March 31, 1953 W. COOKSON 2,633,266

CONTAINER AND CLOSURE THEREFOR

Filed Aug. 17, 1949

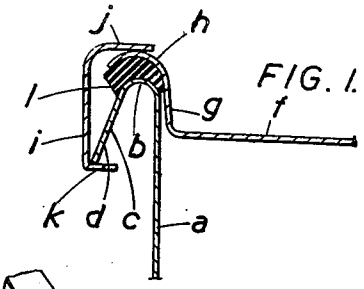


FIG. 1.

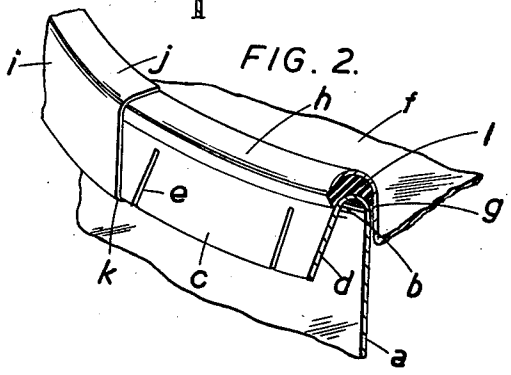


FIG. 2.

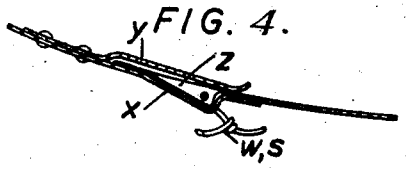


FIG. 4.

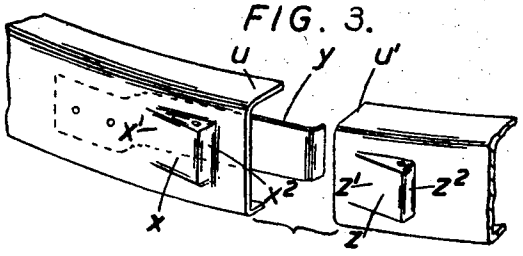


FIG. 3.

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CONTAINER AND CLOSURE THEREFOR

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6 Claims. (Cl. 220—46)

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This invention relates to metal containers or other containers which require metal closures for the purpose of sealing their lids.

The object of this invention is to provide improved means of quickly and easily closing and sealing open top metal containers by the elimination of toggles and similar fastening devices. Opening and re-closing of the containers can be carried out under any conditions without the use of tools.

In accordance with the present invention I provide a container and a removable reusable sealing closure for an open end of the container, said container having at said open end a crown portion provided by an outwardly and rearwardly extending resilient flange, and said closure comprising a lid having a peripheral portion, a gasket adapted to overlie the crown portion and a channeled locking ring adapted to encircle and embrace the peripheral portion of the lid and the resilient flange on the container, the axial dimension of the channel being substantially equal to the axial distance between the peripheral portion of the lid and the free end of the resilient flange when the closure is on the container and the basket is compressed, the diameter of the rim or lip of the channeled locking ring being less than the diameter of the edge of the flange of the outwardly turned mouth of the container over which the said rim or lip is forced, said channeled ring being transversely split and provided adjacent the ends formed by said split with interengaging latching means and being of a diameter when its ends are latched to be loosely carried by the lid and to be axially moved over the resilient flange on the container to press said flange radially inwardly until the free end of said flange snaps in behind one wall of the channeled member to lock the lid on the container.

In order that the invention may be clearly understood and readily carried into effect as applied to a cylindrical container of circular cross-section, reference will be made to the accompanying drawings, wherein:

Fig. 1 illustrates a fragmentary radial sectional view of the components of a metal container after assembly;

Fig. 2 illustrates in broken fragmentary perspective view the same components after assembly;

Fig. 3 illustrates, in perspective, a form of fastening device on the closure ring before being snapped together; and

Fig. 4 illustrates a cross-section view of the fastening device shown in Fig. 3 after being snapped together.

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In Figs. 1 and 2 a cylindrical drum of metal or suitable material a has formed round its periphery at the open end a locking section of limited springy structure comprising a rounded and broad ended nose b, and a resilient flange or wall c diverging at an angle from wall a. Around the periphery of the lock section at suitable intervals slots e in wall c are cut to promote flexible movement of the section during engagement of a closure or clip ring which is less springy than the aforesaid springy locking section.

A lid f for the container is of circular form and comprises a curved flanged periphery g with a return bend h of suitable shape and dimensions to fit the nose b of the drum lock section. A channeled locking or closure or clip ring device i has a cylindrical wall, one end of which is curved to form a flat flange as at j, the other free end of the wall being bent inwards as at k to form an edge rim or lip. This locking ring i is joined at the ends u, u' by means of a suitable quick release device such as x, z. A gasket l of rubber or similar material of suitable shape and dimension fits in the return bend h of the lid and forms a sealing ring, which is resilient enough to compress sufficiently to be slightly over compressed during engagement and to allow the closure ring to lock into engagement over the drum locking device.

For assembly the edges of the closure ring can be wired or joined together or a quick release device used as hereinafter explained.

The form of quick fastening and release device preferred is shown in Figs. 3 and 4, respectively. Near edge u is pressed in the closure ring a wedge-shaped protuberance x with a slanting wall x_1 and a shoulder x_2. Riveted to the closure ring behind protuberance x is a spring clip y. On edge u_1 is pressed a wedge-shaped protuberance z similar to protuberance x but of smaller dimensions. This protuberance has a slanting wall z_1 and a shoulder z_2. For engagement edge u_1 is forced between edge u and spring y until shoulders x_2 and z_2 snap into interlocking engagement as shown in Fig. 4. A wire seal w, s can be threaded through suitable holes in the wedge sections.

For assembly, the locking ring is placed in position on the periphery of the lid and ends u and u_1 snapped together. The combined lid and closure ring is then placed in position on the nose section b of the drum. Pressure is then applied downwardly on a portion of the closure ring

until the free edge of the arm *c* of the nose device *b* locks into engagement with the lip *k* on the closure ring, slight overspringing of said arm being necessary during the process. It is essential to apply pressure progressively around the circumference of the closure ring until the whole assembly is in tight interlocking engagement.

To release the fastening device, edge *u* of the closure is lifted until the protuberances *x* and *z* are out of engagement. The closure ring can then expand sufficiently to allow lip *k* to disengage from wall *c* thus enabling the lid to be released from the drum.

What I claim and desire to secure by Letters Patent is:

1. A container and a removable, reusable sealing closure for an open end of the container, said container having at said open end a crown portion comprising an outwardly and downwardly extending resilient peripheral flange terminating in a free edge, and said closure comprising a lid having a peripheral portion, a gasket adapted to overlie and seat on the crown portion and a preformed transversely split, channeled locking ring adapted to encircle and embrace the peripheral portion of the lid and the resilient flange on the container, said locking ring comprising a wall having upper and lower inwardly turned flanges, each terminating in a free edge, the axial dimension of the channel being substantially equal to the axial distance between the peripheral portion of the lid and the free edge of the resilient flange when the closure is on the container and the gasket is compressed, said channeled ring being provided adjacent the end formed by said split with interengaging latching means and being of a diameter when its ends are latched to be loosely carried by the lid, the diameter of the free edge of the lower, inwardly turned flange of the locking ring being slightly less than the diameter of the free edge of the downwardly extending flange on the container when the ends of the locking ring are in latched position, wherein said closure is adapted to be applied to the container by a progressive axial movement over the mouth of the container, in the course of which movement the inner edge of the lower flange of the channeled locking ring will engage and press inwardly the downwardly extending resilient flange on the container and snap over the free edge of said last-mentioned flange and simultaneously therewith the upper flange of the channeled ring will engage the peripheral portion of the lid to compress the gasket between said peripheral portion and the crown portion of the container, whereby the closure will be locked in sealing relation on the container.

2. A container and a removable, re-usable sealing closure according to claim 1 wherein said upper flange on the locking ring is of greater radial width than said lower flange.

3. A container and sealing closure according to claim 1 wherein the resilient flange on the container slopes away from the container body and is connected to the container body by a blunt curved section.

4. A container and sealing closure according to claim 1 wherein the resilient flange on the container is formed with circumferentially spaced slots.

5. A container and sealing closure according to claim 1 wherein a leaf spring is carried by one end portion of the split channeled ring and engages the other end portion thereof to hold said latching means in interengaging relation.

6. A container and a removable, reusable sealing closure for an open end of the container, said container comprising a body portion provided at said open end with a crown portion having an outwardly and downwardly extending resilient peripheral flange which slopes away from the container body and terminates in a free edge, and said closure comprising a lid having a peripheral portion, a gasket adapted to overlie and seat on the crown portion and a preformed transversely split, channeled locking ring adapted to encircle and embrace the peripheral portion of the lid and the resilient flange on the container, said locking ring comprising a wall having upper and lower inwardly directed flanges, each terminating in a free edge, the axial dimension of the channel being substantially equal to the axial distance between the peripheral portion of the lid and the free edge of the resilient peripheral flange when the closure is on the container and the gasket is compressed, said channeled ring being provided adjacent the ends formed by said split with interengaging latching means and being of a diameter when its ends are latched to be loosely carried by the lid, the diameter of the free edge of the lower, inwardly directed flange of the locking ring when its ends are latched together being slightly less than the maximum diameter of the downwardly extending peripheral flange on the container and capable of being axially moved downwardly over said flange, wherein said closure is adapted to be applied to the container by a progressive axial movement over the mouth of the container, in the course of which movement the inner edge of the lower flange of the channeled locking ring will engage and press inwardly the downwardly extending resilient peripheral flange on the container and snap over the free edge of said last-mentioned flange and simultaneously therewith the upper flange of the channeled ring will engage the peripheral portion of the lid and compress the gasket between said peripheral portion and the crown portion of the container to lock the closure in sealing relation on the container.

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