

Feb. 20, 1968

D. R. BEBOUT

3,369,652

CONTAINER AND HANGER BAR

Filed Jan. 6, 1967

4 Sheets-Sheet 1

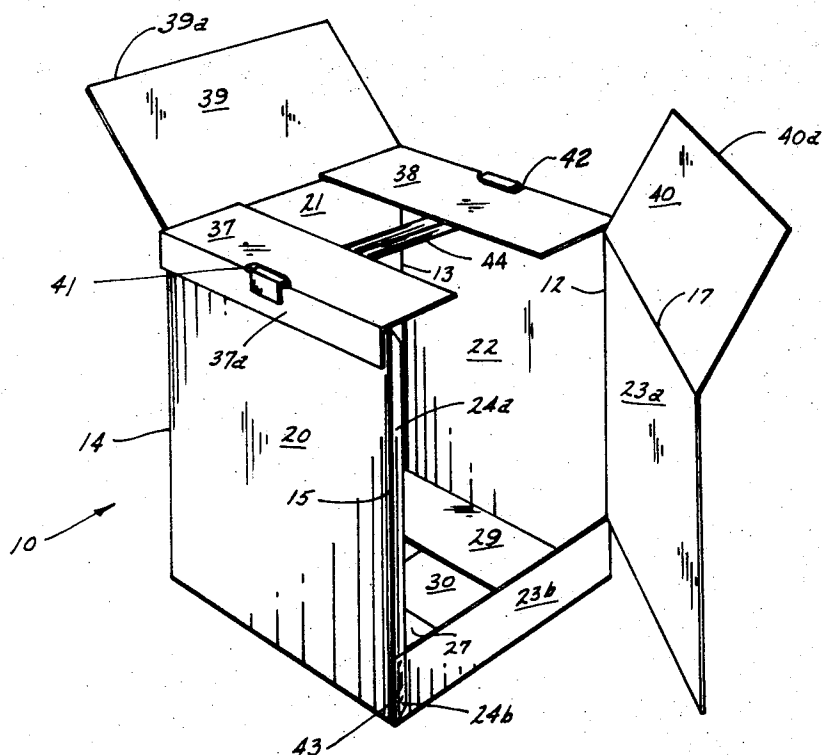


Fig. 1

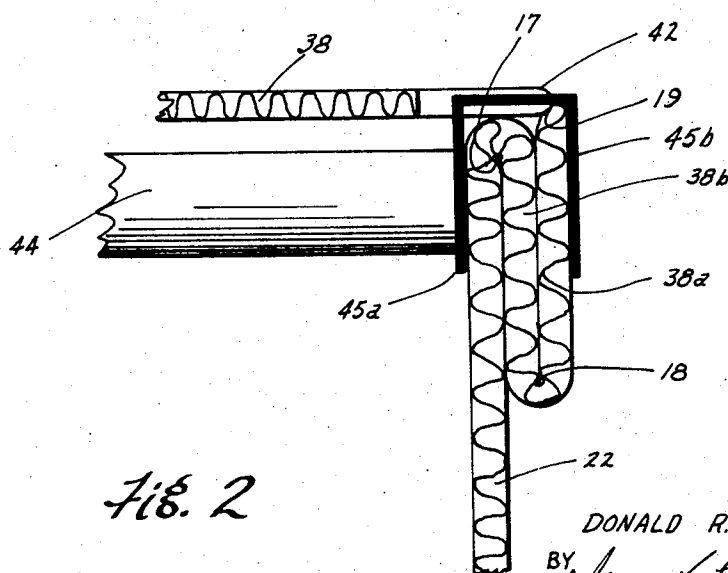


Fig. 2

INVENTOR.
DONALD R. BEBOUT

BY *Arvin V. Gleim and*
Edward M. Jittle
ATTORNEYS

Feb. 20, 1968

D. R. BEBOUT

3,369,652

CONTAINER AND HANGER BAR

Filed Jan. 6, 1967

4 Sheets-Sheet 2

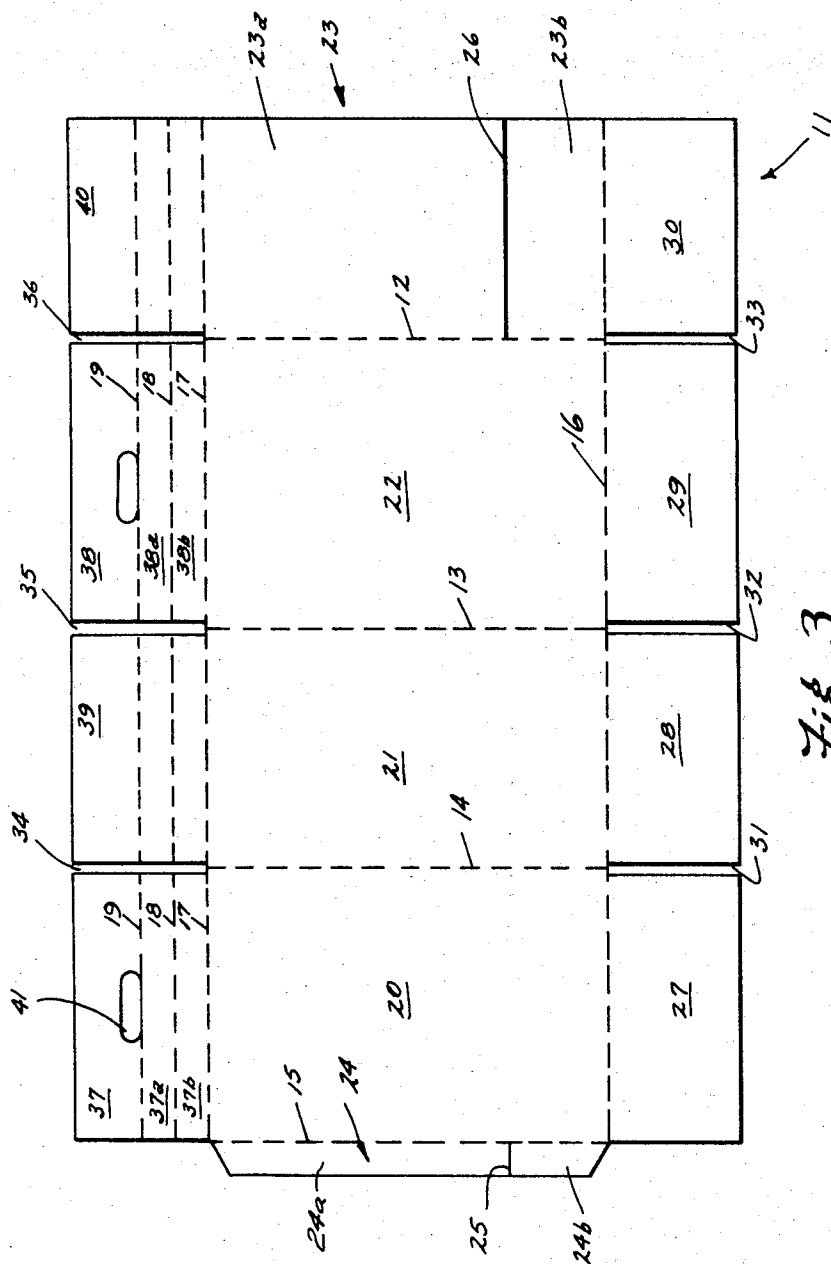


Fig. 3

INVENTOR.
DONALD R. BEBOUT
BY *James V. Levine and*
Edward M. Frittle
ATTORNEYS

Feb. 20, 1968

D. R. BEBOUT

3,369,652

CONTAINER AND HANGER BAR

Filed Jan. 6, 1967

4 Sheets-Sheet 3

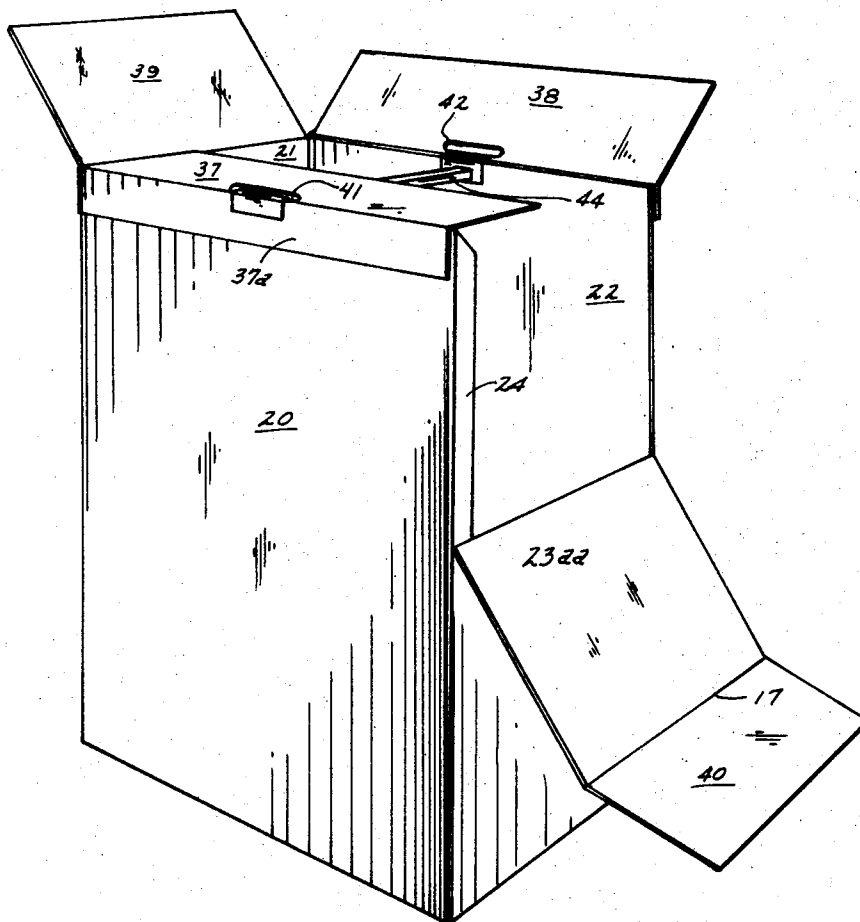


Fig. 4

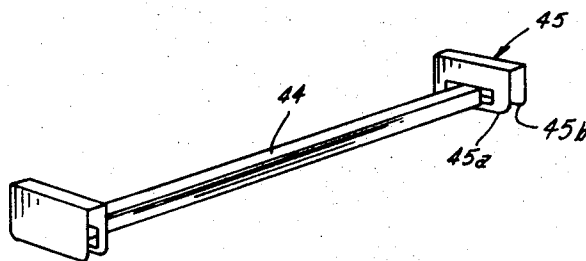


Fig. 6

INVENTOR.

DONALD R. BEBOUT

BY *Irvin V. George and*
Edward M. Jittle
ATTORNEYS

Feb. 20, 1968

D. R. BEBOUT

3,369,652

CONTAINER AND HANGER BAR

Filed Jan. 6, 1967

4 Sheets-Sheet 4

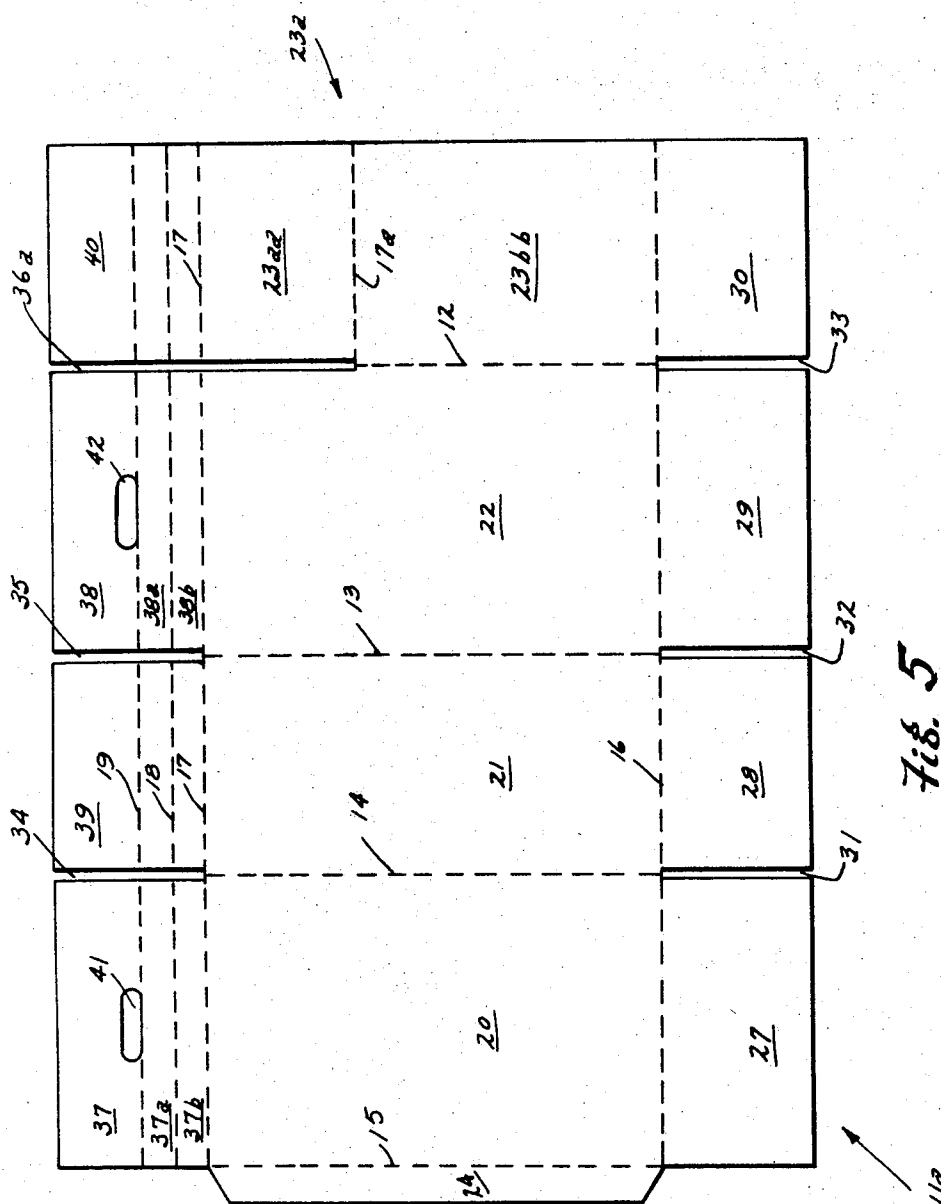


Fig. 5

INVENTOR.
DONALD R. BEBOUT

BY *Wm. V. Stein and*
Edward M. Spittle
ATTORNEYS

1

3,369,652

CONTAINER AND HANGER BAR

Donald R. Bebout, Stone Mountain, Ga., assignor to
The Mead Corporation, Dayton, Ohio, a corporation of Ohio

Filed Jan. 6, 1967, Ser. No. 607,732

4 Claims. (Cl. 206—7)

ABSTRACT OF THE DISCLOSURE

A shipping container having load-supporting walls reinforced by a double reverse fold along their upper edges. Each such fold is gripped by each end of a hanger bar which is positively located and secured and which, in addition to supporting articles suspended therefrom, functions in cooperation with the double reverse folds to add stiffness and rigidity to the container.

Field of the invention

This invention relates to collapsible shipping containers of the wardrobe type that are capable of being erected into an enclosing structure particularly adapted and useful for receiving, enclosing and transporting of a plurality of garments supported and suspended therein by conventional garment hangers. More particularly, the invention relates to a shipping container formed by bending, folding, and interleaving of various elements of a single blank of fiberboard or like material to provide enclosing walls with adequate strength to support suspension means including a hanger bar when loaded with a plurality of garments.

Prior art

Applicant is aware that the prior art discloses various collapsible wardrobe type containers formed from single blanks and that certain prior patents disclose such containers wherein a hanger or support bar is engaged and supported by the upper edges of certain of the container walls, which edges may or may not be provided with a double reverse fold for added strength and rigidity, as exemplified by U.S. patents issued to Brennan, 3,270,865; Fish, 2,752,032; Huehns, 2,902,144; Divine, 2,796,977; and Ross, 2,535,233. Although the prior art was quite well developed prior to the present invention, a need still existed for improvements which would insure rigidity and durability of the shipping container as well as insuring secure and effective support for the garments to be contained therein. More particularly, a need has existed and there has been a demand for improved shipping container structures to insure the safe arrival of garments at their destination in a clean and reasonably wrinkle-free condition.

Objects and summary

Accordingly, it is an object of the present invention to provide an improved shipping container formed from a single blank and having elements thereof cooperatively connected with a supporting bar to simultaneously produce adequate supporting strength, positive locating means preventing shifting and/or dislodgement of the supporting bar, added stiffness and rigidity to the assembled container, as well as improved closure means to minimize infiltration of foreign material into the container after it has been sealed.

Another object of the invention is to provide an improved shipping container that is formable from a single blank that may be shipped and stored in a flat condition until it is to be used and then is easily and readily erected and assembled together with a hanger-supporting bar without requiring the use of special tools and where-in certain individual components are cooperatively asso-

2

ciated to simultaneously perform a plurality of functions.

Description

These and other objects and advantages will be apparent from the following description taken in connection with the accompanying drawings in which:

FIGURE 1 is a perspective view of an erected shipping container and hanger bar assembly embodying the invention, ready to receive garments and prior to sealing of the container;

FIGURE 2 is an enlarged cross sectional view, partly broken away, showing an upper edge portion of the container and hanger bar assembly shown in FIGURE 1;

FIGURE 3 is a plan view of the blank from which the container enclosing walls are erected;

FIGURE 4 is a perspective view illustrating a modification of the embodiment of FIGURE 1;

FIGURE 5 is a plan view of a blank illustrating a modification of the blank of FIGURE 3 for forming the embodiment of FIGURE 4; and,

FIGURE 6 is a perspective view of the hanger bar.

Referring to the drawings, a shipping container, designated generally at 10, is formed from a blank 11 of fiberboard or like material. The blank is scored along spaced apart score lines 12, 13, 14, 15 and score lines 16, 17, 18, 19. Score lines 16, 17 define therebetween a series of wall panels including a side wall 20 and a rear wall 21 with score line 14 therebetween, an opposite side wall 22 foldably connected by score line 13 to rear wall 21, and a front wall, indicated generally at 23, interconnected with opposite side wall 22 along score line 12. Interconnected with side wall 20 along score line 15 is a flange indicated generally at 24. Flange 24 is divided along cut line 25 into flange portions 24a, 24b. Similarly, front wall 23 is divided along cut line 26 into a door portion 23a and a sill portion 23b.

Extending below score line 16 is a series of bottom panels 27, 28, 29, 30 with recesses 31, 32, 33 therebetween. Extending upwardly from score line 17 is a series of upper flaps with recesses 34, 35, 36 therebetween. Inner upper flaps 37, 38 extend upwardly from score line 19 and are foldably interconnected to their respective wall panels 20, 22 by fold portions 37a, 37b, 38a, 38b. Outer upper flaps 39, 40 extend upwardly from score line 17. Openings 41, 42 are elongated along score line 19 and preferably are adjacent and extend upwardly therefrom, as shown in FIGURE 3, and are disposed in inner flaps 37, 38, respectively. As noted heretofore, the container blank may be shipped and/or stored in flat condition until it is to be used.

Erection of the shipping container into an assembled embodiment, as shown in FIGURE 1, is accomplished by first folding the series of wall panels along the respective score lines 12, 13, 14, 15 to form a tube-like sleeve with sill portion 23b being secured to flange portion 24b by any convenient means, as by stitching 43.

Hanger bar 44 is a commercially available element similar to those described in the above noted patents and, hence, will not be described in detail except to note that it includes at the ends thereof a U-shaped member designated generally at 45 and having depending portions 45a, 45b.

Inner flaps 37, 38 are folded to provide stiffening and to receive hanger bar 44. Description of the manner of folding will be in reference to flap 38, as shown in FIGURE 2, and it is to be understood that flap 37 is to be folded in a similar manner. Fold portion 38b is first folded outwardly relative to wall panel 22 along score line 17 and fold portion 38a is then folded upwardly relative to portion 38b along score line 18. The remaining portion of flap 38 is then a vertically disposed extension of fold portion 38a with opening 42 disposed adja-

cent the upper edge of the fold along score line 17. Depending portion 45b is inserted through opening 42 and bar 44 is then pushed downwardly to cause U-shaped member 45 to receive and frictionally and grippingly engage between depending portions 45a, 45b the reversely folded fold portions 38a, 38b and a portion of wall panel 22 along the upper edge thereof as shown in FIGURE 2. After folding portions 37a, 37b of flap 37 in a like manner, the U-shaped member 45 at the opposite end of bar 44 is similarly inserted through opening 41 and receives and frictionally and grippingly engages folded portions 37a, 37b, and a portion of wall panel 20 in a like manner.

Bottom panels 27, 28, 29, 30 are folded inwardly and are secured to form the bottom of the container in a manner and by means known in the container art.

Following the formation of the container bottom and installation of the hanger bar, upper flaps 37, 38, 39, 40 and door portion 23a are still open so that conventional garment hangers bearing garments may be suspended from hanger bar 44 until the container is loaded. Door portion 23a is then folded along score line 12 to closed position in engagement with flange portion 24a and is then sealed or secured by any convenient known means as, for example, by adhesive tape, not shown. When door portion 23a is folded to such closed position, it carries with it upper flap 40. Inner flaps 37, 38 are then folded inwardly along score line 19 to their respective positions as shown in FIGURE 1. Thereafter, outer flaps 39, 40 are folded inwardly along score line 17 into overlying relation with inner flaps 37, 38 and with the upper free edges 39a, 40a in substantially abutting relation to close the top of the container including openings 41, 42. After thus closing the container top, flaps 39, 40 may be secured in any convenient known manner as by a staple top sealer, or by means of adhesive tape, thereby effectively insuring against infiltration of dust or dirt into the interior of the closed container.

Thus, the individual components and the manner in which they are assembled and employed in accordance with the invention results in a cooperative functional relationship therebetween which produces simultaneously a number of important advantages. The provision of the double reverse fold along the upper edges of the container walls that receive and support the hanger bar and its load of garments provides additional load supporting ability and distributes the load transferred to the container walls, thus avoiding local areas of high stress concentration. Simultaneously, the double reverse folds provide added stiffness in a direction along the longitudinal extent of such folds. The spacing between the depending portions of the U-shaped members may be somewhat less than the combined thickness of the double reverse fold portions so that such portions are gripped tightly and frictionally by the U-shaped members thereby insuring against dislodgement and also holding closed the folded portions and avoiding buckling of the container walls. Furthermore, after the container has been loaded and the top closed and secured, the double reverse folds, the U-shaped gripping member and its disposition through the openings in the inner top flaps, and the outer top flaps are all cooperatively associated to function to assure positive positioning of and insuring against accidental dislodgement of the hanger bar. Additionally, in accordance with the invention, such elements function cooperatively to provide increased stiffness and rigidity to the container as well as increased resistance to torsional deformation thereof.

In the modified embodiments of the invention illustrated in FIGURES 4, 5, like elements bear like designa-

tions. In FIGURES 4, 5, the principal modification is in the blank 11a to provide a door portion 23aa that opens or closes by folding along a horizontally disposed score line 17a, rather than swinging about vertically disposed score line 12 as is the case with door portion 23a. Blank 11a further differs by elimination of cut line 25. Also, recess 36a extends below score line 17 to another score line 17a and cut line 26 is omitted. Erection including the forming of the double reverse folded portions and installation of hanger bar 44 is as described in connection with FIGURES 1-3. Door portion 23aa is folded upwardly about score line 17a to closed position in engagement with flange 24 after loading of garments into the container has been completed following which the inner and outer top flaps are closed and secured as described regarding FIGURES 1-3.

While particular embodiments of the invention have been illustrated and described, it will be obvious to those skilled in the art that various changes and modifications may be made without departing from the invention and it is intended to include in the appended claims all such changes and modifications that fall within the true spirit and scope of the invention.

What is claimed is:

1. In a container for enclosing and supporting articles therein, the combination comprising
 - a pair of spaced-apart load-supporting wall portions each having associated therewith,
 - a closure flap having first and second fold portions interconnected together and with said first fold portion foldably connected to its said associated wall portion and forming therewith a double reverse fold constituting three plies of material extending along the upper outer edge of said wall portion,
 - said flap defining therein an opening along the fold line between the upper edge of the outer ply and the remainder of said flap, and article-supporting and torsional rigidifying means including a supporting member extending between said wall portions and through each of said openings and having opposed U-shaped end portions with the intermediate portion of the U-shaped member resting on said upper edge and having one leg thereof in gripping engagement with the inner ply and the other leg in gripping engagement with the outer face of the outer ply.
2. The combination of claim 1 wherein said wall portions are integral with and foldably connected to other components of said container, all components of which are defined by and formed from a one piece blank.
3. The combination of claim 1 wherein said opening is disposed adjacent and above said double reverse fold.
4. The combination of claim 2 and additionally including means including outer flaps for enclosing and securing the top portion of said container.

References Cited

UNITED STATES PATENTS

2,807,354	9/1957	Belsinger	206-7
2,752,032	6/1956	Fish	229-37 X
2,779,527	1/1957	Fallert.	
3,294,221	12/1966	Notko et al.	206-7

FOREIGN PATENTS

927,948	6/1963	Great Britain.
---------	--------	----------------

JOSEPH R. LECLAIR, *Primary Examiner*.

THERON E. CONDON, *Examiner*.

J. M. CASKIE, *Assistant Examiner*.