

Nov. 5, 1968

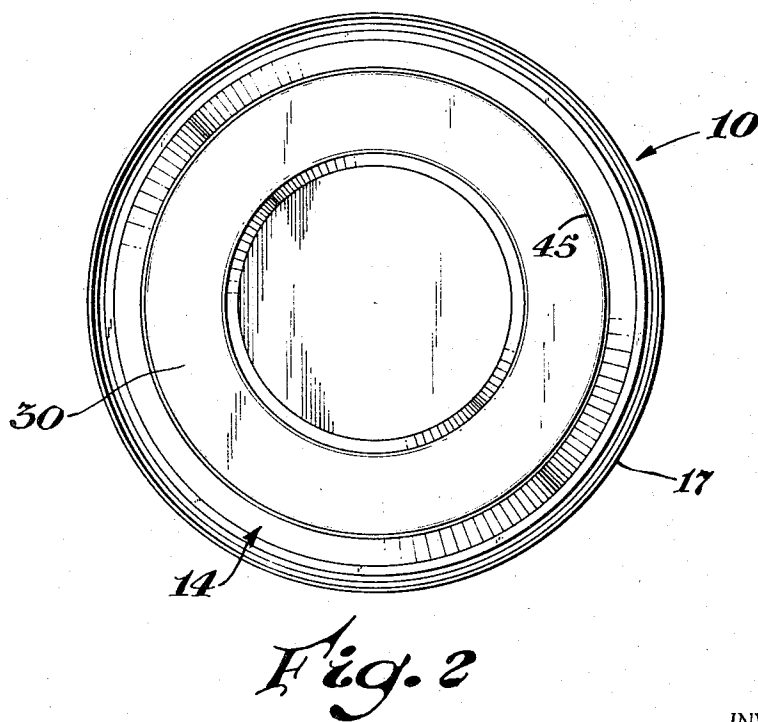
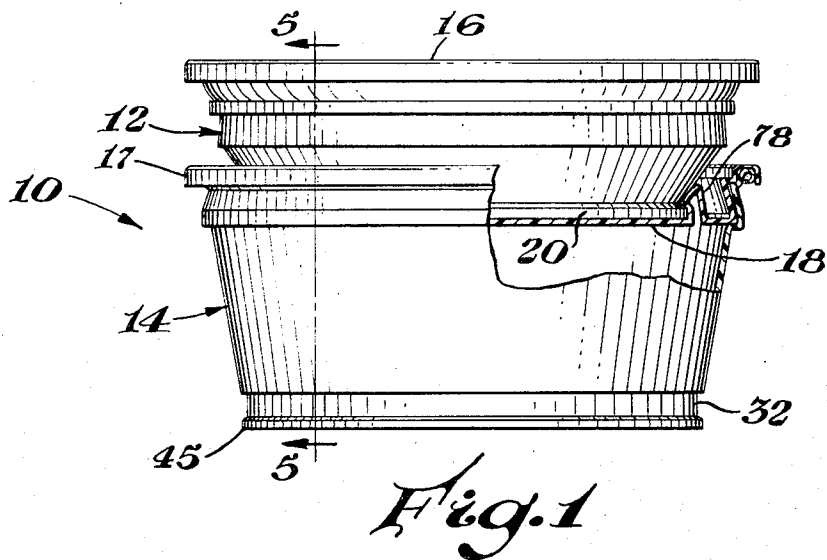
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3,409,123

INTERLOCKING CONTAINER AND LID

Filed Nov. 18, 1966

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

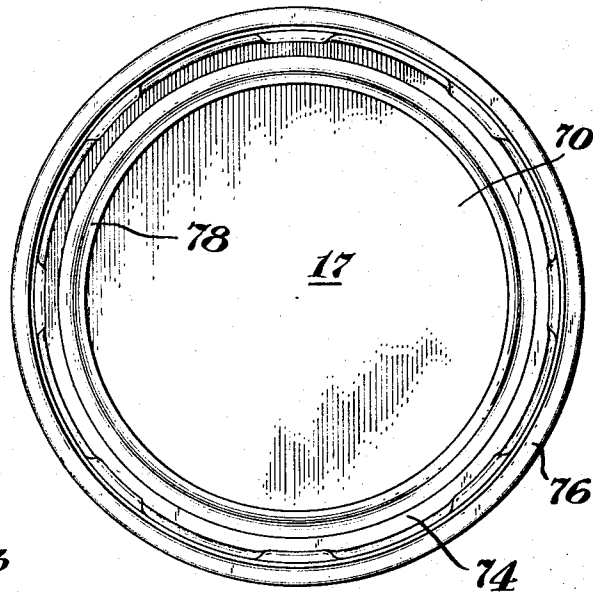
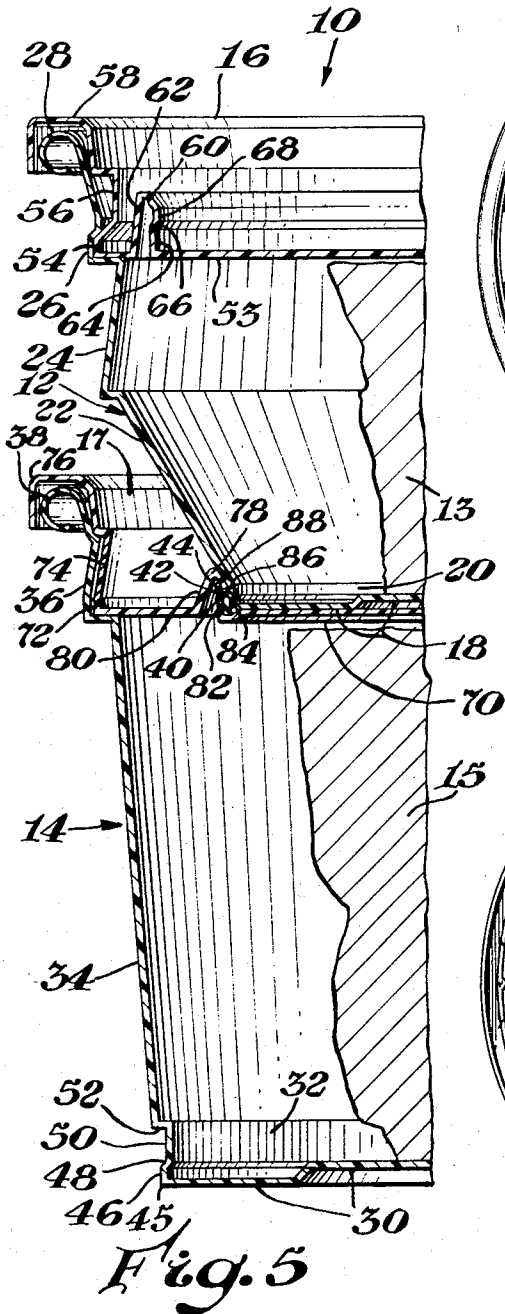


Fig. 3

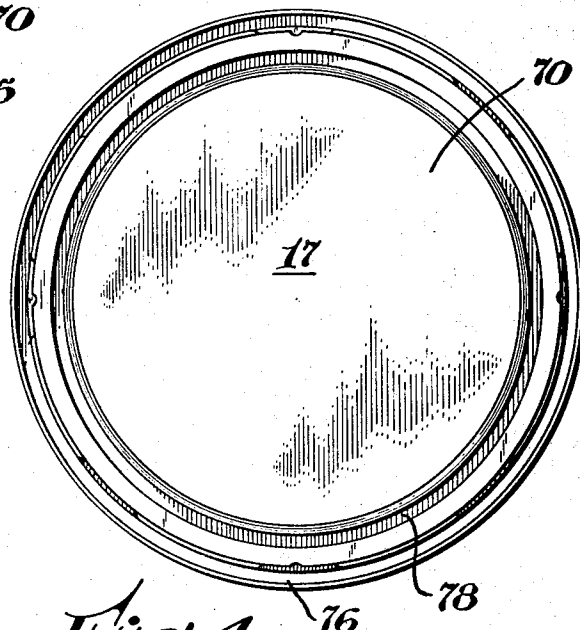


Fig. 4

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1

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INTERLOCKING CONTAINER AND LID

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8 Claims. (Cl. 206-47)

ABSTRACT OF THE DISCLOSURE

A multi-unit package comprised of tubs and lids containing separate related or supplemental products. A locking ridge extending from the lid of a lowermost container matingly snaps together with a locking ring adjacent the bottom of another container which is placed on the top of the lid to form the multi-unit package.

Disclosure of the invention

This invention relates generally to thin walled containers such as tubs for packaging cottage cheese, salads, ice cream and other products, which containers are particularly well adapted to be handled in stacks and dispensed one at a time in commercial filling machines, and are ultimately purchased by consumers in retail stores. More specifically, this invention relates to a new container and interlocking lid combination to make up a composite package for multi-unit sale of related or supplementary food products.

It is common for producers of cultured dairy products to mix them with other food items and package the combination in plastic containers of the type generally shown in U.S. Patents 3,112,841 and 3,173,571, for example. More particularly, many dairies sell cottage cheese containing pineapple, cherries, chives, or vegetables. It is also common for them to sell sour cream containing chives, onions, and other flavoring.

There has been interest by such dairies in something which would allow packaging the cottage cheese or sour cream in one container, the fruit or other related or supplementary product in a separate container, and than tie the two containers together as a composite package for ease of merchandising.

This invention provides a novel construction which permits any number of individual containers and lids to be combined together in a multi-unit fashion so that related or supplemental products, as above discussed, can be sold together as a composite package where this is desirable. Furthermore, the present invention permits ready separability and recombining of each unit from the other without necessarily disturbing other units in a composite package.

Briefly, this invention accomplishes the above desired features by incorporating into a lid, which is used to close a lowermost container, a locking ridge which is designed to matedly snap together with an especially designed bottom locking ring on another container which is placed on top of the lid to form the composite multi-unit package. By using such lids on each successive container having such a bottom locking ring, any number of container units can be stacked and locked together. The inherent resiliency of the plastic material forming the lids and containers usually will provide sufficient flexibility that the locking ridge and locking ring of the lid and container, respectively, can be snapped together and snapped apart without an unusual degree of effort.

Yet additional objects and advantages of the present invention are even more apparent when taken in conjunction with the accompanying drawing in which like characters of reference designate corresponding material and parts throughout the several views thereof, in which:

FIGURE 1 is an elevational view, partially broken

2

away, of two containers interlocked with one another according to the principles of the present invention.

FIGURE 2 is a bottom view thereof;

FIGURE 3 is a top view of a lid of the present invention;

FIGURE 4 is a bottom view of the lid of FIGURE 3; FIGURE 5 is an enlarged fragmentary cross sectional view taken along reference line 5-5 of FIGURE 1.

Referring now more particularly to the drawings, multi-unit package 10 includes containers 12 and 14, which containers are closed by lids 16 and 17, respectively. Preferably, containers 12 and 14, as well as lids 16 and 17, are formed from at least somewhat resilient thermoplastic material, such as polystyrene or polyethylene. Container 12 carries a product 13 and container 14 carries a product 15, which products can be any goods that can be packaged in a multi-unit fashion, as discussed hereinbefore.

Container 12 includes a bottom wall 18, joined through locking ring portion 20, to an outwardly veering upwardly directed side wall 22. Extending upwardly from sidewall 22 is a stacking ridge 24 joined with lid receiving rib 26 and rim 28. This construction, except for bottom locking ring portion 20, is conventional as taught in U.S. Patents 3,061,139 and 3,139,213, for example.

Locking ring portion 20 has a leg 40 extending generally vertically upwardly from bottom wall 18. Extending upwardly from leg 40 is a substantially flat inwardly inclined section 42 and from the uppermost end thereof a generally vertical band 44 merging with sidewall 22, the leg 40 and band 44 defining an inwardly directed groove.

Container 14 includes a bottom wall 30 joined, through a locking ring portion 32, to an upwardly and outwardly directed sidewall 34. Extending upwardly from sidewall 34 is a combined stacking shoulder and lid receiving area 36 which ends in peripheral rim 38, all of which, except for locking ring portion 32, can be as described in co-pending U.S. application Ser. No. 589,112, filed Oct. 24, 1966, and assigned to the same assignee as is this application.

Locking ring portion 32 is defined by a plurality of generally flat surfaces. More specifically, locking ring portion 32 has a leg 46 extending generally vertically upwardly from bottom wall 30. Extending upwardly from leg 46 is a substantially flat inwardly inclined section 48, and from the uppermost end thereof a generally vertical band 50. A generally horizontal ledge 52 continues outwardly from band 50 to where it is joined with sidewall 34. The ledge can serve a stacking function where desired, i.e., the lowermost edge 45 of leg 46 of one container could rest on ledge 52 of a next lower container when two containers 14 are nested together (not shown nested), provided edge 45 extends outwardly beyond the innermost extent of ledge 52.

Lid 16 has an annular center portion 53 which ends in sealing bead 54. Extending upwardly from bead 54 is a recessed portion 56 which merges into rim receiving channel 58. Except for upstanding locking ridge 60, which extends circumferentially about center portion 53, lid 16 is otherwise conventional, as illustrated by U.S. Patent 3,061,139, for example. Locking ridge 60 is of a generally inverted V-shaped configuration the outside leg 62 of which is preferably canted inwardly from bottom to top. The inside of the ridge forms a bump defined by a plurality of flat surfaces. More specifically, the inside of the ridge has a vertical section 64, inclined portion 66, and a vertical band 68 all complementary to leg 46, inclined section 48 and band 50 (except at its uppermost extent), respectively, of locking ring portion 32.

Lid 17 has an annular center portion 70 which ends in sealing bead 72. Extending upwardly from bead 72 is a stacking section 74 which merges into rim receiving chan-

nel 76. Except for upstanding locking ridge 78, which extends circumferentially about center portion 70, lid 17 is otherwise as illustrated in the aforesaid U.S. patent application Ser. No. 589,112. Locking ridge 78 is of a generally inverted V-shaped configuration the outside leg 80 of which is canted inwardly from bottom to top. The inside of the ridge has a vertical section 82, inclined portion 84, and a generally vertical band 86 complementary to leg 40, inclined section 42 and band 44, respectively, of locking ring portion 20. Outwardly veering portion 88 extends from band 86 at generally the same angle as sidewall 22.

Shown interlocked together is the locking ring portion 20 of container 12 with the locking ridge 78 of lid 17. Inclined portion 84 and band 86 of locking ridge 78 form a bump undercut by section 82. The leg 40 and inclined section 42 of locking ring portion 20 is snap-locked under this bump to secure together the locking ring portion 20 and locking ridge 78. Leg 80 and section 82 of locking ridge 78 flex together when locking ring portion 20 slips past the bump, thus permitting locking to occur. The veering portion 88 acts as a lead in passing the ridge portion past the bump. Preferably, locking ring portion 20 and locking ridge 78 are circumferentially continuous to effect fuller engagement between lid 17 and container 12. The canted angle of leg 80 serves to maintain the interlock by exerting inward pressure against the locking ring portion 20.

In a similar manner a container 14 can be snapped together (this interlock not shown) with a lid 16 by engagement of locking ridge 60 with a locking ring portion 32. The main difference is that band 50 is relatively wide, as is its mating band 68, to provide a somewhat greater locking surface more resistant to accidental disengagement.

In each instance the complementary flat mating surfaces of the locking ring portions and locking ridges make for an especially secure interlock between each container and lid. In any event, it is clear that by using interlocking rings and ridges, any number of containers and lids can be combined in stack form and sold as a multi-unit package container related or supplementary products where desirable. However, it is not inconceivable that completely unrelated products might also be sold together, especially where one of the products is a bonus, such as marbles sold with cottage cheese, the marbles being contained in the upper container as the incentive to purchase the cottage cheese.

The bottommost container in a multi-unit package, of course, need not contain a locking ring portion if it is not expected that it will ever be interlocked with another container and lid. Likewise, the uppermost lid need not carry a locking ridge if it is not expected that another container will ever be interlocked with it. In each instance, a conventional container and lid will be satisfactory.

While certain representative embodiments and details have been shown for the purpose of illustrating the invention, it will be apparent to those skilled in the art that various changes and modifications can be made therein without departing from the spirit and scope of the invention.

Accordingly, what is claimed as new is:

1. A composite package comprising at least two separate units interlocked together, each unit including a container and lid therefor, a product contained in each said container, each said container comprising a bottom wall and a sidewall inclined upwardly and outwardly from said bottom wall and ending in a peripheral rim, an upper one of said containers including a locking ring portion about its sidewall and juxtaposed with its bottom wall, said locking ring portion including an inwardly directed groove, said groove being defined by a plurality of surfaces at least one of which is flat, each said lid having an annular center portion closing the open top of its respective container, a locking ridge extending upwardly from said annular center portion of the lid of the container next below said upper one of said containers, an inwardly protruding bump extending from said ridge and snap-locked with said groove, said bump being defined by a plurality of surfaces at least one of which is flat, said flat surfaces of said groove and bump mating with one another, whereby the lid of one unit is interlocked with the container of another unit.

2. The composite package of claim 1 wherein said containers and lids are comprised entirely of a resilient thermoplastic material.

3. The composite package of claim 1 wherein said locking ring portion and said locking ridge are circumferentially continuous.

4. The composite package of claim 3 wherein said locking ring portion in vertical cross section comprises a generally vertical leg extending upwardly from said bottom wall, an inwardly and upwardly directed flat inclined section extending from said leg and merging into a generally vertical band, and wherein said locking ridge in vertical cross section comprises a generally vertical section, an inwardly and upwardly directed flat inclined portion extending from said section and merging into a generally vertical band, said leg, inclined section and band of said locking ring portion generally mating with said vertical section, inclined portion and band of said locking ridge, respectively.

5. The composite package of claim 4 wherein said band merges with the upwardly and outwardly extending portion of said side wall.

6. The composite package of claim 4 wherein a generally horizontal ledge extends outwardly from the band of said locking ring portion.

7. The composite package of claim 4 wherein said locking ridge is of a generally inverted V-shaped configuration having an outside leg canted inwardly and spaced at its bottom from said vertical section.

8. The composite package of claim 7 wherein at least said locking ridge comprises a resilient thermoplastic material.

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