

Sept. 27, 1960

K. T. BUTTERY ET AL

2,954,152

COLLAPSIBLE POLYHEDRAL CARTON

Filed July 31, 1957

3 Sheets-Sheet 1

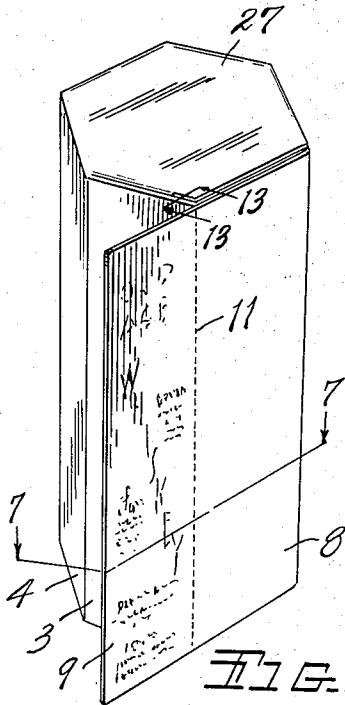


FIG. 1.

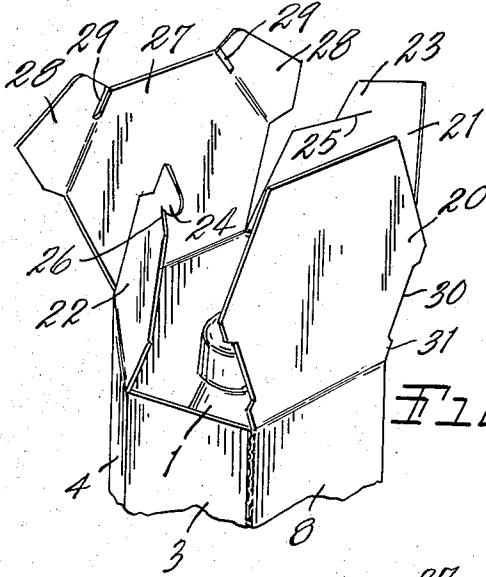


FIG. 9.

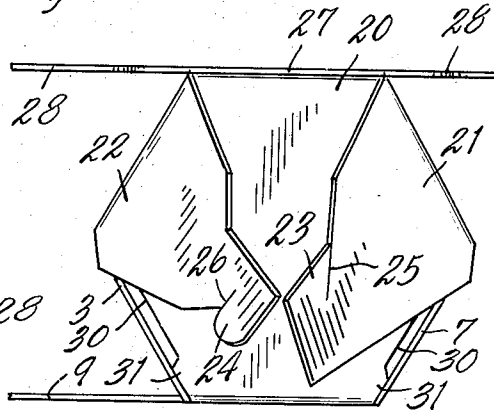


FIG. 10.

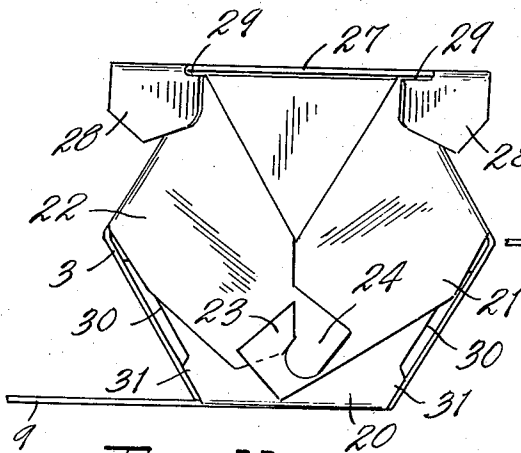


FIG. 11.

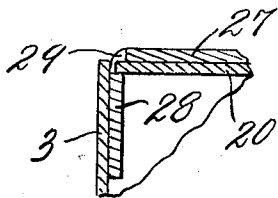


FIG. 13.

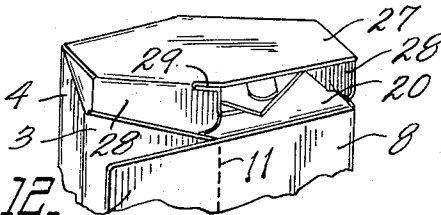


FIG. 12.

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3 Sheets-Sheet 2

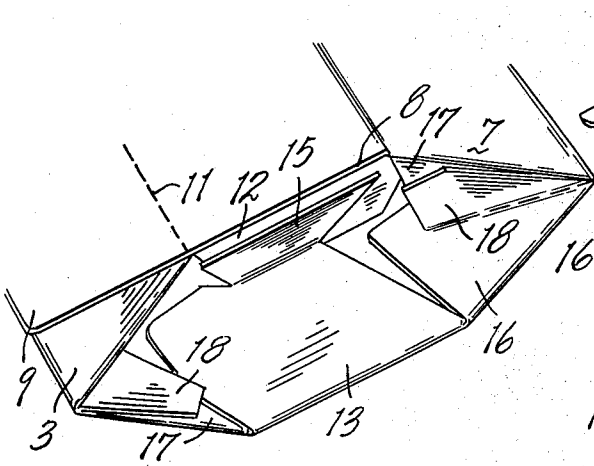


FIG. 6.

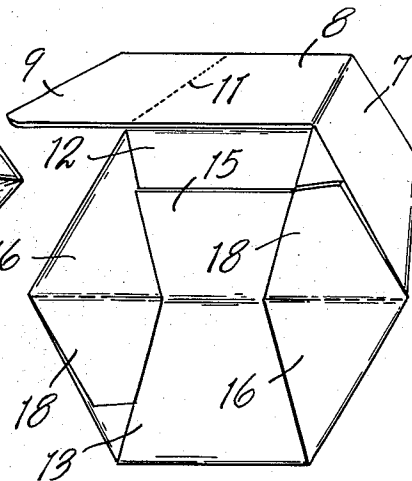


FIG. 2.

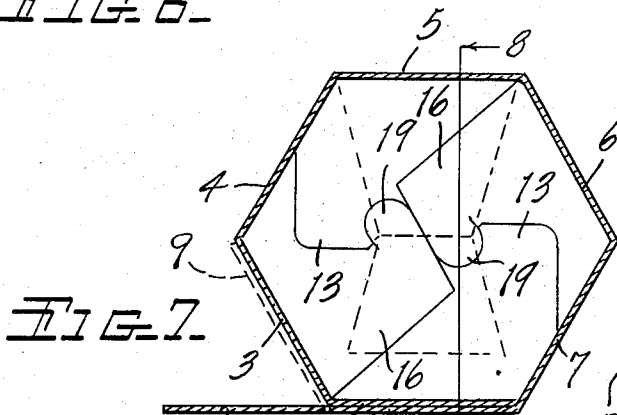


FIG. 7.

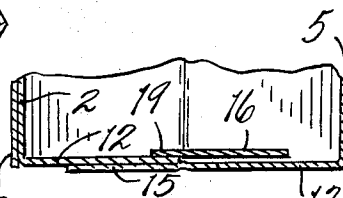


FIG. 8.

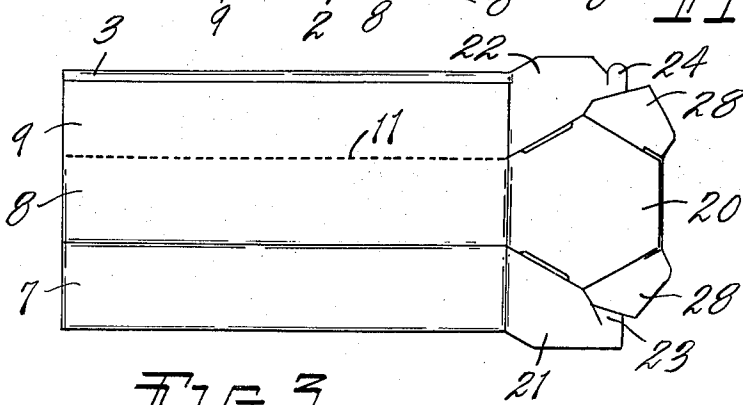


FIG. 3.

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3 Sheets-Sheet 3

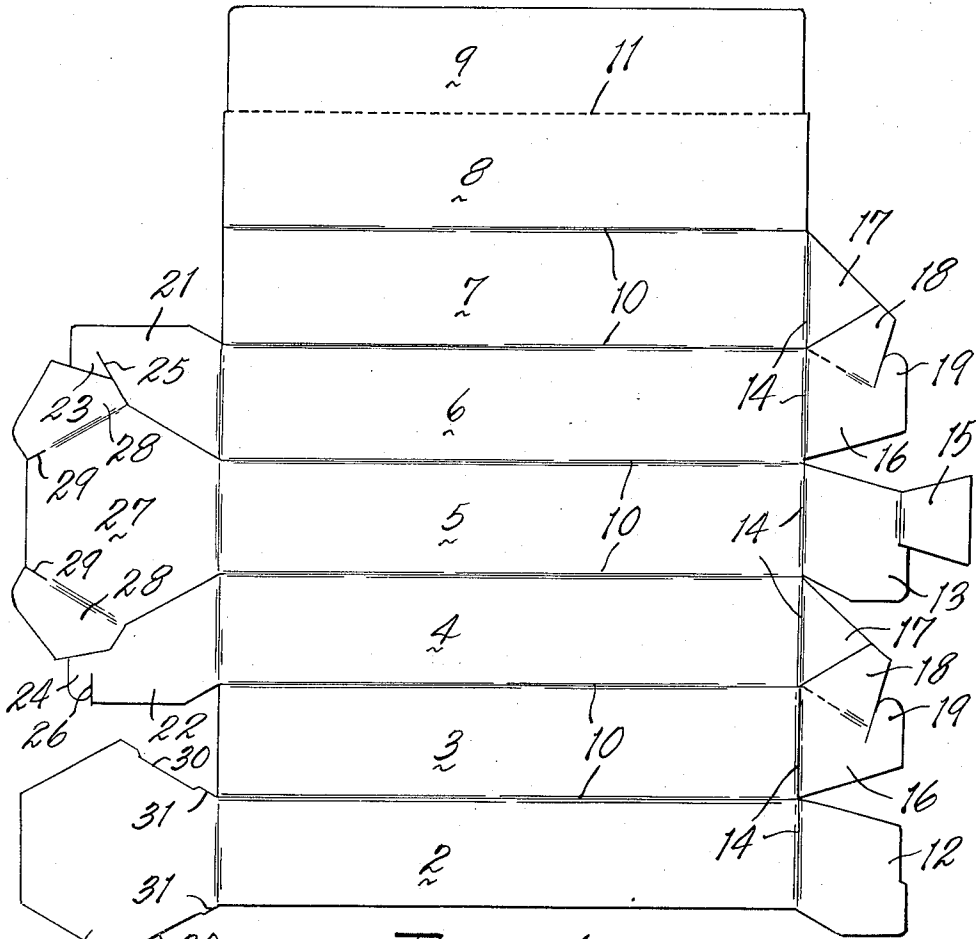


FIG. 4.

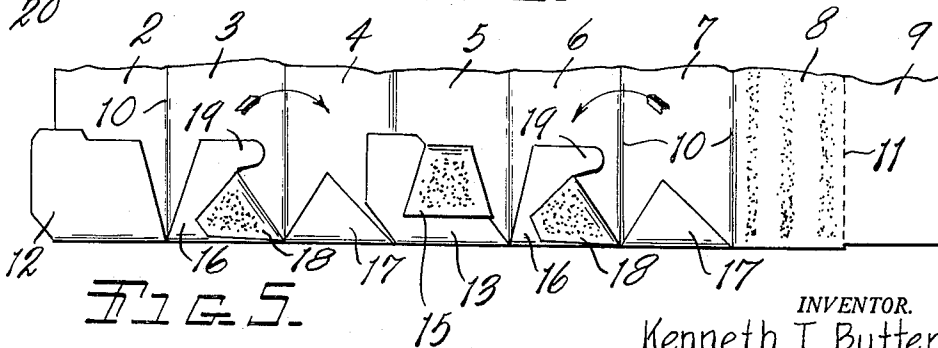


FIG. 5.

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2,954,152

COLLAPSIBLE POLYHEDRAL CARTON

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1 Claim. (Cl. 229—39)

This invention relates to a polyhedral container or carton well adapted for the packaging of cylindrical articles such as bottles.

The main objects of this invention are:

First, to provide a carton which may be quickly erected and closed and one which, when closed, is effective in resisting collapsing stresses.

Second, to provide a polyhedral carton which is well adapted to receive cylindrical articles such as bottles.

Third, to provide a carton having these advantages which is provided with a detachable display member or indicia member adjustable to display position or which may be collapsed against a side wall of the carton.

Objects relating to details and economies of the invention will definitely appear from the description to follow. The invention is defined in the claim.

A carton which embodies the features of the invention is clearly illustrated in the accompanying drawing in which:

Fig. 1 is a top perspective view of a carton embodying the invention with the display panel in projecting position.

Fig. 2 is a fragmentary bottom perspective view.

Fig. 3 is a plan view of the carton in collapsed position.

Fig. 4 is a plan view of the cut and scored blank from which the carton is formed.

Fig. 5 is a fragmentary plan view illustrating certain steps in the manufacture of the carton, adhesive being indicated on certain of the bottom closure members and the sealing flap. This is an inside view with the bottom closure members folded upwardly.

Fig. 6 is a fragmentary perspective view illustrating the bottom closure members in partly erected position and their relation to each other in such position.

Fig. 7 is a cross sectional view looking down on line 7—7 of Fig. 1.

Fig. 8 is a fragmentary view in section on a line corresponding to line 8—8 of Fig. 7 showing further details of the bottom closure members.

Fig. 9 is a perspective view of the upper end of the carton with the top closure members in open position, a bottle being indicated in the carton.

Fig. 10 is a top plan view illustrating the inner closure member in closed position and the intermediate closure members in inturned position preliminary to engaging them.

Fig. 11 is a view similar to Fig. 10 with the intermediate closure members in engaged position and with the locking tabs on the outer closure member turned inwardly preliminary to the closing of the outer closure member.

Fig. 12 is a perspective view illustrating the top closure members in partially closed position.

Fig. 13 is a fragmentary view in section on a line corresponding to line 13—13 of Fig. 1 illustrating the interlocking engagement of the outer closure member tabs with the inner closure member.

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The embodiment of the invention illustrated is a six-walled structure adapted to receive a bottle or like object indicated at 1 in Fig. 1. The carton is formed from a single sheet of fiberboard which is cut and scored to provide six side walls 2, 3, 4, 5, 6 and 7, a sealing flap 8 and a display panel 9. The side walls and the sealing flap are hingedly connected by the scores 10. The display panel 9 is detachably connected to the outer edge of the sealing flap 8 by severage perforations 11. In this embodiment the sealing flap 8 is of the same dimensions as the side walls so that the display panel 9 is supported as illustrated in Figs. 1 and 7, for example, to project from the side wall, or it may be collapsed against the side walls as shown in Fig. 3 when the carton is in collapsed form or as shown by dotted lines in Fig. 7 when the carton is erected. In Fig. 1 the word "Whiskey" appears on the display panel and other material is indicated. The other walls may desirably be covered with aluminum foil or other ornamental coating.

The carton illustrated is provided with an automatically erectable bottom closure and this comprises the closure members 12 and 13 which are hingedly secured by the scores 14 to the wall panels 2 and 5 which are opposed when the carton is erected. The closure member 13 is provided with an attaching flap 15 which is adhesively secured to the closure member 12. The adjacent pairs of side walls 3, 4 and 6, 7 are provided with closure members 16 and 17, the closure members 17 in the embodiment illustrated being of generally triangular shape. The closure members 16 are provided with attaching flaps 18 which are lapped upon and adhesively secured to the closure members 17. The closure members 16 are also provided with tongues 19.

With this arrangement of bottom closure members they are automatically swung to erected position upon the erection of the carton as is illustrated in Figs. 6 and 7. In completely erected position the tongues 19 are interlockingly engaged with the edges of the closure members 12 and 13 which form or constitute in effect upwardly projecting shoulders with which the tongues are engaged. This results in an automatically erectable bottom closure and one which is capable of sustaining heavy loads.

The top closure comprises the inner closure member 20 which is of hexagonal shape and dimensioned to fit within the erected side walls, constituting a brace element which prevents the collapsing thereof. The coacting intermediate closure members 21 and 22 are provided with coengageable tongues 23 and 24, respectively, facing in opposite directions. The slits 25 and 26 permit close interlocking engagement of the tongues, that is, engagement so that there is no lost or substantial wracking movement of the walls. The inner top closure members constitute ties or braces which prevent collapsing of the walls while they are engaged. The outer top closure member 27 is hexagonal in shape and dimensioned to close upon the outer side of the inner closure members, completely concealing the same as illustrated in Fig. 1. The closure member 27 is provided with locking tabs 28 on corresponding edges, slots 29 being provided to form detents at the outer edges of the tabs. The inner top closure member 20 has notches 30 in its edges which coact with the adjacent side walls to provide slots adapted to receive the tabs or detent members 28 when the outer closure member is in closed position, and these have snap retaining engagement with the portions 31 of the inner closure member when the outer closure member is in fully closed position. When the outer top closure member is in closed position the intermediate closure members 25 are concealed and held in their interlocking engagement. This results in a very rigid carton when it is in erected position and one capable of carrying a rela-

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tively heavy load, that is, heavy as compared to the weight of the stock from which the carton is formed.

The top closure members are hingedly secured to their respective side walls by the scores 32. While the display panel 9 is non-functional so far as the coacting relation of the walls and closure members is concerned, it is a desirable feature from the standpoint of merchandising as it permits the display of the desired indicia and may be readily removed without in any wise affecting the coacting relation of the remaining parts.

I have illustrated and described the invention in a desirable commercial embodiment thereof. I have not illustrated or described certain modifications or adaptations which I contemplate as it is believed this disclosure will enable such modification as may be desired for particular products.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:

A collapsible carton formed of a sheet of fiberboard cut and scored to provide six hingedly connected side walls of uniform dimensions and a sealing flap at one side of the sheet of dimensions approximately corresponding to the dimensions of the side walls and fixedly secured to the side wall at the other side of the sheet, the sealing flap having a display panel having a free swinging edge and swingably and removably connected to the outer edge thereof for collapsing upon the outer side of the adjacent side wall and projection there beyond when the carton is erected or to project from the sealing flap to constitute a display device, a hexagonal inner closure member hingedly connected to one wall and dimensioned

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to close between the erected walls and having notches of uniform depth in its side edges adjacent its hinged edge, said notches terminating short of said hinged edge to provide snap retaining portions, an outer hexagonal closure member hingedly connected to the edge of the side wall opposite the side wall to which said inner closure member is connected and provided with tabs engageable in slots defined by said notches in said inner closure member and the walls opposed thereto, and a pair of intermediate closure members hingedly connected to the side walls adjacent the side walls to which said outer member is hingedly connected and foldable over said inner closure member and having coengaging tongues on their swinging ends, said outer closure member having slots at the juncture of its said tabs therewith adjacent the outer swinging edge of the outer closure member which receive said snap retaining portions at the inner ends of said notches.

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