April 2, 1940. G. J. OVERMYER 2,195,422

CLOSURE FOR JARS AND THE LIKE

Filed July 9, 1934

Fig. 1.

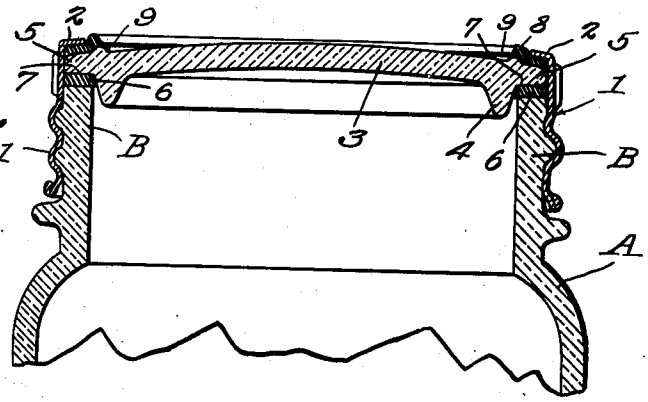


Fig. 2.

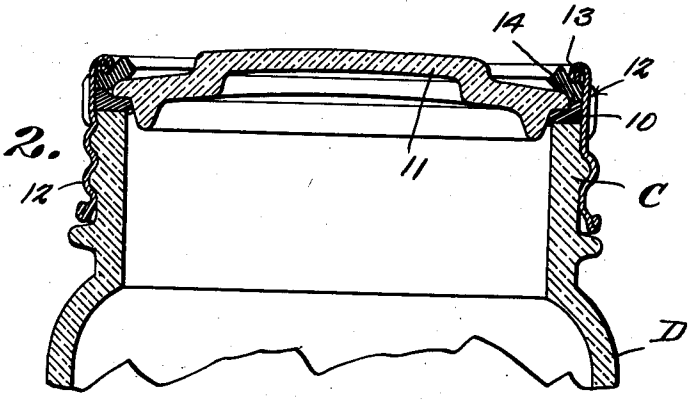
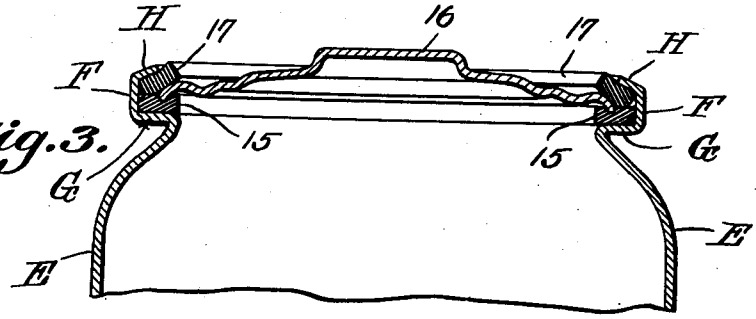


Fig. 3.



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CLOSURE FOR JARS AND THE LIKE

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13 Claims. (Cl. 215—95)

This invention relates to closures for jars and similar containers, one of the objects being to provide means whereby the container can be more readily sealed and unsealed than where the ordinary sealing means are employed. It is especially adapted for use in connection with jars of the screwthread type although it is to be understood that it can be employed with those types of containers wherein threads are not utilized.

It is well known to those skilled in the art that jars such as those having screwthreads for engagement by their closures are very difficult to unseal after the closures have been tightened sufficiently to afford a perfect, air-tight seal. Few women have the strength to unscrew the lids and frequently wrenches are unsatisfactory. In a recent publication of wide-spread circulation it has been stated that a study of the tightness of caps on 500 different jars and bottles of food products revealed that 96 of them could not be unscrewed by the hand of the average housewife and of the 96 it was necessary to use a wrench to remove closures from 56 containers. The remaining 40 closures defied all efforts to remove them.

Obviously it is extremely desirable that a closure for a jar not only afford an efficient seal but also be capable of convenient removal without necessitating the exertion of excessive force or the employment of a special wrench or the like.

The present invention has for an object the provision of a simple form of sealing means which can be tightened readily and which can be removed with ease by the ordinary housewife so as to give ready access to the contents of the container.

It is a further object to provide a sealing means applicable to jars or other containers using screwthreads for engagement by their closures and also to containers which do not require the use of threaded portions.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combination of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing the preferred forms of the invention have been shown.

In said drawing

Figure 1 is a section through the mouth portion of a jar sealed by one form of the present invention.

Figure 2 is a similar view showing a modification thereof.

Figure 3 is a similar view of another form.

Referring to the figures by characters of reference, A designates a container which can be in the form of a jar or the like and which, in Figure 1, is shown provided with a screwthreaded neck portion B.

The present invention includes a ring 1 which is screwthreaded so as to properly engage the threaded portion of the container A. This ring has an inwardly extended annular flange 2 designed to overlie the end of the container and also the closure per se. This closure, which has been shown at 3 in Figure 1, has an annular portion 4 insertable into the neck of the container while the marginal portion 5 of the closure is adapted to extend between the wall of the neck and the flange 2.

A sealing gasket 6 of soft compressible material such as rubber is adapted to be interposed between the end of the neck portion and the marginal portion of the closure 3. This sealing gasket can be separable from the closure or it can be joined thereto with a suitable adhesive indicated generally at 7.

A compression member 8 is adapted to be placed upon the marginal portion 5 of the closure 3 where it will be lapped by the flange 2 and the inner edge portion of this member 8 can be held elevated by projections or ribs 9 formed on the closure inwardly from the flange 2. In practice the container A is filled in the usual manner after which the closure 3 with its gasket 6 and member 8 is placed thereon. Ring 1 is then applied to the neck portion B and screwed tightly into position so that its flange 2 will compress member 8 and transmit thrust therethrough to the marginal portion of closure 3 which, in turn, will compress the gasket 6 to seal the joint between the neck B and the closure 3.

When it is desired to open the container it is not necessary to unscrew the ring 1 first. Instead the user presses downwardly on the closure 3 so as to further compress the gasket 6. This will release pressure from member 8 to such an extent that the raised inner edge portion thereof can be grasped readily and said member pulled from under the flange 2. Thus the closure 3 is loosened and as the ring 1 is freed from pressure it can be easily rotated to permit complete removal of the closure.

If preferred, and as shown in Figure 2, the gasket 10 resting on the neck C of container D can be of greater diameter than the closure 11

and the threaded ring 12 can be formed with an inturned marginal portion 13 or the like larger in diameter than the closure and adapted to bear upon a compression member 14. Thus the member and gasket will contact at their outer peripheral portions while the margin of the closure 11 will be imbedded tightly in gasket 10 when ring 12 is tightened. When the parts are assembled as shown in Figure 2 the inner edge of the compression member 14 will be extended upwardly away from the closure so that it can be grasped readily. Thereafter when it is desired to open the container this member 14 will be partly released when closure 11 is pressed downwardly against gasket 10. Consequently the compression member 14 can be pulled readily out of position from under the inturned portion or flange 13 so as to release the parts for convenient removal.

Since the inturned marginal portion 13 of the ring 12 is slightly larger than the diameter of the closure 11, the closure can be grasped and lifted out through the ring without unscrewing the ring when the contents of the container have been of such a nature that the closure has not become stuck fast. To reseal, the closure is passed through the ring, replaced on the sealing gasket, the ring is unscrewed a partial turn, the compression member 14 is laid on the edge of the closure under the inturned portion of the ring and the ring then screwed down tightly.

In Figure 3 there has been shown a modified construction wherein it is not necessary to employ a ring or the like for holding the closure in place. In this modified structure the container E has a neck portion F which provides an interior annular shoulder G and an overlying inclined annular flange H. A gasket 15 of rubber or other suitable compressible material is seated on the shoulder G and the closure 16 is of a diameter slightly less than the diameter of the opening defined by flange H.

After the container has been filled the closure 16 is inserted into the neck so that its margin will rest upon gasket 15. The closure is then pressed downwardly to place gasket 15 under compression and while it is thus held a supplemental or compression member 17 of rubber or other suitable material is tucked into the annular space above the margin of closure 16 and under the flange H so as to extend continuously between these parts. When the closure is then released it will be elevated slightly by the compressed gasket 15 and will, in turn, place member 17 under compression, thereby affording a double seal for the container.

When it is desired to open the container E the closure 16 is forced downwardly to compress gasket 15. Thus pressure on member 17 is reduced and said member can be withdrawn readily from under flange H, thereby allowing the closure 16 to be easily removed.

Obviously various other modifications of the structures illustrated can be used within the scope of the appended claims.

What is claimed is:

1. The combination with a container and a lid, of two similar sealing gaskets one of which is positioned between the lid and container and the other positioned directly on top of the lid, a flange connected to and defining an opening above the container and bearing on the gasket atop the lid and normally holding the gaskets and lid therebetween compressed towards the container, said upper gasket being sufficiently exposed at all times to afford a gripping portion and being adapted to be detached from the combination by being withdrawn out from under the flange and removed through the opening while under compression.

2. The combination with a container and a clamping ring detachably engaging the same and provided with an inwardly extended annular flange, of a sealing gasket surrounded by the ring and supported by the container, a closure resting at its margin upon the gasket, a removable compression member between the flange and the marginal portion of the closure, said closure, container and flange cooperating to hold both the gasket and the compression member under compression and said closure being shiftable toward the container to increase the compression of the sealing gasket and reduce the pressure upon the compression member, and means on the closure for holding the inner edge of the compression member in an elevated position relative to the closure and flange.

3. The combination with a container and a clamping ring detachably secured thereto and having an inwardly extended flange, of a primary sealing gasket and a secondary sealing compression gasket interposed between the container and flange and contacting with each other, a closure insertable past the flange within the ring and having its marginal portion extended between the primary gasket and secondary gasket and cooperating with the container and flange for holding both the primary gasket and the secondary gasket under compression, said closure constituting means for placing the primary gasket under increased compression thereby to reduce the pressure upon the secondary sealing compression gasket.

4. The combination with a container having a neck portion provided with a shoulder and an overlying flange, of a gasket supported on the shoulder, a closure insertable into the neck portion and into engagement with the gasket, said closure constituting means for compressing the engaged gasket when subjected to external pressure to provide a temporary clearance between the closure and the flange, and a secondary sealing compression gasket having a conveniently accessible gripping edge insertable into said clearance and adapted to be compressed between the flange and closure when the closure is relieved from external pressure.

5. The combination with a container having a neck portion, a primary sealing member carried by the neck portion, a closure member having its marginal edge resting upon the primary sealing member, an attaching member threadedly engaging the neck of the container and having an inwardly extending flange overlapping the marginal edge of the closure member and defining an opening thereabove, and a secondary sealing member interposed between the marginal edge of the cover and the overlying flange, said secondary sealing member having a gripping portion exposed through said opening wherewith said secondary sealing member is gripped for complete withdrawal from under said overlapping flange and through said opening when the attaching member is to be removed.

6. The combination with a container having a threaded neck portion, a sealing gasket carried by the neck portion, a closure bearing upon the sealing gasket, a threaded clamping ring having an annular flange overlying the marginal edge of the closure member and defining a central opening above said closure member, and a com-

pression member normally clamped by the flange against said closure member in uniformly spaced relation around the peripheries thereof to transmit thrust from the flange evenly around the margin of the closure and therethrough to the sealing gasket, the compression member being exposed through said opening and adapted to be completely detached from the assembly while under compression by withdrawal thereof from under the flange and through said opening to expose a space extending continuously between the flange and the marginal edge of the closure member for facilitating ready removal of the clamping ring from the neck of the container.

7. The combination with a container having a neck portion, a sealing gasket carried by the neck portion, a closure bearing upon the sealing gasket, an annular flange movably connected with the neck portion and overlying the marginal edge of the closure member and defining a central opening above said closure member, and a compressible sealing member having a smooth surface in contact with the flange whereon the flange is freely movable independently of movement of said sealing member when the flange is moved to normally clamping relation with said closure member and sealing gasket to transmit thrust from the flange evenly around the margin of the closure member and sealing gasket, the compression member being adapted to be completely detached from the assembly while under compression and be withdrawn from under the flange through said opening.

8. The combination with a container having a neck portion of an attachable annular flange overlying said neck portion and defining an opening above the container, a sealing gasket carried by the neck portion, a closure member bearing upon the sealing gasket, and an unattached elastic compression member interposed between the annular flange and the closure member and capable of ready distortion whereby said compression member is freely distortable for complete removal through said opening while under compression of said flange without impairment to itself and flange and capable of returning to its original size and shape.

9. The combination with a container and a clamping ring detachably secured thereto and having an inwardly extending flange of a gasket supported on the container and beneath the flange, a closure insertible past the flange into the ring and onto the gasket, said closure constituting means for compressing the engaged gasket when subjected to external pressure to provide a temporary clearance between the closure and the flange, and a combination removable compression and sealing gasket insertible into said clearance and adapted to be compressed between the flange and said closure when the closure is relieved from external pressure, said flanged clamping ring being movable towards the container to compress the compression gasket and closure and gasket into sealing relation with the container.

10. The combination with a container having a threaded neck portion of a threaded clamping ring having an annular flange overlying said neck portion and defining a relatively large opening, a sealing gasket carried by the neck portion, a closure below the flange and bearing upon the gasket, and a compression member accessible at all times through and exposed within the opening and normally clamped and holding the closure and flange and uniformly spacing the flange from the closure to transmit uniform thrust around the periphery of the closure and through the closure to the sealing gasket, said compression member being adapted for complete detachment from the assembly by removal through the opening and thereby dispelling all compressing friction between the sealing closure and the flange to facilitate unscrewing the clamping ring.

11. In combination with a container having a threaded neck portion, a sealing gasket carried by said neck portion, a closure member bearing upon the sealing gasket, a threaded clamping ring rotatably engaging the threaded neck portion of the container and having an annular flange overlying the closure member, and a compression member interposed and constantly accessible between the annular flange and the closure member and having a smooth surface in contact with the flange whereon the flange is freely movable independently of movement of said compression member when the clamping ring is threaded on said neck portion to effect sealing of the container.

12. The combination with a container having a neck portion, of an attachable annular flange overlying said neck portion and defining an opening thereabove and adapted for movement towards the container for sealably compressing sealing members to the container, a sealing gasket carried by the neck portion, a closure bearing upon the gasket, a decompression member insertible between the closure and the flange and accessible for gripping at all times within the flange opening, said decompression member being normally compressed between the flange and closure and being capable of distortion and adapted for complete detachment from the combination by removal out through the opening while under compression from the flange thereby providing clearance between the flange and closure around their entire peripheries.

13. The combination with a container and a lid, of two similar gaskets one of which is positioned between the lid and container and the other positioned directly on top of the lid, a flange detachably connected to and defining an opening above the container and bearing on the gasket atop the lid and normally holding the gaskets and lid therebetween compressed towards the container, said upper gasket being sufficiently exposed at all times to afford a gripping portion and being adapted to be detached from the combination by being withdrawn out from under the flange and removed through the opening while under compression.

GEORGE J. OVERMYER.