

April 8, 1969

H. A. PEYSER

3,437,227

EASY OPENING CONTAINER

Filed Feb. 21, 1968

Sheet 1 of 2

FIG. 1

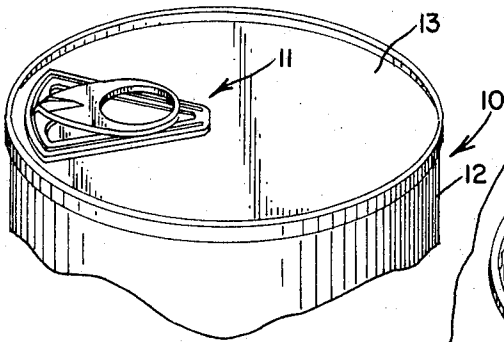


FIG. 2

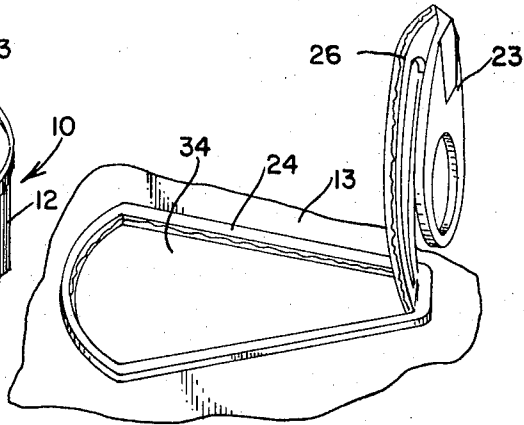


FIG. 3

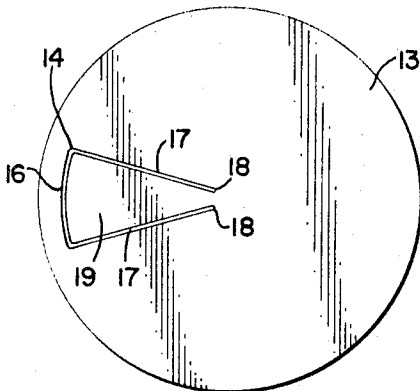


FIG. 4

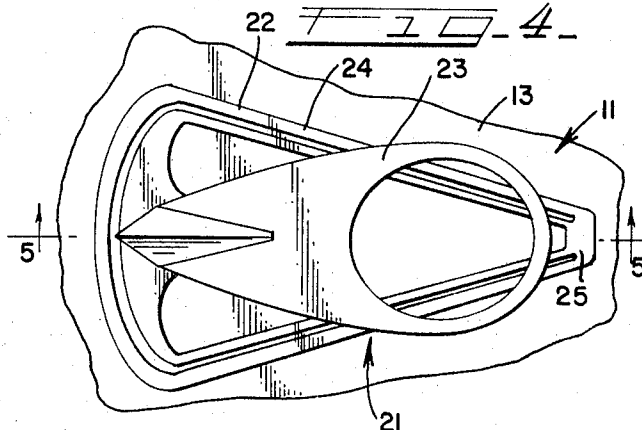


FIG. 6

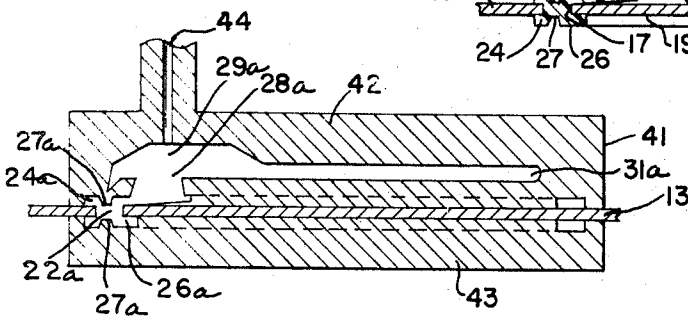
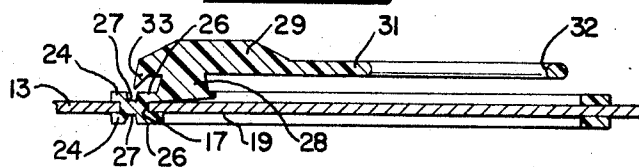


FIG. 5



INVENTOR

HARRY A. PEYSER

BY *Paul P. Korka*
ATT'Y.

April 8, 1969

H. A. PEYSER

3,437,227

EASY OPENING CONTAINER

Filed Feb. 21, 1968

Sheet 2 of 2

FIG. 7

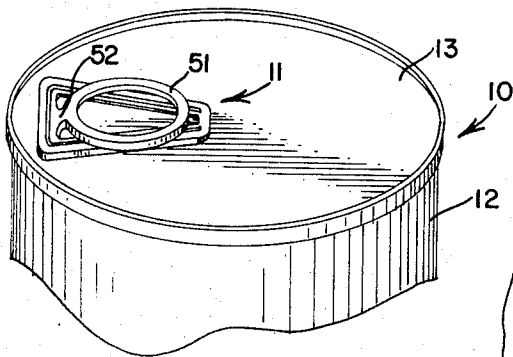


FIG. 8

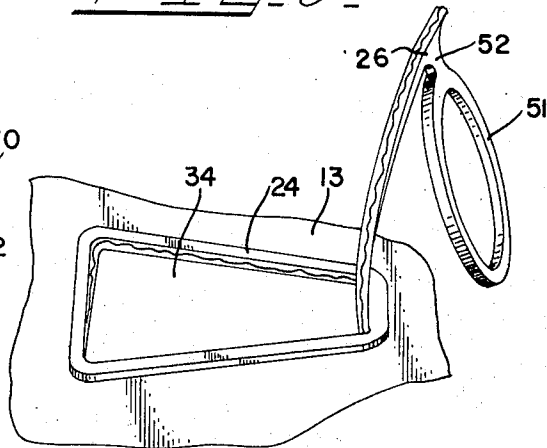


FIG. 9

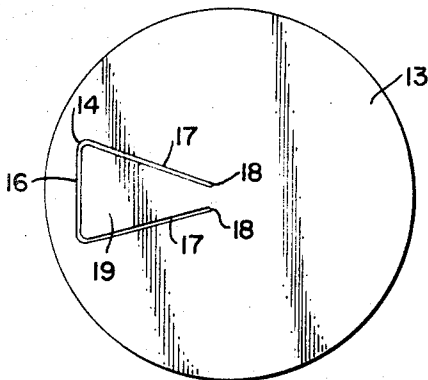
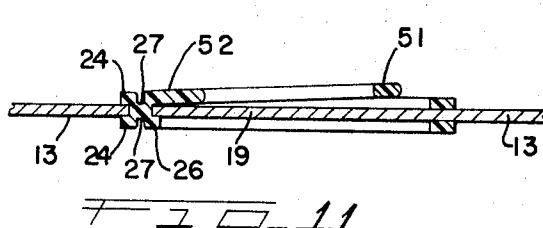
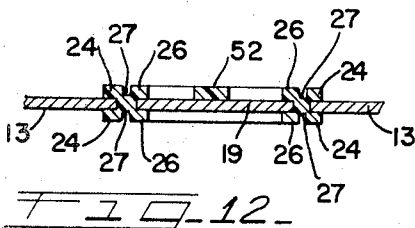
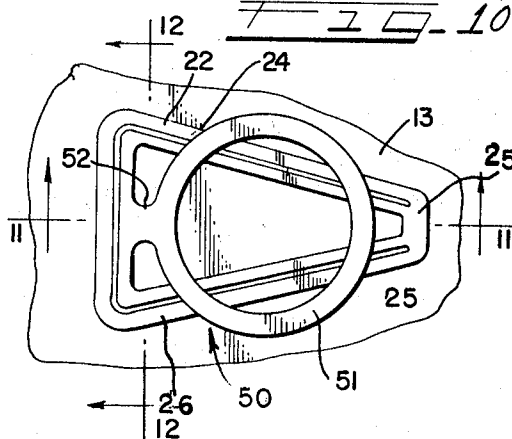


FIG. 10



INVENTOR
HARRY A. PEYSER
BY *Frederic P. Kotka*
ATT'Y.

1

3,437,227

EASY OPENING CONTAINER

Harry A. Peyser, Olympia Fields, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Feb. 21, 1968, Ser. No. 707,266

Int. Cl. B65d 17/02, 17/20, 17/24

U.S. Cl. 220—47

6 Claims

ABSTRACT OF THE DISCLOSURE

As easy opening container having a panel formed with a slot of which the terminal ends are transversely spaced so that the panel portion lying within the confines of the slot is bendable away from the panel to define a pour opening. A pull tab is attached to the bendable panel portion and includes a sealing strip seated in the slot and marginal portions grippingly overlying the marginal wall of the panel and the marginal wall of the bendable portion. A finger tab is formed integral with the sealing strip intermediate the ends of the latter. A weakening line is formed in the sealing strip in alignment and coextensive with the slot so that upon application of a pulling force to the finger tab, the marginal wall portion and marginal tab portions of the sealing strip separate so that the bendable portion may be bent away from the panel.

The present invention relates to containers and in particular to new and improved easy opening structures for containers.

Heretofore metallic containers have been provided with various types of easy opening structures to facilitate the emptying or pouring of the contents therefrom. These prior structures have generally been characterized by a structure in which a tear portion defined by a weakening line in a panel of the container is completely separated from the panel. Upon such separation raw metallic edges are exposed both on the container panel and the separated tear portion.

These raw edges may result in injury in the form of cut fingers, lips and the like. The problem of injury is particularly prevalent when the separated tear portion is discarded on a sandy beach or the like where it is likely that individuals may be barefoot so that cuts may result from stepping on the sharp edged tear portions. Moreover, the indiscriminate discarding of the tear portions in public places also results in unsightly and objectionable litter.

It is a principal object of the present invention to provide an easy opening structure which eliminates the objectionable features encountered heretofore.

This is accomplished generally by the provision of an easy opening structure in which a bendable panel section is formed in the panel by a slot having terminal ends spaced from each other so that the bendable section remains integral with the panel. A pull tab including a sealing strip is seated within the slot and grippingly engages the marginal wall portions bounding the slot. A weakening line is formed in the sealing strip which severs upon the application of a pulling force in a manner such that a marginal portion remains about the edge of the panel and a marginal portion about the edge of the bendable section.

In the drawings:

FIG. 1 is a fragmentary perspective view of one end of a container showing an easy opening structure embodying the principles of the present invention;

FIG. 2 is a fragmentary perspective view of the end

2

panel showing the easy opening structure in its open position;

FIG. 3 is a top plan view of a panel formed with the slot defining a bendable section prior to the attachment of the pull tab thereto;

FIG. 4 is a fragmentary top plan view of the easy opening structure showing the pull tab attached to the panel at the bendable section;

FIG. 5 is a cross-sectional view taken generally along the lines 5—5 of FIG. 4;

FIG. 6 is a cross-sectional view of an injection mold which may be used to form the pull tab in situ on the panel;

FIG. 7 is a perspective top plan view of another embodiment of an easy opening structure embodying the principles of the present invention;

FIG. 8 is a fragmentary perspective view of the easy opening structure of FIG. 1 but showing the structure in the open position thereof;

FIG. 9 is a top plan view of a panel formed with a slot defining the bendable section prior to the attachment of the pull tab thereto;

FIG. 10 is a top plan view of the easy opening structure showing the pull tab attached to the panel at the bendable section;

FIG. 11 is a cross-sectional view taken generally along the lines 11—11 of FIG. 10; and

FIG. 12 is a cross-sectional view taken generally along the lines 12—12 of FIG. 10.

Referring now to the drawings, and in particular to FIG. 5, there is shown a container 10 embodying an easy opening structure 11 constructed in accordance with the present invention. The container 10 includes a conventional body 12 of which only the upper portion is shown. The body 12 at the upper end thereof is closed by a top closure panel 13 which is secured to the former by means of a conventional double seam.

Referring now to FIG. 3, the top panel 13 is punched to form a generally U-shaped slot 14 having a bight portion 16 from which legs 17 extend substantially radially inward. The terminal ends 18 at the legs 17 are transversely spaced from each other so that panel section 19 confined within the slot 14 is bendable about a line extending therebetween.

Sealingly attached and seated within the slot 14 is a pull tab generally designated 21. The pull tab 21 is formed of plastic and includes a sealing strip 22 and a finger pull tab 23. The sealing strip 22 as shown in FIG. 5 is formed with marginal edge portions 24 and 26 which respectively grippingly engage the panel bounding the slot 14 and the bendable panel section 19. To achieve the desired gripping and sealing about the slot 14 the plastic from which the tab is formed is preferably selected so as to have adhering characteristics to the metal of the panel.

In the embodiment as shown the sealing strip 22 includes a section 25 extending between the terminal ends 18 of the slot so as to form a continuous band about the bendable panel section 19. Weakening line means 27 are formed in the upper and undersides of the sealing strip 22 in alignment and co-extensive with the bight portion 16 and legs 17 of the slot 14.

The finger pull or tab 23 is integral with the sealing strip 22 and disposed adjacent the sealing strip overlying the bight portion 16 of the slot 14. In the embodiment as shown in FIGS. 1 through 5 the finger tab includes an upstanding attachment boss 28 immediately contiguous to the upper marginal portions 26 overlying the bendable panel section 19. Extending horizontally from the attachment boss 28 is a tab body 29 from one end of which there extends a finger pull portion 31 having a finger opening 32. At the other end the tab body 29 is formed

with a downwardly projecting penetrating end or nose 33. The penetrating end 33 overlies the weakening line means 27 so that upon relative tilting of the body portion 29 the penetrating nose 33 is operative to sever the weakening line along the slot 14.

Thereafter, further upward pulling on the finger tab is operative to sever the sealing strip 22 in a manner such that the marginal portions 24 separate from the marginal portion 26. At the same time the bendable panel section 19 bends about a line extending between the terminal ends 18 of the slot to the position shown in FIG. 2. In this manner a pour opening 34 is defined in the panel 13.

It is to be noted that the edges of the pour opening 34 are protected by the marginal portions 24 of the sealing strip which remain fixed thereto. Also, the bendable section 19 remains integral with the end panel 13 and is not separated therefrom as has been the common practice heretofore. Moreover, the raw edges of the bendable panel section 19 are completely protected by the marginal portion 26 of the sealing strip 22 so as to eliminate the possibility of injury.

The pull tab 21 may be molded in situ on the top panel 13 as by injection molding. As shown in FIG. 6, the apparatus 41 comprises a male or upper die member 42 and a female or lower die member 43 disposed on opposite sides of the end panel 13. The upper male die is formed with cavities 29a, 28a and 31a defining the body portion 29, mounting boss 28 and finger portion 31 respectively. The male and female die members 42 and 43 are formed with recesses 22a and 22b which coact with the panel 13 to define cavities which form the sealing strip 22 including the marginal edges 24 and 26, and the weakening line means 27. The plastic is introduced through a passage 44 which communicates with the various cavities and recesses.

Referring now to FIGS. 7 through 12, there is shown a second embodiment of easy opening structure 50 embodying the principles of the present invention. This embodiment differs primarily from that described heretofore in connection with FIGS. 1 through 5, in that the penetrating lip 33 is eliminated. The easy opening structure 50 includes the slot 14 formed with the bight 16 and legs 17 of which the terminal ends 18 are transversely spaced. The sealing strip 22 is similarly seated within the slot 14 along the length thereof and includes marginal portions 24 and 26 grippingly overlying the marginal portions of the panel 13 and bendable section 19. The finger pull 51 extends from the marginal portion 26 overlying the bight 16 and includes a connecting neck 52 integrally formed with the marginal portion 26. The finger pull 51 may be in the form of a ring 53 having an axial opening 54 to receive the forefinger and thumb of the user. The diameter of the ring 53 is such that it overlies the weakening line means 27 to protect the latter from damage.

The pull tab 50 upon the application of a pulling force on the ring 53 severs initially at the weakening line 27 whereupon further pulling causes the bendable section

19 to bend upwardly. Severance of the pull tab 50 occurs in the same manner as described heretofore so that the marginal portions 24 remain adhered about the edges of the panel 13 and the marginal portions 26 adhered to the edges of the bendable section 19.

I claim:

1. In an easy opening container member, a panel, a slot formed in said panel and having terminal ends laterally spaced from each other whereby a section of said panel bounded by said slot is bendable along a line extending between said terminal ends, a pull tab including a sealing strip disposed in said slot and grippingly engaging the opposite marginal portions of the panel bounding said slot, weakening line means formed in said sealing strip means aligned with said slot, and a finger grip means connected to said sealing strip intermediate the length thereof for applying a force to sever said sealing strip along said weakening line means to separate said opposite marginal portions from each other and to bend said bendable section to define a pour opening in said panel.

2. The invention as defined in claim 1 in which said sealing strip extends between said terminal ends.

3. The invention as defined in claim 1 in which said weakening line means extends coextensive with said slot.

4. The invention as defined in claim 1 wherein said finger grip means includes a ring pull means, and said ring pull means overlies said sealing strip.

5. The invention as defined in claim 1 wherein said finger grip means includes penetrating nose means overlying said weakening line means for penetrating said weakening line upon initial lifting of said pull tab means.

6. In an easy opening container member, a panel, a slot formed in said panel and having terminal ends laterally spaced from each other whereby a section of said panel bounded by said slot is bendable along a line extending between said terminal ends, a pull tab including a sealing strip disposed in said slot, said sealing strip including oppositely disposed marginal portions grippingly engaging the opposite marginal edges bounding said slot, weakening line means formed in said sealing strip in alignment and coextensive with said slot, said pull tab including a finger pull integral with said sealing strip and normally lying in a plane substantially parallel to said sealing strip, said finger pull being movable to a position for applying an upward pulling force to separate said oppositely disposed marginal portions by tearing along said weakening line and to bend said bendable section about said bend line to define a pour opening in said panel.

References Cited

UNITED STATES PATENTS

3,184,096	5/1965	Cheeley	220—46
3,338,462	8/1967	Reynolds et al.	220—53

GEORGE T. HALL, *Primary Examiner*.

U.S. Cl. X.R.

220—54