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F. E. LEDERER ET AL

2,767,754

PLASTIC CONTAINER

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Fig. 1

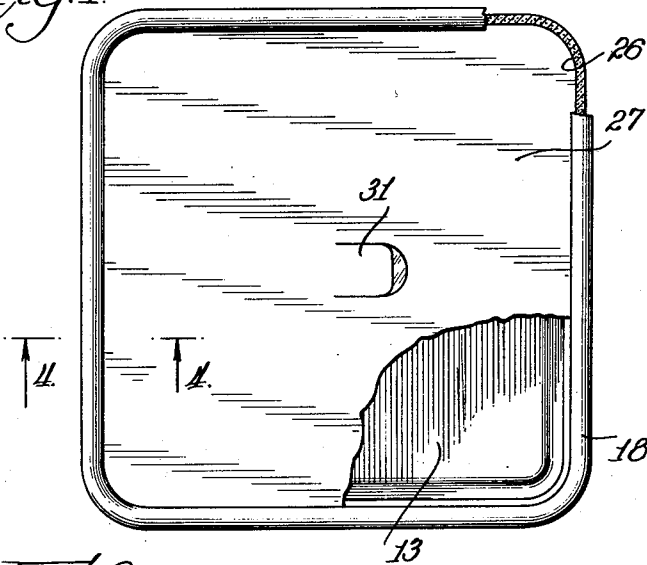


Fig. 2

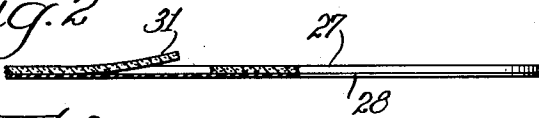


Fig. 3

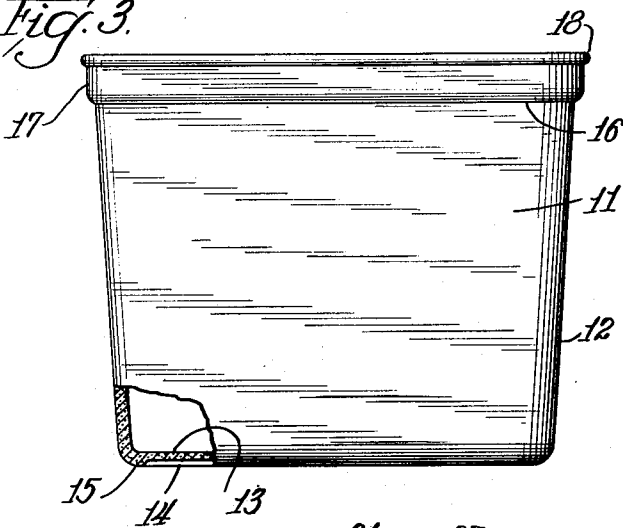


Fig. 6

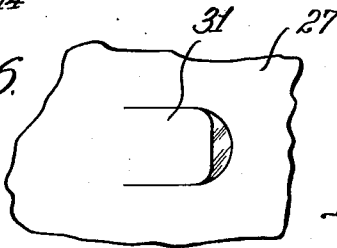


Fig. 4

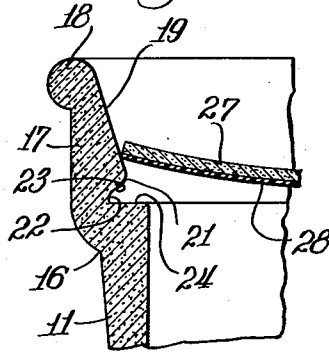


Fig. 5

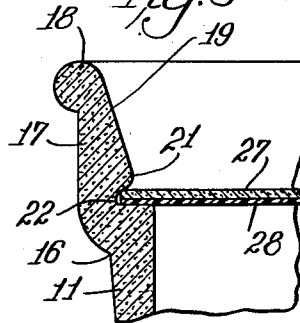
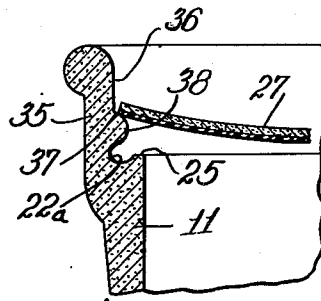


Fig. 7



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PLASTIC CONTAINER

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7 Claims. (Cl. 150—5)

The present invention relates to reusable packaging containers made of plastic which are particularly suited for use in connection with refrigerated foods.

It is a principal object of the present invention to devise a rectangular packaging container consisting of a receptacle portion and a closure portion of which the receptacle portion may be molded of a deformable plastic material such as polyethylene and having an abutting surface sealing ledge and of which the closure portion is flat stock rigid material with a plastic surface layer to abut said ledge under conditions of facile application and removal attended by moisture-proof sealing interengagement between the two components.

Another object of the present invention is to provide a moldable pliant storage receptacle which may be used for refrigerated food packaging and which may be sealed by a rigid flat closure element reliably effecting moisture-proof seating engagement between the two capable of withstanding the rigors of freezer and refrigerator compartment exposure.

Yet another object of the present invention is to provide a packaging container for various classes of comestibles which require isolation against influences of humidity and dehydration, which lends itself to close placement for the economical utilization of storage space, and which may be repetitively opened and closed while utilizing as a closure element a simple profiled planar partition provided with a lift tab.

The foregoing and other objects of the present invention are attained in accordance with a preferred practice by forming a receptacle component in substantially rectangular shape with a parapet type of retaining flange which extends around the uppermost outer periphery of its defining walls. The flange is marginally offset from the principal portions of the defining walls and is significantly shaped on its interior surfaces with a gently inwardly converging slope beneath which there is provided a perimetric recess and a seating ledge. The closure member is made of a profiled flat partitioning element having on its inner surface a bonded film of polyethylene. This member is accurately dimensioned so as to be received snugly within the receptacle recess under conditions of marginal encompassing pressures. The recess of the receptacle, moreover, is preferably sloped at its uppermost engaging surface so as to exert a downwardly directed camming force whereby to urge the polyethylene film on the closure member against the seating ledge.

In order that this invention may be more fully understood reference will now be had to the accompanying drawing and to the following detailed description in which a preferred embodiment thereof is contemplated for illustrative purposes.

In the drawing:

Fig. 1 is a plan view with portions in section of a rectangular receptacle with a closure partition applied embodying various features of the present invention;

Fig. 2 is a side elevational view on an enlarged scale

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of the closure partition alone with a portion thereof broken away and in section;

Fig. 3 is a slide elevational view of the apparatus disclosed in Fig. 1;

Fig. 4 is an enlarged fragmentary sectional view taken approximately on line 4—4 of Fig. 1 showing the cover partition in an intermediate position of application;

Fig. 5 is a view similar to Fig. 4 showing the cover partition fully installed in its perimetric seating groove of the receptacle;

Fig. 6 is a fragmentary plan view on an enlarged scale of the cover partition featuring the lift tab detail; and

Fig. 7 is an enlarged detail sectional view similar to Figs. 4 and 5 but showing a modified form of parapet flange and seating groove.

Referring now more particularly to the illustrations of Figs. 1—6, attention is directed to the receptacle or container member which is illustrated as having identical side wall portions 11 which slope convergently inward and downward and which join at the corners with curved sections designated 12. A bottom wall 13, Fig. 3, may advantageously be recessed as at 14 so that the receptacle will rest on a lowermost perimetric edge flange 15 in the event that any bulging or deformation is impressed upon the bottom wall.

At their uppermost level the receptacle walls merge as at 16 into a parapet flange 17 which bulges slightly outwardly terminating with a beaded curvature as at 18 to afford reinforcement. This arrangement permits a number of such receptacles to be stacked in tier alignment.

The flange 17 may have an outer wall surface which is substantially vertical but its inner surface 19 is preferably convergent to a marked degree ending with a protuberant ridge as at 21 thence receding into a rectangular recess 22 of which one side wall 23 forming the uppermost boundary of the recess is a sloping surface and of which the other side wall 24 is preferably horizontal. If preferred, the horizontal surface may include a seating ridge such as that shown in the modified illustration Fig. 7 as at 25.

The recess 22 preferably parallels the general contour of the flange 17 even as at 26, Fig. 1, in connection with the corner radii curvatures. A cover closure member generally indicated 27 is accordingly of similar profile so that when positioned after the manner illustrated in Fig. 5 the sloping recess surface 23 will engage the outermost edge of the cover member throughout its entire extent exerting a downward pressure component thereto. This effect holds the bottom surface of cover 27 firmly against the ledge 24 or where preferred against the shallow ridge 25 to effect a moistureproof barrier thereat. By making the cup or receptacle of a deformable plastic compound such as polyethylene the placement of the cover portion 27 may be achieved quite rapidly by inducing a mild deformation of the flange 17 during the time that the cover undergoes the intermediate stage of application featured in Fig. 4.

The cover member itself is preferably made of a comparatively rigid material such as bonded laminations of sulphite fibre impervious to moisture penetration and yieldable to a limited extent only by a transverse bowing thereof in a manner suggested by the illustration of Fig. 4. As the cover passes the interior ridge or bead 21 it snaps into the groove 22 and is prevented from overtravel by the positive encounter with the wide surface ledge 24. Restoration of the receptacle flange 17 as well as of the closure partition 27 to their original forms is achieved following the full seating of the disc after the manner of Fig. 5.

In order to provide for moisture-proof sealing the under surface of the cover partition 27 may be coated

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to its full extent or even peripherally with a film of polyethylene 28. A more durable cover structure is had when the film is applied prior to the profiling or stamping of the cover so as to produce sharp identical outline in the two principal laminations. Whether the film surface 28 engages the ledge 24 or the ridge 25 a more positive sealing barrier may be effected where both of the engaging components are in this way comprised of polyethylene plastic due to the characteristic tackiness or waxiness of the material contributed in plural degree by both of the engaging surfaces.

While lift tabs for the purpose of removing the closure 27 in generally similar devices are known which effect a transverse deformation in order to achieve adequate clearance to permit removal, the provision of such a tab as at 31 in the type of closure structure 27 is attended with certain advantageous performance to which attention is now directed. By locating the tab 31 in the approximate center of the rectangular closure member 27 the lift force exerted through the tab 31 is observed to produce a characteristic pyramidal deformation or inflection gathering inwardly the straight line edges of the cover 27 somewhat ahead of the corner extremities and consequently reducing to a marked degree the frictional deterrent between the cover 27 and the interior surface 23 of flange 17. The tab 31 can be any size desired.

In this way the lift operation has been found to be noticeably relieved minimizing the strain hazard which otherwise results in the rupturing of the tab 31 at its connecting neck. In the case of tabs which are secured as separate members by stapling or otherwise the aforedescribed lift operation is also of significant advantage because there also the friction deterrent constitutes an added strain to the tab securement element.

In Fig. 7 the parapet flange designated 35 is characterized by an interior wall surface 36 differing from the wall surface 19 in significant and contrasting manner as best revealed by the inwardly sloping curvature or approach portion 37. This arrangement permits a portion of the wall surface 37 to be more nearly perpendicular to the rigid cover. Accordingly, during placement of the closure cover 27 where one edge may be snapped into the recess 22a ahead of another the final edges to be seated are less likely to back out due to the retentive characteristics of the perpendicular wall section preceding the ridge 38. As a consequence the approach surface 37 may be described as a reverse curvature respecting ridge 38 and is deemed for certain uses preferable to the continuous angle slope of the preferred embodiment shown in Figs. 4 and 5.

It will also be noted that with either embodiment, the container can be readily and easily cleaned around the edges and bottom for repeated uses. Merely flexing the flanges 17 and 35 will loosen encrustations and open the grooves 22 and 22a wide enough to be worked clean.

While the present invention has been explained and described in reference to a preferred embodiment and an exemplary illustration of modification, it is to be understood nevertheless that numerous changes and variations lend themselves to be incorporated without departure from the spirit or scope thereof. Accordingly, it is not intended for an understanding of this invention to be restricted by the portrayal in the accompanying drawing nor by the language of the preceding description except as indicated in the hereinafter appended claims.

What is claimed is:

1. A packaging container for frozen foods comprising a receptacle having a rectangular shape with side walls converging downwardly and joined at their mutual junctures with minor radius fillets, a parapet flange defining the uppermost periphery of said receptacle, said flange being an outwardly offset of said side walls as well as of said radius fillets and including an interior surface tapering inwardly and downwardly and extending to an undercut recess, said recess having a V-shaped

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profile one of the sides of which is substantially horizontal and marginally longer than the other to constitute seating ledge, and a closure for said receptacle comprising a flat disc dimensioned to lodge in said V-shaped recess under pressure fit contacting engagement with the other side of said of said V-shaped recess wherefor said disc is held in sealing engagement with said seating ledge, said disc being made of springably rigid material such as laminated sulphite board and having applied to its interior surface to the extent at least of its ledge engaging areas a polyethylene film adherent, and being incised in respect to its exterior lamina to define an engageable finger tab, the non-incised junction portion of said tab being located substantially at the center of said disc so that a lifting force exerted thereat may cause to be induced upon said disc pyramidal inflection to release the polyethylene film adherent from sealed engagement with said seating ledge.

2. A container for refrigeration storage of foods comprising a receptacle, side walls to said receptacle joined with minor radius curvature wall portions, a laterally offset flange at the uppermost periphery of said receptacle having an interior wall surface with a perimetric inner flange and a V-shaped groove adjacent said inner flange, one of the sides of said groove being substantially horizontal and forming a seating ledge, the other of the sides of said groove sloping upwardly and inwardly, and a closure for said receptacle which comprises a disc member profiled to lodge tightly in said V-shaped groove so that the sloping side of said groove cams said disc into sealing engagement with said seating ledge, and a polyethylene film adherent on the under side of said disc to form an effective moisture sealing engagement with said seating ledge.

3. A container for frozen foods comprising a cup member molded of polyethylene in rectangular form flat side walls to said member connected together at corner junctions with minor radius curvatures, a parapet flange extending around the top of said side walls and having an interior surface tapering inwardly and downwardly, a perimetric ledge inside said flange at the level of said side walls, said cup member having a V-shaped groove between said ledge and said interior surface, and a restorable closure of flat stock springably rigid material profiled to be snugly received within said groove, the upper surface of said V-shaped groove impinging upon the perimetric boundary of said closure whereby to cam said closure into sealing engagement with said ledge.

4. A packaging container for refrigerated foods comprising a rectangular receptacle molded of polyethylene and comprising downwardly and inwardly tapering side walls mutually adjoined with minor radius fillets, a bottom wall to said receptacle, a peripheral offset flange constituting an uppermost extremity of said receptacle and having an interior surface tapering inwardly to effect a passageway constriction terminated by a retention ridge, a V-shaped groove below said ridge of which the upper surface slopes pyramidally and of which the lower surface extends horizontally and a removable closure panel comprising a flat disc member profiled to seat within said V-shaped groove, and comprised of bonded layers of which a lowermost one is made of polyethylene, whereby retention pressure of said flange imparted through said pyramidal slope of said V-shaped groove effects sealing of said disc member lowermost layer with said receptacle horizontal surface.

5. A packaging container for refrigerated foods comprising a receptacle molded of polyethylene and comprising side walls, corner fillets connecting said side walls, a bottom wall to said receptacle, a flange circumscribing said side walls and fillets and having on its interior surface a perimetric closure receiving recess, said recess being of V-shaped cross-section and merging into a sealing ledge, and a closure disc having a polyethylene sealing surface

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and adapted to be placed into sealing engagement with said ledge.

6. A container for refrigeration storage of foods comprising a receptacle having side walls and rounded corner portions, a laterally offset flange skirting said walls and portions having an interior surface which extends first downwardly then curves inwardly and merges into a passage constriction flange, the level immediately beneath said constriction flange having a substantially V-shaped groove, the upper side of which slopes upwardly and inwardly and the lower side of which extends horizontally to form a seating ledge, and a closure disc for said receptacle profiled to be frictionally engaged by said offset flange interior surface at its downwardly extending portion pending encounter with said passage constriction flange, said disc being so conformed with respect to said groove to lodge tightly therewithin with the sloping side of said groove camming said disc into sealing engagement with said seating ledge, and a polyethylene film adherent on the under side of said disc to form an effective moisture sealing engagement with said seating ledge.

7. A container for refrigeration storage of foods comprising a receptacle, side walls to said receptacle, a laterally offset flange at the innermost periphery of said receptacle having an interior wall surface with a perimetric inner flange and a V-shaped groove adjacent said inner flange, a beveled cam surface adjacent said inner flange, a polyethylene, substantially horizontal seating ledge intersecting said beveled camming surface, a closure

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for said receptacle comprising a disc member profiled to lodge in the V-shaped groove formed by said ledge and said camming surface, said camming surface being adapted to force said disc into sealing engagement with said seating ledge and a polyethylene film adherent on the under side of said disc to form an effective moisture sealing engagement with said seating ledge.

References Cited in the file of this patent

UNITED STATES PATENTS

1,064,787	Taylor	June 17, 1913
1,106,191	Crooks	Aug. 4, 1914
1,183,728	Griffith	May 16, 1916
1,345,036	Thompson	June 29, 1920
1,463,198	Dance	July 31, 1923
1,482,761	Moore	Feb. 5, 1924
1,541,146	Huntley	June 9, 1925
1,850,494	Brewer	Mar. 22, 1932
1,916,857	Copeman	July 4, 1933
1,973,758	Gray et al.	Sept. 18, 1934
2,030,841	Anaya	Feb. 18, 1936
2,167,783	Strovink	Aug. 1, 1939
2,367,250	Warth et al.	Jan. 16, 1945
2,409,460	Waters	Oct. 15, 1946
2,420,215	Wiley	May 6, 1947
2,487,400	Tubber	Nov. 8, 1949
2,494,047	Lay	Jan. 10, 1950
2,606,586	Hill	Aug. 12, 1952