

Sept. 13, 1966

F. J. STEC

3,272,382

EASY OPENING CONTAINER

Filed Oct. 14, 1964

FIG. 1

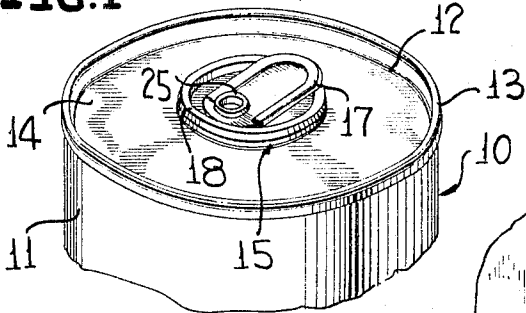


FIG. 2

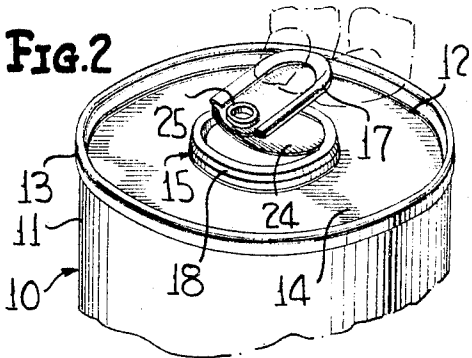


FIG. 3

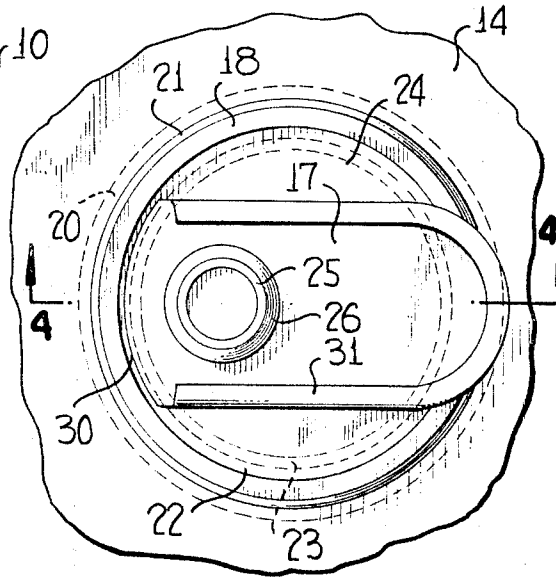


FIG. 4

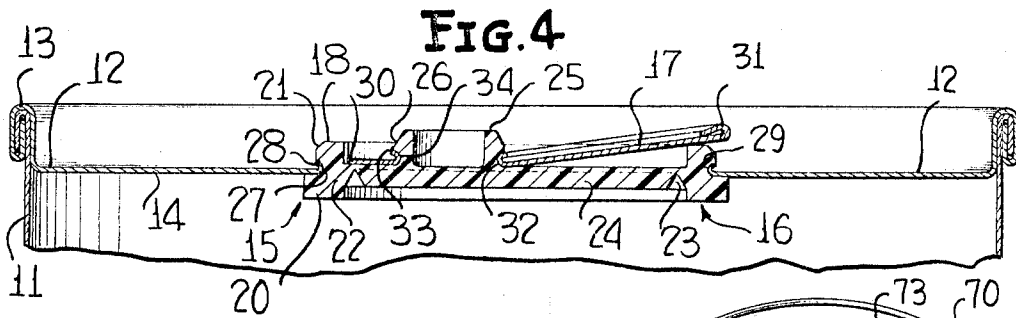


FIG. 5

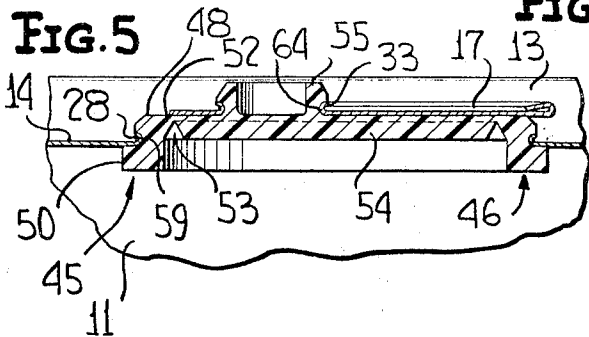
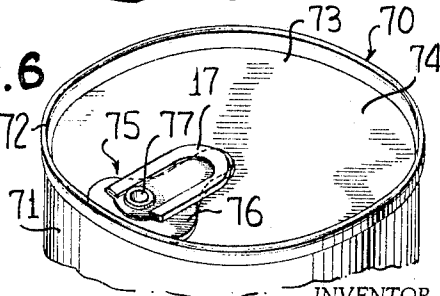


FIG. 6



INVENTOR
FREDERICK J. STEC

BY
Masson, Porter, Miller & Stewart
ATTORNEYS

1

2

3,272,382

EASY OPENING CONTAINER

Frederick J. Stec, Oak Lawn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Oct. 14, 1964, Ser. No. 403,360

7 Claims. (Cl. 220-54)

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

At the present time, a large number of the cans for beverages are of the easy opening type. These cans, however, are so formed whereby in the opening of the cans, at least a portion of each can is torn therefrom and is separately disposed of from the can. Many of these cans are opened in public with the result that the torn off portions of the cans are loosely deposited, thereby subjecting the general public to small and sharp pieces of metal. Furthermore, the present easy opening cans have the deficiency in that the cans, when opened, have a raw edge on which person may be cut while drinking from the can or otherwise dispensing the contents of the can. Another disadvantage of the present cans is that in order to enable one to open the cans with ease, it is necessary to relatively deeply score the metal of the can in defining the removable portions thereof, and this relatively deeply scoring of the cans in many instances unduly weaken the cans so that they are subject to accidental rupture.

In accordance with this invention, it is proposed to overcome the deficiencies of the aforementioned easy opening cans by providing a special insert which may be readily snapped into place in an opening in a can and which insert is provided with a pull tab to facilitate the tearing away of a portion of the insert. Also, it is proposed to form the insert of a plastic material whereby no raw edges exist either on the material remaining attached to the can or the material which is thrown away separately of the can.

Another object of this invention is to provide a novel insert of resilient material which includes a first plug portion which may be snapped through an opening in a panel, and a second plug portion to which there may be readily secured a pull tab, the second plug portion being carried by a removable part of the first plug portion and the pull tab being usable to tear away the removable part of the first portion in the opening of an associated container.

Another object of this invention is to provide a novel insert for a container panel which readily converts a container to one of the easy opening type, the insert being formed of a resilient plastic material and being snappable through the opening to form a seal therefor, and the insert having a removable portion to which there is secured a pull tab whereby the removable portion may be readily torn from the insert to define an opening in the associated container panel.

A further object of this invention is to provide an insert for a container panel wherein the associated container may be of the easy opening type, the insert having associated therewith a pull tab for use in the opening of the container, and the over-all outline of the insert and the pull tab being greater than that of an opening in the container panel which is to be closed by the insert whereby the insert and pull tab cannot be assembled prior to the positioning of the insert within the container panel opening, the insert having a plug portion which readily receives the pull tab and forms an interlock therewith so that the pull tab may be readily applied to the insert after the insert has been applied to the container panel.

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 perspective view of an easy opening container formed in accordance with this invention.

FIGURE 2 is a fragmentary top perspective view similar to FIGURE 1 and shows the manner in which the container is opened.

FIGURE 3 is an enlarged fragmentary plan view of the central portion of the upper end of the container of FIGURE 1 and shows the specific details of the easy opening feature thereof.

FIGURE 4 is an enlarged fragmentary vertical sectional view taken along the line 4-4 of FIGURE 3 and shows the specific details of the construction of the upper end of the container and the easy opening feature thereof.

FIGURE 5 is an enlarged fragmentary vertical sectional view taken through a modified form of insert.

FIGURE 6 is a fragmentary top perspective view showing a still further form of easy opening feature in accordance with this invention.

Referring now to the drawings in detail, it will be seen that there is illustrated in FIGURES 1 and 2 a can of the easy opening type incorporating this invention. The can is generally referred to by the numeral 10 and includes a conventional can body 11 which has the upper end thereof closed by means of an end 12 secured to the can body 11 by means of a conventional double seam 13. The can end 12 has an end panel 14 which is recessed within the can body and which carries an easy opening device formed in accordance with this invention, the easy opening device being generally referred to by the numeral 15.

Referring now to FIGURE 4 in particular, it will be seen that the easy opening device 15 is formed of two separate elements, an insert, which is generally referred to by the numeral 16, and a pull tab 17. The insert 16 is formed of a resilient plastic material and includes a first plug 18. The plug 18 is of a generally hollow tubular configuration and is provided at one end with an outwardly directed flange 20. The opposite end of the plug 18 is beveled, as at 21. The plug 18 also includes a transverse wall 22 which, as is illustrated in FIGURE 4, is recessed within the first plug 18.

In accordance with this invention, the transverse wall 22 is scored at 23 on the inner surface thereof to define a removable tear strip or panel 24. The tear strip 24 carries a second plug 25. The second plug 25 is also tubular in outline and projects outwardly from the tear strip 24. It is to be noted that the upper end of the second plug 25 is tapered as at 26 to facilitate the passage of the second plug 26 through an opening.

The end panel 14 of the can end 12 has an opening 27 therethrough which is defined by an outwardly and reversely turned curl 28. The first plug 18 is provided with a circumferentially extending groove 29 immediately adjacent the flange 20. Thus, when the insert 16 is snapped through the opening 27 in the end panel 14, the curl 28 will snap into the recess or groove 29 to form a positive interlock between the insert 16 and the end panel 14 with the insert 16 fully sealing the opening 27. It is to be noted that the flange 20 bears against the inner surface of the end panel 14 surrounding the opening 27 to assure this seal.

After the insert 16 has been passed through the opening 27 and is firmly seated within the end panel 14, the pull tab 17 is applied to the insert 16. The pull tab 17 is preferably formed of sheet metal and has a rounded end 30 which corresponds to the general contour of the underlying portion of the transverse wall 22. The pull tab 17 also has two sides and a second end which are reinforced by inwardly and upwardly reversely turning edge portion

3

31. The reversely turned edge portions 31 serve to both reinforce the pull tab 17 and to eliminate exposed raw edges.

In order to facilitate the securement of the pull tab 17 to the insert 16, the pull tab 17 is provided with an opening 32 therethrough adjacent the rounded end 30 thereof.

The opening 32 is defined by an outwardly and reversely turned curl 33, as is best shown in FIGURE 4.

The second plug 25 is provided with an exterior circumferential recess 34 immediately adjacent its intersection with the transverse wall 22. When the pull tab 17 is positioned on the second plug 25 by forcing the pull tab 17 down over the plug 25 with the plug 25 passing through the opening 32, the curl 33 snaps into the recess 34 and a positive interlock between the second plug 25 and the pull tab 17 is formed.

It is to be noted that the pull tab 17 projects outwardly beyond the opening 27 in the end panel 14. It is also to be noted that the outer portion of the pull tab 17 rests upon the upwardly projecting first plug 18 with the end of the pull tab 17 remote from the second plug 25 projecting beyond the first plug 18 and being in spaced relation with respect to the end panel 14 whereby that end of the pull tab may be readily lifted. It will be readily apparent that when the pull tab 17 is initially lifted, the pull tab will have a tendency to pivot about the second plug 25 and that the lifting force directed to the pull tab 17 will result in a downward pressure on the transverse wall 22 which may result in the initial rupture of the transverse wall along the score line 23 beneath the rounded end 30. Further lifting of the pull tab 17 will result in the tearing out of the tear strip 24 in the manner shown in FIGURE 2.

The advantages of the easy opening device 15 are obvious. In the first place, since the tear strip 24 is formed of plastic and in view of the fact that the pull tab 17 has the raw edges thereof turned to unexposed positions, it will be seen that even when the tear strip 24 and the pull tab 17 are discarded, they will not constitute a hazard. Secondly, it will be readily apparent that since the tear strip 24 is part of a plastic transverse wall 22, the necessary removal force will not be nearly as great as that required with respect to metal, at the same time, the insert 16 will have at least the same strength as a scored metal end panel. Thirdly, it will be readily apparent that the pull tab 17 is so positioned whereby it may be readily grasped. A fourth advantage of the easy opening device 15 is that since the weakened part of the container is formed of a resilient material, such as plastic, the danger of an accidental rupture of the container due to dropping or other forces which would effect distortion, are greatly reduced. It is also pointed out at this time that it is feasible to form the pull tab 17 of a suitable plastic material if it is desired to remove the tear strip 24 solely by a pulling force as opposed to a leverage type force.

Referring now to FIGURE 5 in particular, it will be seen that there is illustrated a modified form of easy opening device which is generally referred to by the numeral 45. The easy opening device 45 is of a similar construction to the easy opening device 15 and includes an insert 46 which is formed of a resilient plastic material. The insert 46 has associated therewith the pull tab 17 and is mounted within the end panel 14 in the same manner as is the insert 16. The insert 46 includes a first plug 48 which is of a tubular configuration and which has formed at the inner side thereof an enlarged flange 50. The plug 48 also has a transverse wall 52, which unlike the transverse wall 22 of the insert 16, is disposed flush with the outer end of the plug 48. The transverse wall 52 is provided on the underside thereof with a circumferential weakening line in the form of a score 53 so as to define a removable tear strip 54 which corresponds to the tear strip 24.

The tear strip 54, like the tear strip 24, carries a second plug 55 which is identical with the plug 25. The first plug 48 is provided with an annular recess 59 in which

4

the reversely turned curl 28 of the end panel 14 is seated. The second plug 55 has a similar circumferential recess 64 in which the curl 33 of the pull tab 17 is seated.

It is to be noted that in the easily opening device 45 the pull tab 17 lies flush on the upper surface of the first plug 48 and projects outwardly thereof in the same general manner as does the pull tab 17 in FIGURE 4. It is to be noted that in the assembly shown in FIGURE 5, the pull tab 17 has the outer end thereof spaced above the end panel 14 to facilitate the grasping and initial lifting of the pull tab 17 although the pull tab 17 lies flush as compared to the tilted position shown in FIGURE 4.

Referring now to FIGURE 6 in particular, it will be seen that there is illustrated a can which is generally referred to by the numeral 70, the can being principally a beverage can from which one may directly drink the contents thereof. The can 70 includes a conventional can body 71 to which there is secured by means of a double seam 72 a can end 73. The can end 73 has an end panel 74 in which there is positioned an easy opening device formed in accordance with this invention, the easy opening device being generally referred to by the numeral 75. The easy opening device 75 includes an insert formed of a resilient plastic, the insert being referred to by the numeral 76. The insert 76 carries one of the pull tabs 17 to facilitate the removal of a tear strip portion thereof.

The specific details of the insert 76 have not been illustrated. However, it is to be understood that the mechanical features of the insert 76 may be the same as those of the inserts 16 and 46. It is to be noted that the insert 76 does differ from the inserts 16 and 46 in that in lieu of being circular, it is of a modified triangular outline corresponding generally to the pour openings which are presently being utilized in beer cans and the like. It is to be understood that the insert 76 will include a first plug which is snapped through a corresponding shaped opening in the end panel 74. The insert 76 also carries a second plug 77 to which the pull tab 17 is secured. The easy opening device 75 will have all of the advantages set forth above.

Although only several preferred embodiments of the invention have been specifically illustrated and described herein, it is to be understood that other variations may be made in the invention within the spirit and scope of the appended claims.

I claim:

1. An easy opening device for containers comprising an insert receivable in a container opening for facilitating the dispensing of the contents thereof, said insert being formed of a resilient material and including a first plug adapted to be snapped into an opening for closing the opening, said first plug having a transverse wall including a removable tear strip, a second plug projecting from said tear strip, and a pull tab secured to said tear strip by said second plug for facilitating the removal of said tear strip.

2. The device of claim 1 wherein said pull tab extends outwardly of an adjacent portion of said first plug to facilitate the gripping of said pull tab.

3. The device of claim 1 wherein said pull tab has an end overlying said transverse wall with said end corresponding in shape to an adjacent portion of said tear strip.

4. In an easy opening container, a container panel having inner and outer surfaces and an opening therethrough, an insert closing and sealing the opening, said insert comprising a first plug filling and sealing the opening, said first plug including a transverse wall have a removable tear strip, a second plug projecting from said tear strip exteriorly of said panel, and a pull tab secured to said tear strip by said second plug for effecting the removal of said tear strip.

5. The container of claim 4 wherein said pull tab has an end overlying said transverse wall with said end cor-

5

responding in shape to an adjacent portion of said tear strip.

6. The container of claim 4 wherein said pull tab extends outwardly beyond the opening into overlying relation to said panel, and said pull tab having an outer portion thereof resting on said first plug with the end of said pull tab remote from said second plug being spaced above said panel.

7. The container of claim 4 wherein said pull tab extends outwardly beyond the opening into overlying rela-

6

tion to said panel, and the combined configuration of said insert and said pull tab being greater than the opening and said pull tab being securable to said insert by being positioned over said second plug after said first plug is inserted through said panel.

No references cited.

THERON E. CONDON, *Primary Examiner.*

G. T. HALL, *Assistant Examiner.*