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EASY OPENING CONTAINER

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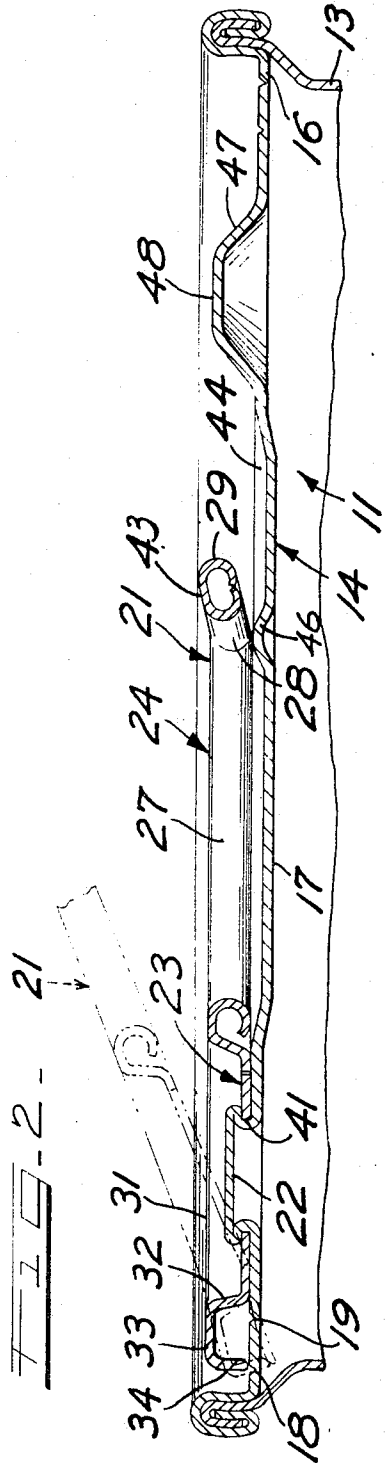

FIG. 2

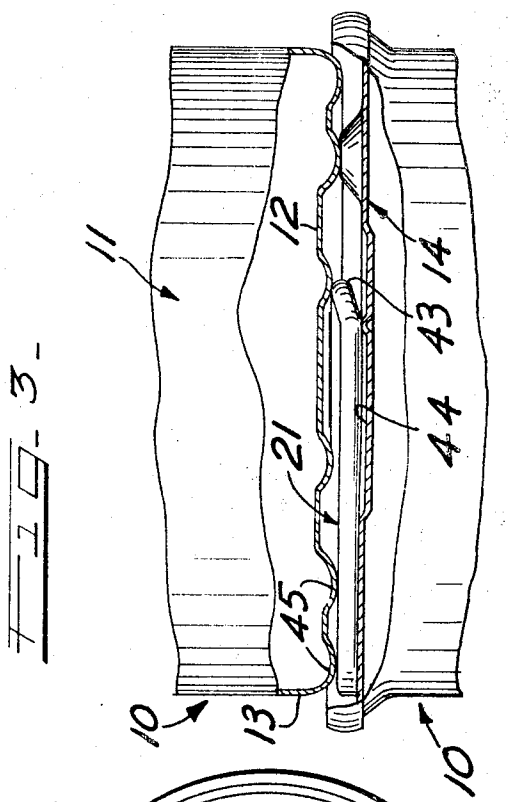

FIG. 3

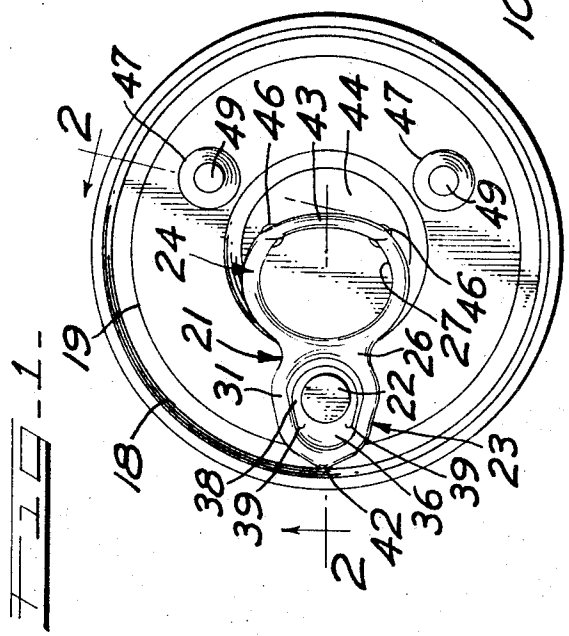

FIG. 1

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# EASY OPENING CONTAINER

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U.S. Cl. 220—54 3 Claims

## ABSTRACT OF THE DISCLOSURE

The disclosure relates to an easy opening container having a cover member formed with a removable tear portion located in the panel. A pull tab is attached to the tear portion for separating the latter from the panel. To compensate for the uneven supporting surface resulting from the presence of the tab on the panel, projections are formed in the latter to provide a supporting surface on which other containers may be stacked in vertical alignment with the underlying easy opening container.

The present invention relates in general to new and useful improvements in container construction and more particularly to a novel container of the easy opening type.

It is a principal object of the present invention to provide an easy opening cover structure with means for permitting the stacking of containers thereon in a manner such that the stacked containers remain in vertical alignment.

Easy opening containers of the type to which the present invention relates have commonly been constructed with a tear portion to which a pull tab is attached for removing the tear portion from the panel. Normally the pull tab lies in a superposed position over the tab and presents an irregular surface which is elevated above the panel surface. Under these conditions a stacked container particularly of the type which does not have a rim, when placed on the easy opening cover member, tends to tilt relative to the underlying container. Such tilting prevents the stacking of containers one upon the other for storage and display purposes.

In accordance with the present invention, it is proposed to provide an easy opening cover construction in which there is provided a plurality of projections which are spaced from the pull tab and arranged to engage an underside of a container adapted to be stacked thereon in a manner to provide a supporting surface which maintains the stacked containers in vertical alignment with the underlying container.

In the drawings:

FIG. 1 is a fragmentary top perspective view of an easy opening container formed in accordance with the present invention;

FIG. 2 is an enlarged fragmentary vertical sectional view taken generally along the line 2—2 of FIG. 1 and showing in particular the relationship of the height of the projections and the upper surfaces of the pull tab; and

FIG. 3 is a fragmentary vertical sectional view of two stacked containers and showing in particular the manner in which the projections serve to provide a support surface for maintaining the upper stacked can in vertical alignment with the underlying can.

Referring now to the drawings in detail, there is shown two stacked easy opening containers **10** each including a can body **11** which may be formed by drawing to provide a bottom **12** formed integral with the side wall **13**. Secured to the open end of the container as by a double seam is a can end or cover member **14**. The cover member **14** includes an end panel **16** of which a major portion **17** thereof is removable. The removable panel portion or tear is defined by a peripheral score line **18**. A second score or anti-fracture score line **19** which serves to relieve the stresses in the primary score line **18** is concentrically formed in the panel **16**. The anti-fracture score **19** is of lesser depth than the primary score **18** so that fracture occurs at the latter.



In order to facilitate the rupture of the end panel **16** and the tearing out of the removable or tear panel portion **17**, there is provided a pull tab **21**. The pull tab **21** is formed from a single piece of sheet metal and is fixedly secured to the removable panel portion **17** by means of a rivet **22** formed integral with the latter.

The pull tab **21** includes a forward portion **23** and a rear grip portion **24**. The portions **23** and **24** are connected together by a transverse cross bar **26** which is common to the two portions of the pull tab.

The grip portion **24** is in the form of a finger ring and has a finger receiving opening **27**. The finger receiving opening **27** is defined by a downwardly and radially outwardly turned curl **28**. Around the periphery of the grip portion **24**, the sheet metal of the pull tab **21** is folded or curled to define a hem **29**. The hem **29** co-operates with the curl **28** to rigidify the grip portion **24** and at the same time to eliminate all exposed raw edges both internally and externally.

The forward portion **23** is reinforced by an upstanding rib **31** which extends entirely thereabout. The rib **31** includes an inner flange **32**, a web **33** and a peripheral depending flange **34**. The flange **34** of the forward portion **23** is a continuation of the hem **29**. It is also to be noted that the inner flange **32** forms one boundary of the cross bar **26** while the curl **28** forms the opposite boundary thereof.

The rib **31** defines a planar recessed attaching portion **36** to which the rivet **22** is secured. An attaching panel **37** may be provided in the attaching portion **36** and is defined by a generally U-shaped cut **38** which opens across the forward end of the pull tab **21**. The cut **38** terminates at the opposite ends thereof in transversely aligned generally opposed reversely turned portions **39**. The attaching panel **37** has an opening **41** for receiving the rivet **22** as best shown in FIG. 2.

The forward portion **23** of the pull tab terminates at its forward end in the nose **42** having a radius of curvature substantially the same as that of the portion of the primary score line **18** with which the pull tab **21** is aligned. It is to be noted further that the nose **42** is disposed in matching aligned relation with respect to the score line **18** when the pull tab **21** is in its operative position, as shown in phantom lines.

The grip portion **24** which is shaped in the form of a ring is formed with an upwardly offset portion **43** to provide a finger access thereto, and thereby facilitate the initial lifting of the pull tab **21**.

To take up the looseness of metal in the panel created by the scoring, there is provided an axial depression **44** which receives the grip portion **24** of the pull tab **21**. The axial depression **44** may be formed with a pair of projecting beads **46** to maintain the pull tab substantially level.

From the foregoing description of the pull tab **21** it is readily apparent that the structure of the latter including the rib **31**, curl **28** and hem **29** creates an uneven and irregular surface which is elevated above the outer surface of panel **16**. The uneven surface creates a stacking problem particularly when the containers **10** do not have a bottom rim or have a bottom diameter less than the top diameter as typified by the drawn container body **11** shown in FIG. 3. The drawn container body **11** is formed with an integral bottom which is nestable within the rim or double seam of the cover **14** and is formed

with a plurality of circumferential and concentric reinforcing ribs **45**.

To overcome the stacking problem, there is provided a plurality of upstanding protuberances or stacking projections **47** which are spaced to engage and provide support for the underside of the upper stacked container **10** to maintain the latter in vertical alignment with an underlying container.

As shown, the stacking projections **47** are formed in the tear portion **17** of the panel **16** inwardly of the score lines **18** and **19** and radially outward of the axial depression **44**. The projections **47** are each formed more or less in the configuration of a frustum of a cone having a substantially top planar surface **49**. The top planar surfaces **49** each lie in the same horizontal plane as the surfaces of the tab on which the bottom of a stacked container **10** rests. In this manner the projections **47** compensate for the uneven surface caused by the pull tab **21** to maintain the stacked container in vertical alignment with the underlying container. Moreover, the upwardly extending projections **47** formed in the panel also serve to take up further loose metal created by the score lines **18** and **19** and thereby further stiffen the tear portion **17** to facilitate the removal thereof.

We claim:

**1.** In an easy opening container a cover member including a panel, weakening line means formed in said panel and defining a tear portion removable from said panel, a pull tab fixed to said tear portion and normally overlying said panel and presenting a surface vertically spaced above the surface of said panel, and a plurality of upwardly projecting protuberances formed in said tear portion and spaced from said pull tab to provide a support surface at substantially the same level as said vertically spaced tab surface is spaced above said panel so as to be engageable with the bottom of a container adapted to be stacked thereon for maintaining the stacked containers in vertical alignment.

**2.** The invention as defined in claim **1** wherein said protuberances are each in the form of frusto-conical projections.

**3.** The invention as defined in claim **1** wherein said tear portion is formed with an axial depression and said protuberances are disposed in spaced relationship to said axial depression.



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GEORGE T. HALL, *Primary Examiner.*

U.S. Cl. X.R.

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