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CONTAINER AND CLOSURE CAP FOR SAME

Filed June 23, 1965

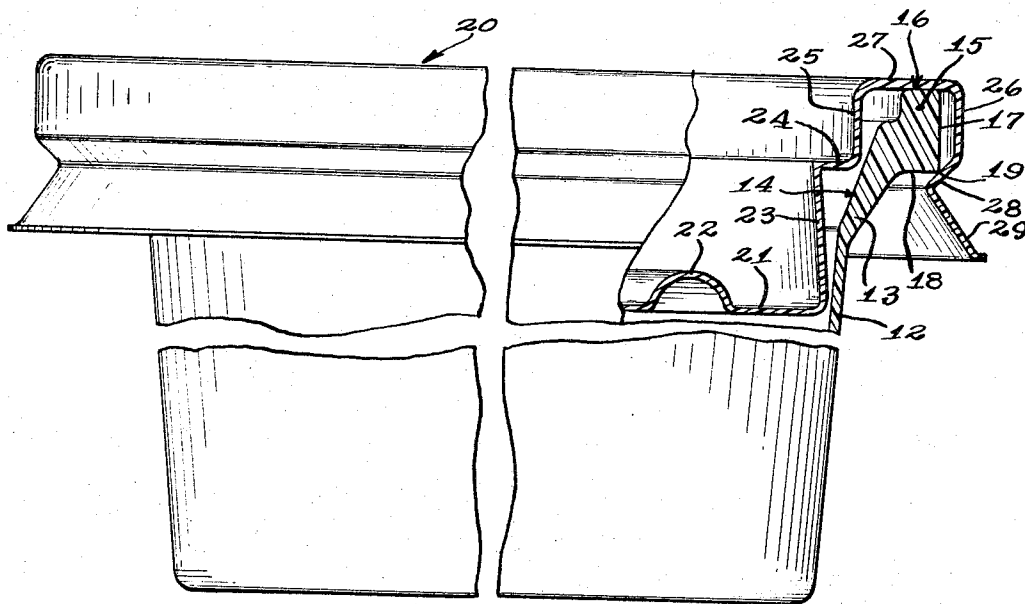


Fig. 1.

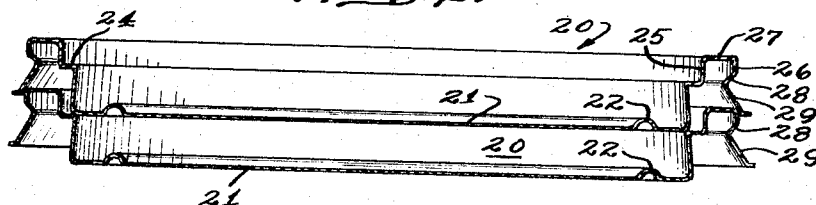


Fig. 2.

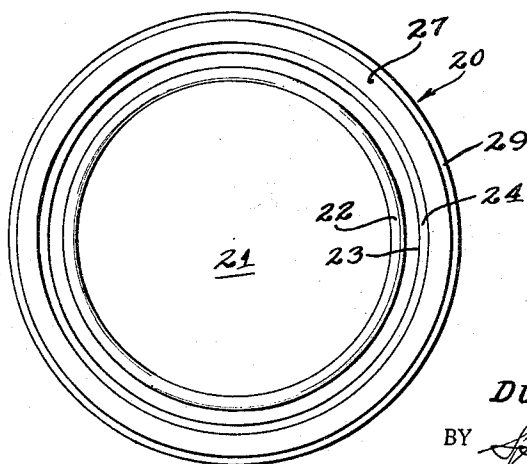


Fig. 3.

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CONTAINER AND CLOSURE CAP FOR SAME
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4 Claims. (Cl. 220-60)

ABSTRACT OF THE DISCLOSURE

A container and closure cap combination wherein the container has a mouth-forming wall increasing in thickness toward a mouth-defining bead having a top rim and a continuous corner sealing surface below the rim, together with a closure cap, the latter in part projecting into the mouth and embodying a channel-like section straddling the bead and being under tension to effect a tight seal between a part of the skirt and the corner sealing surface.

My invention relates to improvements in thermoplastic containers and closure caps for same and has for an object the provision of a novel, effective, thermoplastic, sheet-like closure having sealing contact with a pre-formed exterior sealing surface of novel form.

More particularly, the invention pertains to plastic containers of the type customarily used in the packaging of small quantities of cottage cheese, potato salad, and the like for the retail trade. Such packages are not ordinarily vacuum packed, but nevertheless should be effectively sealed against entry of insects, etc. Accordingly, I have provided for such sealing and the creation of a closure cap which may be not only molded or otherwise formed from thermoplastic sheet, but additionally can be nested or stacked for rapid handling by closure affixing apparatus.

It is also an object of my invention to provide a thermoplastic closure cap wherein the attaching skirt or flange incorporates means functioning both to aid in cap centering and application and in cap removal.

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

In the accompanying drawings forming a part of this application:

FIG. 1 is a fragmentary sectional elevational view of a container and closure cap embodying my invention;

FIG. 2 is a sectional view showing the manner in which my closure caps may be nicely stacked, or nested; and

FIG. 3 is a top plan view of one of the closure caps.

In my copending U.S. application Ser. No. 466,193, filed June 23, 1965, is disclosed a closure cap of the form herein claimed, but incorporating a venting feature.

In the illustrated embodiment of my invention, the container 10, which may well be and preferably is formed of a thermoplastic material, comprises a bottom 11 of circular form, and an annular upstanding side wall 12 terminating at its upper end as a flared annular section 13 of upwardly increasing radial thickness, thus providing an internal sloping guiding surface 14 which, as will become evident, aids in stacking as well as in initial centering and application of the closure cap to a container. A substantially thickened annular bead 15 is formed integral with and at the upper end of the thickened upper portion of the annular section 13, presenting a flat circular top or rim 16, and an annular external side surface 17 which at its lower margin merges with a lower radial annular wall 18 merging with the exterior of the annular section 13. At the juncture of the external side surface 17 and the lower radial wall 18, is an annular line sealing surface 19, which is engaged by a part of the closure cap 20, as will be apparent presently.

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The closure cap 20 which, as stated, may be produced from a sheet of thermoplastic material, is of very light weight and comprises a depressed central panel portion 21 or top wall, having an annular internal stiffening rib 22 near its periphery. An upstanding annular wall 23 about the panel 21 tapers inwardly and upwardly slightly and merges at its upper end with a radial shelf 24. From the outer margin of this shelf 24 rises a vertical annular wall 25 which is spaced radially inward from a depending external annular wall 26, these two walls 25 and 26 being joined together by a top wall 27 which is intended to rest quite firmly upon the aforementioned rim 16 of the container finish. These walls 25 and 26 are spaced apart sufficiently to create a channel capable of straddling the bead 15. Thus, the walls 25 and 26 and the top wall 27 together provide an inverted annular channel to accommodate the aforementioned bead 15, the fit being quite loose to thereby permit ready assembly of the closure cap and container.

The actual seal results from sloping or tapering inwardly and downwardly an extension 28 or sealing section of the exterior wall 26 so that it snugly engages the aforementioned corner sealing surface 19. Because of the closely controlled tolerance, the radial top wall 27 of the channel which straddles the bead 15, firmly contacts the rim 16, placing the external wall 26 under tension and consequently very tightly interengaging the sealing section 28 and the corner sealing surface 19. The outwardly flared annular extension 29 at the bottom end of the sealing section 28, aids both in application of the closure cap to the container and in stacking or nesting of a number of closures preparatory to their application to containers.

As perhaps is best shown in FIG. 2, the closure caps 20 are readily stackable, or nestable, in a fashion permitting ready separation of single caps and delivery of same for application to the containers, over the mouths of which they are telescoped and snapped into sealing position. The center section of the closure cap, as is apparent, functions as a pilot, aiding both in initial stacking and centering the closure cap relative and incident to its application to a container. As is also evident, resistance to stretching or distortion of the sealing section of the closure cap is effected by the particular described channel and the stiffened central portion of the top wall or panel.

It is apparent, in view of the above, that, as shown in FIG. 2, the closure cap design permits effective stacking for general handling and feeding by a capping apparatus and in FIG. 1 it is also evident that the specific panel or top wall contour very materially facilitates guiding the cap and insuring both easy stacking and proper initial positioning of same relative to the container mouth and rim or bead, just prior to the application of top pressure which snaps the cap into sealing position, as illustrated best in FIG. 1. The flared extension 29 or lip, as stated, aids not only in guiding the cap onto the container, but also functions as a finger-piece facilitating cap removal.

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

I claim:

1. In combination, a wide-mouth container comprising a bottom, an annular upstanding wall having a flared upper section of upwardly increasing radial thickness, an annular bead of substantial cross-section at the upper margin of the flared section, said bead having a flat top rim and an external annular corner sealing surface below said rim, a closure cap having a panel portion receivable in the container mouth, an inverted annular channel-like member having an outer annular pendent wall formed with an inwardly sloping sealing section for contact with

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said corner sealing surface, the spacing between the rim and sloping sealing section being such as to maintain the pendent wall under tension and create a tight seal.

2. A structure as defined in claim 1, there being a flared annular section at the lower margin of the sealing section.

3. A structure as defined in claim 1, there being an up-standing annular wall about the panel interconnecting it and the channel-like member.

4. A structure as defined in claim 3, the annular wall being inclined upwardly and inwardly from said panel and

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a radial shelf connecting the annular wall and said channel-like member.

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