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3,325,033

CLOSURES FOR GLASS CONTAINERS

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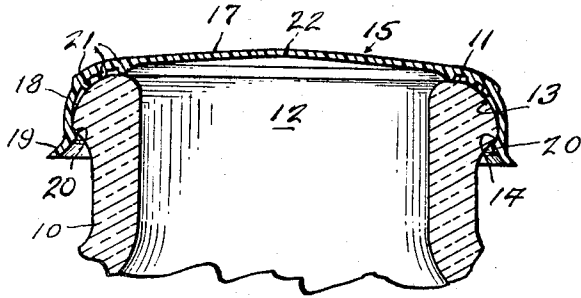


Fig. 1.

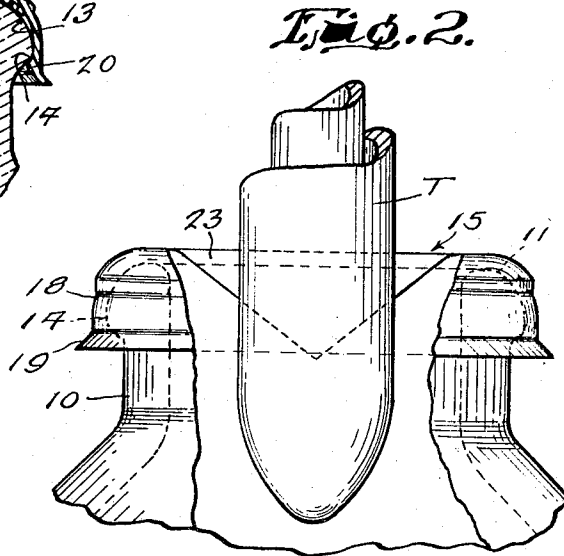


Fig. 2.

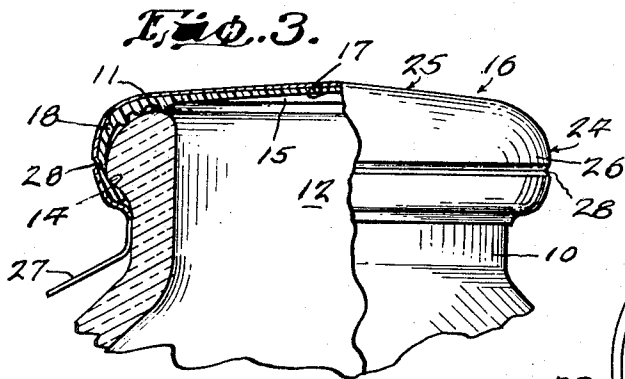


Fig. 3.

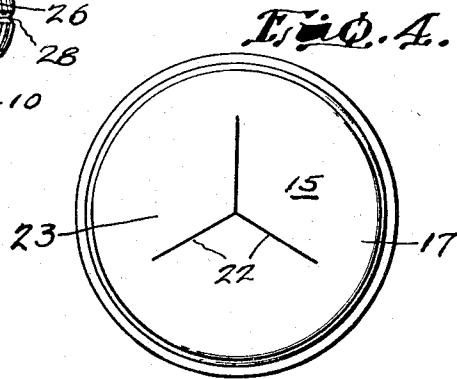


Fig. 4.

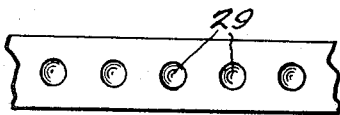


Fig. 5.

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3,325,033
CLOSURES FOR GLASS CONTAINERS
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 3 Claims. (Cl. 215-39)

My invention relates to closures for glass containers and is especially concerned with the provision of a composite closure, one element of which functions initially as a dust-cap or cover which is affixed to the container almost immediately following the container fabricating operation so as to maintain the initial substantial commercial sterility of such containers by protecting them against contamination resulting from entry thereof of dust, carton fiber etc., during transportation and general handling between the glass plant and the customer's or bottler's filling line. Without such protection, it would be necessary to wash the containers thoroughly prior to filling, such being a costly procedure because expensive floor space occupying machinery is required.

An important object of my invention is the provision of a dust-cap of the above type which remains as an integral part of the complete sealed, filled bottle from the time it is manufactured until the bottle is opened by the ultimate consumer of its contents and removed with a metal cover cap. To this end the dust-cap embodies a panel portion through which a filling tube, or the like device, may be inserted into the bottle mouth, such step being of a character to insure substantially complete reclosing of the opening created by the filling device, incident to its retraction and finally an interlocking of the two caps so that they normally are inseparable, inadvertently.

A further object of my invention is the provision of a tear-tab type of metal cover cap or closure adapted to be fitted over the dust-cap, which may be formed of polyethylene or some similar elastomeric material, and secured to the bottle. Thus the dust-cap becomes a cap liner in the final analysis.

It is also a very important object of my invention to provide novel simple means for positively securing the dust-cap and outer metal cap together so that both, of necessity, are removed together, as a unit by the ultimate consumer. This is obviously of substantial importance in that it would be most undesirable to burden the customer with the necessity of removing first the metal outer cap and then, as a separate step or operation, removing the inner dust-cap. By interlocking them securely, they are removable as a unit, as indicated previously.

Other objects will be in part apparent and in part pointed out hereinafter.

In the accompanying drawings forming a part of my application:

FIG. 1 is a fragmentary sectional view showing my dust-cap affixed to the neck of a conventional, newly formed beverage bottle;

FIG. 2 is a sectional elevational view, similar to FIG. 1 but with a conventional filling, or air tube, projecting through the dust-cap into the bottle mouth;

FIG. 3 is a view like FIG. 1, but with a tear-tab metal cover cap enclosing and secured to the dust-cap and in turn secured to the bottle neck;

FIG. 4 is a plan view of the dust-cap showing one possible arrangement of radial scores or slits in the panel or top wall, such permitting ready insertion of the filling or air tube; and

FIG. 5 is a fragmentary elevational view showing another form of means for interlocking the two caps.

This application discloses subject matter related to my commonly assigned, co-pending application Ser. No.

476,276, filed Aug. 2, 1965, filed jointly with a co-inventor, Samuel M. Downs.

In the illustrated embodiment of my invention there is shown a bottle neck **10** having at its upper end an annular rim **11** defining a mouth **12**. The rim **11** is of such cross-sectional contour as to incorporate a bead **13** providing a relatively wide annular sealing surface and a comparatively abrupt annular shoulder **14** which extends downwardly and inwardly for retaining engagement with a dust-cap, as will become evident presently.

The dust-cap **15**, which, as stated heretofore, is formed of a thermoplastic material, also functions as a liner for the final closure **16**. This dust-cap **15** may well comprise a panel **17**, or top wall, and an annular depending attaching skirt **18** about the periphery of the top wall **17**. The lower margin, if desired, may be provided with a flared extension **19** as shown, an internal annular bead **20**, at the juncture of the skirt and extension **19** is intended to snap over and securely engage the previously mentioned annular shoulder **14** on the bottle neck. The dust-cap is thus secured in position to close the bottle mouth and exclude dust and other foreign matter from the bottle, as heretofore explained. As stated previously, this dust-cap application is effected at the bottle manufacturing plant and prior to exposure of the bottle to dust-laden air, etc. Thus commercial sterility is assured. Beads **21** within the dust-cap contribute materially to the sealing effectiveness of the cap, as is apparent. Filling of the bottle, without any necessity for removal of the dust-cap, is possible because of the slits **22** in the panel or top wall of the dust-cap. These slots create a multiplicity of flaps **23** which are momentarily displaced by insertion of the filling or air tube **T**. This tube pushes the flaps aside and upon completion of the filling cycle, the tube of course is withdrawn and concurrently therewith the flaps return to their original position, thus again closing the top wall. Immediately, the outer metal cover cap **24** is fitted over the dust-cap and secured in place.

This cover cap **24** comprises a panel **25**, or top wall, and a depending annular attaching skirt **26**, the latter embodying a tear-tab **27**, if desired. This cover cap telescopes completely over the dust-cap **15**, tending to more firmly press the latter against the neck of the bottle. The lower margin of the skirt is contracted slightly to secure the cover cap to the bottle. Additionally the skirt proper is constricted in localized areas so as to provide either a continuous annular indentation **28**, or perhaps an annular series of spaced apart indentations **29** or relatively sharp protuberances, which bite into the skirt of the dust-cap and firmly interlock the two caps. Thus, at the time of opening the bottle by the ultimate consumer, both caps separate as a unit from the bottle.

It is understood in view of the foregoing, that newly formed bottles, perhaps while still warm from the annealing operation, are effectively sealed with dust-caps **15** which remain in place until removed by the ultimate consumer. These bottles do not require conventional washing, and are filled through the inserted filling, or air tube **T**. Thereafter the metal cover cap is placed over the dust-cap, and secured to the bottle neck by a conventional skirt deforming step. Thereupon the indentations are formed in the cover cap skirt to effect firm interlocking of the two caps so that both, of necessity, and unavoidably must be removed as a unit, incident to initially opening the bottle.

Modifications may be restored to within the spirit and scope of the appended claims.

I claim:

1. A closure for hermetically sealing the mouth of a bottle comprising a thermoplastic skirted dust cover-cap formed with means to readily admit a filling device for

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insertion into the bottle mouth, a skirted closure cap telescoped over the dust cover-cap, and at least one radially inwardly extending protuberance formed on the skirt of the metal closure cap and biting into the skirt of the dust cover-cap.

2. A closure as defined in claim 1 and a tear-tab depending from the skirt of the metal closure cap.

3. In combination, a bottle having a mouth-defining rim, said rim formed with an annular external downwardly facing abutment, a closure for said mouth comprising a thermoplastic dust cover-cap having a radially slitted panel and a depending annular skirt to engage over said abutment and thereby initially secure the cap to the bottle, a sheet metal closure cap telescoped over said dust cover-cap, said closure cap having a panel over-

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lying the slitted panel and an annular attaching skirt lying against the skirt of the dust cover-cap, a tear tab depending from the skirt of the closure cap and at least one protuberance on the skirt of the closure cap to interlock the two skirts and caps.

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