

Nov. 17, 1964

J. M. GRADY

3,157,342

CARTON

Filed Jan. 7, 1963

2 Sheets-Sheet 1

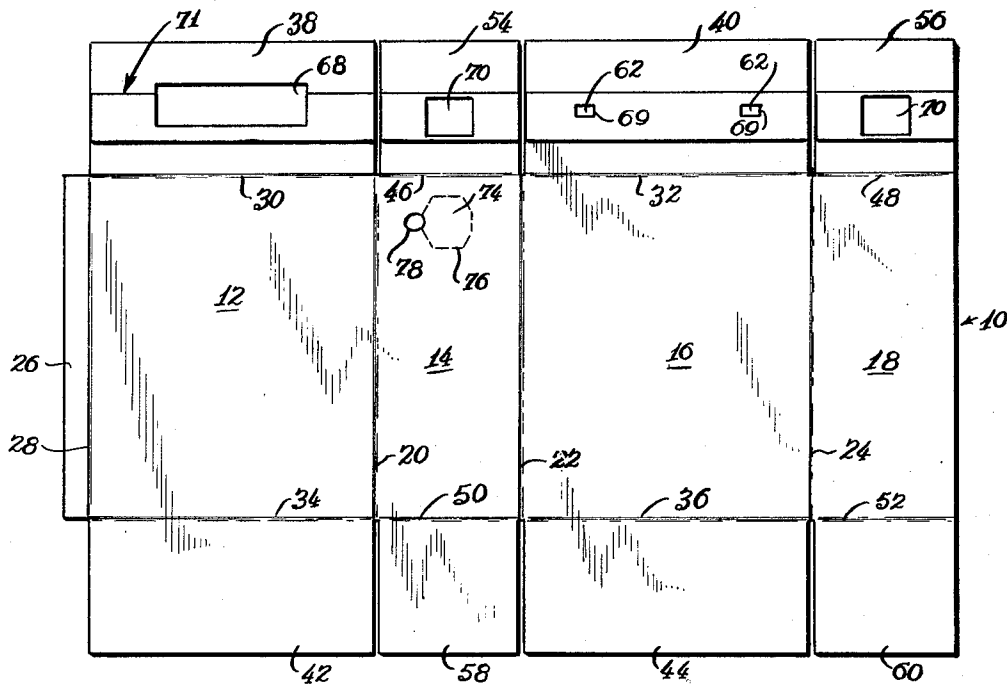


FIG 1

FIG 2

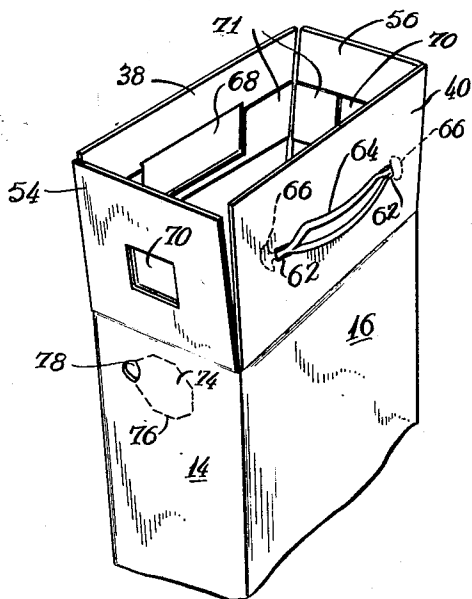
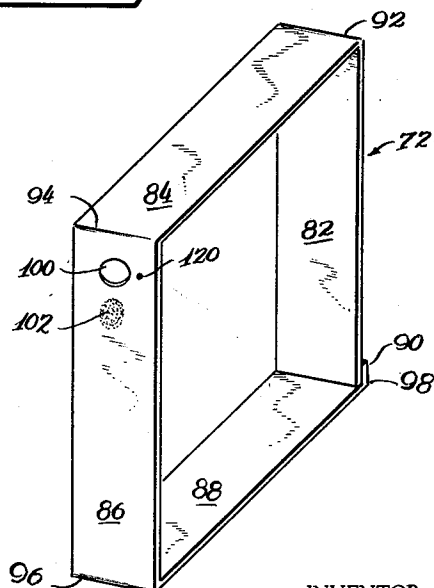


FIG 3



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2 Sheets-Sheet 2

Fig 4

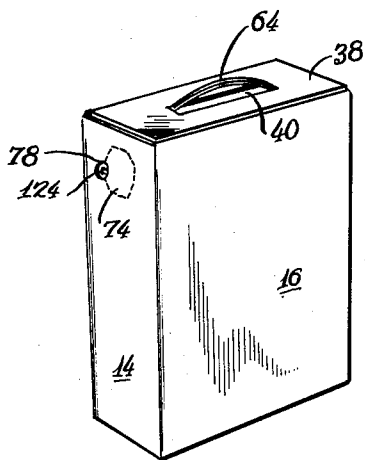


Fig 5

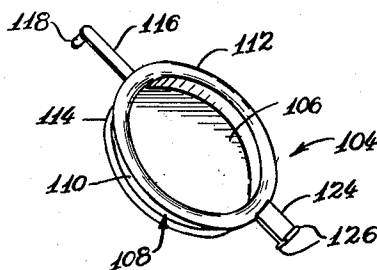
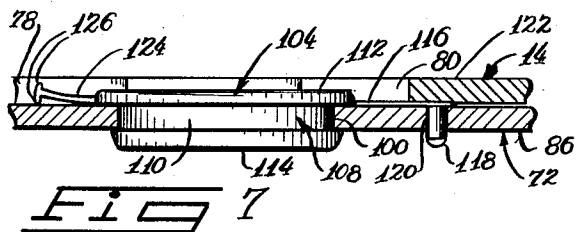
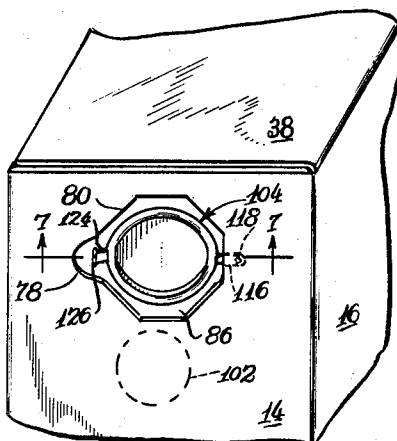


Fig 6



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1

3,157,342
CARTON

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16 Claims. (Cl. 229-14)

This invention relates to a carton for packaging materials. More particularly, this invention relates to a carton especially adapted for packaging and storing materials having a relatively high density and relatively small crystal size, such as salt and the like.

Materials having these characteristics are frequently packaged, shipped and stored in large quantities and in containers having a capacity substantially exceeding the amounts of such material which might be poured from the container for any single use. Due to the foregoing characteristics of such materials, difficulties have been encountered in providing a carton or container therefor which prevents the packaged material from leaking or sifting through the joints of the container during packaging, shipping and storage, or through the discharge opening in the container once the closure therefore has been opened for initial use and then reclosed. Another problem associated with the storage of such materials has been the uncertainty as to whether any of the materials originally packaged in the container may have been removed therefrom prior to delivery of the container to the ultimate user.

Consequently, it is an object of this invention to provide a container for materials having a relatively high density and relatively small crystal size which is so constructed as to eliminate, or at least minimize as much as possible, leakage or sifting of the packaged material through the joints or discharge opening thereof.

It is a further object of this invention to provide containers for such materials which are economical to manufacture and fill, and which are at the same time sturdy in construction so as to be readily filled, shipped, stacked for storage and manually carried, without deformation or damage.

It is a still further object of this invention to provide a container which is so constructed that the closure in the discharge opening therein cannot be initially removed after the container is filled without leaving obvious evidence of such removal.

It is a further object of this invention to provide a container having a specially constructed closure for the discharge opening therein which may be repetitively removed from and reinserted in the discharge opening without impairing the ability of the closure to prevent leakage or sifting of the packaged material through the opening when the closure is in closed position.

The foregoing and other objects are achieved by this invention which provides a container having an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, and a removable closure or plug hingedly connected to said liner for opening and closing said second opening. The removable plug of the invention is resilient and comprises a central body portion and a flange portion disposed substantially perpendicularly to and extending outwardly from adjacent the periphery of said body portion, said flange portion comprising a web portion and a pair of spaced-apart retaining members extending laterally from said web portion in planes substantially parallel to said body portion, one member of said pair being substantially coplanar with said body

2

portion and the other member of said pair being disposed adjacent the outer end of said web portion, a first resilient means extending from one side of the last mentioned member of said pair for removably hinging said plug to the liner wall adjacent the discharge opening therein, and a second resilient means extending from another side of said last mentioned member of said pair to provide a finger grip for removal of said plug from said discharge opening.

The structure and objects of this invention may be more thoroughly understood by those skilled in the art of packaging upon reading the following specification in conjunction with the accompanying drawings wherein:

FIGURE 1 is a plan view of a container blank made in accordance with the invention;

FIGURE 2 illustrates in perspective the liner or container insert which comprises another part of the invention;

FIGURE 3 is a fragmentary perspective view showing the container blank of FIGURE 1 in partially assembled condition;

FIGURE 4 is a perspective view showing the container in completely assembled condition;

FIGURE 5 is a perspective view of the closure or removable plug comprising a part of the invention;

FIGURE 6 is a fragmentary perspective view showing the relative positions of certain parts of the invention in assembled form; and

FIGURE 7 is a partial sectional view taken generally in the direction of the arrows 7-7 in FIGURE 6.

Referring to FIGURE 1, there is provided a carton blank 10 which, when assembled, forms the outer surfaces or walls of the container of the invention. The blank 10 may be die-cut and is preferably made from double-faced corrugated fiberboard, although other materials may also be suitable. The blank comprises a side wall 12, an end wall 14, an opposite side wall 16 and an opposite end wall 18, which are respectively defined along their common edges by the fold lines 20, 22 and 24. A glue flap 26 is connected to the side wall 12 along the fold line 28 whereby, when the blank is partially folded to the position shown in FIGURE 3, the glue flap 26 is adhesively secured to the end wall 18 in the customary manner.

Side walls 12 and 16 each have top and bottom extensions defined by the fold lines 30, 32, 34 and 36 to provide an outer full top flap 38, an intermediate full top flap 40, an intermediate full bottom flap 42 and an outer full bottom flap 44, respectively. End walls 14 and 18 each have top and bottom extensions defined by the fold lines 46, 48, 50 and 52 to provide inner partial top flaps 54 and 56 and inner partial bottom flaps 58, and 60, respectively.

As shown in FIGS. 1 and 3, the intermediate top flap 40 is provided with a pair of spaced-apart rectangular slots 62 by means of which a resilient plastic handle 64 is attached to afford a means for lifting and carrying the filled container. As shown in FIGURE 3, the handle 64 includes a pair of lugs 66. These lugs are inserted through the slots 62 which are of a size sufficient to receive the handle lugs 66 therethrough only when the latter are turned in one direction, and allow for free movement of the handle shank without, however, allowing gaps through which any appreciable amount of material may leak.

The outer full top flap 38 is provided with an enlarged rectangular centrally disposed slot 68 having a length less than the distance between the remotest edges 69 of the slots 62 in the intermediate top flap 40 whereby the outer top flap 38 further delimits the slots 62 in the intermediate top flap when the top is fully assembled, as

shown in FIGS. 1 and 4. This further reduces the possibility of leakage through the slots 62 around the handle. The slot 68 in the outer top flap 38 also provides a space for the exposed central portion of the handle 64 to rest so as to prevent snagging during handling, shipping and storage. The inner partial top flaps 54 and 56 each have a centrally disposed rectangular slot 70 to provide resting places for the handle lugs 66 so as to permit close contact between the inner partial top flaps and the intermediate top flap 40, when the top flap is fully assembled.

As shown in FIGS. 1 and 3, in order to provide additional strength in the handle area, a solid fibre reinforcing strip 71 is affixed to the inside or concealed surfaces of all top flaps and positioned so that it is centered on the handle slot openings 7. This strip may be applied continuously at the corrugator prior to die-cutting of the blank 10.

As shown in FIGS. 1, 3 and 4, end wall 14 is provided near the top thereof with an integral seal 74 defined substantially by the partial perforation line 76 which may preferably be die-cut in the carton blank 10. A thumb or finger hole 78 is also provided in the end wall 14 contiguous with the seal 74 so as to provide a means for manually rupturing the unperforated portions of the line 76 to permanently remove the seal 74. As shown in FIGURE 6, the thumb hole 78 becomes a small extension of the opening 80 in the end wall 14 when the seal 74 is completely removed.

Referring to FIGURE 2, there is also provided an insert or liner 72 which comprises a side panel 82, a top panel 84, an opposed side panel 86, a bottom panel 88 and a tuck flap 90, respectively connected along the fold lines 92, 94, 96 and 98. The liner 72 may preferably be die-cut from a blank (not shown), and may also be formed of double-faced corrugated fiberboard, in which event the insert is preferably cut with the corrugations thereof disposed so as to be perpendicular to the side walls of the container to provide maximum stacking strength. The dimensions of the several panels of the liner 72 are such that when the liner is inserted into the outer portion of the container formed by the blank 10 when assembled, the several panels of the liner will be in close contact with the overlying panels of the assembled blank 10.

As shown in FIGURES 2 and 7, a circular aperture 100 is provided near the upper end of the side panel 86 of the liner 72, the aperture 100 being positioned so as to be in substantial alignment with the opening 80 in the end wall 14 of the container when the liner is inserted. A glue spot 102 is also provided on the outer surface of the side panel 86 of the liner, adjacent the aperture 100 therein, so that after insertion of the liner the alignment of the aperture 100 in the side panel 86 with the opening 80 in the end wall 14 will be maintained even after the container is partially emptied, as will be hereinafter described.

Aperture 100, following removal of the seal 74 from the end wall 14, serves as the discharge opening for pouring the contents of the container in a controlled stream. In order to provide a closure for the aperture 100 so that any unused portion of the packaged material may be safely stored without leakage, a resilient plug 104, which may be formed of plastic material, is provided, as shown in FIGS. 5, 6 and 7. Plug 104 is formed and shaped so as to be both snugly received in the aperture 100 to prevent discharge of material therethrough and hingedly secured to the side panel 86 of the liner 72 whereby the plug may be readily removed from and reinserted in the aperture 100 while always remaining attached to the liner 72 to avoid loss of the plug.

Plug 104 comprises a central body portion 106 having a shape conforming to the shape of the discharge opening 100 which, in the example shown in the drawings, is circular. It will be understood, however, that equally satisfactory results may be obtained when the discharge

opening in the liner and the conforming central body portion of the plug are rectangularly or otherwise similarly shaped. Plug 104 also comprises a flange portion 108 disposed substantially perpendicularly to and extending outwardly from adjacent the periphery of the central body portion 106. The flange portion 108 includes a web portion 110 having a depth substantially equal to the thickness of the side panel 86 of the liner, and a pair of spaced-apart retaining members 112 and 114 extending laterally from the web portion 110 in planes substantially parallel to the body portion 106, the smaller inner retaining member 114 being substantially co-planar with the central body portion 106 and the larger outer retaining member 112 being disposed adjacent the outer end of the web portion 110.

Due to the resiliency of the plug 104, the plug may be readily inserted in the opening 100 by manually pushing the plug into the opening until the inner retaining member 114 is forced through the opening 100 and the web portion 110 of the plug is snugly received in the opening 100. The retaining member 112 and 114, which extend beyond the periphery of the web portion 110 of the plug, embrace the opposed areas of the side panel 86 of the liner surrounding the opening 100 so as to prevent the plug 104 from being either pushed completely through or unintentionally removed from the opening 100. The snug fit of the resilient plug in the discharge opening 100 prevents any leakage of material through the opening when the plug is inserted therein.

In order to hingedly attach the plug 104 to the liner 72, a resilient arm 116 is formed integrally with the plug and extends laterally from one side of the outer retaining member 112. Arm 116 is sufficiently thin and flexible so that the arm itself may act as a hinge for removing and reinserting the plug. Near the outer end of the arm 116 there is provided an elongated post-like projection 118 extending perpendicularly and inwardly from the arm 116 and being shaped so as to be snapped into and snugly held by friction in a small hole 120 in the side panel 86 of the liner 72. The hole 120 is spaced-apart a short distance from the discharge opening 100 and is positioned under the area 122 (FIG. 7) of the end wall 14 so that the plug 104 is prevented from being completely detached from the container even when the plug is removed from the discharge opening 100.

In order to facilitate removal of the plug 104 from the opening 100, a second resilient arm 124 is also formed integrally with the plug 104 and extends laterally from the outer retaining member 112 oppositely from the hinging arm 116. To facilitate grasping the arm 124, a pair of opposed nibs 126 is provided at the free end of the arm 124. As shown in FIGS. 4, 6 and 7, the arm 124 is of sufficient length that the nibs 126 and a portion of the free end of the arm are positioned in the thumb hole 78 when the plug 104 is inserted in the discharge opening 100. Thus, when the container is completely assembled and before the seal 74 is removed, the nibs do not prevent a close contact between the end wall 14 and the side panel 86. The nibs 126 extend from the arm 124 a sufficient distance to permit obtaining a firm finger grip thereon for removal of the plug 104 but are not long enough to permit the outer nib to extend beyond the outer surface of the end wall 14, when the plug is in closed position. This prevents snagging of the plug when the container is handled or stacked. The arm 124 is somewhat thicker and consequently is less flexible than the hinging arm 116 in order that the arm 124 may function somewhat as a handle to remove the plug from the discharge opening, while at the same time being sufficiently flexible to bend the free end thereof to first obtain a finger grip on the nibs 126.

During the set-up and filling operation, the plastic handle 64 is first applied and the top flaps of the blank 10 sealed in closed position, such as by stapling or gluing (not shown). The thus partially assembled blank is then

5

inverted and the liner 72, with the plug 104 already attached and in closed position and the glue spot 102 having been applied thereto, is inserted into the container. The position of the inserted liner is such that the top panel 84 of the liner embraces the inner partial flaps 54 and 56 of the blank 10, thereby covering the slots in the top flaps of the blank to further minimize the possibility of leakage. The side panel 86 of the liner embraces the end wall 14 of the blank 10 with the discharge opening 100 and the removable plug 104 therein in alignment with the removable seal 74. The side panel 86 is adhesively retained in such aligned position by means of the glue spot 102. The side panel 82 of the liner embraces the end wall 18 of the blank.

When the panels 82, 84 and 86 of the liner are thus inserted, the container is then filled from the bottom, following which the bottom panel 88 of the liner 72 is folded to the position shown in FIG. 2 and secured in such position by inserting the tuck flap 90 of the liner between the side panel 82 thereof and the end wall 18 of the folded blank. The bottom flaps 42, 44, 58 and 60 of the blank 10 are then folded in the customary manner, and secured by stapling or gluing (not shown), to completely form and close the bottom of the container. The carton thus filled and completely assembled may then be reinverted and carried by means of the handle 64. It is then also in condition for shipment or storage.

It will be seen that a carton or container has been provided for packaging materials of relatively high density and relatively small crystal size which affords maximum protection against leakage both before removal of any of the contents therefrom and after any partial removals thereof. There has also been provided in such a carton a means for easy visual detection of the first removal of contents therefrom.

While a particular embodiment of this invention is shown herein, it will be understood, of course, that the invention is not to be limited thereto, since many modifications may be made, and it is, therefore, contemplated by the appended claims to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, and a removable plug hingedly connected to said liner at a point spaced apart from said second opening and underlying said outer wall for opening and closing said second opening.

2. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner at a point spaced apart from said second opening and underlying said outer wall for opening and closing said second opening, and a removable seal disposed in said first opening to prevent removal of said removable plug from said second opening without first removing said seal.

3. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner at a point spaced apart from said second opening and underlying said outer wall for opening and closing said second opening, a removable seal disposed in said first

6

opening to prevent removal of said removable plug from said second opening without first removing said seal, and adhesive means proximate to said second opening for securing said inner wall area to said outer wall.

4. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein substantially defined by a partially perforated removable seal, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner at a point spaced apart from said second opening and underlying said outer wall for opening and closing said second opening, said removable seal being disposed to prevent removal of said removable plug from said second opening without first removing said seal, and means for removing said seal to gain access to said removable plug.

5. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein substantially defined by a partially perforated removable seal, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner at a point spaced apart from said second opening and underlying said outer wall for opening and closing said second opening, said removable seal being disposed to prevent removal of said removable plug from said second opening without first removing said seal, and means including a thumb hole defined by an unsealed portion of said first opening for removing said seal from said outer wall.

6. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner for opening and closing said second opening, and a removable seal disposed in said first opening to prevent removal of said removable plug from said second opening without first removing said seal, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mounting said plug on said liner adjacent said second opening, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening.

7. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, adhesive means proximate to said second opening for securing said inner wall area to said outer wall, a removable plug hingedly connected to said liner for opening and closing said second opening, and a removable seal disposed in said first opening to prevent removal of said removable plug from said second opening without first removing said seal, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed

substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mounting said plug on said liner adjacent said second opening, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening.

8. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner for opening and closing said second opening, a removable seal disposed in said first opening to prevent removal of said removable plug from said second opening without first removing said seal, and means for removing said seal to gain access to said removable plug, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mounting said plug on said liner adjacent said second opening, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening.

9. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner for opening and closing said second opening, a removable seal disposed in said first opening to prevent removal of said removable plug from said second opening without first removing said seal, and means including a thumb hole defined by an unsealed portion of said first opening for removing said seal from said outer wall, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mounting said plug on said liner adjacent said second opening, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening.

10. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner for opening and closing said second opening, and a removable seal disposed in said first opening to prevent removal of said removable plug from said second open-

ing without first removing said seal, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mounting said plug on said liner adjacent said second opening, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening, said second resilient means comprising an arm substantially parallel to said central body portion and a pair of opposed nibs extending from the outer and inner sides of said arm at the free end thereof.

11. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, a removable plug hingedly connected to said liner for opening and closing said second opening, a removable seal disposed in said first opening to prevent removal of said removable plug from said second opening without first removing said seal, and means including a thumb hole defined by an unsealed portion of said first opening for removing said seal from said outer wall, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mounting said plug on said liner adjacent said second opening, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening, said second resilient means comprising an arm substantially parallel to said central body portion and a pair of opposed nibs extending from the outer and inner sides of said arm at the free end thereof, said nibs and the free end of said arm being disposed in said thumb hole.

12. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, said inner wall area also having a hinge-receiving aperture therethrough adjacent said second opening and underlying said outer wall, a removable plug hingedly connected to said liner for opening and closing said second opening, and a removable seal disposed in said first opening to prevent removal of said removable plug from said second opening without first removing said seal, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mount-

ing said plug on said liner adjacent said second opening, said first resilient means including a post-like projection extending inwardly therefrom into and held by friction in said hinge-receiving aperture, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening.

13. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, said inner wall area also having a hinge-receiving aperture therethrough adjacent said second opening and underlying said outer wall, a removable plug hingedly connected to said liner for opening and closing said second opening, a removable seal disposed in said first opening to prevent removal of said removable plug from said second opening without first removing said seal, and means including a thumb hole defined by an unsealed portion of said first opening for removing said seal from said outer wall, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed substantially perpendicularly to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mounting said plug on said liner adjacent said second opening, said first resilient means including a post-like projection extending inwardly therefrom into and held by friction in said hinge-receiving aperture, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening, said second resilient means comprising an arm substantially parallel to said central body portion and a pair of opposed nibs extending from the outer and inner sides of said arm at the free end thereof, said nibs and the free end of said arm being disposed in said thumb hole.

14. A container comprising an outer wall and a liner inserted therein, said outer wall having a first opening therein, said liner having an inner wall area underlying and embracing the portion of said outer wall having said first opening, said inner wall area having a second and smaller opening therein in alignment with said first opening, and a removable plug hingedly connected to said liner for opening and closing said second opening, said removable plug comprising a central body portion substantially congruent with said second opening and a resilient flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion including a pair of retaining members spaced apart a distance substantially equal to the thickness of said liner and adapted to embrace the portion of said liner surrounding said second opening, a first resilient means extending from one side of the outer retaining member for hingedly mounting said plug on said liner adjacent said second opening, and a second resilient means extending from another side of the outer retaining member to provide a finger grip for removal of said plug from said second opening.

15. A resilient plug for opening and closing an aperture

in a walled container comprising a central body portion and a flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion comprising a web portion and a pair of spaced-apart retaining members extending laterally from said web portion in planes substantially parallel to said body portion, one member of said pair being substantially coplanar with said body portion and the other member of said pair being disposed adjacent the outer end of said web portion, a first resilient means extending laterally from one side of said last-mentioned member of said pair, a post-like projection spaced from said last-mentioned member of said pair and extending inwardly and generally perpendicularly from said first resilient means and adapted to be inserted and frictionally retained in a smaller second aperture in said container spaced apart from said first mentioned aperture whereby to hingedly secure said plug to said container, said first resilient means being sufficiently flexible to serve as a hinge for pivoting said body portion about said projection as an axis to remove said plug from said first aperture, and a second resilient means extending laterally from another side of said last-mentioned member of said pair, said second resilient means being sufficiently less flexible than said first resilient means whereby said second resilient means may serve as a handle for removal of said plug from said first aperture.

16. A resilient plug for opening and closing a circular aperture in a walled container comprising a circular central body portion and a flange portion disposed substantially perpendicular to and extending outwardly from adjacent the periphery of said body portion, said flange portion comprising a cylindrical web portion and a pair of spaced-apart ring-like retaining members extending radially from said web portion in planes substantially parallel to said body portion, one member of said pair being substantially coplanar with said body portion and the other member of said pair being disposed adjacent the outer end of said web portion, a first resilient means extending radially from one side of said last-mentioned member of said pair, a post-like projection spaced from said last-mentioned member of said pair and extending inwardly and generally perpendicularly from said first resilient means and adapted to be inserted and frictionally retained in a smaller second aperture in said container spaced apart from said first mentioned aperture whereby to hingedly secure said plug to said container, said first resilient means being sufficiently flexible to serve as a hinge for pivoting said body portion about said projection as an axis to remove said plug from said first aperture, and a second resilient means substantially diametrically opposed to said first resilient means and extending radially from said last-mentioned member of said pair, said second resilient means being sufficiently less flexible than said first resilient means whereby said second resilient means may serve as a handle for removal of said plug from said first aperture.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,157,342

November 17, 1964

James M. Grady

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, line 26, for "stroage" read -- storage --;
column 2, line 5, for "will" read -- wall --; line 50, for
"respctively" read -- respectively --; same column 2, line
54, after "58" strike out the comma; column 3, line 15, for
"7" read -- 70 --; column 4, line 21, for "member 112 and
114, whcih" read -- members 112 and 114, which --.

Signed and sealed this 13th day of April 1965.

(SEAL)

Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents