, wherein the protective cover does not extend above the top of the rim wall.

5. The protective cover of claim 2, wherein the protective cover is dimensioned to cover an area of the top wall extending from the rivet hole to the groove.

6. The protective cover of claim 1, wherein the downward extension of the overhanging lip inside the groove allows a second beverage container to be stably stacked on top of the beverage container.

7. The protective cover of claim 3, wherein the protective cover has a first position overlying the unpunctured score-line to prevent contact with undesirable objects during distribution and storage of the container.

8. The protective cover of claim 7, wherein the protective cover has a second position underlying the ring pull tab after the score-line has been punctured.

9. The protective cover of claim 8, wherein the protective cover has a third position residing inside the recessed base surrounding the opening to form a seal between the cover and the container.

10. The protective cover of claim 3, wherein the protrusion allows for rotation of the protective cover about the rivet-axis.

11. The protective cover of claim 10, wherein the protrusion forms an angle with the region of the cover between the overhanging lip and depression, the angle permitting a second container to be vertically stacked on the beverage container.

12. The protective cover of claim 11, wherein the protrusion has a downward extending support arm.

13. The protective cover of claim 2, wherein the lower surface of the protective cover has an undercoating to sweep debris away from the area of the top wall engaging a consumer's mouth during drinking of the beverage contents.

14. The protective cover of claim 13, wherein the undercoating enhances the affinity of the depression to take a resting position inside the recessed base surrounding the opening.

15. A protective cover for use in combination with a beverage container having a rim wall, a top wall, an unpunctured score-line defining an opening, a recessed base surrounding the unpunctured score-line, an annular groove formed by the junction of the rim wall and the top wall, and a ring pull tab, the protective cover comprising:
   an overhanging lip extending downwardly into the groove to allow rotation of the cover along the top wall;
   a protrusion formed by the upward extension of a central portion of the overhanging lip;
   a depression countered to sealably rest inside the recessed base surrounding the opening;
   an aperture;
   a rivet extends through an opening in the ring pull tab, the aperture, and a rivet hole in the top wall, thereby movably affixing the ring pull tab, protective cover and top wall to each other, and forming a rivet-axis;
   the protective cover rotating freely about the rivet-axis;
   the protective cover not extending above the top of the rim wall;
   the protective cover dimensioned to cover an area of the top wall extending from the rivet hole to the groove;
the downward extension of the overhanging lip inside the groove allowing a second beverage container to be stably stacked on top of the beverage container;
the protective cover having a first position overlying the unpunctured score-line to prevent contact with undesirable objects during distribution and storage of the container;
the protective cover having a second position underlying the ring pull tab after the score-line has been punctured;
the protective cover having a third position residing inside the recessed base surrounding the opening to form a seal between the cover and the container;
the protrusion allowing for rotation of the protective cover about the rivet-axis;
the protrusion forming an angle with the central portion cover between the overhanging lip and depression, the angle permitting a second container to be vertically stacked on the beverage container;
the lower surface of the protective cover having an undercoating to sweep debris away from the area of the top wall engaging a consumer’s mouth during drinking of the beverage contents; and
the undercoating enhancing the affinity of the depression to take a resting position inside the recessed base surrounding the opening.

16. A protective cover for use in combination with a beverage container having a rim wall, a top wall, an unpunctured score-line defining an opening, a recessed base surrounding the unpunctured score-line, an annular groove formed by the junction of the rim wall and the top wall, and a ring pull tab, the protective cover comprising:
an overhanging lip extending downwardly into the groove to allow rotation of the cover along the top wall;
a protrusion formed by the upward extension of a central portion of the overhanging lip;
a depression countered to sealably rest inside the recessed base surrounding the opening; and
an aperture;
a rivet extends through an opening in the ring pull tab, the aperture, and a rivet hole in the top wall, thereby movably affixing the ring pull tab, protective cover and top wall to each other, and forming a rivet-axis;
the protective cover rotating freely about the rivet-axis;
the cover not extending above the top of the rim wall;
the protective cover dimensioned to cover an area of the top wall extending from the rivet hole to the groove;
the downward extension of the overhanging lip inside the groove allowing a second beverage container to be stably stacked on top of the beverage container;
the protective cover having a first position overlying the unpunctured score-line to prevent contact with undesirable objects during distribution and storage of the container;
the protective cover having a second position underlying the ring pull tab after the score-line has been punctured;
the protective cover having a third position residing inside the recessed base surrounding the opening to form a seal between the cover and the container;
the protrusion allowing for rotation of the protective cover about the rivet-axis;
the protrusion forming an angle with the central portion cover between the overhanging lip and depression, the angle permitting a second container to be vertically stacked on the beverage container;
the protrusion having a downward extending support arm;
the lower surface of the protective cover has an undercoating to sweep debris away from the area of the top wall engaging a consumer’s mouth during drinking of the beverage contents; and
the undercoating enhancing the affinity of the depression to take a resting position inside the recessed base surrounding the opening.

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