May 14, 1968 R. J. WEIKERT 3,383,009

CONTAINER

Filed March 17, 1967 3 Sheets-Sheet 1

FIG-1

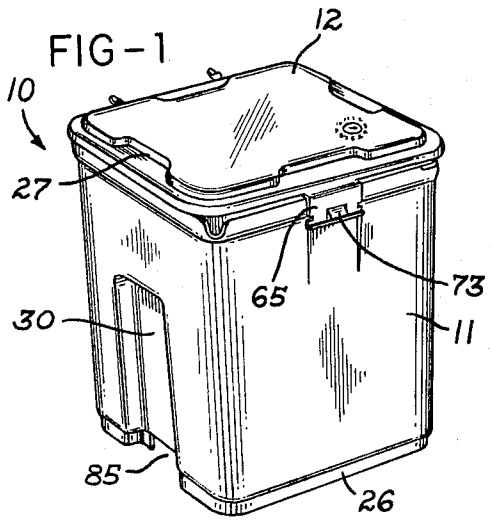


FIG-2

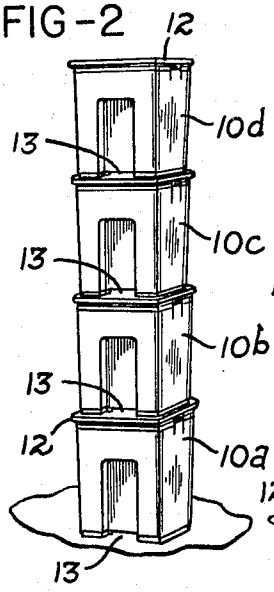


FIG-3

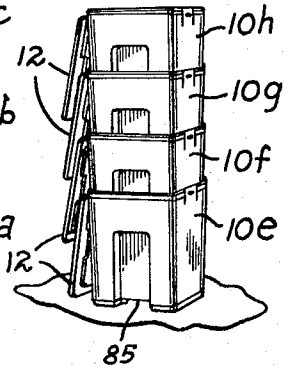
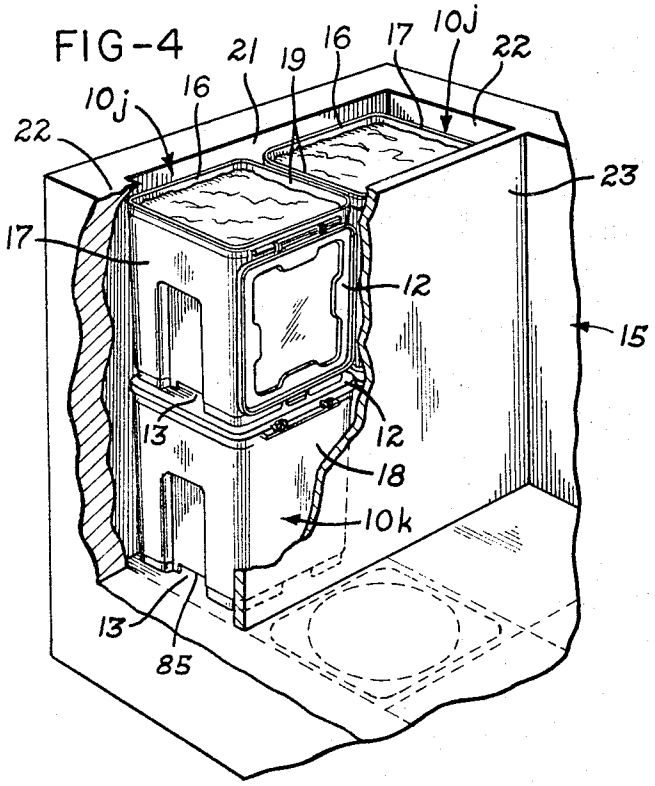


FIG-4



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ATTORNEYS

May 14, 1968 R. J. WEIKERT 3,383,009

CONTAINER

Filed March 17, 1967 3 Sheets-Sheet 2

FIG-5

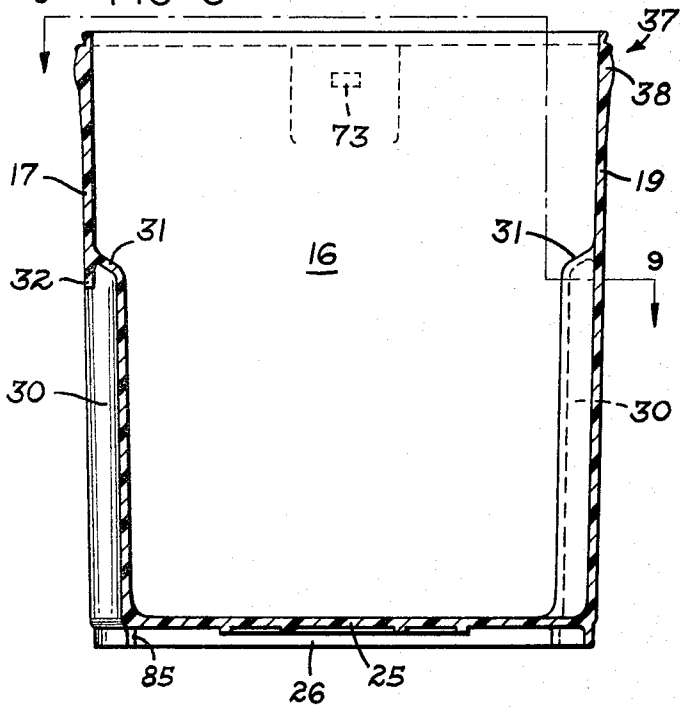


FIG-6

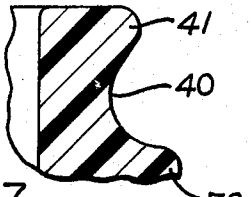


FIG-7

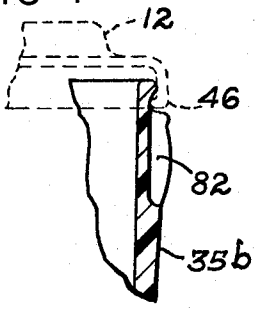


FIG-8

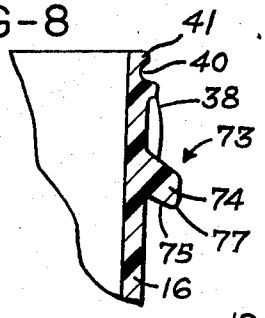


FIG-9

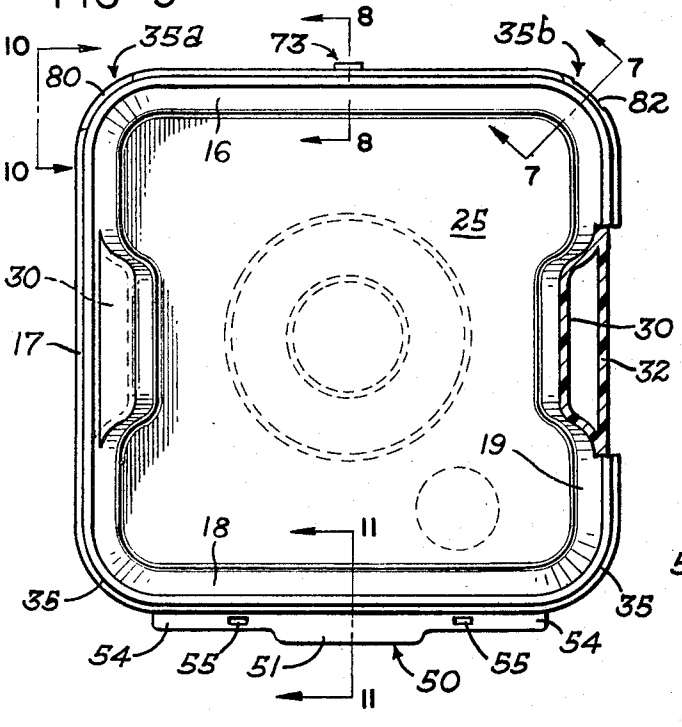


FIG-10

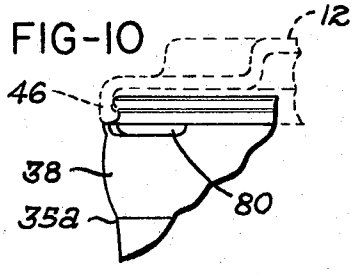
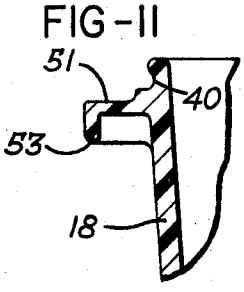


FIG-11



May 14, 1968 R. J. WEIKERT 3,383,009

CONTAINER

Filed March 17, 1967 3 Sheets-Sheet 3

FIG-12

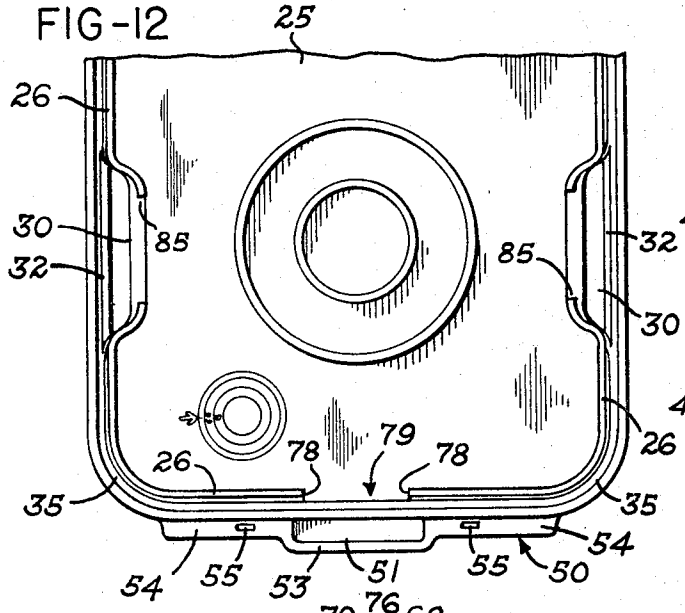


FIG-13

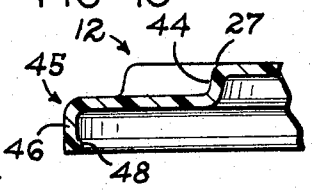


FIG-14

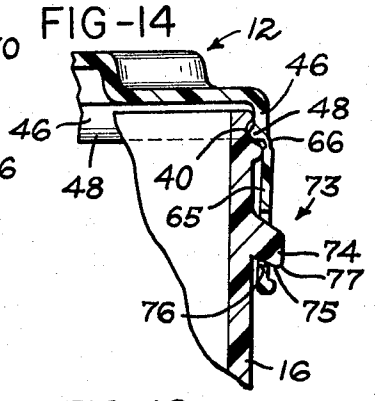


FIG-15

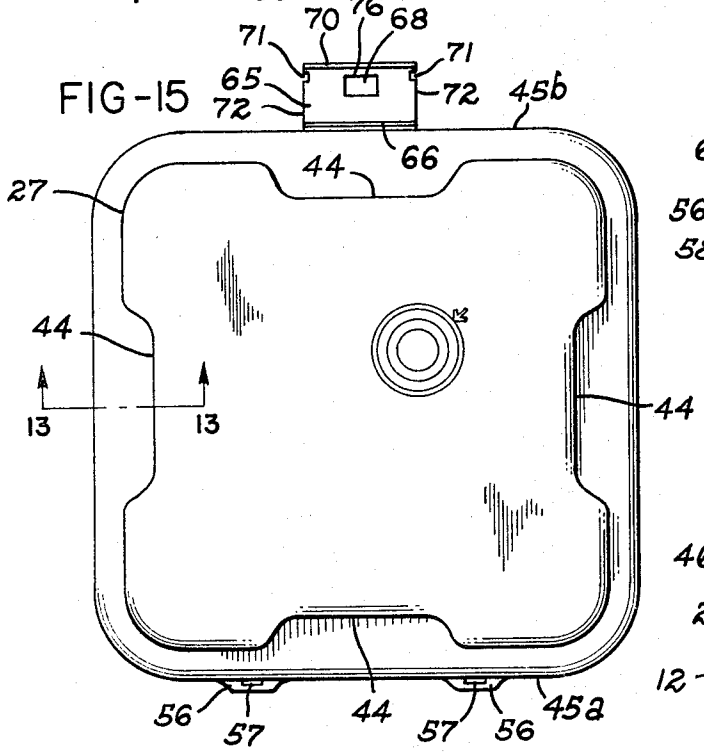


FIG-16

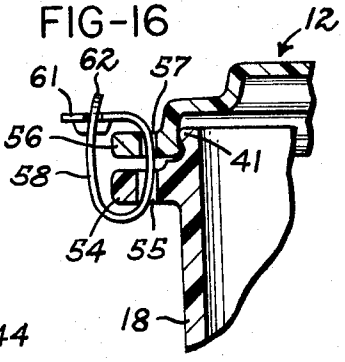


FIG-17

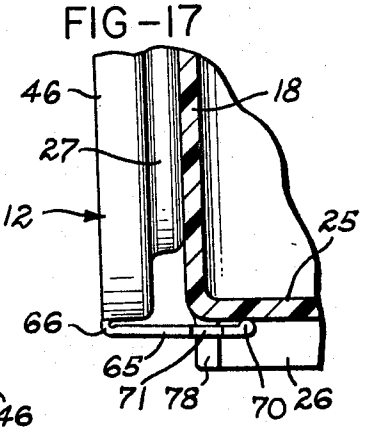
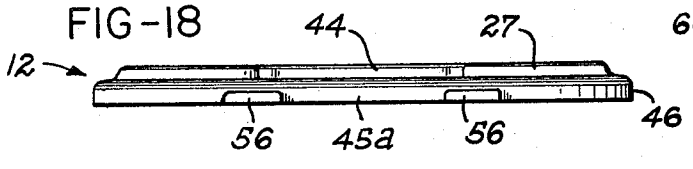


FIG-18



United States Patent Office 3,383,009 Patented May 14, 1968

3,383,009

CONTAINER

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Filed Mar. 17, 1967, Ser. No. 624,052
7 Claims. (Cl. 220—97)

ABSTRACT OF THE DISCLOSURE

A plastic container adapted for frozen or refrigerated liquids which has a generally square configuration for more efficient use of the space in expensive refrigeration equipment, as well as improved handling and storage of the container and easy removal of the contents thereof. The container includes novel locking mechanism for the cover to the container in either the open or closed position.

Background of the invention

The invention relates to containers, and specifically to dispensing containers for use in refrigerated dip cabinets. In the past, ice cream and the like have been shipped and dispensed from reusable cylindrical metal cans or cylindrical chipboard containers which are discarded after use. These containers are quite deep and it is very difficult, even with a very long reach, to remove all of the ice cream from the bottom thereof. These other containers leave a substantial amount of unused space in storage facilities and dipping cabinets and thus do not efficiently occupy the available space. Because they fit loosely in the cabinet they move around during the dispensing thus making the removal of the contents more difficult. The chipboard top covers are very difficult to remove since they are frozen in place and frequently a portion of the cover is torn during removal.

Summary of the invention

This invention is directed to a dispensing container which can be recleaned and reused many times and which has a configuration adapted to make maximum use of the space available in conventional freezers. A reusable cover is pivotally mounted on the container and means are provided for releasably securing the cover in a closed position on the top of the container. Because the container is to be reused, the cover is releasably fastened to the side of the container in its open position so that it does not interfere with the removal of the contents of the container, nor does it obstruct handling of the containers during insertion into and removal from the dip cabinets. The containers are designed for stacking when filled and nesting when empty for improved and efficient handling, and a space is provided between adjacent stacked containers for ventilation between the top and bottom of adjacent stacked containers. Indentations are provided in the side walls for handling as well as for increasing the rate at which the contents of the container can be cooled or frozen.

Brief description of the drawings

FIG. 1 is a perspective illustration of the container which embodies the invention;

FIG. 2 is another perspective view showing several of the containers stacked vertically;

FIG. 3 is a perspective view showing several of the containers nested together for storage or handling;

FIG. 4 is a fragmentary perspective view showing several of the containers mounted in a conventional freezer;

FIG. 5 is a vertical sectional view taken through the center of the container;

FIG. 6 is a sectional view through the lip around the upper periphery of the container;

FIGS. 7 and 8 are sectional views taken along the lines 7—7 and 8—8, respectively, of FIG. 9;

FIG. 9 is a sectional view taken along the line 9—9 of FIG. 5;

FIGS. 10 and 11 are also sectional views taken along the lines 10—10 and 11—11, respectively, of FIG. 9;

FIG. 12 is a bottom view of the container;

FIG. 13 is a sectional view of the cover taken along the line 13—13 of FIG. 15;

FIG. 14 is a sectional view through the locking mechanism for the cover;

FIG. 15 is a top view of the cover;

FIG. 16 is a sectional view taken through one of the hinges on the cover;

FIG. 17 is an elevation view partially in section showing the manner in which the cover is locked in the open position; and

FIG. 18 is a side view of the cover.

Description of the preferred embodiment

Referring to the drawings wherein a preferred embodiment of the invention is shown, FIGS. 1–4 illustrate the container **10** and the manner in which it is utilized. Specifically, the container **10** includes a body **11** having a cover **12** which is hinged to the body **11**. As shown in FIG. 2, the filled containers **10***a*, **10***b*, **10***c* and **10***d* can be stacked one on top the other with the bottom of one container nesting on the cover **12** of the adjacent lower container in such a manner that air will flow through the spaces **13** between the containers to permit ventilation and quick freezing or cooling of the contents of the container. As shown in FIG. 3, several containers **10***e*, **10***f*, **10***g* and **10***h* are nested together during storage for a substantial saving in space and improved handling characteristics.

Referring to FIG. 4, the containers **10** are generally square and thus fit compactly into the freezing compartment of the freezer **15**. The side walls **16**, **17**, **18** and **19** of the container abut the sides of the freezer **21** and **22**, the partition **23**, and the adjacent container, respectively, so that there is relatively no movement of the containers **10** within the freezer **15**. When the upper containers **10***j* are emptied, they are closed and substituted for the lower containers **10***k* so that at no time is a long reach required to scoop the ice cream from the container. Because the containers are generally square and fill the entire space, a substantial increase (as much as 25%) in the capacity thereof is attained thus reducing handling of the containers.

Each container, as shown in FIG. 5, includes the four slightly tapered side walls **16**, **17**, **18** and **19** having the bottom wall **25** integrally molded therewith. The bottom wall **25** is spaced above the lower peripheral edge **26** of the side walls, and this lower edge defines a configuration which is identical to the raised central portion **27** on the cover **12**. The height of the edges **26** is somewhat greater than the height of the raised portion **27** to create the space **13** between containers **10** when they are stacked.

The side walls **17** and **19** have substantially identical indentations **30** formed therein which extend from the bottom edges **26** of the container upwardly about two-thirds of the height of the container. The upper portion of these indentations terminates in the rounded wall **31** having the downwardly extending section **32** adjacent the outside surface of the side wall **17** or **19**. The indentations **30** have a width slightly greater than the width of the human hand and thus it is quite easy to grasp the downwardly extending sections **32** with the fingertips to transport the container. Moreover, the indentations **30** provide increased surface area and reduced distance between the

outside surface of the container and the center thereof, both of which facilitate rapid freezing or cooling of the container contents. The portion of the side walls 17 and 19 above the indentations 30 is flush with the remaining portion of the side walls and all of the corners 35 of the container are smoothly rounded so that no sharp edges are provided.

As shown in FIGS. 5 and 6, the upper peripheral edges 37 of the side walls 16–19 have the thickened section 38 below the circular cutout 40 therein with the lip 41 extending horizontally beyond the cutout. The enlarged section 38, the cutout 40, and the lip 41 extend entirely around the pirephery of the upper edges 37 of the container for receiving the cover 12. The cover 12 (FIGS. 13–15) thus has the raised central portion 27 which mates with the bottom of the containers 10, and the cover 12 has the indented portions 44 for accommodating the lower portion of the indentations 30 in the side walls 17 and 19. The outer edge 45 of the cover has the downwardly extending wall 46 (FIG. 13) having a rounded internal bead 48 on the lower edge thereof for engaging the cutout 40 in the upper edge 37 of the body 11. Because of the resiliency of the plastic materials from which the cover 12 and body 11 are made, a slight amount of pressure will snap the bead 48 into the cutout 40 and thus firmly lock the cover 12 on the body 11 to seal the container 10.

The cover 12 is pivotally secured to the body 11 and thus cannot be lost when the container 10 is opened. The horizontally extending flange 50 is provided near the top of one of the side walls 18 which does not have an indentation 30 therein. This flange includes a central section 51 (FIGS. 11 and 12) having a downwardly projecting flange 53 which forms a handle, and the side sections 54 of the flange have the rectangular slots 55 therein. On one edge 45*a* of the cover 12 is provided the outwardly extending flanges 56 which also have rectangular slots 57 therein aligned with those in the horizontal flange 50 so that the flexible hinge members 58 may be inserted therethrough, as shown in FIG. 16. This hinge member 58 may take the form of a plastic strip having a head portion 61 which engages the tail portion 62 to lock the member into a closed loop thus providing an inexpensive hinge.

A rectangular locking tab 65 (FIG. 15) is provided on the opposite edge 45*b* of the cover 12 and includes a flexible hinge 66 which permits the central portion of the tab 65 to pivot with respect to the cover 12. For example, if the cover is made from polypropylene, the hinge 66 could be molded as a part thereof to form a so-called "living hinge." The tab 65 has a rectangular opening 68 therein adjacent the enlarged outer edge 70 while the cutout portions 71 are provided in the adjacent side edges 72 thereof, as shown in FIG. 15. The mating male portion 73 of the lock is shown in FIGS. 8 and 14 and includes a downwardly extending member 74 having a generally rectangular cross-section and a lower surface 75 which is adapted to engage the outermost edge 76 of the opening in the locking tab 65. The tab 65 must be deformed slightly to clear the outer apex 77 of the member 74 so that it is held in position thereon.

When the cover 12 is open it is locked against the side wall 18 of the container 10 so that it does not interfere with the handling of the container. Thus the hinges 58 permit the cover 12 to fold against the side wall 18 and the lock tab 65 also pivots into a position wherein the cutouts 71 engage the vertical side edges 78 on the opposite side of the cutout 79 in the lower peripheral edge 26, as shown in FIG. 17, to hold the cover securely in position.

When the cover 12 has been in place for some time and the contents of the container are frozen, it is frequently quite difficult to remove the cover 12. Accordingly, a relieved portion 80 (FIG. 10) in the thickened section 38 of the container is provided to allow insertion of a lever, for example, a screw driver to pry the cover off. Thus, as shown in FIG. 10, the elongated relieved portion 80 adjacent the corner 35*a* permits the insertion of a screw driver to wedge the edge 46 of the cover 12 from the container. In addition, another relieved portion 82 is provided in another corner 35*b* (FIG. 7) of the container so that a large exposed area of the cover is presented to enable a hammer or similar tool to strike a blow to edge 46 of the cover 12 to break it loose. The cutout 79 is provided in the lower edge 26 in the indentations 30 to permit the flow of air under the bottom wall 25.

All of the inside corners of the container 10 are smoothly rounded thus enabling ice cream or other solid materials to be easily scooped therefrom without waste. In addition, the absence of any tight corners facilitates the cleaning operation. Because the container is made from a plastic material, it is reusable and will withstand the necessary temperatures required to sterilize and clean the container before it is reused.

In use, the container 10 is thoroughly cleaned and filled with the liquid material to be frozen or cooled. The cover 12 is then pivoted onto the top of the body 11 and snapped into position so that the internal beads 48 of the cover 12 engage the cutouts 40 in the body 11. The cover is locked in place by pivoting the tab 65 so that the projection 74 extends through the opening 68 in the tab. The containers are then stacked one on top the other, as shown in FIG. 2, in a freezing compartment. The lower edge 26 of each of the containers engages the cover 12 of the next lower container around the raised portion 27 so that horizontal movement therebetween is substantially prohibited. Since the bottom of the container is somewhat higher than the raised portion 27, cooled air circulates through the cutout portions 85 in the edge 26 into the space 13 between the adjacent containers. This allows the bottom surface 25 and the top surface to be exposed to the cold temperatures thereby increasing the rate at which the ice cream is frozen or other contents are cooled.

The handles 32 and 53 facilitate transportation of the container to the customer who can conveniently maneuver the container to the desired location. When the container is to be opened, the lock tab 65 is removed from the projection 74 and, if the cover is frozen in place, a screw driver is inserted into the relieved portion 80 or a hammer used to strike a blow to the edge 46 (if unable to open with fingers) at the other relieved area 82 thus releasing the cover 12 which will be frozen in position. The cover is then pivoted about the hinges 58 to a position adjacent the side wall 18 wherein the cutouts 71 in the tab 65 engage the edges 78 to hold the cover in place. The handles are again used to insert the container 12 into the conventional freezer wherein the product can be easily dispensed as described above. After all of the containers have been emptied, they can be easily nested together, as shown in FIG. 3, because the side walls 16–19 taper downwardly and permit nesting of the containers to facilitate handling a plurality of them at one time. While nested together, the indentations 30 are aligned and also nest together, or by alternating the like panels of adjacent containers 90 degrees to each other the indentation 30 serves as a stop to the above nested container preventing jamming.

While the form of apparatus herein described constitutes a preferred embodiment of the invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. A portable dispensing container adapted for use with refrigerant products comprising, four slightly inwardly tapered vertical walls integrally interconnected and having a bottom wall integrally connected thereto, edge means on the lower end of said side walls for supporting said bottom wall a preset distance above a supporting surface, at least two cutout portions in said edge

means for the free flow of air into and from the space below said bottom wall, said walls having an upper peripheral edge therearound, a cover adapted to be secured to said edge, a raised portion on said cover having a height somewhat less than said preset distance, said raised portion being complementary to said edge means so that said edge means of one container can be supported on said cover of a second container, said upper edge and said cover having complementary means thereon for releasably sealing said cover in place on said upper edge, hinge means for pivotally securing said cover to one of said side walls, and lock means for locking said cover in the sealed position on said upper edges or in an open position wherein said cover is releasably held against movement adjacent one of said side walls.

2. A container as defined in claim 1 wherein said complementary means includes a thickened section spaced below said upper edge a predetermined distance to strengthen said upper edge, a cutout portion immediately above said thickened portion, a downwardly extending edge on said cover having an internal bead thereon adapted to engage said cutout portion and seal the cover to said side walls.

3. A container as defined in claim 1 wherein indentations are formed in at least two opposite of said side walls, said indentations extending upwardly from the bottom edge more than one-half the height of said side walls, the upper portion of said indentations having handle means therein adapted to receive the fingers of the human hand to thus provide means to carry the container which do not project outwardly of said side walls.

4. A container as defined in claim 1 wherein said lock means includes an outwardly and downwardly extending projection from one of said side walls, a lock tab pivotally secured on said cover having an opening therein adapted

to deform slightly and receive said projection to lock said cover in place.

5. A counter as defined in claim 4 wherein a cutout portion is provided in said lower edge and having a width complementary to said lock tab, said lock tab having cutout portions in the side edges thereof adapted to engage the side edges of said cutout portions to secure said lock tab to said lower edge and thus lock said cover in the open position adjacent one of said side walls.

6. A container as defined in claim 1 wherein all of the internal and external corners thereof are rounded for ease in cleaning and dispensing of the contents of the container.

7. A container as defined in claim 1 wherein said hinge means includes outwardly extending aligned flanges from one of said side walls and said cover, slot means formed in each of said flanges, flexible strip means extending through aligned slots, and means for securing the end of the strip means together to form a closed loop and thus a loose and comprehensive hinge for said cover.

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GEORGE E. LOWRANCE, *Examiner.*