

[54] COMBINED STACKING RING AND CONTAINER COVER

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[58] Field of Search 206/503, 508, 509, 821; 222/143, 480; 220/4 D; 215/DIG. 1

[56] References Cited

UNITED STATES PATENTS

2,326,414	8/1943	Thompson	220/4 D
3,042,271	7/1962	Winstead	220/94 A
3,180,537	4/1965	Collins	222/143
3,317,087	5/1967	Landis	206/503

3,371,814 5/1968 Ruprecht 215/DIG. 1

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[57] ABSTRACT

Molded plastic stacking device comprises a pair of oppositely axially extending annular flange portions and a transverse wall portion. The device is adapted to be snapped onto the beaded ends of a pair of containers so that the containers will be relatively firmly held together until one desires to utilize their contents. The transverse wall portion cooperates with one or both of the flange portions to firmly seal one or both of the containers after they have been opened. A pair of integral, axially spaced inwardly extending flexible annular ring members on each flange portion serve to lock the device to both the cylindrical portions of the containers as well as the bead portions.

5 Claims, 2 Drawing Figures

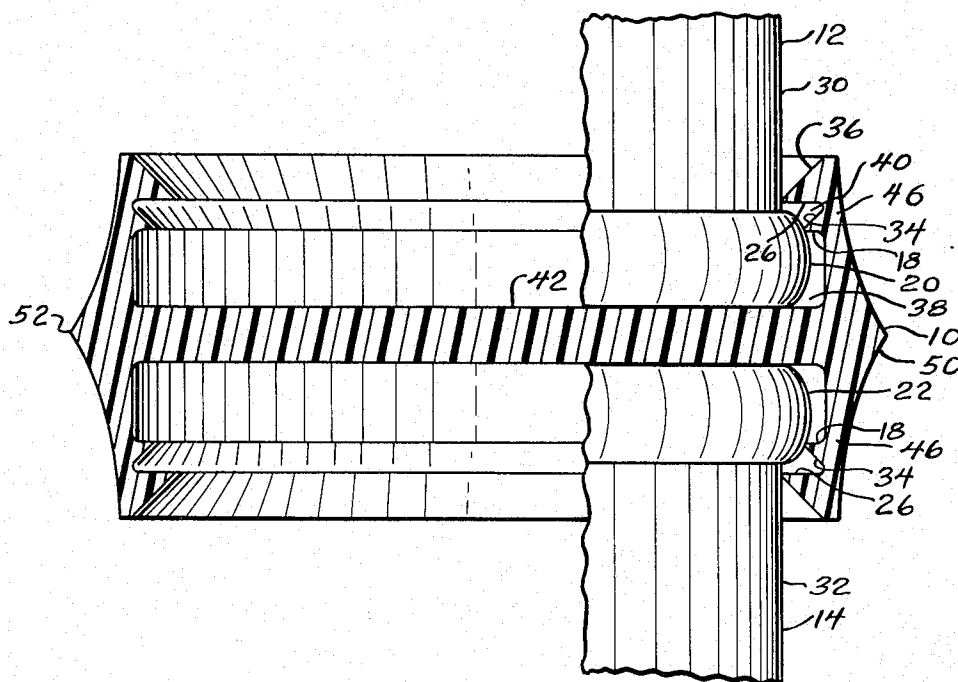


Fig. 1

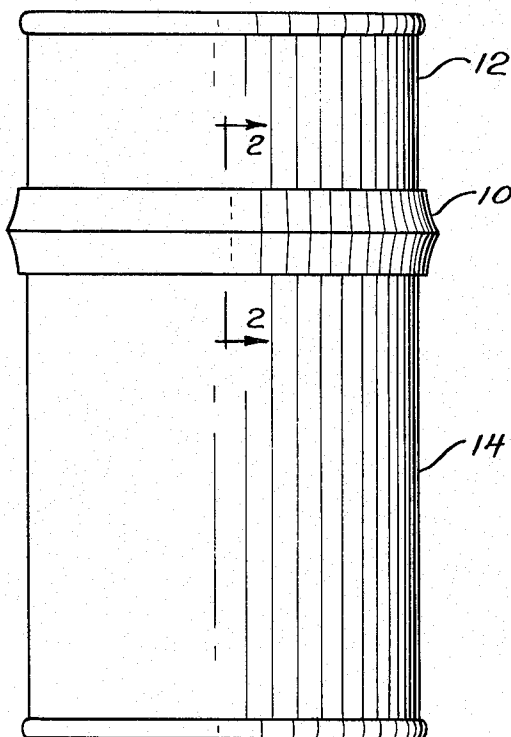
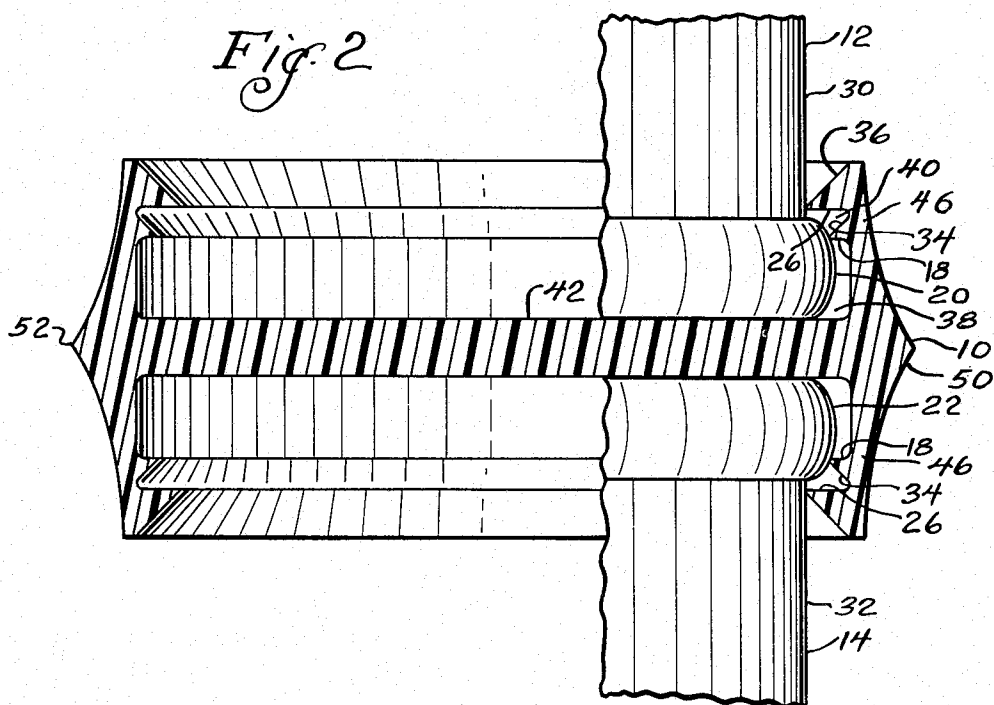


Fig. 2



COMBINED STACKING RING AND CONTAINER COVER

BACKGROUND OF THE INVENTION

This invention relates to containers having flanged or beaded ends and particularly to devices for locking a pair of such containers in stacked relation. Although stacking devices are known in the prior art, as exemplified by U.S. Pat. Nos. 1,757,192; 2,687,231; 3,180,537; 3,237,802 and 3,317,087, most such devices merely encircle the container rims or are perforated to permit dispensing. None of the prior art devices provides more than one retaining ring or lip in contact with each of the containers.

The principal purpose of many stacking devices is merely to permit cans to be stacked on a store shelf without tipping over in order to conserve shelf space, reduce labor costs and protect the customers from having cans fall on them. Other devices hold a pair of containers together which are designed to be sold together, such as the paint pigment and paint vehicle containers disclosed in U.S. Pat. No. 1,757,192.

With the current trend toward the greater use of convenience foods it is desirable to be able to lock two or more containers together rather firmly so that they will stay together throughout the various marketing channels but will be readily separable for use by the consumer. Examples of products which are preferably sold in such a manner include those that cannot be mixed, such as chow mein vegetables and crisp noodles. Products that are often consumed together, such as soft drinks or beer and nuts or other food snacks, could be conveniently sold in a single package in a vending machine if the containers could be adequately locked to each other to prevent jamming of the machine. Unfortunately, the large variation in production tolerances in can manufacture and in plastic molding evidenced by an examination of a large number of beaded cans sold with auxiliary snap-on plastic covers indicates that a single lip or ring is insufficient to provide a good locking seal. One might also expect that a single lip seal of the type used on can covers would not be completely effective in providing the firm grip desired if applied to a stacking ring device. When the grip is loose, the cans can separate, a situation which could jam a vending machine, or cause problems in a store where the two container combination is intended to be sold as a single unit.

SUMMARY OF THE INVENTION

One of the objects of the present invention is to provide a stacking device which is capable of firmly and securely holding a pair of beaded cans together despite a relatively large range of manufacturing tolerances while permitting the cans to be readily separated when desired. Another object is to provide a stacking device which incorporates a tight sealing, reusable closure for one or both of the containers.

These and other objects are achieved by the stacking device of the present invention which comprises a molded plastic member which has a transverse solid wall portion which separates the two containers and forms a cover for either one or both. Although each stacking device can join a pair of beaded containers, it is obvious that by using additional stacking devices, additional containers can be joined together to form a stack of three or more containers. A generally cylindrical

cal flange portion extending axially from each side of the wall portion includes a pair of annular, inwardly extending resilient lip portions which have different radial extents. The shorter lip is closest to the transverse wall and is adapted to engage a curved portion of the container bead and force the container against the transverse wall. The longer lip is axially outwardly spaced from the shorter lip and is adapted to engage the cylindrical body of the container in order to center the container in the stacking device and provide a seal. The double lip engagement is quite effective to hold the two containers together when the composite assembly is held from either end but yet permits manual separation of the containers by applying a bending moment to their common axis at their ends. To assist in removing the stacking device from the remaining container after one container has been removed, the outer surface of the stacking device flanges is curved so as to provide finger gripping portions.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side plan view of the improved stacking device mounted to a pair of containers; and

FIG. 2 is a fragmentary side sectional view of the stacking device and containers of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1, the improved stacking ring 10 is shown attached to an upper container 12 and a lower container 14. In FIG. 2, the ring 10 and containers 12, 14 are shown in section to illustrate their locking relationship to each other. The ring 10 includes a pair of short inner ridges or lips 18 which engage the beaded or flanged end portions 20, 22 of containers 12, 14. A pair of longer outer ridges or lips 26 engage the cylindrical outer walls 30, 32 of containers 12, 14. The lead in surfaces 34, 36 of the lips 18, 26 are preferably angled to permit the beaded container portions to cam the lips outwardly into the open areas 38, 40 during assembly. Since the ring 10 is preferably formed of a resilient plastic material such as polyethylene, the lips 18, 26 are readily deformed during assembly.

The ring device 10 includes a transverse planar wall or cover portion 42 which is held in tight sealing engagement with the beaded container ends 20, 22 due to pressure applied to the beaded ends by lips 18. The outer lips 26 center the ring 10 on the containers 12, 14 and prevent the containers from being too readily removed from their locking engagement with the inner lips 18. The outer wall of the ring 10 comprises generally annular upper and lower flange portions 46 which have a curved outer surface 50. The upper and lower curved outer surfaces 50 meet in an external ridge portion 52 which is in the plane of the transverse wall portion 42. The curved surfaces 50 and the ridge portion 52 may be easily manually engaged to permit sufficient force to be applied to the ring 10 to remove it from either of the containers 12, 14 when desired.

I claim as my invention:

1. In combination, a pair of containers, each having at least one beaded end, and a molded plastic stacking device for stacking said pair of containers and engaging and retaining said beaded ends, said stacking device comprising an imperforate, substantially planar center portion defined at its periphery by oppositely axially extending annular flange portions, said flange portions

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each including a pair of integral, spaced annular ridges having their apexes directed generally radially inwardly and having their axially outermost walls directed toward said planar center portion, the intermost ridge of each of said pair of ridges extending radially inwardly to a lesser extent than the outermost ridge, each of said intermost ridges engaging and retaining the end bead of one of said pair of containers and each of said outermost ridges engaging the side wall of one of said pair of containers, said intermost ridges being axially spaced from said planar center portion and having an inner diameter less than the maximum diameter of the beaded end of the container with which it is engaged.

2. The combination of claim 1 wherein an open space is provided between said pairs of annular ridges on said

stacking device and between the intermost ridges and the planar center portion to accommodate the resilient movement of said ridges as said stacking device is assembled to said containers.

3. The combination of claim 2 wherein said open spaces have a greater diametral extent than the diametral extent of the beaded ends of said containers.

4. The device of claim 1 wherein said stacking combination has a non-cylindrical outer surface having a greater diameter at its center than at its ends.

5. The combination of claim 4 wherein said outer surface is concavely curved between its ends and its center so as to define a pair of finger gripping surfaces and a central ridge portion.

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