CONTAINER HAVING LIP PROTECTING MEANS

A container of the easy-opening type in which an end panel is scored to define a tear strip having starting and terminal end portions with the latter being permanently attached to the container end. The tear strip is adapted for hinging movement to an open position above the end panel upon the rupture of the score line thereby forming a raw edge. The starting and terminal end portions are disposed at diametrically opposite sides of the central axis of the container, and means underlying at least the terminal end portion and projecting laterally beyond the score line cover the exposed raw edge in the open position of the tear strip thereby preventing damage to a user of the container which might otherwise occur in the absence of the covering means.

This invention relates in general to new and useful improvements in containers, and more particularly to a novel container of the easy-opening type.

It is conventional to form easy-opening containers having a tear strip which is not completely torn from the end panel but remains attached thereto. Such tear strips and the normal pull tab attached thereto cannot therefore be discarded as a unit. This reduces litter to some extent but increases the probability of persons being cut by the sharp raw edges of the tear strip which remains attached to the container.

It is therefore a primary object of this invention to overcome the deficiencies of existing easy-opening containers by forming the tear strip in a manner wherein the exposed raw edge of the ruptured score line is covered in the open position of the tear strip thereby preventing cuts or similar contusions which might otherwise occur to a user in the absence of the covering means.

Another object of this invention is to provide a novel container having a tear strip defined by a score line terminating at hinge means, the tear strip including a starting end portion remote from the hinge means and a terminal end portion adjacent thereto, a pull tab secured to the tear strip starting end portion, and means underlyingly secured to at least the terminal end portion and projecting laterally beyond the score line thereof for covering the exposed raw edge of the tear strip terminal end portion in the open position on the container.

A further object of this invention is to provide a novel container of the type heretofore set forth wherein the length of the covering means as measured along a longitudinal center line of the tear strip is at least substantially equal to the radial distance between the hinge means and the periphery of the container, and the starting and terminal end portions of the tear strip are disposed at diametrically opposite sides of the container end.

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

In the drawing:

FIGURE 1 is a top plan view of an easy opening container constructed in accordance with this invention, and illustrates a score line defining a tear strip to which is attached a pull tab.

FIGURE 2 is a fragmentary top plan view of the container of FIGURE 1, and illustrates the tear strip in its open position and means covering raw edges of the tear strip formed by the rupture of the score line.

FIGURE 3 is a highly enlarged fragmentary sectional view taken generally along line 3-3 of FIGURE 1, and more clearly illustrates the covering means in the normal closed position of the tear strip.

FIGURE 4 is an enlarged fragmentary sectional view taken generally along line 4-4 of FIGURE 2, and more clearly illustrates the manner in which the raw edge of the tear strip is covered in the open position of the container.

FIGURE 5 is a fragmentary top perspective view of another container constructed in accordance with this invention, and illustrates means carried by the starting end portion of a tear strip for locking beneath a seam of the container.

FIGURE 6 is a fragmentary sectional view taken generally along a line corresponding to the line 4-4 of FIGURE 2, and illustrates the tear strip and its associated pull tab locked to the double seam generally outboard of the periphery of the container.

Referring to the drawing in detail, it will be seen that there is illustrated a container formed in accordance with this invention and generally referred to by the numeral 10.

The container or can 10 includes a conventional can body 13 to which an end 11 is secured by a conventional double seam 12.

The can end 11 has an end panel 14 of which the central portion thereof is in the form of a tear strip 15. The tear strip 15 is defined by a score line 16 curving ends 17, 18, terminating adjacent hinge means or a zone of hinging, generally designated by the numeral 20. The tear strip 15 includes a starting end portion 21 remote from the hinge means 20 and an terminal end portion 22 adjacent the hinge means 20. The starting end portion 21 of the tear strip 15 is disposed to one side of the container axis while the terminal end portion 22 is disposed diametrically opposite the end portion 21 and generally to an opposite diametrical side of the container axis.

In order to facilitate the tearing of the tear strip 15 from the end panel 14, the starting end portion 21 is provided with a pull tab which is generally referred to by the numeral 23. The pull tab 23 is formed from a single piece of sheet material and includes a connecting end portion 24 joined to the starting end portion 21 of the tear strip 15 by integral upset rivet 25. An opposite end portion 26 of the pull tab 23 is formed of a ring-like configuration to facilitate grasping and pulling the pull tab to rupture the score line 16 incident to the removal of the tear strip 15. A generally U-shaped slit 27 permits the pull tab 23 to be initially pivoted in the direction of the unnumbered headed arrow in FIGURE 3 incident to the rupture of the score line 16.

Means generally designated by the reference numeral 30 is secured to the terminal end portion 22 of the tear strip 15 in the normal or closed position thereof, as is best illustrated in FIGURES 1 and 3 of the drawing. The closing means 30 is a separate piece of plastic or similar soft, resilient material bonded or otherwise secured to the undersurface of the terminal end portion 22. The covering 30 is illustrated as being of a generally rectangular configuration having edges 31 through 34. The edges 32, 33 are disposed laterally outboard of the adjacent portions of the score line 16 while the edges 31, 33 are positioned respectively adjacent the hinge zone 20 and the axis of the end panel 11 and the container body 13. It is also to be noted that the length of the covering 30 as measured along the longitudinal center line of the tear strip 15 is...
at least and slightly greater than the distance between the hinge means 20 and the perimeter of the container body 10 defined by the double seam 12 for a purpose to be described immediately hereafter.

As the ring portion 26 of the pull tab 23 is pulled in the direction of the unnumbered headed arrow in FIGURE 3 the end portion 24 of the pull tab 23 ruptures the leftmost portion of the tear strip 15 as viewed in FIGURE 5 causing the progressive rupture of the score line 16 and the pull tab is continually thereafter drawn upwardly and to the right as viewed in FIGURES 1 and 2 toward the final position illustrated in FIGURES 2 and 4. As the tear strip 15 tears along the terminal end portion 22 the edges 32, 34 of the covering 30 thereby distort as the covering is progressively drawn through an opening 0 formed in the end panel 14. After the terminal end portion 22 has been completely removed from the end panel 14, as illustrated in FIGURES 2 and 4, the pull tab 23 is pulled down along the exterior of the container body 13 which disposes the starting end portion 21 of the tear strip 15 in the same position. The covering 30 and particularly the edges 32, 34 thereof which rebound after passing through the opening 0 completely cover the raw edges of the terminal end portion 22 thereby preventing these edges from cutting the hands or face of a person opening or thereafter using the container 10 as intended.

As was hereforenoted, the length of the covering 30 is at least as great as the radial distance between the hinge means 20 and the exterior of the double seam 12, and preferably equal to the slightly greater distance between the hinge means and the top of the double seam which is in effect the hypotenuse of the terminal end portion 22 in the fully open position shown in FIGURE 4. This assures that the edge portion 33 projects beyond the double seam 12 thereby completely overlying the raw edges of the terminal end portion 42 as well as a forwardmost raw edge portion 35 of the starting end portion 21.

Referring now to FIGURES 5 and 6 of the drawing, another container, generally designated by the reference numeral 40 is shown and corresponds substantially identically to the container 10. However, in addition to covering means 41 corresponding to the covering means 30 of the container 10, the container 40 includes additional covering means, generally designated by the numeral 42. The covering means or covering 42 is of a generally semicircular configuration and is positioned adjacent a starting end portion 43 of a tear strip 44 defined by a score line 45. The covering 42 includes a straight edge portion 46 and an arcuate edge portion 47 outboard of the leftmost score portion of the score line 45, as viewed in FIGURE 5 of the drawing. The purpose of the covering 42 is to overlie or cover the raw edge formed by the rupture of the score line 45 adjacent the starting end portion 43 upon the removal thereof from the plane of the container end panel and the disposition of the starting end portion to the position illustrated in FIGURE 6. Due to the positioning of the arcuate edge portion 47 outboard of its associated raw edge the latter raw edge as well as a medial portion 48 is completely protected or covered and a user of the container 40 can grasp the same about the circumference thereof without becoming cut upon any raw edge of the removed tear strip 44. It should be noted that the covering or covering means 41, 42 substantially entirely cover the entire exposed raw edge of the tear strip 44, as is readily apparent from FIGURE 6 of the drawing. The tear strip 44 is additionally provided with an inwardly directed dimple or protrusion 50 which is positioned at a predetermined point on the tear strip 44 to interlock beneath the double seam (unnumbered) of the container, thus securing the pull tab (unnumbered) in the position illustrated in FIGURE 6 of the drawing. Thus, in addition to maintaining the raw edge of the tear strip completely covered the tear strip 44 is precluded from inadvertently rebounding to a position other than that illustrated in FIGURE 6 of the drawing.

Each of the containers 10, 40 may, if desired, be provided with lip-protecting means in the form of upwardly offset beads adjacent the starting end portions 21, 43, respectively, of the associated tear strips, such as the beads 52, 53 of the end panel 11. Furthermore, while the containers 10, 40 have been illustrated as including covering means 30, 41 which cover the raw edges of the terminal end portions of the associated tear strips, it is to be understood that the coverings can be extended or constrained to entirely cover the associated tear strips 15, 44. However, such construction is undesirable from the standpoint of employing additional covering material and in lieu thereof the construction illustrated in FIGURE 5 of the drawing is preferred.

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

I claim:

1. A container comprising a container body having a normally closed end, score line means defining a tear strip in said container end having a starting end portion and a terminal end portion, said tear strip terminal end portion being permanently attached to the remainder of said container end and adapted for hinging movement to an open position above said end upon the rupture of said score line means thereby forming an exposed raw edge of the tear strip, a pull tab secured to said tear strip starting end portion, means underlying secured to at least said terminal end portion and projecting laterally beyond the score line means thereof for covering the exposed raw edge of said tear strip terminal end portion in said open position thereby preventing contusions which might otherwise occur to a user in the absence of said covering means, said score line means terminates at hinge means for the hinging movement of said terminal end portion to said open position, and the length of said covering means as measured along a longitudinal centerline of the tear strip is substantially equal to the radial distance between said hinge means and the periphery of said container body whereby said covering means completely covers the exposed raw edge of said terminal end portion in the open position thereof.

2. The container as defined in claim 1 wherein said closed end has a central axis, said starting end portion is disposed to one side of said central axis, and said terminal end portion is disposed at a diametrically opposite side of said closed end.

3. The container as defined in claim 1 wherein said covering means covers only said terminal end portion.

4. The container as defined in claim 1 wherein separate additional covering means is underlyingly secured to said starting end portion and projects laterally beyond the score line means thereof for covering the exposed raw edge of the tear strip starting end portion in said open position.

5. In a container end of the easy-opening type having a tear strip having a starting end portion and a terminal end portion, said tear strip terminal end portion being permanently attached to the remainder of the container end, said tear strip being adapted for hinging movement to an open position above said end panel upon the rupture of said score line of the tear strip, the improvement comprising disposing said starting and terminal end portions at diametrically opposite sides of the central axis of the container end, means underlying at least said terminal end portion and projecting laterally beyond the score line for covering the exposed raw edge of said tear strip terminal end portion in said open position thereby preventing contusions which might otherwise occur to a user of a container.
carrying the container end in the absence of said covering means, said score line terminating at hinge means for the hinging movement of said tear strip to said open position, and the length of said covering means as measured along a longitudinal center line of the tear strip is substantially equal to the radial distance between said hinge means and the periphery of said container end whereby said covering means completely cover the exposed raw edge of said terminal end portion in the open position thereof.

6. The container as defined in claim 1 including a pair of upstanding beads formed from the material of said end to either side of an open portion defined upon the rupturing of the tear strip starting end portion.

7. The container as defined in claim 4 wherein said first-mentioned covering means and said separate additional covering means are spaced from each other in the normally closed position of said end.

8. The improvement in a container end as defined in claim 5 including a pair of upstanding beads formed from the material of said end to either side of an open portion defined upon the rupturing of the tear strip starting end portion.

9. The improvement in a container end as defined in claim 5 wherein separate additional covering means is underlyingly secured to said starting end portion and projects laterally beyond the score line means thereof for covering the exposed raw edge of the tear strip starting end portion in said open position.

10. The improvement in a container end as defined in claim 9 wherein said first-mentioned covering means and said separate additional covering means are spaced from each other in the normally closed position of said end.

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