April 9, 1946. J. H. CONWAY 2,397,948

CLOSURE

Filed Aug. 27, 1942

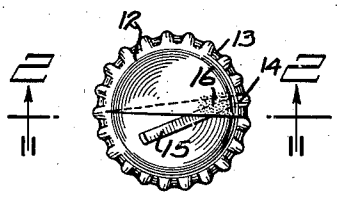


Fig. 1.

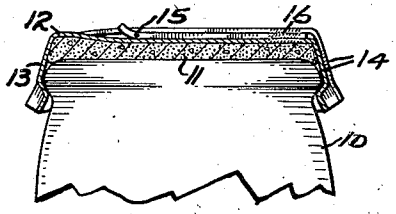


Fig. 2.

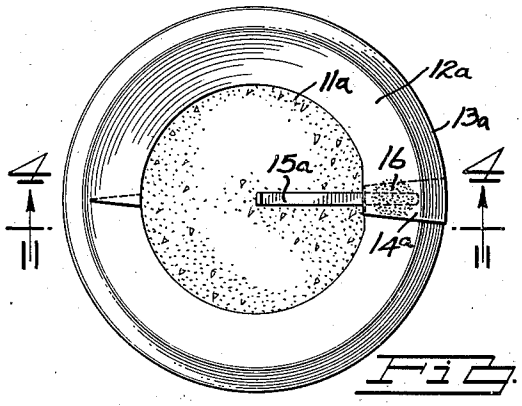


Fig. 3.

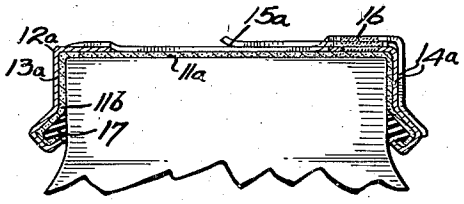


Fig. 4.

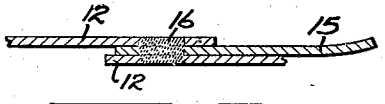


Fig. 7.

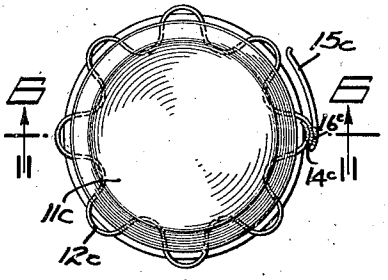


Fig. 5.

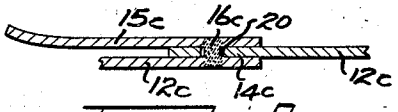


Fig. 8.

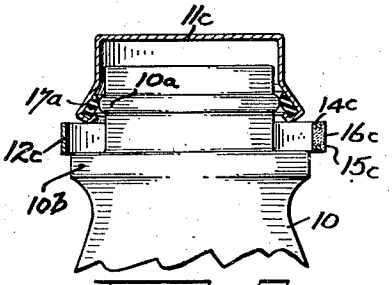


Fig. 6.

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UNITED STATES PATENT OFFICE

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CLOSURE

James H. Conway, Detroit, Mich.

Application August 27, 1942, Serial No. 456,316

4 Claims. (Cl. 215—46)

This invention relates to improvements in closures, and refers particularly to closures for bottles, jars and the like.

It is an object of the invention to provide a closure including a retaining member which is split and has the adjacent extremities of the split portions and an arm all held together by a friable joint, either welded, brazed or soldered, so that when the connection is broken the closure may be readily removed.

Another object of the invention is to provide such a closure wherein the arm is so secured that by movement of it the friable connection may be easily broken.

Having thus briefly and broadly stated some of the objects and advantages of the invention I will now proceed to describe it in detail with the aid of the accompanying drawing in which:

Figure 1 illustrates a plan view of one form of the closure, and

Figure 2 is a section on the line 2—2 of Figure 1.

Figure 3 is a plan view of a slightly modified construction, and

Figure 4 is a section on the line 4—4 of Figure 3.

Figure 5 is a plan view of another modification of the invention and

Figure 6 is a section on the line 6—6 of Figure 5.

Figures 7 and 8 are details showing two slightly different forms of the friable joint.

Referring first to Figures 1 and 2, 10 designates the neck of a conventional bottle over the mouth of which a circular gasket 11 is arranged. This gasket is held in position by a split retaining member 12 which is circular and has a peripheral depending skirt 13 which is crimped to engage the periphery of the bottle neck. The member 12 is split substantially radially from adjacent one side of the skirt 13 across the said member and down to the bottom of the opposite side of the skirt, and the adjacent extremities of the split member and skirt portion are arranged in overlapping relation as shown at 14. Between the overlapping extremities of the member 12 an arm 15 is inserted which is connected, preferably adjacent the severed skirt side of the member, to both extremities of the latter by a friable connection as indicated at 16 in Figures 1 and 7. This arm 15 extends across the top of the cap to form a lever rigid in the plane of the surfaces of the split member so that by its movement about the connection 16 in a direction parallel with the plane of the overlapping extremities the said connection may be readily broken and the overlapping extremities of the member 12 released from one another, after which, obviously, the said member and its skirt may be readily removed.

In the modification shown in Figures 3 and 4, the periphery 11b of the gasket 11a is downturned to extend around the bottle neck 10, and a ring 17, made of rubber or other suitable material, is supported by the inwardly flexed margin of the gasket periphery. The split retaining member 12a, in this instance, is substantially annular to bear upon the gasket 11a over the mouth of the bottle and has its integral downturned skirt inturned at its lower extremity to engage the lower margin of the gasket periphery 11b. In this instance again the member 12a and skirt 13a are substantially radially split, the split portion extending from the bottom of one side of the skirt 13a completely across that side of retaining member 12a and at least partly across its opposite side toward the other side of the skirt. The split extremities 14a are again arranged in overlapping relation, and between these overlapping portions an arm 15a rigid in the plane of the surfaces of the overlapping extremities is inserted which is secured to both extremities of the member 12a by a friable connection 16. Thus the connection may be readily ruptured by movement of the arm 15a in a direction parallel with the plane of the overlapping extremities.

In the modification shown in Figures 5 and 6, the cap 11c, which extends over the mouth of the bottle 10, has its periphery downturned to support a suitable ring 17a which bears against a bead 10a formed around the bottle neck and the top of the cap is spaced above the top of the bottle neck. Around the latter a second and lower flange 10b is provided between which and the underside of the downturned gasket periphery a substantially annular retaining member 12c is provided. This member is transversely split and has overlapping extremities 14c which, together with an arm 15c rigid in the plane of the overlapping extremities of the transversely split member, are secured to one another by a friable joint 16c. It will be noted in this instance that the two overlapping extremities of the member 12c rest against one another and that the arm 15c bears against the outer of the two overlapping extremities in which case the latter is preferably apertured as shown at 20 in Figure 8 so that the friable connection 16c may be made directly between the arm 15c and the inner of the

two overlapping extremities thereby holding the outer extremity between them. Again by movement of the arm 15c in a direction parallel to the plane of the split extremities breakage of the connection 16c may be readily caused thereby rendering the member 12c easily removable. Then the cap 11c may be moved downward and slightly tilted to break the vacuum within the bottle after which the gasket may be readily taken off.

Obviously the friable connections shown in Figures 7 and 8 may be interchangeably employed with any of the closure forms above described.

While in the foregoing the preferred embodiments of the invention have been described and shown, it is understood that further alterations and modifications may be made thereto provided they fall within the scope of the appended claims.

What I claim is:

1. A closure including a covering means extending over the mouth of a vessel, a split retaining member having overlapping extremities holding said covering means in position, a lever arm rigid in the plane of the surfaces of the overlapping extremities, a friable joint securing said overlapping extremities and one end of the lever arm to one another whereby upon movement of the arm in a direction parallel with the plane of the overlapping extremities said joint is adapted to be broken and said overlapping extremities freed from one another.

2. A closure including a gasket extending over the mouth of a bottle, a retaining member including a depending peripheral skirt engaging the neck of the bottle, said member holding said gasket in position, said member and skirt being split and having overlapping extremities, a lever arm rigid in the plane of the surfaces of the split member, and a friable connection securing said arm to the overlapping extremities of said member whereby upon sufficient movement of the arm in a direction parallel to the plane of said surfaces said joint is broken.

3. A closure including a gasket extending over the mouth of a bottle, a skirt extending from the gasket engaging the neck of the bottle, a split retaining member having overlapping extremities mounted around said bottle neck beneath the gasket and preventing downward movement of the latter, a lever rigid in the plane of the surfaces of the overlapping extremities, and a friable connection securing the lever to both overlapping extremities whereby upon movement of said lever in a direction parallel with the plane of said overlapping extremities the connection is adapted to be broken.

4. A closure including a gasket extending over the mouth of a bottle, a substantially annular retaining member over the gasket having a depending peripheral skirt, said skirt engaging the neck of the bottle, said skirt being substantially radially split from one peripheral margin and said split extending at least across the adjacent side of the annular retaining member, the adjacent extremities of the latter and of the skirt lying in overlapping relation, a lever arm rigid in the plane of the overlapping extremities of the skirt, and a friable connection securing the arm to the overlapping extremities of the skirt whereby when said lever arm is sufficiently moved in a direction parallel with the plane of the overlapping extremities the connection is ruptured.

JAMES H. CONWAY.