April 12, 1966 H. E. FRANKENBERG 3,245,575

EASY OPENING RECLOSURE CAN

Filed Nov. 1, 1963

FIG. 1

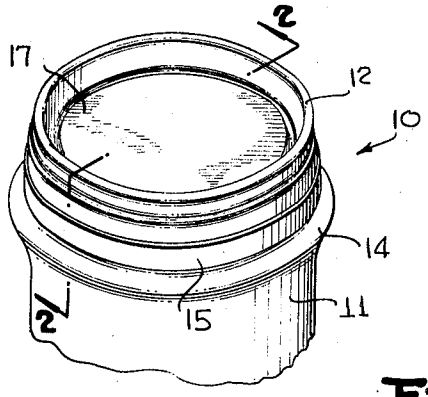


FIG. 3

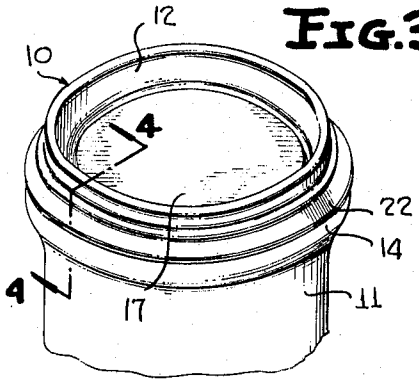
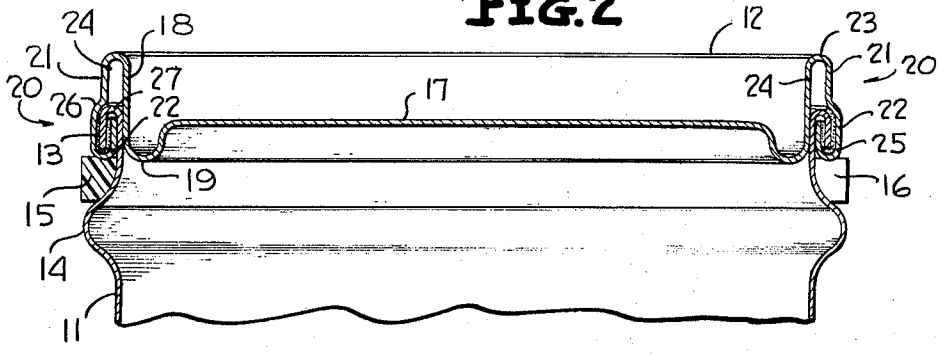


FIG. 2



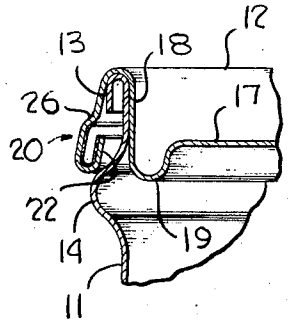
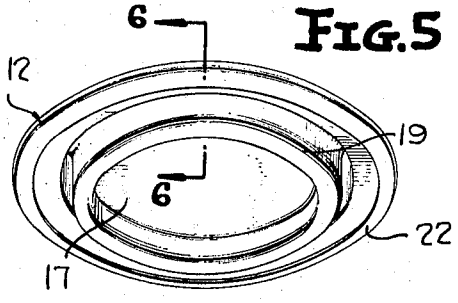


FIG. 4

FIG. 5



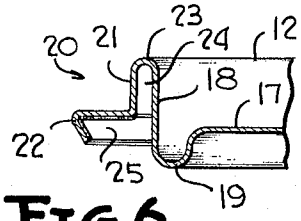


FIG. 6

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EASY OPENING RECLOSURE CAN

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2 Claims. (Cl. 220—47)

This invention relates in general to receptacles of the easy-opening type and more particularly to a plastic or metallic can which is provided with a hermetically sealed can closure which can be opened without the use of special tools and which has a full-opening reclosure feature.

It is well known in the can-making art to form a can body having an outwardly turned flange at its open end and providing the can body with a closure member which includes a closure flange that is clamped together with the body flange for effecting a hermetically sealed can closure. It is also old in the can-making art to shape the closure member so as to provide a channel therein for receiving the body flange and to provide means for spreading the closure flange outwardly from the body flange whereby the closure member may be removed from the can body without the use of special tools. Previously known types of easy-opening reclosure cans have the objectionable feature that the hermetic seal between the closure flange and the can body flange may be readily destroyed by an inadvertent application of a downward force on the closure member.

It is an object of the present invention to provide an improved easy-opening reclosure can in which novel lock means are provided to prevent inadvertent movement of the closure member with respect to the can body.

Another object of this invention is to provide an improved easy-opening reclosure can of the type comprising a can body and a closure member, wherein the closure member is axially movable with respect to the can body, the closure member and the can body being connected together by a seam, a stop bead being provided in the can body adjacent to the seam and adapted to spread the closure member whereby the closure member is removable from the can body, the improvement comprising means disposed between the stop means and the seam for fixedly securing the closure member relative to the can body.

Another object of this invention is to provide a sealing compound on the closure member for forming an improved seal between the closure flange and the can body flange.

A further object of this invention is to provide an improved easy-opening reclosure can which includes a removable split ring or a removable elastic mason jar-type ring disposed immediately between the can body bead and the seam formed by the closure flange and the can body flange to prevent inadvertent movement of the closure member with respect to the can body, thereby protecting the hermetic seal formed by the seam.

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 claimed subject matter, and the several views illustrated in the accompanying drawing.

In the drawing:

FIGURE 1 is a fragmentary perspective view of a can body which is provided with an axially movable closure member and a locking ring for preventing inadvertent axial movement of the closure member with respect to the can body.

FIGURE 2 is a fragmentary vertical sectional view, taken on line 2—2 of FIGURE 1, illustrating the closure

member as being seamed to the can body and being provided with a locking ring to prevent damage to the seam.

FIGURE 3 is a fragmentary perspective view, similar to FIGURE 1, and illustrates the closure member as having moved axially with respect to the can body after the locking ring has been removed therefrom.

FIGURE 4 is an enlarged fragmentary sectional view, taken on line 4—4 of FIGURE 3, and illustrates the container in the unsealed, closure hook expanded condition effected by application of downward pressure on the closure member.

FIGURE 5 is a perspective view of the underside of the closure member prior to the seaming of the closure member to the can body.

FIGURE 6 is an enlarged fragmentary sectional view, taken on line 6—6 of FIGURE 5, illustrating the closure flange prior to a seaming operation.

Referring to the drawing in detail, there is illustrated an improved easy-opening reclosure can or container, generally indicated by the numeral 10, the can 10 including a can body 11 and a closure member 12.

As is best illustrated in FIGURES 2 and 4, the can body 11 includes a body flange 13 which is turned downwardly in parallel spaced relation to the can body 11 to provide a downwardly open hook. An outwardly directed bead 14 is formed in the can body 11 adjacent to the body flange 13 and spaced slightly therebelow. It is to be understood that while the bead 14 is illustrated as being continuous along the periphery of the can body 11, a plurality of small circumferentially disposed projections will provide equivalent structure for supporting thereon a removable locking ring 15, which locking ring may be elastic (e.g., Mason jar type) or may be split as at 16, in FIGURE 2.

The closure member 12 includes a main central portion 17 which is connected to an upstanding heel 18 by a bight portion 19. It is preferable that the outside diameter of the heel portion 18 be substantially equal to the inside diameter of the can body 11 so that a friction fit is provided therebetween.

The closure member 12 is further provided with a closure flange, generally indicated by the numeral 20, which closure flange 20 includes a wall portion 21 and a hook-forming portion 22 for forming an upwardly open hook, as is best illustrated in FIGURES 2 and 4. The closure flange 20 is connected to the heel 18 by a bight portion 23 such that the wall 21 is spaced from the heel 18 to form a downwardly open channel 24. The closure member 12 is also preferably provided with a conventional sealing compound 25 along an area thereof that cooperates with the body flange 13 to provide a seam.

The closure member 12 is connected to the can body 11 by a conventional seaming operation wherein the hook portion 22, of the closure flange 20, and the hook formed by the body flange 13 are tightly clamped together to form a conventional double seam, as is best illustrated in FIGURE 2. During such a seaming operation, it is preferable that a support shoulder 26 be formed in the closure flange 20 between the wall 21 and the hook 22. The support shoulder 26 engages a bight portion 27, of the body flange 13, to maintain the channel 24 of the closure member 12 in spaced relation above the body flange 13. In addition to the tightness of the seam and the effect of the support shoulder 26, for axially fixing the closure member 12 with respect to the can body 11, it has been found highly desirable to provide the locking ring 15 immediately between the can body bead 14 and the closure flange 20 so as to prevent inadvertent movement of the closure member 12 with respect to the can body 11, which inadvertent movement would destroy the hermetic seal provided by the sealing compound 25. The locking ring 15 is preferably assembled after the seaming

operation has been completed and is supported by the outwardly directed bead **14**, thus preventing accidental movement of the closure member **12**.

When it is desired to open the container or can **10**, the locking ring **15** is removed from between the bead **14** and the closure flange **20**, and a downwardly directed pressure is applied to the closure member **12** sufficient to force the hook **22** downwardly and out of the body flange **13**. During the downward movement of the closure member **12**, the support shoulder **26** and the bight portion **27** cooperate to provide a wedging action which facilitates entry of the body flange **13** into the channel **24** by effecting a spreading of the wall **21** and the heel **18** and, in addition, by preventing radially outward spreading of the hook formed by the body flange **13**. Downward movement of the closure member **12** also causes the hook portion **22**, of the closure flange **20**, to engage the outwardly directed bead **14** and spread the closure flange **20** outwardly from the heel **18** so that the closure memmber **12** can be readily withdrawn upwardly from the can body **11** without interference between the hook **22** and the body flange **13**.

It will be obvious by reference to FIGURE 3 of the drawing that after the closure flange **20** has been spread in the manner described for permitting free removal of the closure member **12** from the can body **11**, the closure member **12** may be removed and reapplied as often as is desired, and the dimensioning of the heel **18** and the can body **11** provide a friction fit for resiliently holding the closure member **12** in place on the can body **11**.

While the locking ring **15** has been illustrated as being generally circular in shape and substantially rectangular in cross section, it may be preferable to provide finger tabs which are integrally molded on, or otherwise provided, for the locking ring **15** to aid in removing the locking ring **15** prior to applying the downward pressure previously described.

While preferred forms and arrangement of parts have been shown in illustrating the invention, it is to be clearly understood that various changes in details and arrangement of parts may be made without departing from the

spirit and scope of the invention as defined in the appended claimed subject matter.

I claim:

1. An improved easy-opening reclosure can comprising a can body and a closure member, said can body including a body flange turned downwardly in parallel spaced relation to said can body to provide a downwardly open hook; said closure member including a main central portion, a heel connected to said main central portion and being adapted to be frictionally received within said can body, a closure flange connected to said heel by a bight portion, said closure flange including an upwardly open hook, said downwardly open hook and said upwardly open hook being clamped together to form a double seam connecting said closure member to said can body, said closure flange having an upper portion thereof spaced from said heel and defining a channel therewith for receiving said body flange therein, an outwardly directed bead formed in said can body adjacent to said body flange, and lock means disposed between said bead and said seam to prevent inadvertent movement of said closure member with respect to said can body, said lock means comprising an annular ring encircling said can body beneath said seam and being supported upon said outwardly directed bead thereby filling the space between said seam and said bead for fixedly securing said closure member relative to said can body, said annular ring having an inside diameter adjacent said seam which is smaller than the outside diameter of said seam and smaller than an inside diameter of said annular ring adjacent said outwardly directed bead.

2. An improved easy-opening reclosure can as defined in claim **1** wherein said ring is split to provide for easy removal of said ring from about said can body.

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THERON E. CONDON, *Primary Examiner.*