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[56] **References Cited**
 UNITED STATES PATENTS
3,229,841 1/1966 Bailey..... 215/31
3,468,447 9/1969 Smalley..... 215/31X

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[54] **RESEALABLE CONTAINER**
 9 Claims, 5 Drawing Figs.
[52] **U.S. Cl.**..... **215/31,**
 215/41, 215/43
[51] **Int. Cl.**..... **B65d 1/02,**
 B65d 11/04
[50] **Field of Search**..... **215/31, 43,**
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ABSTRACT: A container which has a neck portion defining the container opening. The neck portion includes an external thread for engagement by a screw-type cover and an annular bead for the alternative engagement by a snap-on lid. A recess extending in an axial direction of the container enables the quick release of the lid from its engagement with the annular bead by providing access to the lid for prying it loose.

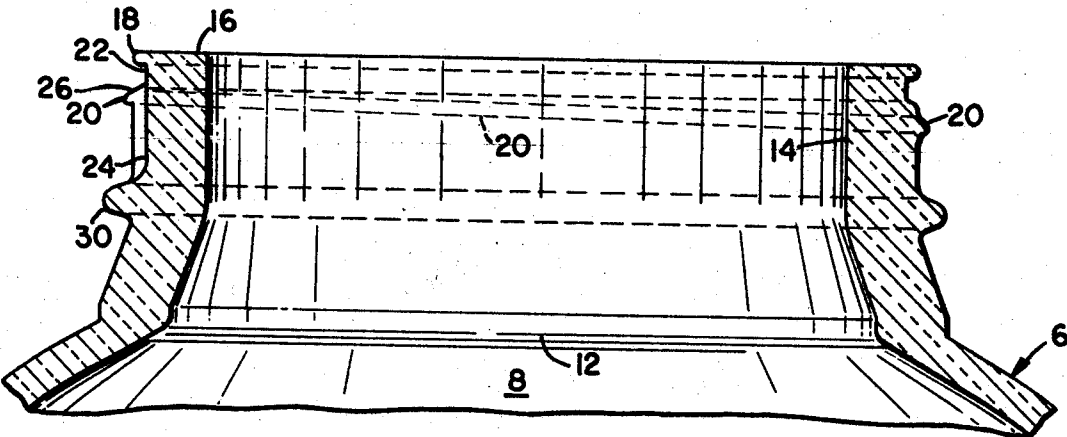


FIG_1

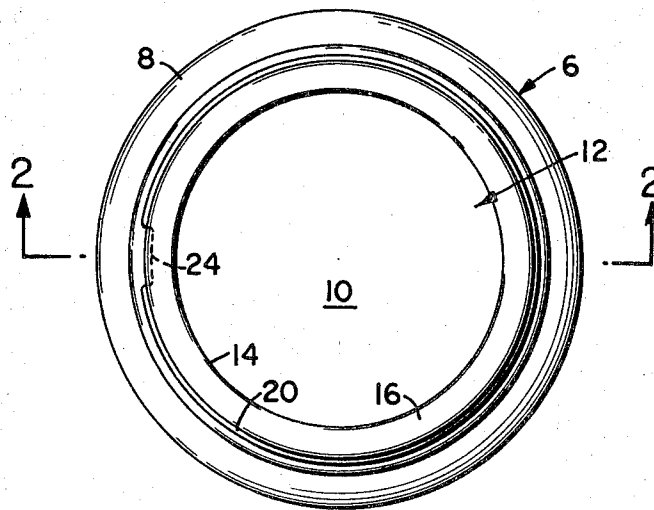


FIG_2

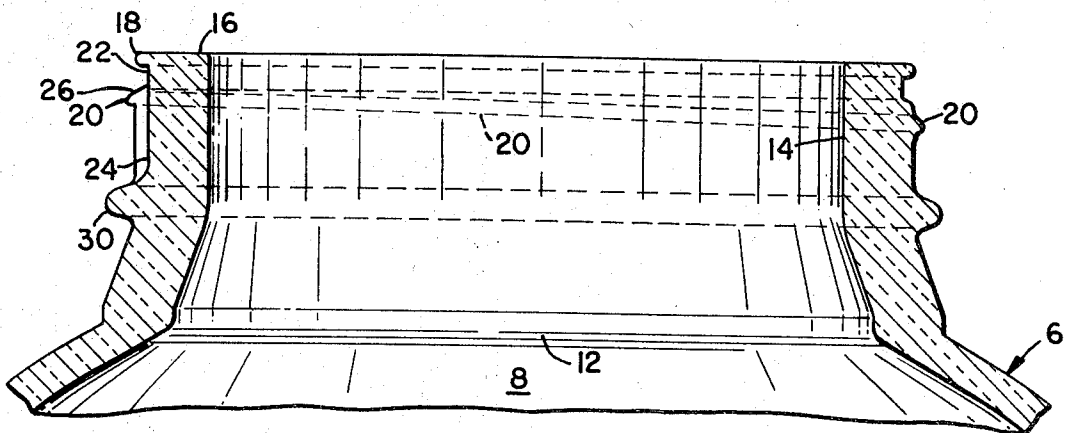


FIG_3

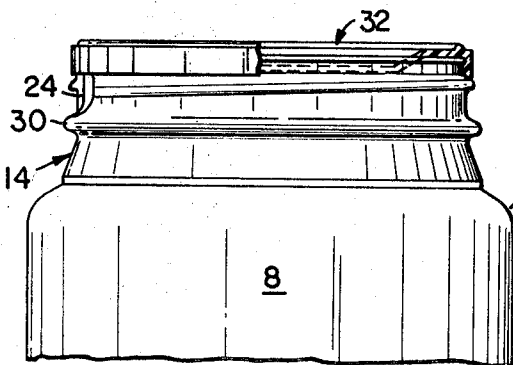


FIG_5

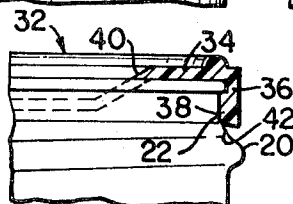
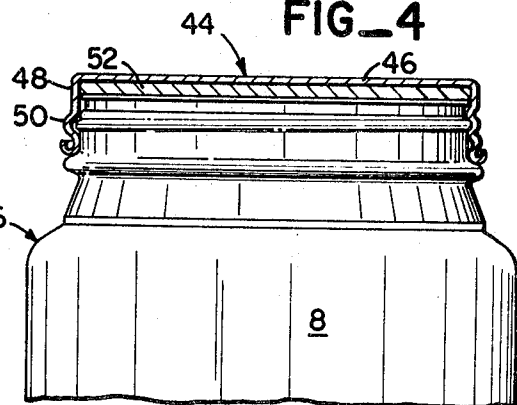


FIG_4



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RESEALABLE CONTAINER

BACKGROUND OF THE INVENTION

This invention relates to closeable containers such as jars, bottles, etc., and more particularly to containers permitting their alternative closing by a snap-on lid or a screw-type cover.

Containers, and particularly wide-mouth containers such as jars, are presently closed and sealed by either a screw-type cover or by a snap-on lid. Both have certain advantages which dictate their use in particular applications. As a result, container manufacturers and distributors must stock two sets of containers, the one set having an external thread, or a screw-type finish, for engagement by a screw-type cover and the other set having a finish for engaging snap-on lids.

The large scale use of containers requires manufacturers and distributors to stock huge quantities. Inventory costs are burdensome, particularly since the quantity that must be stocked is virtually doubled by the fact that two types of containers are required to be on hand.

It is known to construct containers with a combination finish enabling the use of both closures. Such containers provide an annular bead adjacent an end face of the container neck, followed by a groove and by an external thread for engagement by a screw-type cover. The snap-on lid is placed over the bead and securely retained to the mouth of the container. It is constructed so that it permits the placement of the screw cover thereon. Once the snap-on lid is in place it is difficult to remove it since its exterior cannot be grasped.

Such combination finish containers are often employed for the storage of spices and other food ingredients. They have a wide mouth to facilitate the filling of the containers and the snap-on lid includes openings to enable the dispensing of the container contents. Thus, the lid performs the function of a dispensing unit while the cover forms the actual closure for the container. If the snap-on lid were the actual container closure it would require special tools to remove it. If removed manually, the fingernails of the person attempting the removal break frequently.

SUMMARY OF THE INVENTION

The present invention provides a container having a container finish which permits the alternative use of a snap-on lid or a screw-type cover. This enables the use of a single container with either one of the two types of closures. Manufacturers and distributors need only store one container whereas, in the past, two containers, each with a different finish, had to be held in inventory. Operating costs are thereby appreciably reduced.

In its broadest aspect the present invention comprises a container having a hollow body and a tubular neck defining an access opening or mouth of the container. The neck terminates in an end face and includes on its exterior surface an annular bead, an external thread, a groove intermediate the bead and the thread, and a recess extending in an axial direction of the neck from adjacent the groove towards the body.

To close the container with a screw cover the latter is engaged with the external neck thread as in the past. To close it with a snap-on lid the latter is placed, or snapped over the annular bead so that an internal protrusion of the lid is disposed in the groove and retains the former to the container. The lid is removed by engaging it with an object or a finger placed in the recess and applying a force in an axial direction to thereby quickly and effortlessly separate the snap-on lid from the container.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects, features and advantages of the present invention will be more apparent after referring to the following specification and accompanying drawings in which:

FIG. 1 is a plan view of a wide mouth container constructed according to the present invention;

FIG. 2 is a fragmentary, enlarged cross-sectional view taken on line 2-2 of FIG. 1;

FIG. 3 is a fragmentary, elevational view of the container illustrated in FIG. 1 and shows the closing of the container with a snap-on lid illustrated partially in section;

FIG. 4 is a view similar to FIG. 3 but illustrates the closing of the container with a screw-type cover shown in section; and

FIG. 5 is an enlarged, fragmentary elevational view, in section, of the interengagement between the snap-on lid and the container.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1 and 2, a container 6 comprises a hollow body 8 having a closed end 10 and an open end 12. A tubular neck 14 extends from the body in alignment with open end 12, terminates at an end face 16 and defines the mouth of the container.

The exterior of the neck is cylindrical and includes an annular bead or protrusion 18 extending from adjacent end face 16 towards container body 8 and an external thread 20 spaced from the annular bead by a groove 22. The neck further includes a recess 24 which preferably has a depth, as measured from thread peaks 26 or from the annular bead, greater than the depth of groove 22 and which extends in an axial direction of the neck from adjacent the groove, past threads 20 towards container body 8. The neck may further include one or more ribs 30 for stiffening it and providing a convenient grip.

Referring to FIGS. 3 and 5, container 8 having a neck 14 constructed as described in the proceeding paragraphs can be closed and sealed with a snap-on lid 32. The lid comprises a generally flat closure member 34 placed across the mouth of the neck and a cylindrically tubular skirt 36 that depends from the closure member and includes an inwardly projecting annular projection 38. The closure member may include one or more undulations 40 to impart rigidity to it or it can have a planar configuration.

The axial extent of skirt 36 is such that its lowermost edge 42 facing towards container body 8 terminates at about the end of groove 22 proximate the container body so that projection 38 is disposed in the groove and interengages with annular bead 18 and secures the snap-on lid to the container neck. Although the outer periphery of the skirt can have any desired shape it is preferred that it is cylindrical and has an outer diameter about equal to or less than the maximum diameter of thread 20 as defined by thread peaks 26. This prevents accidental disengagement of the lid from neck 14 when foreign objects or articles strike the lower edge 42 of the skirt.

It will be observed that the snap-on lid, which is constructed of a flexible plastic such as polyethylene, is easily removable from the container neck by inserting an object or a finger in recess 24 and applying a force acting in an axial direction to lowermost edge 42 of skirt 36. This disengages the lid from the container by prying annular projection 38 off annular bead 18. The lid is placed on the container by merely positioning it over the container mouth and pushing the lid towards container body 8 until annular projection 38 of skirt 36 snaps over the annular bead and thereby firmly interconnects the lid and the container.

To provide sufficient space in recess 24 to allow the manual removal of the snap-on lid the recess has a width, in the direction of the thread, of at least about three-eighths inch. In addition to prevent an excessive discontinuity of the thread caused by the recess the width of the latter is preferably no greater than about 1½ inches. In the presently preferred embodiment one recess is provided. If desired two or more spaced apart recesses (not shown) can be formed in neck 14.

As is well known to those skilled in the art, the annular bead 18, annular projection 38 on skirt 36, and the recess in the skirt between projection 38 and closure member 34 can be constructed to form a seal between closure member 34 and end face 16 or between the annular bead and the recess in the skirt. The detailed construction is therefore not further described herein.

Referring to FIGS. 2 and 4, instead of closing container 6 with the snap-on lid illustrated in FIG. 3 it can be closed with a screw-type cover 44. The cover comprises a generally flat closure member 46 placed across the mouth of neck 14 and a downwardly extending skirt 48 defining an interior thread 50 formed to be engageable with the exterior thread 20 on the container neck. Cover 44 is preferably constructed of metal for durability but can be equally successfully constructed of a thermosetting or a thermoplastic material. The cover includes a gasket 52 to seal the cover and end face 16 of the container neck.

Thread 20 is formed on the neck exterior so that its end proximate neck end face 16 is substantially tangent to groove 22. Interior thread 50 in skirt 48 is so positioned that when it engages the external neck thread gasket 52 is biased against neck end face 16 and forms a seal therewith. Thread 20 terminates at recess 24 so that it extends over an arc of 360° less the width or arc of the recess. Ordinarily this provides sufficient thread engagement. Should particular applications require a thread engagement of more than 360° the thread 20 can be continued (not shown) on the other side of the recess.

Standard screw-type covers are in widespread use and are constructed to fit with neck threads or finish dimensions established and published in 1968 by the "Standard and Testing Procedures Committee" of the Society of the Plastics Industry, Inc., 250 Park Avenue, New York, New York 10017, in a technical bulletin entitled "Dimensional Standards for Plastic Bottles." When thread 20 is constructed and positioned according to the published standards the theoretical thread end proximate neck end face 16 is normally positioned within groove 22 since the maximum distance between the thread end and the end face is less than one-eighth inch. To narrow the groove width sufficiently to fully accommodate the thread end would require a narrowing of annular protrusion 38 on lid 32 to such an extent that it is too weak to effectively retain the snap-on lid to the container.

To provide the groove with sufficient width to accommodate annular protrusion 38 of lid 32, particularly on wide mouth containers having neck diameters of up to 120 mm., the groove has a width of at least about one-sixteenth inch and preferably a width of about one-eighth inch. The spacing between end face 16 and the side of the groove defined by thread 20 should not exceed about three-sixteenths to about one-fourth inch. As a result of such a groove width and position, the thread end proximate neck face 16 is spaced from the neck face a greater distance than the standard distance. However, by maintaining the recommended dimensions standard screw-type covers dimensioned to the above-referred to standards can, nevertheless, be used for closing containers constructed according to the present invention since the above-recommended dimensions and positions of the groove and the beginning of the thread assure sufficient thread engagement between the cover and the neck.

Widely available and inexpensive standard screw covers can be thus used for closing containers constructed according to the present invention. Additional tooling, manufacturing and inventory costs from requiring specially designed screw covers are thereby eliminated to increase the economy afforded by the containers of the present invention.

By virtue of the present invention a manufacturer or distributor of containers need only stock one container for each given size and shape without regard to the required closure type. In addition, he stocks the same inventory of standard snap-on lids and screw-type covers as he has in the past.

While one embodiment of the invention has been shown and described, it will be obvious that other adaptations and modifications can be made without departing from the true spirit and scope of the invention. For example, the containers can be constructed for use with a snap-on lid only in which case it would be unnecessary to provide the container neck with a thread.

I claim:

1. A container comprising an open-ended, hollow body terminating in a substantially cylindrical neck, the neck having an end face, an outwardly extending annular protrusion adjacent the face, an annular groove recessed from an exterior surface of the neck and disposed on the side of the protrusion facing towards the container, the neck further having a depression extending from adjacent the annular protrusion towards the remainder of the container and below the exterior neck surface, whereby snap-on lids can be placed over the annular protrusion and manually removed therefrom by engaging a portion of the lid overlying the depression.

2. A container according to claim 1 wherein the exterior neck surface includes a thread disposed between the groove and the remainder of the container, and wherein the width of the depression in the direction of the thread is between about three-eighths to about 1½ inches.

3. A resealable container adapted to alternatively receive a snap-on lid or a screw-on cover, the container comprising: a hollow body having a closed and an open end, and a neck portion extending from the body and defining the open end of the container, the neck having a cylindrical exterior and an end face, an external thread spaced from the end face, an annular bead intermediate the end face and the thread and projecting radially outward from the exterior surface of the neck, and a recess extending from adjacent the bead towards the body and over an arc substantially less than 360°, whereby a snap-on lid can be applied to the neck by engaging the lid with the annular bead and whereby the lid is manually removable from the neck by grasping an edge of the lid disposed adjacent the recess to forcibly separate the lid from the neck.

4. A container according to claim 3 wherein the recess extends in an axial direction of the container past the end of the thread closest to the container body.

5. A container according to claim 3 including an annular groove of a substantially constant cross section between the annular bead and the thread, and wherein the recess extends below a bottom of the groove.

6. A resealable container for alternative use with screw-type covers and snap-on lids comprising: a main container body having an opening therein, and a tubular neck defining the opening and aligned therewith, the neck terminating in an end face and having an external thread for engagement by the cover, the thread being positioned with respect to the end face so that it is engageable by standardized covers requiring a predetermined spacing between an end of the thread proximate the end face and the end face, the neck further including an annular protrusion intermediate the end face and the thread and an annular groove intermediate the protrusion and the thread, adjacent portions of the thread being discontinued in the direction of the axis of the opening and over a thread length substantially less than the total thread length to provide access to the groove along the exterior of the neck whereby a snap-on lid placed over the neck opening and engaged by the annular protrusion is manually removable from the container by applying a force to an edge of the snap-on lid overlying the discontinuity of the thread.

7. A screw-top container adapted to receive a quick release, sealing snap-on lid having a closure member and a tubular, cylindrically shaped skirt depending from the periphery of the closure member, the skirt including an inwardly extending annular projection spaced from the closure member, the container comprising: a hollow body and a tubular neck extending from the body and defining an opening of the container, the tubular neck including an end face, an annular bead on the periphery of the neck and positioned to be disposed intermediate the closure member and the annular projection when the snap-on lid is placed over the opening to thereby retain the snap-on lid to the neck and seal the opening, the neck further including an external thread spaced from the annular bead to form a groove between the thread and the bead for placement of the annular projection therein, the thread being formed for engagement by a screw-type cover to enable the alternative closing of the container with the cover, the neck further in-

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cluding a recess terminating at the groove and extending along the exterior of the neck towards a remainder of the container to define a discontinuity of the thread and provide access to the skirt along the recess when the lid is engaged by the bead to facilitate the removal of the snap-on lid by engaging an edge of the skirt portion proximate the recess and pry the snap-on lid off the bead.

8. A container according to claim 7 wherein a depth of the recess measured from peaks of the threads is greater than a depth of the groove measured from peaks of the thread to enable the engagement of the full edge surface of the skirt.

9. A container according to claim 7 wherein the groove has a width of between about one-sixteenth inch to about one-eighth inch, and wherein the spacing between the end face and an end of the thread proximate the end face is no more than about one-fourth inch, whereby a cover standardized for a predetermined distance between the end face and the proximate thread end, the distance being less than one-fourth inch, is engageable with the thread for the closing of the containers with a standardized cover.

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