Dec. 29, 1964 E. L. BLAKSLEE 3,163,310

CONTAINER

Filed Dec. 31, 1963

Fig. 1.

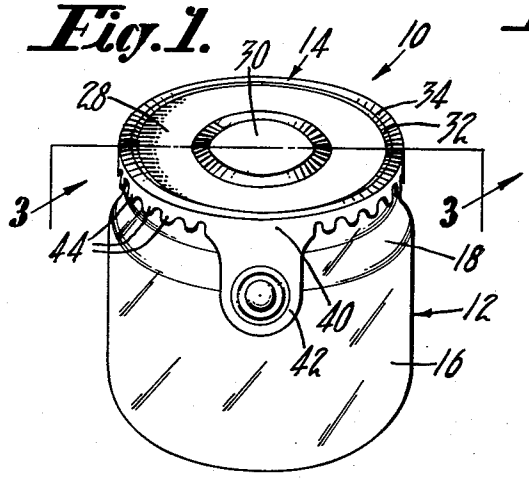


Fig. 2.

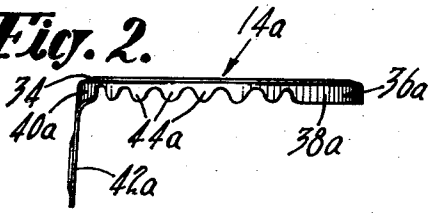


Fig. 6.

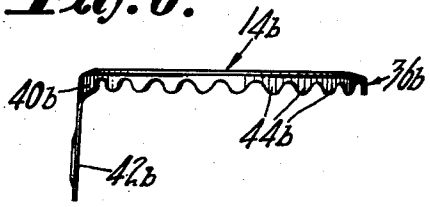


Fig. 4.

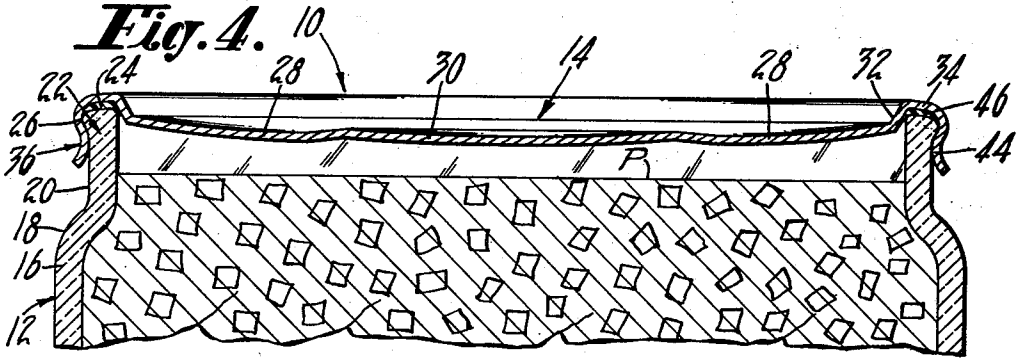


Fig. 3.

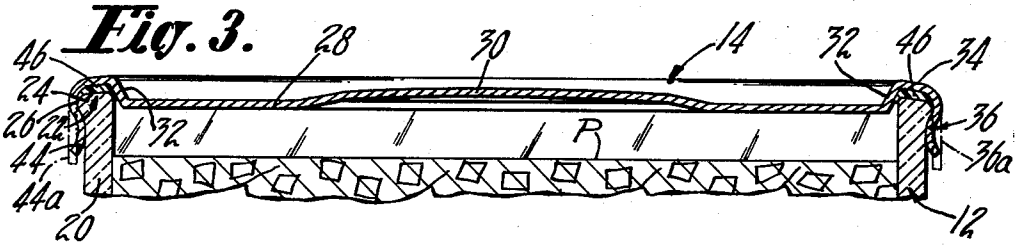
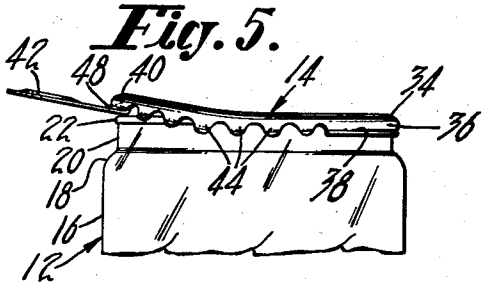


Fig. 5.



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3,163,310
CONTAINER

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9 Claims. (Cl. 215—46)

The present invention relates generally to a container for hermetically sealing food or other type products and more particularly to such a container which includes an easily removable end closure which is adapted to be used as a reclosure after the initial opening of the container.

An object of the present invention is to provide an easily openable container for hermetically sealing food or other type products which may or may not be maintained under vacuum.

Another object is to provide such a container which may be easily opened without the use of an opening tool and which may be readily reclosed after the initial opening thereof to preserve the product remaining in the container.

A further object is to provide such a container with an end closure which may be easily gripped by the consumer for the removal thereof from the container body.

A still further object is the provision of a container for products maintained under vacuum therein which comprises an end closure that is adapted to indicate visually and audibly the presence of and the breaking of, respectively, the vacuum within the container, so that the consumer can be assured of the hermetic sealing of the food product within the container.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

Referring to the drawing:

FIGURE 1 is a perspective view of a container constructed according to the principles of the instant invention;

FIGURE 2 is a side elevational view of a blank from which the end closure shown in FIGURE 1 is made;

FIG. 3 is an enlarged sectional view taken substantially along line 3—3 of FIGURE 1, showing the end closure in blank form (broken lines) and in final form when a product is maintained at substantially atmospheric pressure within the container;

FIG. 4 is a view similar to FIG. 3, showing the end closure when a product is maintained under vacuum within the container;

FIG. 5 is a partial side elevational view of the container of FIGURE 1, showing the end closure as it is being removed from or as it is being repositioned on the container body; and

FIG. 6 is a view similar to FIG. 2, showing a modified form of the end closure blank.

As a preferred and exemplary embodiment of the instant invention, FIGURE 1 illustrates a container **10** for hermetically sealing a food or other type product P (FIG. 3) wherein. The container **10** comprises a container body **12** preferably formed of glass or a similar material and an end closure **14** adapted for sealing engagement with the container body **12**. The end closure **14** preferably is formed of a relatively easily deformable material such as aluminum or lightweight tin plate.

As shown in FIGS. 3, 4 and 5, the container body **12** comprises a generally vertically extending lower wall **16** which merges at its upper end with an inwardly extending intermediate wall **18** that in turn merges at its upper end with a generally vertically extending upper wall **20**. The

upper wall **20** comprises at its upper end an annular bead **22** having a relatively flat upper face **24** and a curved outer face **26**.

Referring now to FIGURES 1 through 3, the blank **14***a* for the end closure **14** comprises a relatively flat central panel **28** having a raised button **30** formed therein for a purpose to be described hereinafter. The central panel **28** merges at its outer end portion with a generally outwardly and upwardly extending or tapered countersink wall **32** which in turn merges at its upper end with a downwardly and outwardly extending upper portion **34**. The outer end of the upper portion **34** merges with a depending flange or skirt **36***a* comprising a first continuous portion **38***a* disposed on one side of and extending through approximately one-third of the periphery of the end closure blank **14***a*. Disposed substantially on the opposite side of the end closure blank **14***a* is a second continuous portion **40***a* which is shorter than the first continuous portion **38***a*, and extending downwardly from the second continuous skirt portion **40***a* and formed integral therewith is a pull tongue **40***a* (see FIG. 2) which is of sufficient length as to be easily gripped between the fingers of the consumer.

Between the continuous portions **38***a* and **40***a*, the skirt **36***a* of the blank **14***a* comprises a plurality of substantially equally spaced, depending tabs or fingers **44***a* which extend downwardly from the upper blank portion **34** substantially the same distance as the first continuous skirt portion **38***a*. A sealing gasket **46** is disposed on the undersurface of the upper blank portion **34** and extends onto the inner surface of the countersink wall **32** and the depending skirt **36***a* (see FIG. 3). The sealing gasket **46** preferably is formed of a suitable compressible plastic material such as a plastisol or a foamed plastisol.

When the end closure **14** is to be formed from the blank **14***a*, the preferable, but not the only, method of forming the end closure **14** is to position the blank **14***a* on the container body **12** in the manner shown in FIG. 3, wherein the central panel **28** and the countersink wall **32** are disposed within the container body **12**, the sealing gasket **46** is in contact with the upper face **24** of the bead **22**, and the depending blank skirt **36***a* extends over the container body bead **22** and is in contact with the curved outer face **26** thereof. The first continuous skirt portion **38***a*, the second continuous skirt portion **40***a* and the depending tabs **44***a* then are deformed or rolled inwardly under the container body bead **22** into contact with the upper container body wall **20** in any suitable or conventional manner (not shown) to form the outwardly curved skirt or flange **36** of the end closure **14** which comprises a first continuous portion **38**, a second continuous portion **40** and the depending tabs or fingers **44**, respectively, as shown in FIGS. 1, 3 and 5. When the outwardly curved flange or skirt **36** of the end closure **14** is formed under the container body bead **22** in this manner, the sealing gasket **46** is tightly compressed between the annular bead **22** of the container body **12** and the upper portion **34** and countersink wall **32** of the end closure **14** to hermetically seal the food product P within the container body **12**.

When it is desired to remove the end closure **14** from the container body **12** to provide access to the product P within the container body **12**, the pull tongue **42** is grasped between the fingers of the consumer and is pulled outwardly and upwardly as shown in FIG. 5 to lift the second continuous portion **40** of the end closure skirt **36** upwardly over the container body bead **22**. During this lifting of the pull tongue **42**, it is pivoted with respect to the second continuous portion **40** about a hinge line **48** disposed approximately in the area of the continuous portion **40** which is adjacent the bottom of the container body bead **22** when the end closure is positioned

in sealing engagement with the container body **12**. The pull tongue **42** pivots to a position which is roughly parallel to the adjacent portion of the end closure central panel **28**. Since the depending tabs **44** on the end closure **14** are easily deformable, continued upward pulling on the pull tongue **42** lifts the tabs **44** over the container body bead **22**, and thus the first continuous portion **38** of the end closure flange **36** may be easily removed from the container body **12** to effect the complete removal of the end closure **14** from the container body **12**. During the removal of the end closure **14** from the container body **12**, the countersink wall **32** reinforces the end closure **14** and prevents it from being deformed to a much greater extent than that shown in FIG. 5.

After the initial opening of the container **10**, the end closure **14** may be conveniently utilized as a reclosure for the container body **12** to preserve the product P remaining therein. Since the first and second continuous skirt portions **38** and **40**, respectively, and the depending tabs **44** are relatively resilient, they return substantially to their original shape after removal of the end closure **14** from the container body **12**. Thus, the reclosure of the container body **12** may be easily accomplished by pressing the first continuous portion **38** of the end closure flange **36** and the adjacent depending tabs **44** downwardly over the container body bead **22** substantially as shown in FIG. 5. The remaining portion of the end closure **14** may then be deformed downwardly to snap the remaining tabs **44** and the second continuous portion **40** of the end closure flange **36** over the container body bead **22** to reposition the sealing gasket **46** in sealing engagement with the container body bead **22**. The pull tongue **42** may then be pivoted downwardly about the hinge line **48** into a position which is adjacent to the container body **12** as shown in FIG. 1 so that the pull tongue **42** does not extend unnecessarily outwardly from the container body **12**.

Referring now to FIG. 4, when the product P is maintained under vacuum within the container body **12**, atmospheric pressure on the outer portion of the end closure **14** will deform the central panel **28** and the button **30** formed therein into depressed, downwardly curved positions, so that the consumer can readily determine the presence of vacuum within the container **10** by the depressed condition of the button **30**. Thereafter, as the end closure **14** is being removed from the container body **12**, as shown in FIG. 5, the pressure on both sides of the button **30** is equalized and, owing to the resilience of the button **30**, it snaps upwardly to the position shown in FIG. 3. This snapping of the button **30** from its depressed position shown in FIG. 4 to its normal position shown in FIG. 3 creates an audible sound as the vacuum is broken within the container **10** to additionally indicate to the consumer that vacuum was present in the container **10** prior to the removal of the end closure **14** therefrom, and thus assures the consumer that the product within the container was hermetically sealed.

FIG. 6 illustrates a modified form of the end closure blank **14***a* of FIG. 2. The modified end closure blank **14***b* of FIG. 6 is substantially identical in construction to the blank **14***a* of FIG. 2, except for the omission of the first continuous portion **38***a* of the skirt **36***a* on the end closure blank **14***a*. Instead, the skirt **36***b* of the modified end closure blank **14***b* is provided with depending tabs **44***b* extending completely around the periphery thereof with the exception of the second continuous portion **40***b* thereof having the depending pull tongue **42***b* formed integral therewith. The procedure for the formation of this modified end closure blank **14***b* into an end closure such as **14**, the removal of the modified end closure from the container body **12**, and the procedure for utilizing the modified end closure as a reclosure for the container body **12** is identical to that described above with respect to the end closure blank **14***a* and the end closure **14**.

Various other modifications may be made in the instant container **10** without departing from the spirit of the present invention. For example, the depending tabs **44** do not necessarily have to be equally spaced around the end closure **14** and may vary in size and shape from that disclosed herein; when the end closure **14** is to be utilized with a product P that is not maintained under vacuum within the container body **12**, the button **30** may be omitted from the end closure **14** and thus the central panel **28** thereof would be substantially flat; and the container body bead **22** could be of any suitable shape other than the curved one disclosed herein which would serve to retain the continuous and tab portions of the end closure skirt **36** thereon.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. An easily removable end closure of an easily deformable metal for a container of the type having a dispensing mouth and an annular bead surrounding the dispensing mouth, comprising:
   a central panel,
   a countersink wall extending upwardly from the periphery of said central panel,
   said central panel and said countersink wall being adapted to be received within the container mouth,
   an upper portion extending outwardly from said countersink wall,
   a sealing gasket disposed on the undersurface of said upper portion and adapted to be compressed between said upper portion and the container bead,
   an annular skirt depending from said upper portion and adapted to extend over the container bead when the end closure is positioned on the container,
   said annular skirt comprising a plurality of spaced depending tabs adapted to be deformed inwardly to tightly engage the lower portion of the container bead to provide an anchorage for the end closure when it is positioned on the container, and
   a depending pull tongue formed integral with said annular skirt to facilitate removal and handling of the end closure.

2. The end closure of claim 1 wherein said annular skirt is provided with a continuous portion adapted to engage the lower portion of the container bead, and
   said depending pull tongue is formed integral with said continuous portion.

3. The end closure of claim 1 wherein said annular skirt further comprises a first continuous portion of greater width than said tabs which is adapted to engage the lower portion of the container bead and is disposed on a side of the end closure opposite to that on which said pull tongue is disposed.

4. The end closure of claim 3 wherein said first continuous portion extends through approximately one third of the periphery of the end closure.

5. The end closure of claim 3 wherein said annular skirt is provided with a second continuous portion of greater width than said tabs which is adapted to engage the lower portion of the container bead and is disposed oppositely to said first continuous portion, and
   said pull tongue is formed integral with and depends from said second continuous portion.

6. The end closure of claim 5 wherein said second continuous portion is shorter in width than said first continuous portion.

7. The end closure of claim 5 wherein said tabs are of uniform configuration and are equally spaced between said first continuous portion and said second continuous portions,

each of said tabs, said first continuous portion and said second continuous portion being curved in an outward direction.

8. The end closure of claim 7 wherein said end closure skirt is provided with cutout portions between said tabs, said cutout portions extending upwardly through at least one-half of the height of said skirt.

9. The end closure of claim 7 wherein said central panel of the end closure is provided with a raised button

to indicate the presence of vacuum when the end closure is positioned on the container.

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