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CONTAINER CLOSURE

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Fig 1

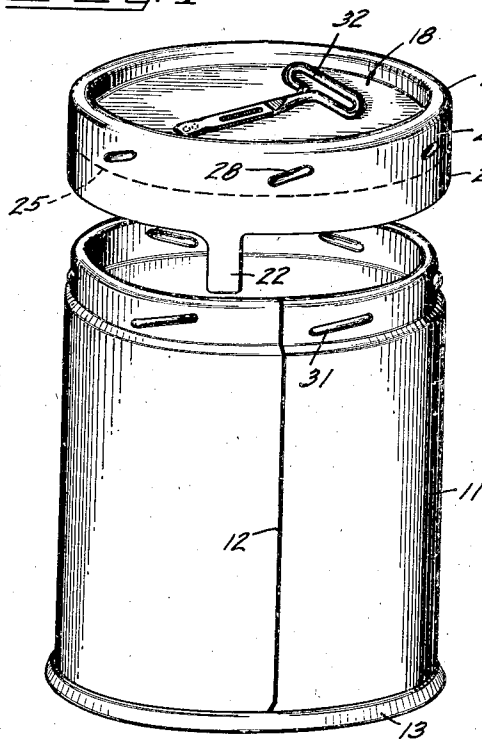


Fig 2

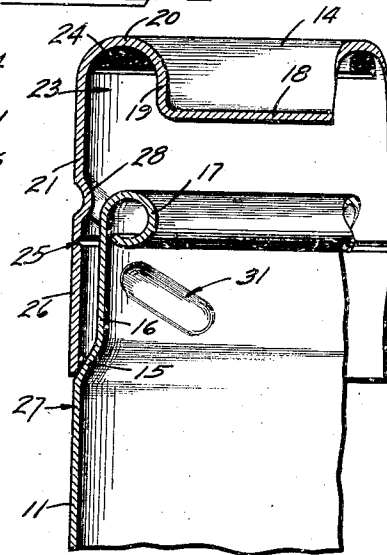


Fig 3

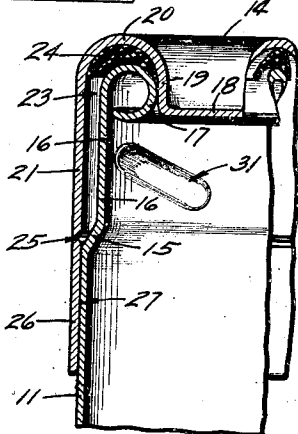


Fig 4

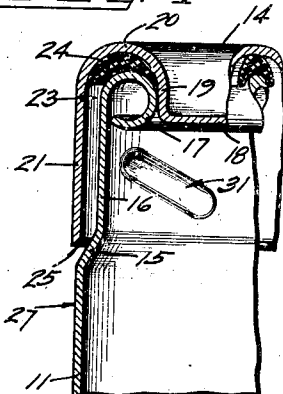
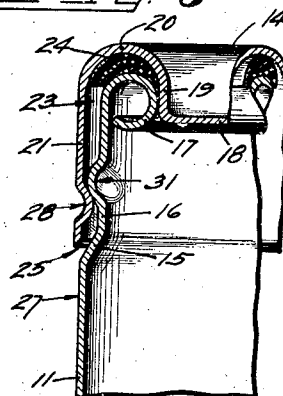


Fig 5



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CONTAINER CLOSURE

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5 Claims. (Cl. 220—53)

The present invention relates in general to containers and more particularly to improved closures therefor which may be easily applied to provide a tight seal and which may be readily opened by removal of a tearing strip, after which the closure may be reapplied and interlocked in reclosure position.

The principal object of the present invention is the provision of a container closure which is applied to the container to effect an hermetic seal and after opening acts as a reclosure capable of providing a substantially tight seal.

An important object of the invention is the provision of a container having a closure member applied thereto in an hermetic seal which is easily broken by removal of a tearing strip leaving a part which is adapted for interlocking engagement with the container as a reclosure.

An important object of the invention is the provision of such a container having a closure member forming an hermetic seal and one easily opened by removal of a tearing strip formed in the closure member after which the latter is adapted for threaded engagement with the container to provide a sealing reclosure.

Numerous other objects 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 and cover embodying the present invention, these parts being shown in separated position;

Fig. 2 is an enlarged sectional detail of the upper part of the container body and the cover member, showing the parts in initial assembled position;

Fig. 3 is a view similar to Fig. 2, illustrating the container and cover in fully closed position;

Fig. 4 is a view similar to Fig. 2, illustrating the cover detached from the container by removal of the tearing strip; and

Fig. 5 is a view similar to Fig. 2, illustrating cover and container in locked and reclosure position.

To illustrate a preferred embodiment of the present invention, the drawing discloses a container body 11 having a side seam 12 and a bottom end 13. The top of the container is adapted to be closed by a cover or top closure member 14 which is assembled with the container in sealing position by means of a drive fit. The upper part of the body 11 is reduced or bent inwardly at 15 to provide a vertical wall 16 which forms an annular

neck for the container. The wall 16 terminates in an inwardly curled edge 17.

The cover member may be formed with a sunken panel 18 joined by a vertical wall 19 to a rounded semi-circular wall 20 merging exteriorly into a downwardly depending skirt or flange 21 having an integral tongue extension 22 (Fig. 1). The walls 20, 19, 21 enclose an annular channel 23 in which is preferably located a gasket or lining compound 24.

The depending flange 21 is provided on its inner surface with a circumferentially extending score line 25 spaced from the lower edge of the wall 21, this score line setting off a tearing strip 26 from which depends the tongue 22. The body wall 11, directly beneath the bend 15 thereof, is accurately sized during its manufacture to provide a sealing area 27 having a predetermined diameter.

The flange 21 of the cover member, above the score line 25, is pressed inwardly or beaded at spaced intervals around its circumference to provide interrupted threads 28 (Figs. 1 and 2) which are disposed at a slight angle to the score line 25. In similar manner the neck or reduced part 16 of the container body is pressed outwardly or beaded at spaced intervals (see also Fig. 5) to provide interrupted threads 31 which are disposed, relative to the upper curled edge 17 at an angle similar to the angle of the threads 28.

When the top of the container is to be closed, the cover member 14 is placed over the open end of the body with the lower edge of the depending flange 21 touching the upper sealing area 27 adjacent the inward bend 15, as illustrated in Fig. 2. At this time the threads 28 of the cover are arranged vertically out of alignment or spaced between the threads 31 as disclosed in Fig. 1. The cover is then forced or driven home into which position (Fig. 3) the tearing strip area 26, in the lower section of the flange 21 of the cover, is brought into sealing contact with the sealing area 27 of the container body.

Considerable pressure is exerted in the closing of a container of this type, the area 26 of the cover being forced or stretched sufficiently within its elastic limits to tightly embrace the sealing area 27 of the container. To provide this tight seal the inner diameter of the flange 21 of the cover member 14, adjacent the tearing strip area 26, is of a predetermined dimension being smaller in diameter than the outer diameter of the sealing area 27 of the container body.

A tight metal-to-metal seal is created between the body and the cover by the assembling of parts just described. This closure is made hermetic

when desired by the embedding of the curled edge 17 of the body 11 into the gasket material 24 in the cover channel 23, as shown in Fig. 3. This lining compound or gasket is squeezed and changed in shape by the sealing operation so that it accurately adapts itself to the adjacent surfaces of the container and cover making the closure seal both liquid and air-tight.

The cover 14 may be conveniently removed and the container opened by a tearing away of the tearing strip area 26 of the cover flange. To effect this opening the tearing tongue 22 is engaged by a slotted key 32. Such a key may be conveniently and removably secured within the panel 18 of the cover member in any usual and preferred manner. The tearing strip 26 is first torn across its width adjacent the tongue 22 and thence severed from the cover member 14 by a tearing along the score line 25, the tearing strip being rolled upon the key 32 during this opening operation.

If desired the wall of the flange 21 of the cover member may be an integral part of the can body and the spaced wall 16 of the body may be a part of a separate member disposed inside of the can body. In such a construction the can at its upper part would consist of two plies of metal, i. e. the outer wall 21 and the inner spaced wall 16.

When the container has been opened by the removal of the tearing strip, the cover member 14 (Fig. 4) rests loosely in position and can be lifted off to gain access to the container contents. Afterwards it may be replaced on the container and used as a reclosure. In such a reclosure use the cover is rotated relative to the container body until its inclined threads 28 engage beneath the threads 31 of the body.

The rotation tightly interlocks the cover with the container as shown in Fig. 5. In reclosed position the upper curled edge 17 of the body 11 is again embedded in the seat of the gasket 24 and a substantially tight seal results. A reversed rotation of the cover disengages the interlocked threads after which it may be lifted off to again open the container.

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. In a sheet metal container, a container body having a sealing peripheral area of predetermined diameter, a cover for said container having a depending flange forming a peripheral sealing area of predetermined smaller diameter than said sealing area of the body, the said sealing areas of the body and cover being straight in a vertical direction, so they may have a tight slip-fit, a portion of said flange being set off as a tearing strip, said flange including the tearing strip being adapted to be stretched within the limits of its elasticity by forcing the same over said sealing area of the body to form a tight seal therewith, said cover being permanently secured to the body by friction until the tearing strip is removed, and means formed in said body and said cover for providing an interlocking engagement therebetween after the removal of said tearing strip.

2. In a sheet metal container, a container

body having a sealing peripheral area of predetermined diameter and a reduced part above said area, a cover for said container having a depending flange forming a peripheral sealing area of predetermined smaller diameter than said sealing area of the body and having a score line defining a tearing strip, said flange being adapted to be stretched within the limits of its elasticity by forcing the same over said area to form a tight seal which is adapted to be severed along said score line to open said container, said reduced body part being formed with outwardly projecting thread parts, and said cover flange above its tearing strip being formed with inwardly projecting thread parts adapted to interlock with the thread parts of said body after opening of the container, said parts being arranged to permit the forcing of the cover and tearing strip over the body.

3. In a sheet metal container, a container body having an annular sealing peripheral area of predetermined diameter and a reduced neck portion above said area terminating in a rounded curled top, a drawn cover having an annular channel for the reception of a gasket and also having a depending flange forming a peripheral sealing area of predetermined diameter less than the diameter of said sealing area of the body and containing a score line defining a tearing strip, said flange being adapted to be stretched within the limits of its elasticity by forcing the same over said area to form a tight seal therewith, and threaded means effective after the removal of said tearing strip and formed in said neck portion of said body and in said cover flange to force the said gasket into engagement with the said body curl and provide a sealing removable closure for the container, said threaded means being arranged to permit the direct forcing of the cover and tearing strip over and around the body.

4. A can having two plies of metal extending circumferentially around it at the top, said plies being separate and engaged tightly with each other throughout an encircling zone, by contraction of the inner ply and corresponding stretching of the outer ply, and provided with screw thread parts adapted for interengagement after a portion of the outer ply has been removed, the outer of said plies being provided with a score line setting off a tearing strip beneath said screw thread parts and above said zone of ply engagement, the tearing strip being below said screw thread parts and in a stretched condition around the inner ply.

5. In a sheet metal container, a container body having a sealing peripheral area of predetermined diameter, a cover for said container having a depending flange forming a peripheral sealing area of predetermined smaller diameter than said sealing area of the body, a portion of said flange being set off as a tearing strip, said flange including the tearing strip being adapted to be stretched within the limits of its elasticity by forcing the same over said sealing area of the body to form a tight seal therewith, said cover being permanently secured to the body by friction until the tearing strip is removed, and spaced-apart projections on the body and cover, for providing an interlocking engagement therebetween after the removal of the tearing strip, the projections of the cover being arranged out of line with the projections of the body when said sealing areas are interengaged.

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