Nov. 22, 1966 N. D. ELLIS 3,286,908

CARTON

Filed March 29, 1965 2 Sheets-Sheet 1

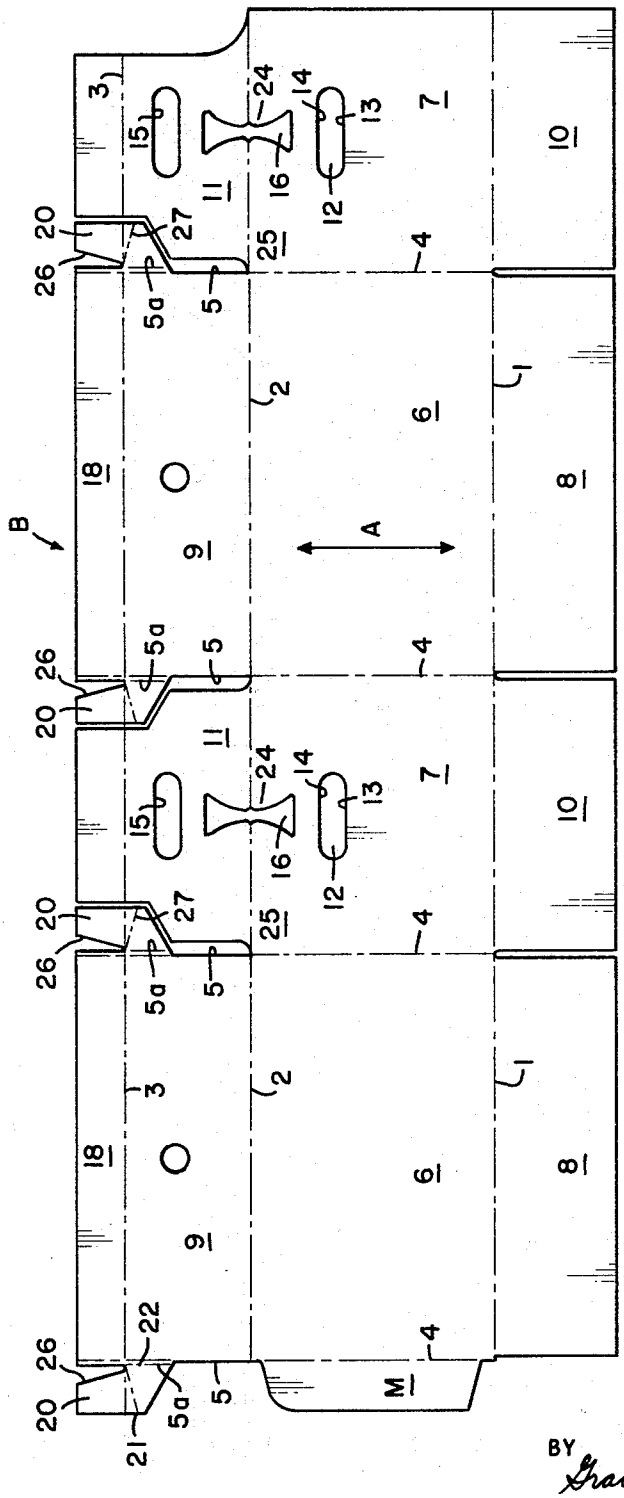


FIG. 1

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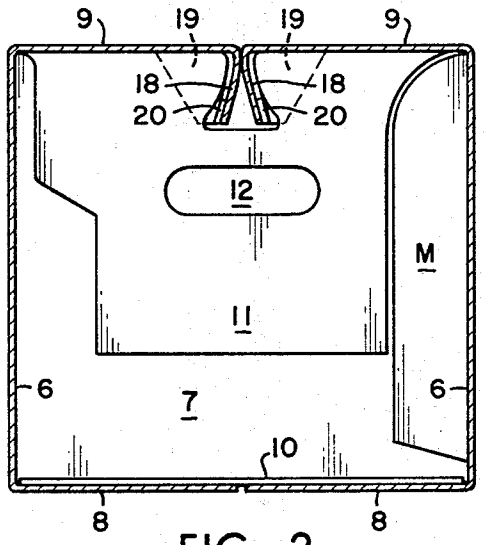


FIG. 2

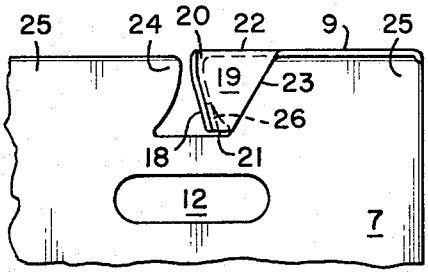


FIG. 5

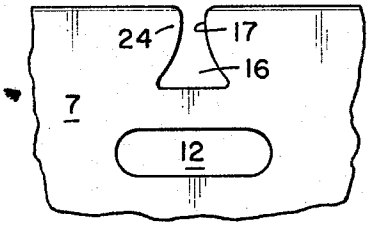


FIG. 4

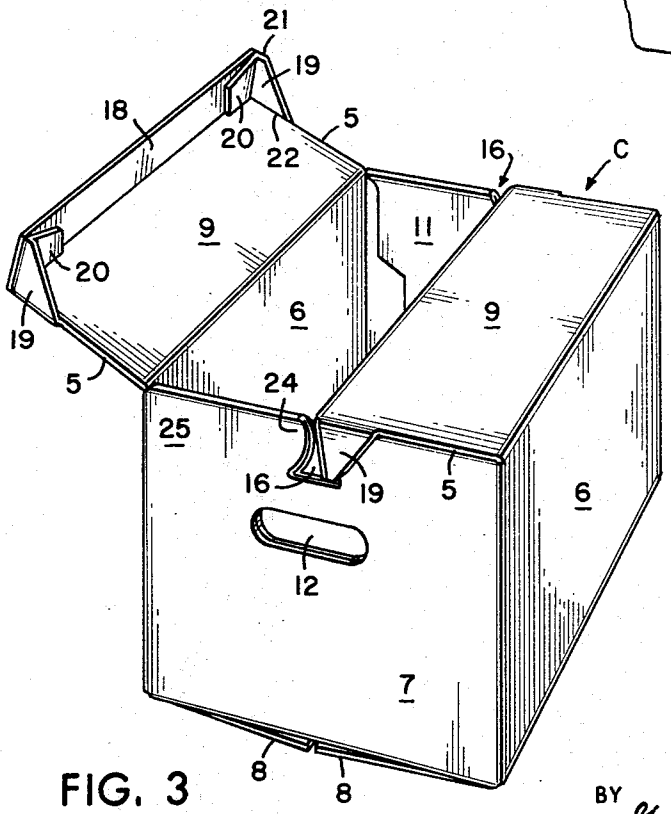


FIG. 3

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CARTON

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4 Claims. (Cl. 229—44)

This invention relates to an improved carton formed of relatively inexpensive material, such as corrugated board, and designed for multiple use in shipping and storing relatively heavy articles, such as bottles of beer.

The principal object of the present invention is to provide an inexpensive multiple trip carton which can be erected, loaded, and closed on high speed automatic equipment. Another object is to provide a multiple trip carton made from one piece of corrugated board, having end cover brackets which are shortened to eliminate bending, tearing, and catching of the end cover brackets when the cartons are palletized. Another object is to eliminate the conventional end cover flanges which tend to "dog ear" or bend in use, and use only small triangular connectors to maintain the side cover flange at an angle to the side cover flap.

These and other objects and advantages will become apparent hereinafter.

The present invention is embodied in a carton made from the corrugated board, said carton having end walls and side walls, each of said side walls having a side cover flap hinged thereto, said side cover flap having a side cover flange positioned at an angle to said side cover flap and maintained in said position by end cover brackets, said side cover flanges adapted to extend into a notch in the upper portion of said end walls, said end cover brackets having a small bottom portion and extending angularly upwardly so as to cover only a small portion of the upper part of the end walls adjacent to said notch in said end walls.

The invention also consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed. In the accompanying drawings which form part of this specification and wherein like numerals and symbols refer to like parts wherever they occur:

FIG. 1 is a top plan view of a carton blank embodying the present invention, with the inside surface shown,

FIG. 2 is a transverse sectional view toward one end of said carton after it has been erected,

FIG. 3 is a perspective view of said carton showing one side cover flap in open position,

FIG. 4 is an enlarged fragmentary view of the end wall showing the details of the notch therein and the handhole, and

FIG. 5 is an enlarged fragmentary view of the end wall showing one side cover flap in its closed position.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a blank B made from a single piece of substantially rectangular corrugated board with the corrugations extending in the direction of the arrow A shown in FIG. 1.

The carton blank B shown in FIG. 1 may be rotary cut to reduce cost. The corrugated material is of about 275 pounds strength, but this strength may be varied within limits without departing from the present invention.

The carton blank B is provided with longitudinal scores or fold lines 1, 2, and 3. The blank B is also provided with transverse or vertical score lines 4 which form the vertical corners of the carton C, and vertical free edges 5, which are in line with the score lines 4 and form the end edges of the side cover flaps. The blank B is also

provided with vertical score lines 5*a* which are slightly offset from the score lines 4 about ⅛ inch.

The carton C is provided with two side walls 6, two end walls 7, and a manufacturer's flap M defined along their vertical edges by the scores 4. The side walls 6 each have a side bottom flap 8 hinged thereto along the bottom score 1 and a side cover flap 9 hingedly secured thereto along the upper score 2. The upper score 2 between the side walls 6 and side cover flaps 9 may be cut through at intervals to weaken it so that the covers 9 may be pivoted more readily. The side cover flaps 9 may be provided with a finger hole in the center thereof to facilitate opening, if desired, and also may be provided wit han inspection hole so that one bottle cap in the case is visible without having to open a side cover flap 9. Each end wall 7 has an end bottom flap 10 hingedly connected thereto along the bottom score 1 and an end reinforcing flap 11 hingedly secured thereto along the upper score 2. Each end wall 7 is provided with a handhole 12 having a lower edge 13 and an upper edge 14. The end reinforcing flap 11 is adapted to be rebent 180° along the upper score 2 to be placed in juxtaposition with the inner surface of the end wall 7 so that its handhole 15 is in registering relation with the end wall handhole 12. The end wall 7 and end reinforcing flap 11 each have a notch 16 in the center of their upper edge, said notch 16 preferably having curved inner portions 17 thereon, as will be explained.

Each side cover flap 9 is provided with a longitudinal side cover flange 18 and two small end cover brackets 19, said end cover brackets 19 being perpendicular to the side cover flap 9 and secured in said perpendicular portion by reason of the tabs 20 connected to the end cover brackets 19, which tabs 20 are secured to the inner face of the side cover flange 18 preferably by staples. The cover flanges 18 and tabs 20 are adapted to fit into the notches 16 when the carton is in its erected and closed position. The free edges 5 are in line with the score lines 4 to make the side cover flaps 9 the same length as the carton C. The offset score line 5*a* allows the cover brackets 19 to move downwardly past the outer surface of the end walls 7 in parallel relation therewith so that said end cover brackets 19 do not strike the top edge of the end walls 7. The parts are dimensioned so that the inside surface of the tab 20 adjacent to the score line along which it is hinged frictionally engages the curved surface 17 of the notch 16 to hold the side cover flap 9 in closed position.

As best shown in FIG. 5, the end cover brackets 19 are substantially triangular in shape, being very narrow at their bottom 21 and wide at their top 22 with a rear edge 23 extending angularly upwardly therebetween. Thus, the end cover brackets 19 cover only those portions 24 of the end walls 7 which are adjacent to the notches 16 and the remaining upper portions 25 of the end walls 7 remain uncovered and free from any end cover bracket 19. That is, the upper part 25 of the end walls 7 is not covered by an end cover bracket near the side walls 6. The part 25 is greater than the portion 24 so that the major portion of the top part of the end wall remains uncovered by the end cover bracket 19.

The tabs 20 reinforce the inner surface of the side cover flanges 18 and have sloping bottom edges 26, which slope at an angle of about 15° with an extension of the scores 5*a*, so that there are four thicknesses of material. The tabs 20 may be folded along the score lines 3 but preferably are folded along the short scores 27 which are at an angle of about 15° to the score line 3. When the tabs 20 are folded along the score lines 3, the side cover flange 18 is perpendicular to the side cover flap 9, but when the tabs 20 are folded about the scores 27, the side cover flanges 18 slope inwardly.

In the erected position, suitable fastening means are used. Preferably, the end bottom flaps **10** are glued to the inner surfaces of the side bottom flaps **8**, the end reinforcing flaps **11** are glued to the inner surfaces of the end walls **7**, and the outer surfaces of the tabs **20** are glued to the inner end portions of the side cover flanges **18**. The manufacturer's flap M is preferably stapled to the edge of the end wall **7** to maintain the four walls **6** and **7** in their perpendicular position. However, it is to tbe understood that staples or adhesive may be used as desired.

The present corrugated board carton C provides a carton which is sufficiently strong and rigid to be used for a number of trips in the ordinary course of the beer business. This carton can be erected with automatic equipment which holds the side cover flaps in open position for inserting the separate partition member and 24 bottles of beer. Only two cover flaps must be closed in order to close the carton, thereby saving labor costs over cartons having two side cover flaps and two end cover flaps. In effect, the usual end cover flanges have been eleminated in this carton thereby avoiding palletizing problems and saving a carton which might otherwise have to be discarded because of the end cover flanges becoming bent or torn. The brackets **19** do not have such disadvantages, and yet said brackets **19** do help to make the carton more rigid when the cover flaps **9** are closed.

The corrugations run vertically in the side walls **6** and in the end walls **7**, and run transversely across the side cover flaps **9** so that the free edges **5** are closed by a corrugation, thereby preventing wicking or moisture from entering between the inside and outside liners which along with a corrugated sheet form the material of the side cover flaps **9**.

This invention is intended to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

What I claim is:

1. A carton made from corrugated board, said carton having side walls and end walls, said end walls having a notch therein, said side walls each having a side cover flap hingedly secured thereto, said side cover flaps each having a side cover flange positioned at an angle thereto, said side cover flaps each having small substantially isosceles triangular end cover brackets connected by tabs to said side cover flange for maintaining said side cover flange in angular relation with said side cover flap, said end cover brackets having a small bottom and a wider top thereby covering only a small portion of said end walls adjacent to said notch when said cover flaps are in closed position and leaving the major portion of the end walls uncovered.

2. A substantially rectangular carton made from about 275 pound corrugated board in which the corrugations run vertically in the side walls and in the end walls, each end wall having a notch in the central upper portion thereof, each side wall having a side cover flap hinged thereto with the corrugations running in a transverse direction, said side cover flaps each having a side cover flange maintained in angular relation thereto by small substantially isosceles triangular end cover brackets with tabs connecting said end cover brackets and side cover flange, said end cover brackets having a small bottom and a wider top thereby covering only a small portion of said end walls adjacent to said notch when said cover flaps are in closed position and leaving the major portion of the upper part of the end walls uncovered by said end cover brackets.

3. The carton set forth in claim **1** wherein each end wall is provided with an end reinforcing flap hinged thereto substantially over its entire top edge.

4. The carton set forth in claim **3** wherein the corrugation in said side cover flaps run transversely across the carton, thereby forming closed free edge portions on said cover flaps.

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