Sept. 17, 1940. M. T. ASHE 2,215,076

CLOSURE DEVICE

Filed Feb. 26, 1937

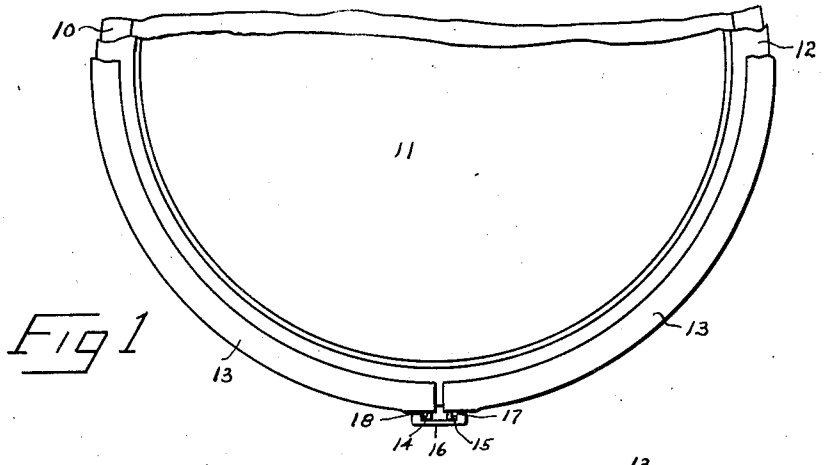

Fig 1

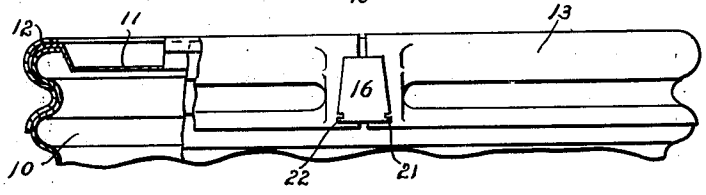

Fig 2

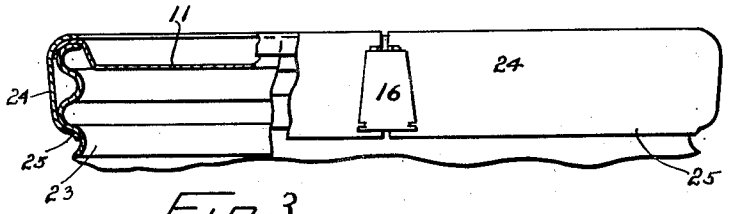

Fig 3

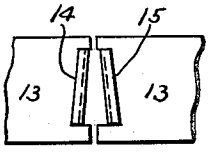

Fig 4

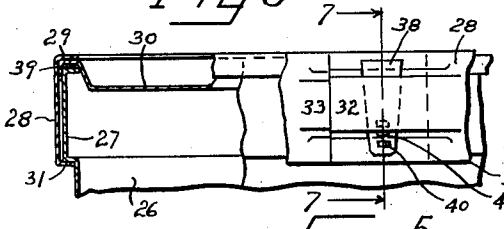

Fig 5

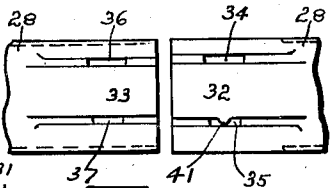

Fig 6

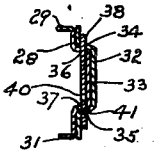

Fig 7

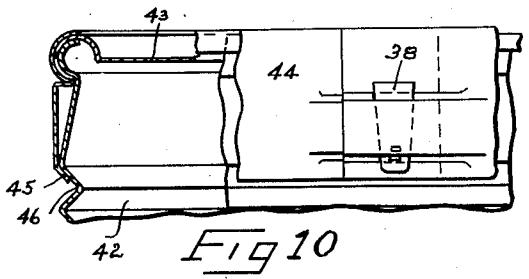

Fig 10

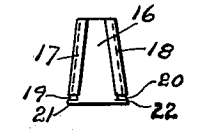

Fig 8

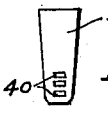

Fig 9

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CLOSURE DEVICE

Marselius T. Ashe, Garden City, N. Y.

Application February 26, 1937, Serial No. 127,824

1 Claim. (Cl. 220—61)

The invention relates to closure devices, or clamping rings, for securing covers or lids on containers. One of the main objects of the invention is to provide a closure device which may be adapted to a great variety of containers and which can easily be clamped on such containers and as easily removed therefrom.

Another object is to provide a closure device which may be effectively locked so as to prevent it from being dislodged in shipping or handling the containers. A further object is to provide a closure device of simple construction consisting of few parts, which are not readily broken or apt to get out of order, which occupies but small space on the container, and which can be manufactured and assembled with the container at low cost.

These and various other objects and advantages will be readily understood from the following description and from the accompanying drawing of preferred embodiments of the invention in which, however, modifications may be made without departing from the scope of the appended claim. In the drawing:

Fig. 1 is a fragmental, top view showing the closure device applied to a metal drum;

Fig. 2 is a fragmental side view of Fig. 1 shown partly in cross-section;

Fig. 3 is a similar side view, but shown with the clamping ring slightly modified;

Fig. 4 is a fragmental, side view of a certain detail of the construction;

Fig. 5 is a fragmental, side elevation of another container shown with a somewhat modified clamping ring;

Fig. 6 is a fragmental, side view of the ends of the clamping ring shown in Fig. 5;

Fig. 7 is a cross-sectional side view of the clamping ring, taken on the line 7—7 in Fig. 5;

Fig. 8 is a rear view of the clamping plate shown in Figs. 1, 2 and 3;

Fig. 9 is a detail view of the wedge shown in Figs. 5 and 10; and

Fig. 10 is a fragmental, side elevation of still another container shown with still another modification of the clamping ring.

Referring first to Figs. 1, 2, 4 and 8, the upper part of a container, as for example a metal drum is shown at 10 and the cover at 11. The cover is provided with a flange 12 which extends outwardly and downwardly over the top of the container. The closure device consists of a ring 13, which in this instance is corrugated similarly to the corrugations on the container so as to fit in the upper corrugations, as plainly shown.

As shown in Figs. 1 and 4, two lips 14 and 15 are bent outwardly and away from each other. These lips are formed directly from the metal in the ring and are so bent that they diverge angularly from each other so that their edges will form wedging surfaces when a locking plate 16 is placed over them. This locking plate, of which a front view is shown in Fig. 2 and a rear view in Fig. 8, is likewise provided with divergent and inwardly extending lips 17 and 18.

It is evident that, when this plate is forced down over the lips 14 and 15, the band will be drawn tightly around the container and thus clamp the cover securely in place. So that the clamping plate may not be dislodged in shipping or handling, I preferably cut two slots 19 and 20 in the sides of the plate so as to form two tongues 21 and 22. If, after the plate has been tightly wedged on the band, these tongues are bent in underneath the lips 14 and 15, it is evident that the plate cannot be dislodged or removed, except by straightening out these tongues.

Fig. 3 shows a similar container 23, but in this instance the band 24, instead of being corrugated as in the former case, has merely its lower edge 25 bent into the second corrugation of the container. All the other parts are similar to the parts just described and have therefore been similarly numbered.

In Fig. 5, the container 26 is provided with an undercut neck 27. In this case the band 28 is provided with an upper flange 29, which fits over the cover 30, and with a lower flange 31, which fits under the shouldered neck. The ends of the band, as plainly shown in Figs. 5, 6 and 7, are made to overlap each other. One end of the band is provided with an outwardly embossed portion 32 in which a similar, but smaller, outwardly embossed portion 33, formed on the other end of the band, is nested. Slots 34, 35, 36 and 37 are formed in the upper and lower edges of the embossed part and each set of these slots, as plainly shown, are tapered.

With this form of a band an ordinary wedge 38, such as shown in Figs. 5, 7 and 9, is employed. The ends of the band are overlapped and the wedge is driven through the slots, thus clamping the band tightly around the container and clamping the cover in place. In this instance a gasket 39 has been shown between the cover and the top of the container, and it is evident that such gaskets might also be used with the other embodiments shown.

To prevent the wedge from being dislodged, a plurality of perforations 40 are formed in its

lower end and a tongue 41 is formed dependently from the embossed part 32. If, after the wedge is in place, this tongue is driven into any one of the perforations, it is evident that the wedge cannot be dislodged.

In the embodiment shown in Fig. 10, a somewhat different container 42 is shown. The cover 43 is held in place by the band 44, which is shaped as plainly shown. Its lower edge 45 extending into one of the rectangular corrugations 46 in the container. The ends of this band are similarly constructed as the ends of the bands just described and a wedge of the same construction is employed.

While I have shown and described the closure device as employed with containers made of metal, it is evident that this device may as readily be employed with containers of other types, and I therefore do not wish to limit the invention to any particular kind, size or shape of container.

Having described the invention and its objects, what I claim as new and wish to protect by Letters Patent is:

A device for clamping and fastening covers on containers having an undercut neck, comprising an open ring formed of a band and having an upper annular flange extending over the edge of the cover and a lower annular flange extending in under the neck; the ends of the band overlapping each other and shaped so that one end may nest in the other; tapering slots formed through the upper and lower flanges of said nested parts; a wedge insertable in said slots for tightening the ring when the wedge is driven in place; and means for locking the wedge to the ring, comprising a vertical series of horizontal slots in the wedge and a tongue on one of the overlapping parts for engaging said slots.

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