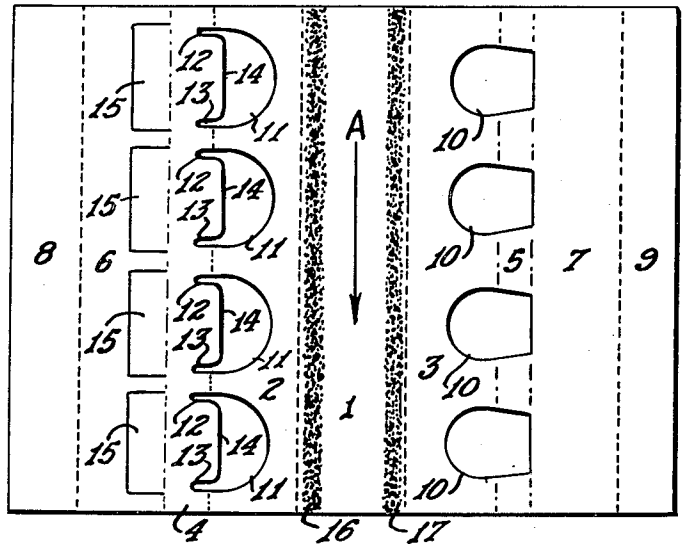
April 19, 1955 R. M. BERGSTEIN 2,706,590

REINFORCED DOUBLE-WALLED INSERT FOR CARTONS

Filed March 2, 1953 2 Sheets-Sheet 1

FIG. 1.



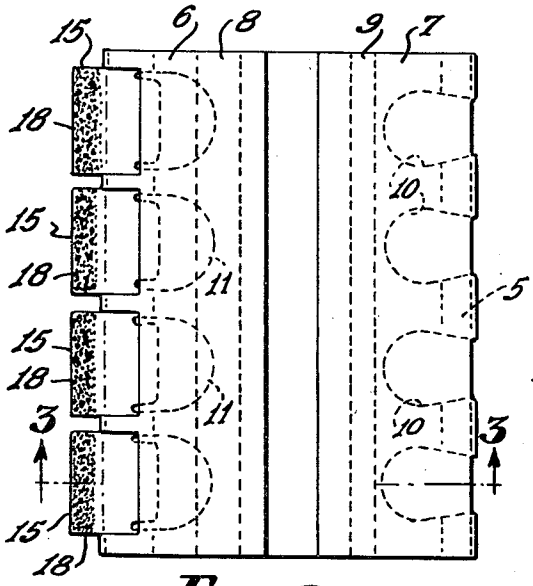


FIG. 2.

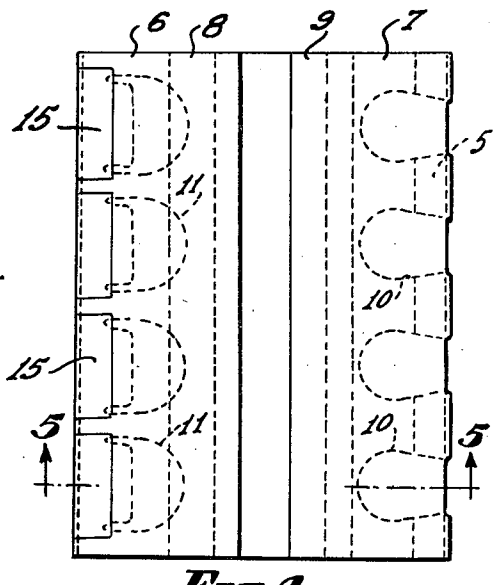


FIG. 4.

FIG. 3.

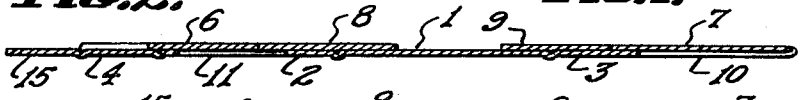
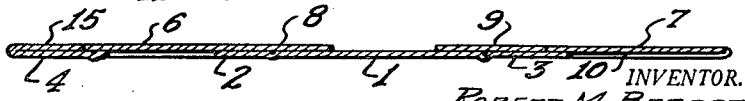


FIG. 5.



INVENTOR.
ROBERT M. BERGSTEIN,
BY Allen & Allen
ATTORNEYS.

April 19, 1955 R. M. BERGSTEIN 2,706,590

REINFORCED DOUBLE-WALLED INSERT FOR CARTONS

Filed March 2, 1953 2 Sheets-Sheet 2

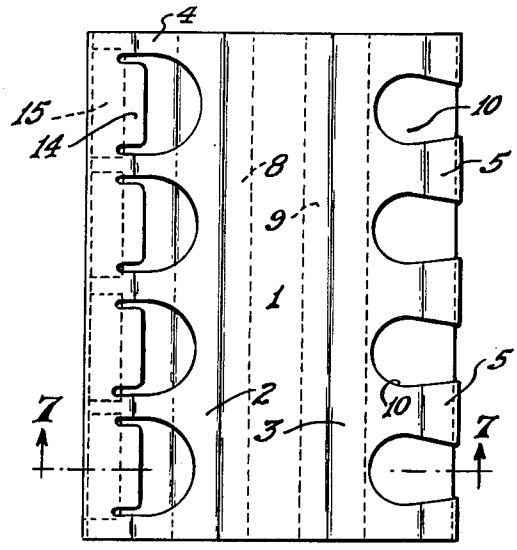


FIG. 6.

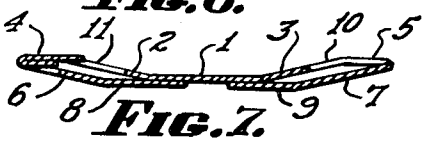


FIG. 7.

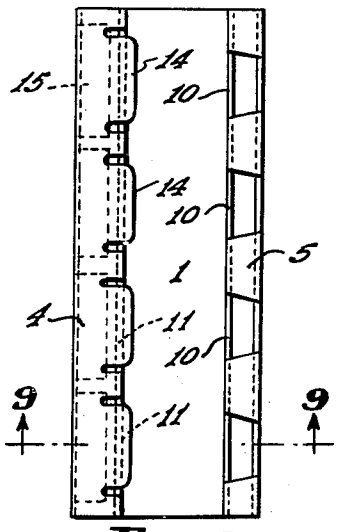


FIG. 8.

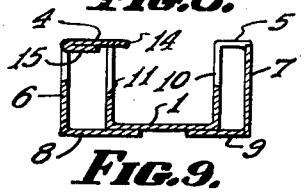


FIG. 9.

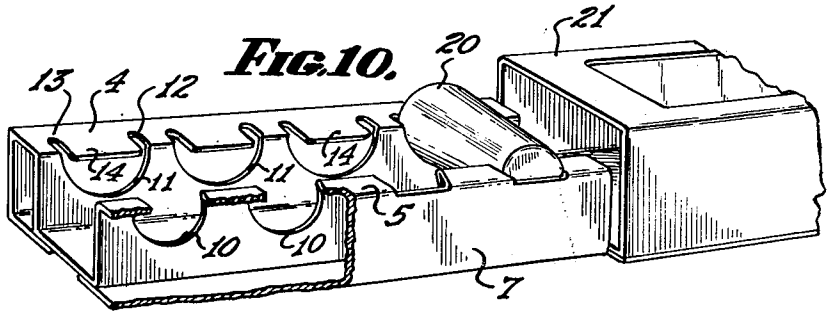


FIG. 10.

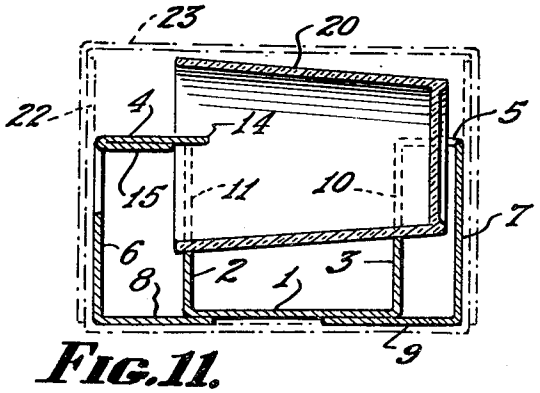


FIG. 11.

INVENTOR.
ROBERT M. BERGSTEIN,
BY Allen & Allen
ATTORNEYS.

United States Patent Office 2,706,590 Patented Apr. 19, 1955

2,706,590

REINFORCED DOUBLE-WALLED INSERT FOR CARTONS

Robert M. Bergstein, Cincinnati, Ohio, assignor to The Bergstein Packaging Trust, a Trust composed of Robert M. Bergstein and Frank D. Bergstein, trustees

Application March 2, 1953, Serial No. 339,657

8 Claims. (Cl. 229—14)

My invention relates to packaging structures, and more particularly to an insert for use in cartons wherein it is desired to package glassware and the like.

It is a principal object of my invention to provide a simple and inexpensive carton insert which will speed-up the interior packing time, as well as lower its cost.

It is a further object of my invention to provide a double-walled carton insert formed from a one-piece blank in such a fashion that the insert may be erected for placement in an outer carton by a single manipulative step effective to erect all of the walls of the insert.

Let another object of my invention is the provision of a double-walled insert in which at least one of the top walls of the insert is notched to receive the rim of a glass placed therein, and wherein the said top wall is reinforced in the areas lying immediately beyond the notches so as to prevent the rim of the glass from cutting through or tearing the notches and thereby becoming loose and out of position in the carton.

It is a further object of my invention to provide a simple and inexpensive method of folding and gluing the insert to form a knocked-down or flat-folded structure which can be readily shipped to the packager.

These and other objects of my invention which will appear hereinafter or which will be apparent to the skilled worker in the art upon reading these specifications, I accomplish by that construction and arrangement of parts and by those procedures of which I shall now describe an exemplary embodiment.

Reference is made to the accompanying drawings wherein:

Figure 1 is a plan view of the blank for my carton insert.

Figure 2 is a plan view of the blank of Figure 1 subsequent to the initial folding step.

Figure 3 is a sectional view taken along the line 3—3 of Figure 2.

Figure 4 is a plan view of the blank of Figure 2 following infolding of the reinforcing flaps.

Figure 5 is a sectional view taken along the line 5—5 of Figure 4.

Figure 6 is a plan view of the completed flat-folded structure with the parts slightly expanded just prior to erection.

Figure 7 is a sectional view taken along the line 7—7 of Figure 6.

Figure 8 is a plan view of the fully erected insert.

Figure 9 is a sectional view taken along the line 9—9 of Figure 8.

Figure 10 is a partial perspective view with parts broken away illustrating a tumbler in position in the insert and the insert ready for insertion into an outer carton.

Figure 11 is a vertical sectional view taken through the insert showing a tumbler in position in the insert, and illustrating in dotted lines the manner in which the insert may be placed in an outer carton.

Referring now to Figure 1 of the drawings, the insert is formed from a blank of suitable paperboard or boxboard cut and scored to provide a bottom wall **1**, inner side walls **2** and **3**, top walls **4** and **5**, outer side walls **6** and **7**, and attachment flaps **8** and **9**, all in articulation in the manner illustrated. Inner side wall **3** and top wall **5** are provided with cut-out openings **10** adapted to receive the bases of tumblers or similar articles placed in the insert. Similarly, inner side wall **2** is provided with cut-out portions **11** adapted to receive and support the rims of the tumblers. The cut-out portions **11** terminate in pairs of slots or notches, such as the notches **12** and **13** extending inwardly in top wall **4**. The pairs of notches **12** and **13** extend only partially through the top wall **4** and are adapted to receive the rim edges of the tumblers. If desired, the top wall **4** may be extended outwardly in the areas of the cut-out portions **11** to form the projections **14**.

A reinforcement flap **15** is formed in outer side wall **6** adjacent each of the cut-out portions **11**, the reinforcement flaps being of a length sufficient to extend slightly beyond the outer edges of the pairs of slots or notches **12** and **13**. Preferably the reinforcement flaps **15** will lie along the line of articulation between top wall **4** and outer side wall **6** and have a common line of articulation with the outer side wall. It will be evident, however, that the reinforcement flaps may be spaced downwardly from the top edge of the outer side wall and have separate lines of articulation thereto, or may even be formed as tear outs perforated about all four sides.

The blank just described may be conveniently folded and glued on a straight-line gluer by positioning the blank with its reverse side uppermost, i. e., with the side form in the lowermost surface of the bottom wall and the inner surfaces of the side walls uppermost, and by moving the blank in the direction of the arrow A, as seen in Figure 1, the initial step in the folding and gluing of the blank being the application of the strips of adhesive **16** and **17** to the outer side edges of bottom wall **1**. Following the application of the adhesive strips, the blank is infolded along the lines of articulation between the top walls **4** and **5**, and the outer side walls **6** and **7**, so as to bring the blank to the condition illustrated in Figure 2. When the blank is infolded in this manner, edge portions of the attachment flaps **8** and **9** are brought into contact with the adhesive strips **16** and **17** and hence into adhesive engagement with the outer side edges of bottom wall **1**. The dimensions of the attachment flaps are such that they in effect comprise extension of the bottom wall, the extensions being equal in width to the top walls **4** and **5**.

The infolding of the outer side wall **6** results in the exposure of the reinforcement flaps **15**, in the manner seen in Figure 2 of the drawings. The exposed reinforcement flaps are next coated with adhesive, as indicated at **18** in Figure 2, and thereafter infolded and brought into adhesive contact with the under surface of top wall **4**. As will be apparent from the drawings, the width of the reinforcement flaps is such that their outer edges will abut or just slightly overlap the ends of the notches **12** and **13**. The reinforcement flaps thus serve to reinforce the top wall **4** in the area lying beyond the notches **12** and **13**.

The completed, flat-folded insert is seen in Figure 4 of the drawings as it appears at the end of the folding and gluing operations. It is in this condition that the insert is ready for shipment to the packager.

Upon receipt by the packager, the insert is placed in the position illustrated in Figure 6, which is on the side opposite from that shown in Figure 4, and the packager has but to lift upwardly on the opposite side edges of the knock-down structure to cause the entire structure to assume the erected condition seen in Figures 8 and 9 of the drawings. The structure will be held in the erected condition by the outer carton into which it is placed.

As seen in Figure 10 glasses or tumblers, such as the tumbler **20**, are placed in the insert with the base supported in the cut-out opening **10** and the rim supported in the cut-out portion **11** with the edge of the rim extending into the notches **12** and **13**. The insert may then be slipped into an outer carton, such as the sleeve **21** seen in Figure 10, or it may be placed in a box having a bottom **22** and a cover **23**, as indicated in Figure 11. Also, in many instances it is preferred to provide a carton in which a plurality of the inserts may be placed side-by-side, as for example where it is desired to package eight or twelve glasses in a single carton.

As best seen in Figure 11, the glass or tumbler **20** is supported on the inner side walls **2** and **3** in the cut-out openings **10** and **11**. The projection **14** extends into the mouth of the glass and the rim edge of the glass, which lies in the notches **12** and **13**, abuts the outer edge of the

nfolded reinforcement flap 15. The reinforcement flap, is already indicated, reinforces the top wall 4 in the areas ying beyond the notches 12 and 13 and hence prevents he top flap from tearing in the areas lying beyond the notches.

Modifications may, of course, be made in my invention without departing from the spirit of it. For example, while I have taught a procedure for folding and gluing the carton insert wherein the reinforcement flaps are infolded separate from the side wall in which they are formed, it is within the spirit of my invention to spot adhesive on the reinforcement flaps 15 prior to the infolding of the outer side wall panel 6, and thereafter jointly infold the outer side wall and the reinforcement flaps. This, of course, requires a timed gluing mechanism to apply the spots of adhesive to the reinforcement flaps 15 without also covering the intermediate portions of the outer wall; whereas the procedure illustrated in Figure 2 of the drawings enables me to use an ordinary glue wheel for applying the adhesive to the extending reinforcement flaps. Also, it will be evident that the reinforcement flaps may take the form of cut-outs formed wholly within the confines of the outer side wall 6 rather than being articulated to the top wall in the manner disclosed in the drawing. Where the reinforcement flaps are in the form of cut-outs, they of course will be adapted to break away from the outer side wall upon the erection of the structure.

Having, however, described my invention in an exemplary embodiment, what I desire to secure and protect by Letters Patent is:

1. In an insert for a carton, spaced apart inner and outer side walls connected together along their upper edges by a top wall, notches in said top wall extending inwardly from the inner side edge thereof and terminating short of the outer side edge, reinforcement flaps struck from said outer side wall and secured to the under side of said top wall in areas lying beyond the ends of said notches, whereby to reinforce said top wall and prevent it from being torn in the areas beyond the notches.

2. In a carton insert, inner and outer side walls connected together by a top wall, cut-out portions in said inner side wall extending downwardly from the top edge thereof for receiving and supporting the upper end of a tumbler, notches in said top wall extending inwardly therein from the edges of said cut-outs for receiving the rim of the tumbler, said notches terminating short of the opposite side edge of said top wall, and at least one reinforcement flap struck from said outer side wall and secured to the under side of said top wall in the area lying beyond said notches, whereby to reinforce said top wall and prevent the tumbler from tearing it.

3. In a carton insert, inner and outer side walls connected together by a top wall, cut-out portions in said inner side wall extending downwardly from the top edge thereof for receiving and supporting the upper end of a tumbler, notches in said top wall extending inwardly therein from the edges of said cut-outs for receiving the rim of the tumbler, said notches terminating short of the opposite side edge of said top wall, and at least one reinforcement flap struck from said outer side wall and secured to the under side of said top wall in the area lying beyond said notches, whereby to reinforce said top wall and prevent the tumbler from tearing it, said reinforcement flap and said outer side wall being hinged to said top wall along a common line of fold.

4. In a carton insert, inner and outer side walls connected together by a top wall, cut-out portions in said inner side wall extending downwardly from the top edge thereof for receiving and supporting the upper end of a tumbler, notches in said top wall extending inwardly therein from the edges of said cut-outs for receiving the rim of the tumbler, said notches terminating short of the opposite side edge of said top wall, and at least one reinforcement flap struck from said outer side wall and secured to the under side of said top wall in the area lying beyond said notches, whereby to reinforce said top wall and prevent the tumbler from tearing it, said reinforcement flap and said outer side wall being hinged to said top wall along a common line of fold, said top wall including projections between the notches for each cut-out portion extending inwardly beyond the plane of the inner side wall for contact with the inner surface of a tumbler supported in the said cut-out portion.

5. An insert for a carton comprising a bottom wall, inner side walls extending upwardly from said bottom wall, top walls extending outwardly from the upper edges of said inner side walls, outer side walls extending downwardly from the outer side edges of said top walls, and attachment flaps extending inwardly from the bottom edges of said outer side walls and secured to the under surface of said bottom wall, cut-out openings in one of said inner side walls extending upwardly through the adjacent top wall for receiving the bases of tumblers placed therein, cut-out portions in the other of said inner side walls opposite said first mentioned cut-out openings, said cut-out portions extending downwardly from the top edges of said last mentioned inner side walls and adapted to receive the upper ends of tumblers placed therein, notches in the top wall adjacent said last named inner side wall extending inwardly from the edges of said cut-out portions for receiving the rims of the tumblers, said notches terminating short of the opposite side edges of said last named top wall, and reinforcement flaps struck from the outer side wall adjacent said last named top wall, said reinforcement flaps being folded inwardly and secured to the under surface of said last named top wall in areas lying beyond said notches, whereby to reinforce the last named top wall and prevent the rim of the tumbler from tearing beyond the notches.

6. The structure claimed in claim 5 wherein said reinforcement flaps and the outer side wall from which they are struck are articulated to the said last named top wall along a common line of articulation.

7. In combination for the purposes described, a carton including a bottom, side and end walls, and an insert for said carton, said insert including an outer side wall in contact with the side wall of said carton, a top wall extending inwardly from the top edge of said outer side wall, an inner side wall extending downwardly from the opposite side edge of said top wall, and a bottom, a cut-out portion extending downwardly in said inner side wall from the upper edge thereof for receiving and supporting the upper end of a tumber, notches in said top wall extending inwardly from the edge thereof adjacent said cut-out portion for receiving the rim of the tumbler, and a reinforcement flap in the outer side wall of said insert, said reinforcement flap hinged to said outer side wall along the upper edge thereof and folded inwardly and secured to the under surface of said top wall with a free edge of said flap substantially coinciding with the ends of said notches.

8. A method of forming a reinforced carton insert which comprises providing a blank including a bottom wall, inner side walls articulated to oppsite side edges of said bottom wall, top walls articulated to the opposite edges of said inner side wall, outer side walls articulated to the opposite edges of said top walls, attachment flaps articulated to the opposite edges of said outer side walls, and reinforcement flaps formed in one of said outer side walls and hinged thereto along the line of articulation between said last named outer side wall and the adjacent top wall, infolding said outer side walls along their lines of articulation to said top walls so as to bring said attachment flaps into contact with said bottom wall with the interposition of adhesive therebetween but without infolding said reinforcement flaps, thereafter applying adhesive to the extending reinforcement flaps and then infolding said reinforcement flaps to bring them into adhesive engagement with underlying portions of said top walls.

References Cited in the file of this patent

UNITED STATES PATENTS

1,351,740	Boyd	Sept. 7, 1920
2,339,555	Glass	Jan. 18, 1944
2,368,753	Elliott et al.	Feb. 6, 1945
2,426,899	Pantolone	Sept. 2, 1947
2,447,243	Freel et al.	Aug. 17, 1948
2,511,569	Davis et al.	June 13, 1950
2,593,430	Frankenstein	Apr. 22, 1952

FOREIGN PATENTS

393,630	Great Britain	June 9, 1933