

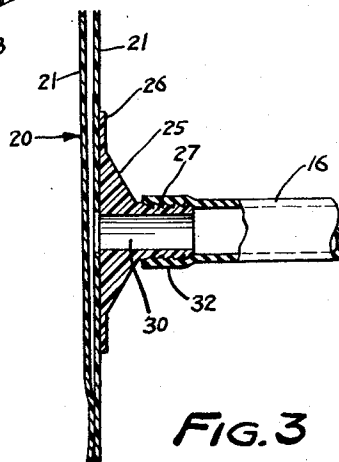
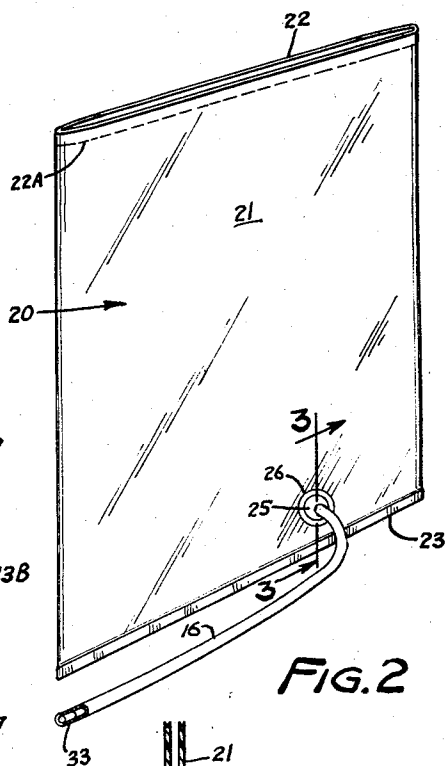
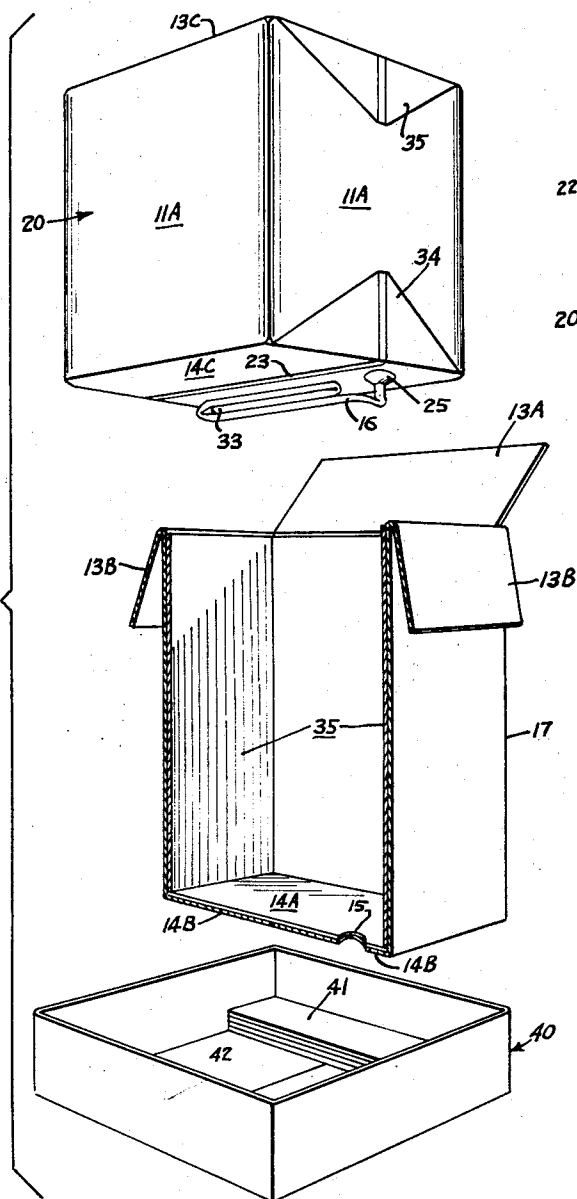
Nov. 25, 1958

O. C. WINZEN
DISPENSING CONTAINER

2,861,718

Filed April 6, 1956

4 Sheets-Sheet 1



INVENTOR.
OTTO C. WINZEN
BY
More, Ruggie, White & Dand
ATTORNEYS

Nov. 25, 1958

O. C. WINZEN

2,861,718

DISPENSING CONTAINER

Filed April 6, 1956

4 Sheets-Sheet 2

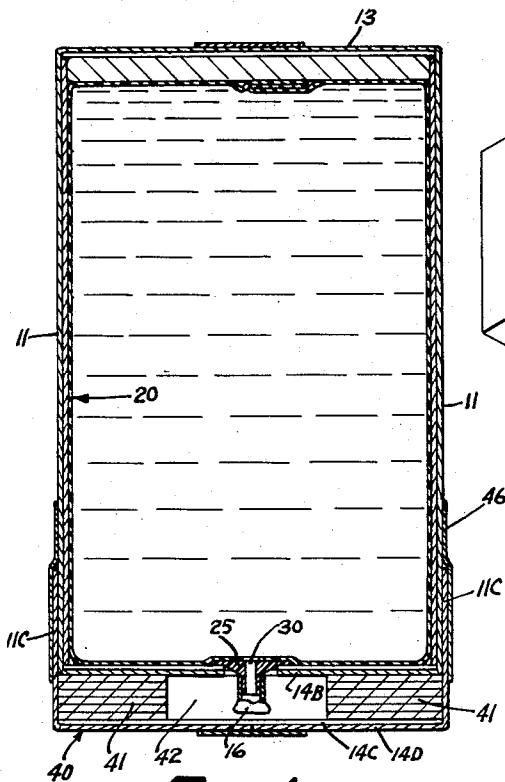


FIG. 4

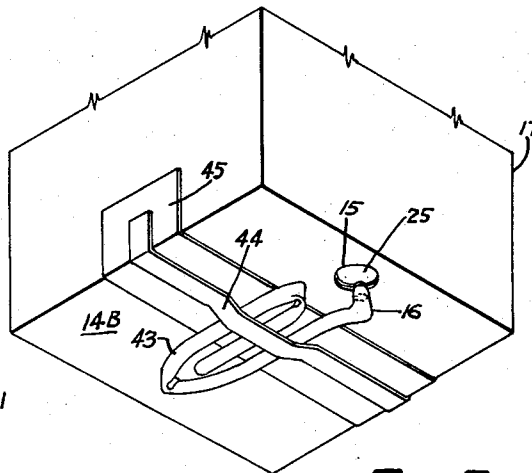


FIG. 5

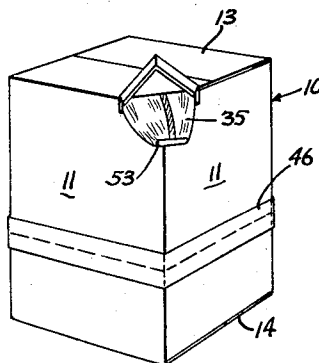


FIG. 7

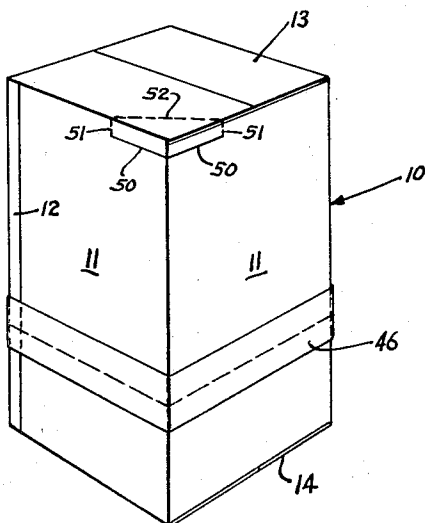


FIG. 6

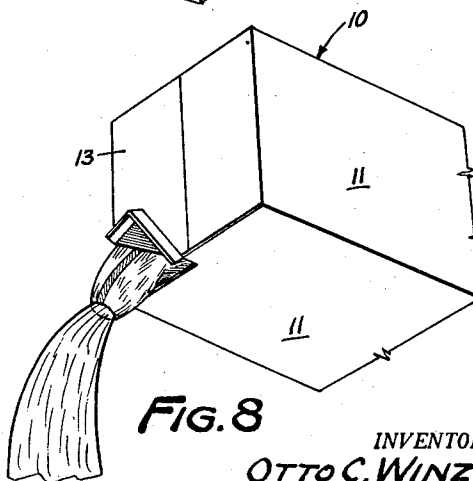


FIG. 8

INVENTOR.
OTTO C. WINZEN
BY
Moore, Huggins, White & Bond
ATTORNEYS

Nov. 25, 1958

O. C. WINZEN
DISPENSING CONTAINER

2,861,718

Filed April 6, 1956

4 Sheets-Sheet 3

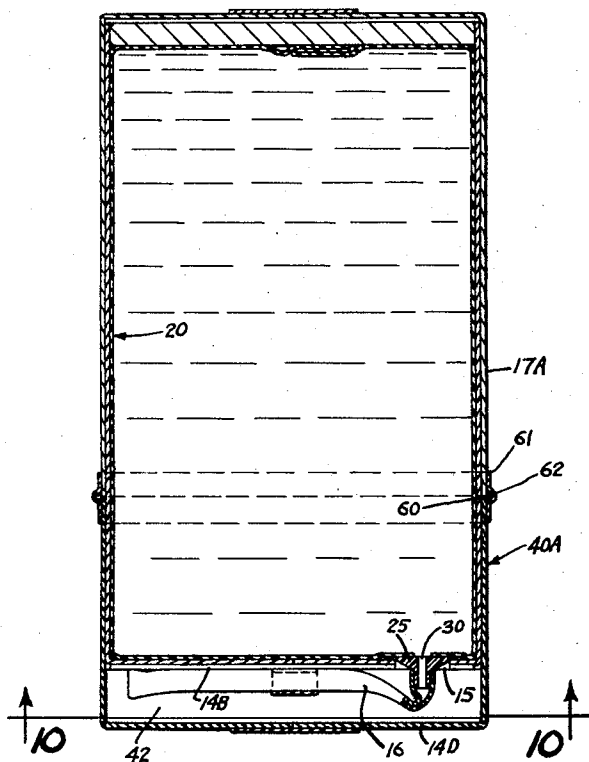


FIG. 9

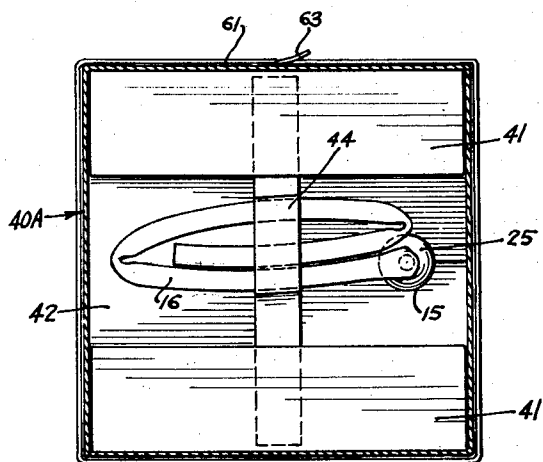


FIG. 10

INVENTOR.
OTTO C. WINZEN
BY
Moore, Ruggie, White & Bond
ATTORNEYS

Nov. 25, 1958

O. C. WINZEN
DISPENSING CONTAINER

2,861,718

Filed April 6, 1956

4 Sheets-Sheet 4

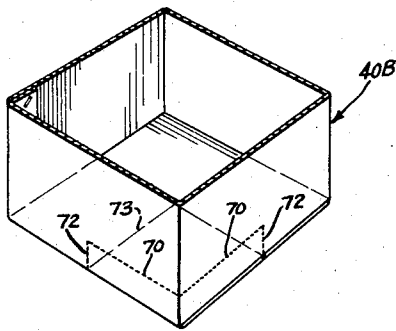


FIG. 11

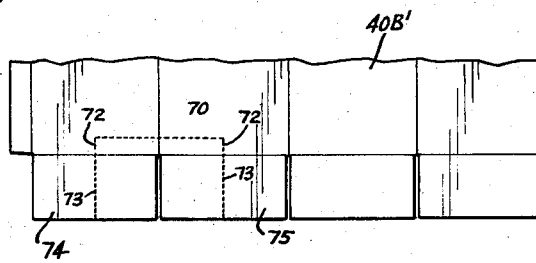


FIG. 12

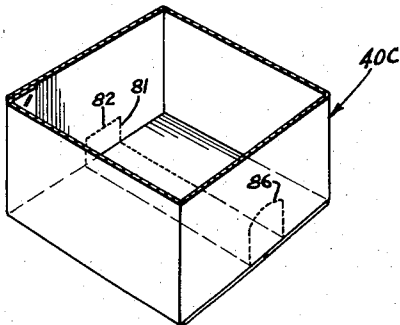


FIG. 13

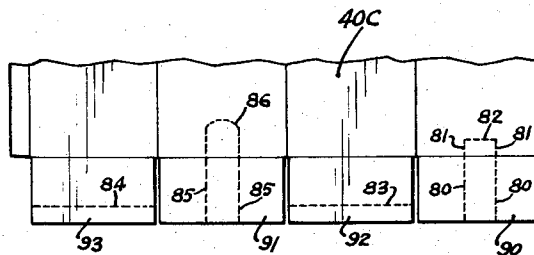


FIG. 14

INVENTOR.
OTTO C. WINZEN

BY
Moore, Rugg, White & Reed

ATTORNEYS

2,861,718

DISPENSING CONTAINER

Otto C. Winzen, Mendota Township, Dakota County, Minn., assignor to Winzen Research, Inc., Minneapolis, Minn., a corporation of Minnesota

Application April 6, 1956, Serial No. 576,668

12 Claims. (Cl. 222-107)

This invention relates to new and useful improvements in dispensing containers, and particularly to dispensing containers of the type analogous to that shown in Patent No. 2,377,261, issued May 29, 1945.

Broadly speaking, this invention comprises a disposable fluid tight container having an inner sanitary liner, and cover means adapted to be removed for exposing a discharge means whereby fluids such as milk may be kept in sanitary, substantially air free condition yet readily dispensed from the container.

It is therefore an object of this invention to provide a new and useful dispensing container;

A further object of this invention is to provide a sanitary disposable fluid tight container from which the fluid may readily be extracted;

A further object of this invention is to provide a fluid container using inexpensive and conveniently available materials;

Still a further object of this invention is to provide a new and useful container of the type used in fluid dispensing apparatus presently available;

Still a further object of the invention is to provide a versatile package for containing fluids in which the fluid is contained in a flexible fluid tight container having a discharge means, the discharge means and the fluid tight container are securely positioned within a supporting outer shell, a removable cover means is provided for at least a portion of the outer shell and which may be removed to expose the dispensing means whereby the fluid may readily be dispensed;

Still other and further objects of the invention reside in the structural details of the container including the inner bag or liner; the outer shell; the dispensing means; the cooperation of the dispensing means with the inner liner and the outer shell; the covering and spacing means removably positioned on the outer shell for positioning and concealing the dispensing means; and the means whereby the cover means may readily be removed;

Other objects of the invention are those inherent and apparent in the structure as described, illustrated and claimed and will become further apparent as the exposition proceeds.

To the accomplishment of the foregoing and related ends, this invention then comprises the features herein-after fully described and particularly pointed out in the claims, the following description setting forth in detail certain illustrative embodiments of the invention, these being indicative, however, of but a few of the various ways in which the principles of the invention may be employed.

This invention will be described with reference to the drawings in which corresponding numerals refer to the same parts and in which:

Figure 1 is a vertically exploded, partially sectional illustration of the instant invention;

Figure 2 is a perspective view of the collapsible fluid tight inner container or liner of the instant invention;

Figure 3 is an enlarged fragmentary view partially in

in vertical section, of the discharge means or vent of Figure 2;

Figure 4 is a vertical sectional view of the structure of Figure 1 assembled;

Figure 5 is an isometric view of the bottom structure of Figure 4 with the bottom cover removed and showing the discharge means;

Figure 6 is an isometric view of the structure of Figure 1 assembled and showing a modified top cover structure therefor;

Figure 7 is a view similar to Figure 6 and showing such modified cover in open or bent back position;

Figure 8 is a fragmentary view similar to Figure 7 but showing liquid being poured from the opening provided by the modified cover of Figure 6;

Figure 9 is a view similar to Figure 4 but showing a modified form of the invention;

Figure 10 is a sectional bottom plan view of the structure of Figure 9;

Figure 11 is a fragmentary perspective view of a modified form of outer shell of this invention;

Figure 12 is a fragmentary view of a blank for the structure of Figure 11;

Figure 13 is a view similar to Figure 11 but showing an additional modified form of outer shell of the instant invention; and

Figure 14 is a view similar to Figure 13 but showing a blank for the structure of Figure 13.

Figure 6 shows the container generally designated 10 comprising a rectangular prism, in this instance square or parallelepiped as shown. The prism 10 is a box comprised of four rectangular side walls 11, two of which are joined at their corners by a tape 12, and with a top 13 and bottom 14.

The box is usually formed from a flat blank appropriately scored and cut to provide the side walls 11 and top 13 and bottom 14. Usually it is of corrugated or chip board. The top 13 comprises two flaps 13A secured to opposed walls 11 and two flaps 13B secured to the other opposed walls 11. Likewise, the bottom comprises similar flaps 14A and 14B. When the box is set up as shown in Figures 1 and 6, the flaps 13A or 13B are folded inwardly and flaps 13B or 13A respectively are folded thereover and adhesively secured, stapled, taped or otherwise fixedly positioned with respect thereto. The same is true with the flaps 14A and 14B for the bottom.

Flaps 14A as shown in Figure 1 are in this instance each provided with a semi-circular aperture which apertures are positioned in abutment and cooperation with an aperture in one of the flaps 14B to form a circular hole 15 for a tube 16 as subsequently explained.

The aperture in flap 14B is circular and in co-operation with the semi-circular cutouts in flaps 14A, completes the hole 15 through the bottom 14 of the box. In this instance, the hole 15 is positioned along a median line through the bottom 14 in one direction and approximately mid-way between one of the walls 11 and a median line in the other direction, although it may be otherwise positioned and other than circular configurations may be provided.

The liner 20 provides a fluid tight container or bag closed to atmosphere and having a vent means. In this instance it comprises a tubular section, which when in the position shown in Figure 2 provides opposed flat wall portions 21 in abutment having edges 22 and 23. The wall portions adjacent edges 23 are secured together, in this instance by heat-sealing, although adhesive or tape may be used. The portions of the walls 21 adjacent edges 22 are likewise sealed or secured along the dotted line 22A after the fluid has been introduced into the liner.

3

Positioned on one of the walls 21 is a vent connected to hose 16 and so positioned that the vent will coincide with the aperture formed by hole 15 when the liner is in the inserted position of Figure 4. This will also be apparent by reference to Figure 1.

The vent 25 comprises a conical member having a peripheral annular flange 26 secured to the wall 21, in this instance by heat-sealing, and provided with a central aperture 30 which leads to the interior of the liner or bag 20 through a congruent aperture in wall 21. The vent 25 is provided with a ferrule 27, as shown, having a plurality of annular ridges to provide a saw-tooth periphery over which the end 32 of tube 16 is adapted to seat as shown in Figure 3. Other types of ferrules may be used, if desired. Tube 16 comprises an elongated rubber, or other flexible tube having a plugged end 33 which may be severed when it is desired to drain the liner. The plugged end may be provided with an integral or assembled plug.

When the liner 21 is filled with fluid and the edges 22 joined, and it is inserted within the outer shell or container 17, it will take the configuration of the container as shown best in Figure 1. Because the liner 21 is in the nature of a flat folded bag when empty, as shown in Figure 2, when it is confined to a rectangular prism by shell 17 triangular gores or ends 34 will be formed at each side of the bottom of the liner and similar gores 35 will be formed at each side of the top of the liner. They may be folded against the side walls 11A of the liner as shown in Figure 1 or gores 35 may be folded over the top 13C of the liner into opposed position. Gores 34 may also be folded over the bottom 14C of the liner into oppositely directed relation.

The liner 21 has been shown positioned so that seamed edges 22 and 23 coincide with a median line between two of the walls 11 of the container or shell 17. However, the liner could be so positioned that these edges form a diagonal between two opposed corners formed by the intersection of walls 11, or otherwise as desired. When the corner opening of Figure 6 is being utilized, it is preferred to position these edges on the diagonal.

Likewise, while it is the preferred form of liner to make it from a section of seamless tubing folded so that portions of its walls are in flatwise abutment the liner could be made in the form of a gusseted bag, an intucked bag or any other suitable construction, as in a plurality of pieces, to conform to the interior of the shell 17.

As shown in Figure 1 the walls 11 are reinforced with an inner reinforcing rectangular tubular ply 35, although this may be dispensed with as desired.

A removable base cover 40 comprises a rectangular pan adapted to fit over the bottom portions of the walls 11 as shown in Figure 4 with the inner surface of stub walls 11C thereof in abutment with the exterior surface of walls 11, the interior dimension between walls 11C being slightly greater than the exterior dimension between walls 11. Base cover 40 is provided with a bottom formed by flaps 14C and 14D similar to flaps 14A and 14B for shell 17. Two spacers 41 are positioned in opposed relation within the cover 40 and secured to the bottom thereof as shown in Figure 1. The spacers in this instance comprises multiple plies of corrugated board, although multiple plies of chip board or other spacers may be used. These serve to provide an upwardly off-set bottom for the cover 40 having a central depression 42. As shown, the spacers are secured to bottom 40 by adhesive, although they may be otherwise secured or loose as desired. Furthermore, in some instances, it may be desirable to secure the spacers 41 to the bottom 14 of the shell 17, as shown in Figure 10.

In Figure 5, the liner 21 has been positioned within the shell 17 and filled. The vent 25 has been positioned to correspond with the aperture 15 in the bottom 14 and hose 16 extends therethrough and is coiled at 43 to seat

4

in the depression 42 between spacers 41. It is retained in position by an adhesive tape 44 secured to the larger adhesive tape 45 which tape is shown retaining the flaps 14A and 14B in position to form a bottom 14 of container 17. Thus, the assembly comprising the liner and shell is then inserted in the bottom cover as shown in Figure 4 and an adhesive tape member 46 laterally passed around the junction between the two to retain the two in position.

When it is desired to dispense liquid, the tape 46 is severed, the cover 40 removed, the tape 44 broken, hose 16 extended and end 33 removed.

In Figures 6, 7 and 8 is shown a modified form of the invention in which the tops of two adjacent walls 11 are provided with severance score lines 50 uniting at a corner and each extending inwardly in cooperation with a vertical severance score line 51 which in turn cooperates with a scored fold line 52. Thus, by engagement with the fingers, the corner so formed may be severed along lines 50 and 51 and folded from the position of Figure 6 to the position of Figure 7, a triangular end 35 grasped and extended from the box as shown in Figure 7, the extreme tip 53 thereof cut-off and the liquid poured from the top of the container 21 as shown in Figure 8. This may be done when the assembly is in the position of Figure 4, or where the bottom cover 40 has been removed as shown in Figure 1.

In Figures 9 and 10 there is shown a modification of this invention in which the shell 17A is modified to have the walls of its exterior ply terminating at 60. In this instance, the walls of the cap 40A extend upwardly and into abutment therewith, and comprise an extension thereof. Thus, instead of there being a two ply shell 17 with a cap placed thereover forming a third ply for the bottom thereof, the cap structure 40A and the shell 17A cooperate to provide two plies for the shell (with spaced bottoms) and when the cap 40A is removed there is one less ply for shell 17A throughout that portion normally occupied by the cap. This permits the container 10 to present a relatively unbroken exterior surface with the top edge of the side walls of the cap and the bottom edge of the side walls of the shell in abutting juxtaposition. Positioned over the juncture 60 is a tape 61 having a rip cord 62 provided with a free end 63. Thus, end 63 may be grasped, the cord pulled in counterclockwise direction with reference to Figure 10, severing the tape 61 and releasing the cap 40A from shell 17A.

In Figures 11 and 12 is shown a modified form of cap 40B in which the cap is provided with severance score lines 70 joining at the corner and connected to vertical severance score lines 72 and score lines 73. In Figure 11, the score lines have been indicated on the blank 40B' forming the cap 40B. Thus, it will be seen that a corner of the cap 40B may be severed along lines 70, 72 and 73 thus removing a small portion of the vertical walls adjacent the corner and a portion of bottom flap 74 and cooperating bottom flap 75 so that the central recess 42 provided by spacers 41 is exposed.

In Figures 13 and 14 is shown a modified form of bottom cap 40C in which the bottom cap is provided with severance score lines 80-86 located on the blank 40C' of Figure 13 as shown.

When the blank 40C' is folded to form the bottom cap 40C of Figure 13 the flaps 90 and 91 are folded into opposed relationship and flaps 92 and 93 folded thereover and secured thereto, or vice versa. In either instance the cooperation of the score lines 80-86 provides a circular scored portion defined by line 86, positioned as shown in Figure 13 which may be engaged by a thumb and ripped downwardly to the bottom of the box, and then an elongated tab or flap portion in the two plies of the bottom formed by the cooperation of flaps 90 and 91, 92 and 93 which may likewise be severed and a rectangular portion formed by lines 81 and 82 positioned on the opposite wall of the cover from the position of scored portion 86 which also may be severed.

5

Thus, by removing the scored portions the center recess 42 is exposed permitting access to the tube 16.

In the modifications of Figures 11-14 it is of course preferable to have the cap 40B or 40C integral with the outer shell since there is then no necessity for removing the entire cap to expose the dispensing means but exposure is provided by removing only the scored portion of the cap. Thus, such modifications would look in cross-section as the structure of Figure 9 except that the outer ply of the shell would not be severed, the cap and outer ply of the shell would be integral, and there would be no need for tape 61 of cord 62.

The outer shell or outer container is preferably formed from a blank erected to a rectangular prism as shown, in the nature of a box, but of course, it need not be formed from a blank and could be formed as shown without ever having been a blank. It is conventional, when corrugated boxes or chip board boxes are used to provide such blanked construction because of facility in shipment, storage, etc. and the blank is erected into the box when desired. Preferable materials are corrugated board, chip board or the like, although of course other materials may be used within the spirit and scope of this invention.

The liner should comprise a fluid tight container and is usually in the form of a flat folded bag, the top of the bag being sealed by heat or adhesive after fluid is introduced into the bag. It is preferred to have the bag thermoplastic so that it may be heat-sealed for the substantially complete exclusion of atmosphere, and flexible so that as fluid is withdrawn through the tube the bag will collapse and an air vent is not needed. Synthetic resinous material such as polyethylene has been found superior for this purpose. The liner material must of course be relatively chemically inert, not subject to attack by the fluids contained therein. A variety of suitable materials may be used for the liner and among these, the following.

The liner should comprise a sealable, preferably heat-sealable, thin, smooth, tough, pliable, membranous, fluid tight film which is relatively inert and free from chemical attack by the liquids contained. A superior material having these characteristics is polyethylene. However, other materials available for such use are such materials as "Cry-O-Rap," butadiene-acrylonitrile copolymer, manufactured by the Dewey & Almy Chemical Company; moisture resistant cellophanes, that is, regenerated cellulose sheets coated with lacquers or the like to improve their moisture resistance; vinyl chloride-vinylidene chloride copolymers; plasticized rubber hydrochloride which is readily sealed by heat and is available in the form of transparent sheets and under the trademark "Pliofilm" from the Goodyear Tire & Rubber Company; thermoplastic resins produced by the polymerization of vinylidene chloride alone or with other monomers under the trademark "Saran" by Dow Chemical; plasticized vinyl chloride-vinyl acetate copolymers available from many manufacturers; butadiene-styrene copolymers; and many others. Polyethylene film has been found superior.

The vent is preferably of the same material as the liner, and in the preferred embodiment comprises polyethylene, slightly more rigid than the polyethylene of the liner so that the flange may be heat-sealed to the liner. However, likewise, the vent may be of other materials as explained with reference to the liner and adhesively secured to the liner if desired.

The spacers are usually secured to the cover, although may be likewise secured to the spaced bottom of the inner container if desired. They may be constructed of any suitable material, usually several plies of corrugated board.

Thus, it will be seen that this invention provides a new and useful fluid tight container in which a flexible, relatively inert liner, preferably of thermoplastic synthetic resinous material, has secured thereto a vent, preferably heat-sealed to the liner, which has an elongated flexible conduit. The liner is positioned within the outer

6

shell which confines and shapes its configuration, the vent positioned in a hole in the shell and the flexible conduit secured to the bottom of the shell which is spaced from a false bottom of the shell, the false bottom being provided, either by a removable cover or by a portion of the shell itself.

As many widely differing embodiments of this invention may be made without departing from the spirit and scope thereof, it is to be understood that the specific embodiments described are given by way of example only and the invention is limited only by the terms of the appended claims.

What is claimed:

1. In combination an outer container providing a supporting and confining closure, and a flexible inner container positioned within said closure and fluid-tight, an elongated dispensing means secured to said inner container, said outer container having means for supporting the bottom of said inner container in spaced relation to the bottom of said outer container with a portion of said elongated dispensing means therebetween, and a portion of said outer container being removable whereby said dispensing means may be exposed.

2. In combination an outer container providing a supporting and confining closure, an inner flexible container positioned within said closure and supported thereby and fluid-tight, an elongated dispensing means secured to said inner container, said outer container having a false bottom for supporting the bottom of said inner container in spaced relation to the bottom of said outer container with a portion of said elongated dispensing means therebetween, and the bottom of said outer container being removable whereby said dispensing means may be exposed.

3. In combination an outer fiber container providing a closure, an inner flexible container positioned within said closure and fluid-tight, an elongated dispensing means secured to said inner container, said outer container having a false bottom for supporting the bottom of said inner container in spaced relation to the bottom of said outer container with a portion of said elongated dispensing means therebetween, and portion of said outer container being scored whereby it may be removed and said dispensing means may be exposed.

4. A container comprising in combination a flexible bag having an elongated dispensing tube secured at one end thereto, a box within which said flexible bag is positioned, the bottom of the box having an aperture whereby said elongated conduit may be extended therethrough, a removable cover means positioned on said box and providing a spaced bottom covering said aperture, said spaced bottom having a portion for accommodating said elongated conduit.

5. A container comprising in combination a flexible bag having an elongated dispensing conduit secured at one end thereto, a box having side walls of multiple ply throughout at least a portion adjacent the bottom thereof within which said flexible bag is positioned, and multiple plies providing inner and outer spaced bottoms, the inner bottom of the box having an aperture whereby said elongated conduit may be extended therethrough, the outer ply of said side walls being severable so that said spaced bottom may be removed, and spacers separating said bottoms and providing a central recess.

6. A container comprising in combination a flexible bag having an elongated dispensing tube secured at one end thereto, a box within which said flexible bag is positioned having two plies throughout the side walls thereof, and the bottom thereof, said plies of said bottom providing inner and outer members, the bottom of the box having an aperture whereby said elongated conduit may be extended therethrough, and means for severing a portion of the outer ply of said side walls and said outer bottom member.

7. In combination, a liner of tubular flexible inert

7

synthetic resinous material heat-sealed at the bottom and top to form a fluid-tight container, a vent heat-sealed to said liner at the bottom thereof forming an opening for said container, an elongated tube secured to said vent and having an extending closed end, a box encasing said liner and having a hole in the bottom thereof, said tube being drawn through said hole with said vent being located thereby, said tube being coiled and secured to the bottom of said box, a cap member positioned over the bottom of said box and secured thereto, said cap member providing a false bottom for the bottom of said box and spaced therefrom by spacer means providing a central depression in which said elongated tube is coiled.

8. In combination, a liner of tubular flexible inert synthetic resinous material heat-sealed at the bottom and top to form a fluid-tight container, a vent heat-sealed to said liner at the bottom thereof forming an opening for said container, an elongated tube secured to said vent and having an extending closed end, a box encasing said liner and having a hole in the bottom thereof, said tube being drawn through said hole with said vent being located thereby, said tube being coiled and secured to the bottom of said box, a cap member positioned over the bottom of said box and secured thereto, said cap member providing a false bottom for the bottom of said box and spaced therefrom by spacer means providing a central depression in which said elongated tube is coiled, and score lines defining a removable portion of said cap member whereby said tube may be exposed.

9. The subcombination of a section of tubular synthetic resinous material, said tubular material having parallel top and bottom severed edges, said section of tubular material being collapsed radially to form a bag with two opposed wall portions bounded by folds forming edges at right angles to said severed edges, a heat welded line seal at one of said severed edges extending transversely of said tubular section and forming a closure

8

for one end of said bag, a dispensing means heat-sealed to one of said opposed flat wall portions, said flat wall portion being apertured adjacent said heat-sealed end closure, said dispensing means having an opening connecting with said aperture, said dispensing means including a flange of synthetic resinous material heat-sealed to said wall and including a ferrule, and an elongated flexible tube of small diameter having a closed extending end and secured to said ferrule.

10. The structure of claim 9 further characterized in that said dispensing means comprises a conical member having a peripheral annular flange heat-sealed to said flat wall portion and provided with a central aperture to the interior of said bag, a ferrule extending from said conical member, and said conical member having ridge means for retaining said tube thereon.

11. The structure of claim 9 further characterized by said tubular section being heat-sealed by a line seal at said other severance edge to form a fluid-tight closure.

12. The structure of claim 9 further characterized by an open top box encasing said liner and having a hole in the bottom thereof, said tube being drawn through said hole with said dispensing means being located thereby, said tube being coiled and secured to the bottom of said box and removable closure means covering said tube.

References Cited in the file of this patent

UNITED STATES PATENTS

2,214,944	Vogt	Sept. 17, 1940
2,446,308	Smith	Aug. 3, 1948
2,574,931	Nason	Nov. 13, 1951
2,681,747	Norris et al.	June 22, 1954
2,685,385	Kuss	Aug. 3, 1954
2,801,577	Ingham	Aug. 6, 1957
2,815,887	Ford et al.	Dec. 10, 1957