

[54] **PULL TAB**

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 [51] Int. Cl. ....B65d 17/24  
 [58] Field of Search ....220/54, 48; 215/46

[56] **References Cited**

**UNITED STATES PATENTS**

3,483,355 12/1969 Murdock .....220/54 X

3,411,662 11/1968 Silver .....220/54  
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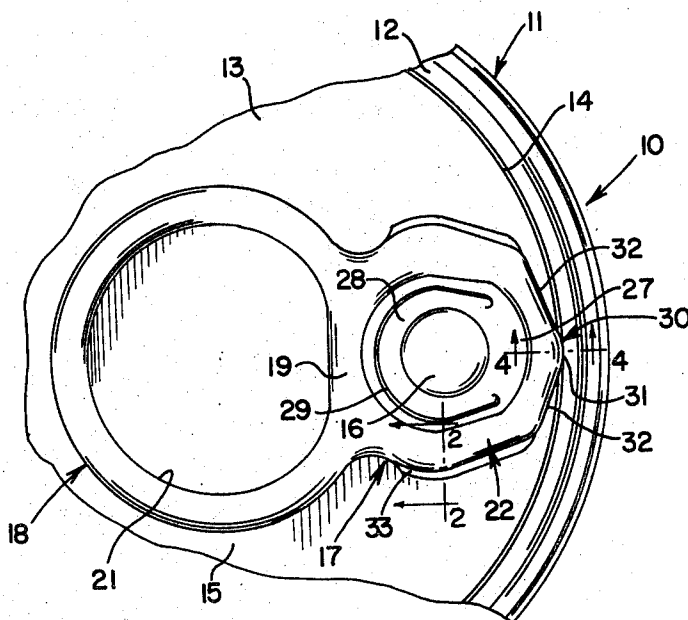
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**ABSTRACT**

A pull tab for an easy opening container. The pull tab includes a finger grip portion and a forward portion having a nose for penetrating a score line defining a removable panel portion. The forward portion is formed with a rib including an outer peripheral depending flange. The depending flange terminates in an outwardly extending lip which serves to increase the resistance against bending.

**1 Claims, 4 Drawing Figures**



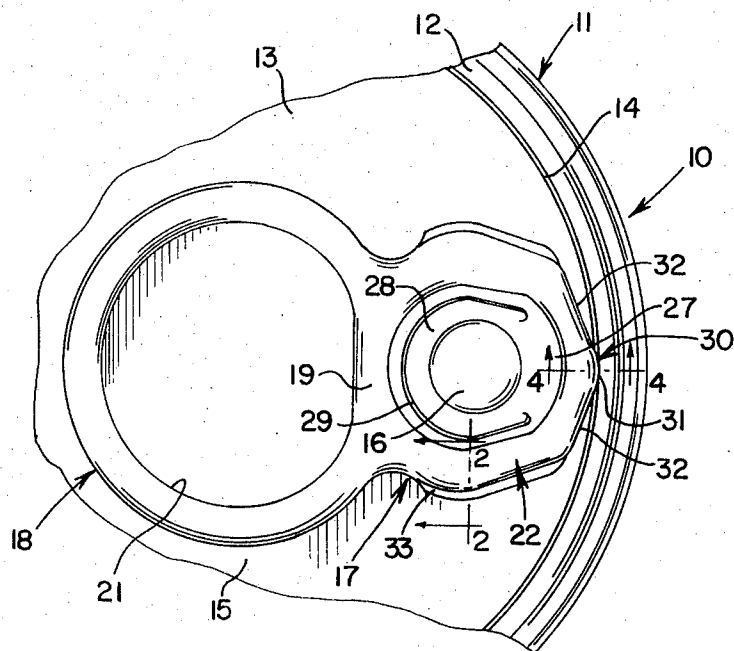


FIG. 1

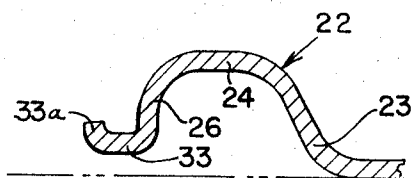


FIG. 3

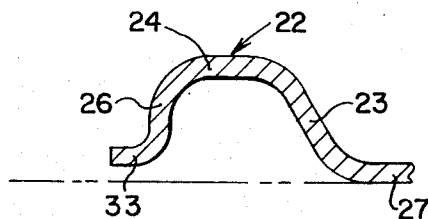


FIG. 2

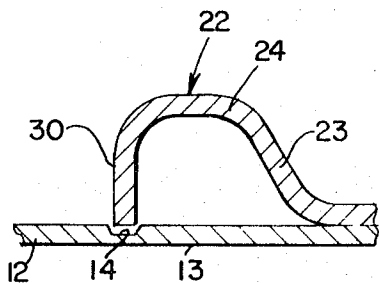


FIG. 4

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## PULL TAB

## FIELD OF THE INVENTION

The present invention relates to easy opening containers and more particularly to an improved pull tab for opening the containers.

The easy opening containers with which the pull tabs of the present invention are used include a removable panel portion which is defined by a weakening line formed, as for example, by scoring. The pull tab is mounted on the container so that upon lifting a nose portion formed on one end thereof is operative to initially sever a length of the weakening line. Thereafter, a pulling force is applied on the tab to complete the severance of the removable panel portion from the container. The container contents may then be poured through the opening which is provided after removal of the removable panel portion.

## BACKGROUND OF THE INVENTION

The prior art pull tab construction and the manner in which it is attached to the container is shown in my prior U.S. Pat. No. 3,366,270.

These prior pull tabs are generally made from a strip of sheet metal in a multiple station progressive die on which the strip material is continuously fed through the tool. The pull tab is progressively fabricated until completed at the last station wherein it is severed from the strip as a completed pull tab.

In this process, the partially completed pull tab is retained attached to the continuous strip by means of a carrier strip. The carrier strip is generally located along one side of the forward portion of the tab and is severed substantially flush with a downwardly depending flange on the forward portion. When severed in this manner, the downwardly depending flange tends to be stressed and under some circumstances, the severance has been such that fracture readily occurs during initial opening of the container. Such fracture may result from the bending moment imposed on the downwardly depending flange along the line at which the carrier strip is severed from the pull tab.

In order to withstand the stresses associated with the initial penetration of the score by the pull tab, the prior art pull tabs have been formed of relatively heavy gauge sheet material. This, of course, raises the cost of the tab.

## BRIEF DESCRIPTION OF THE INVENTION

By the present invention, it is proposed to provide a pull tab which overcomes the difficulties encountered heretofore and to achieve a more rigid lever structure than the prior art pull tabs.

In accordance with the present invention, this is accomplished generally by providing a substantially horizontal outwardly extending lip about the peripheral downwardly depending flange on the forward portion of the tab.

The carrier strip is attached to the horizontal lip and is severed by a vertical cutting operation along a line spaced from the peripheral flange so that the stresses resulting from the cutting are minimized at the peripheral flange.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plane view of a pull tab attachment attached to a container in the normal non-use position.

FIG. 2 is a cross-sectional view taken generally along the lines 2—2 of FIG. 1 and showing one form of rigidifying lip.

FIG. 3 is a cross-sectional view similar to FIG. 2 but showing a modified form of rigidifying lip.

FIG. 4 is a cross-sectional view taken generally along the lines 4—4 of FIG. 1.

## DESCRIPTION OF PREFERRED EMBODIMENT

Referring now to the drawings, there is shown an easy opening container 10 including a can body (not shown) to the

upper end of which there is secured by means of a double seam a can end 11. The can end 11 includes an end panel 12 of which a major portion 13 thereof is removable. The removable panel portion 13 is defined by a peripheral score line or weakening line 14.

In order to facilitate the rupture of the end panel 12 and to tear out the removable panel portion 13, a pull tab 15 is provided. The pull tab 15 is formed from a single piece of sheet metal and is fixedly secured to the removable panel portion by means of a rivet 16 formed integral with the panel 13.

Generally, the pull tab 15 includes a forward portion 17 and a rear grip portion 18. The portions 17 and 18 are joined by a transversed cross bar 19 which is common to both portions of the pull tab.

The grip portion 18 is in the form of a finger ring and has a finger receiving opening 21. The finger receiving opening 21 is defined by a downwardly and inwardly turned inner and outer curls or hems as fully shown and described in my aforementioned patent.

The forward portion 17 is reinforced by an upstanding rib 22 including, as shown in FIG. 2, an upstanding inner flange 23 and an uppermost substantially horizontal web 24 and a peripheral depending flange 26. The peripheral flange 26 along each side of the forward portion 17 is a continuation of the hem extending about the finger grip portion 18. The upstanding flange 23 forms one boundary of the cross bar 19 while the curl about the inside of the finger grip portion 18 forms the opposite boundary.

The upstanding flange 23 defines a recessed planar attaching portion 27 in which there is formed an attaching panel 28. The attaching panel 28 is defined by a generally U-shaped cut 29 which opens toward the forward end of the pull tab. The cut 29 terminates at the opposite ends thereof in transversely aligned generally inwardly and reversely turned cut portions. The attaching panel 28 has an opening therethrough receiving the rivet 16 in the usual manner. It is to be noted that the forward portion 17 as shown in FIGS. 1 and 4 terminates in a nose 30. The nose 30 includes a central arcuate portion 31 and a rearwardly and outwardly diverging outer portions 32. The nose 30 is an extension of the forward portion 17 of the peripheral flange 26.

When the pull tab is secured in place on the can 10, the arcuate center portion 31 of the nose 30 is in alignment with the score 14 as clearly shown. The can 10 provided with the pull tab 15 is opened by upward tilting about the attachment panel 28 so that the nose 30 initially severs the score line 14. Thereafter, the pull tab 15 is pulled upwardly so as to sever the remainder of the removable panel portion 13 from the container.

During removal of the removable panel portion from the container end, considerable stresses are imposed on the pull tab 15 particularly during the initial severance of the weakening line 14 from the panel. Such stresses usually result from the bending moment occurring along the sides of the pull tab nose portion at the peripheral flange 26 of the rib 22. To minimize these stresses which may result in failure of the pull tab and thereby prevent opening of the container, there is provided a horizontal lip 33 as shown in FIG. 2. The lip 33 is formed integral with the peripheral flange 26 and is disposed in a horizontal plane. The lip 33 is located and arranged so as to be spaced slightly above the surface of the removable panel 13 whereby the nose 30 is maintained in engagement with the weakening line or score line 14 so as to facilitate severance thereof upon initial tilting of the pull tab 15. The horizontal lip 33 increases the moment of inertia about the forward portion 17 of the pull tab 15 and thereby provides greater resistance to bending. This permits a lighter gauge material to be used. Also this lip permits the carrier strip which may be attached to the horizontal lip to be severed by a vertical knife along a line remote from the peripheral flange 33 and thereby minimizes the stress problem prevalent heretofore in the prior art pull tabs.

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To further increase the rigidity against the pull tab to prevent inadvertently bending thereof, the horizontal lip 33 may be formed as shown in FIG. 2 with a slightly upstanding outer lip 33a.

What is claimed is:

1. A one piece sheet metal pull tab having a forward portion and a rigid finger type grip portion, said forward portion having a nose at the end remote from said finger grip portion, said forward portion having an attachment portion defined by an upstanding flange, a peripheral depending flange extending

about said forward portion and integrally connected to said upstanding flange by a substantially horizontal web, said nose being a continuation of said peripheral flange and having a terminal edge spaced below said peripheral flange, and a lip disposed in a plane above said terminal edge of said nose and projecting from said peripheral flange intermediate said nose and finger grip portion and terminating in an upstanding turned edge whereby said forward portion is strengthened against lengthwise bending.

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