Dec. 20, 1960 G. S. HOLMES 2,965,261

FOLDING PAPERBOARD CARRIER FOR BOTTLES AND THE LIKE

Filed Jan. 2, 1958 3 Sheets-Sheet 1

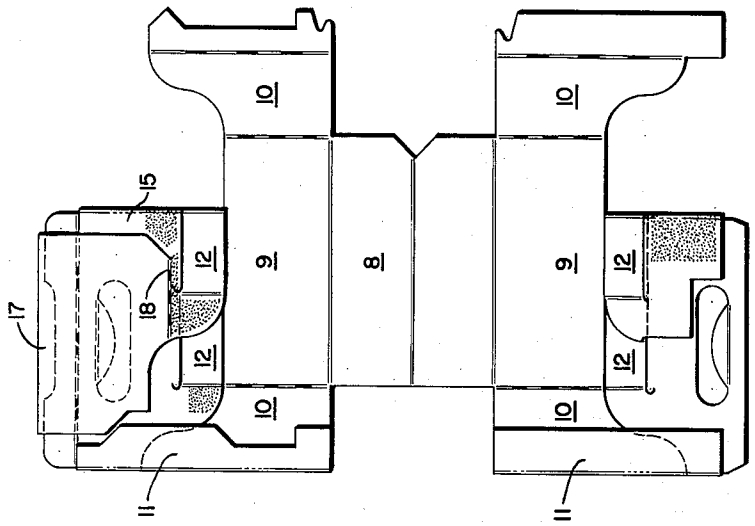


FIG. 2

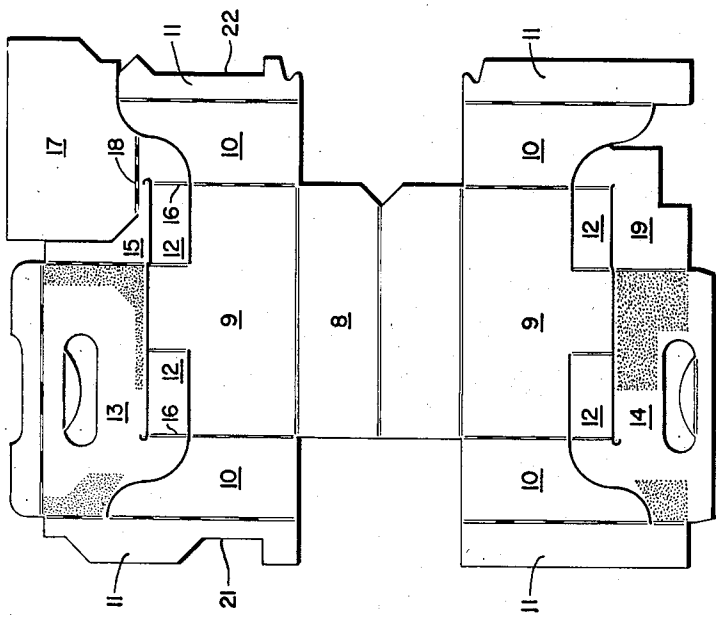


FIG. 1

FOLD LINES
CUT LINES
FOLD LINES WITH CUTS

INVENTOR.
GEORGE S. HOLMES
BY
Pollard, Johnston, Smythe & Robertson
ATTORNEYS.

Dec. 20, 1960 G. S. HOLMES 2,965,261

FOLDING PAPERBOARD CARRIER FOR BOTTLES AND THE LIKE

Filed Jan. 2, 1958 3 Sheets-Sheet 2

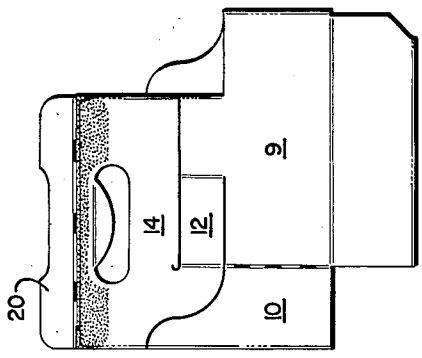


FIG. 4

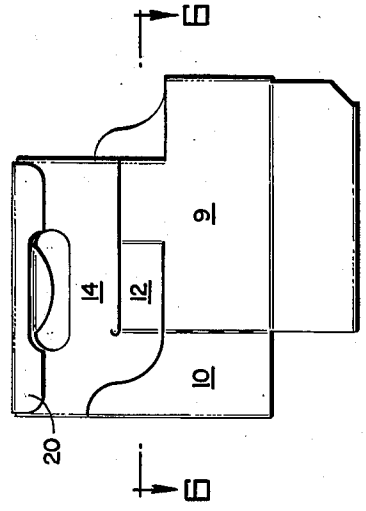


FIG. 5

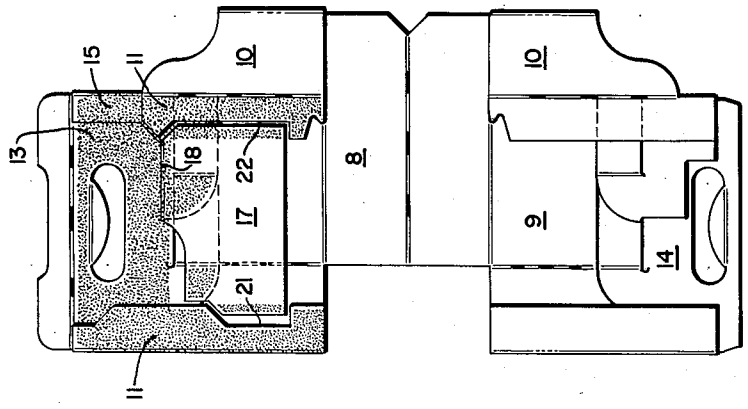


FIG. 3

INVENTOR.
GEORGE S. HOLMES
BY
Pollard, Johnston, Smythe & Robertson
ATTORNEYS.

Dec. 20, 1960 G. S. HOLMES 2,965,261

FOLDING PAPERBOARD CARRIER FOR BOTTLES AND THE LIKE

Filed Jan. 2, 1958 3 Sheets-Sheet 3

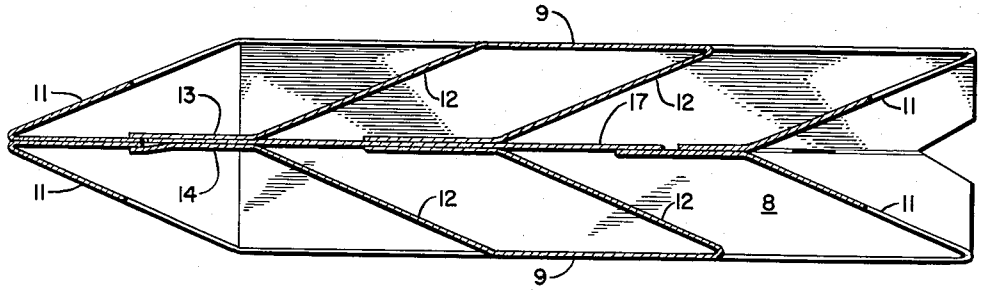


FIG. 6

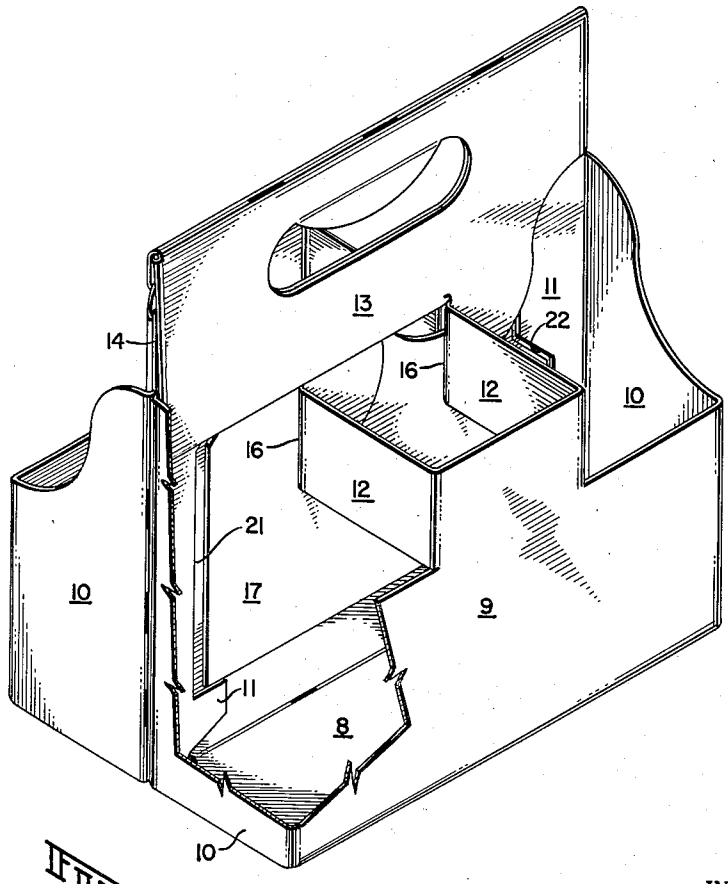


FIG. 7

INVENTOR.
GEORGE S. HOLMES
BY
Pollard, Johnston, Smythe & Robertson
ATTORNEYS.

United States Patent Office 2,965,261
Patented Dec. 20, 1960

2,965,261

FOLDING PAPERBOARD CARRIER FOR BOTTLES AND THE LIKE

George S. Holmes, Quaker Hill, Conn., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Jan. 2, 1958, Ser. No. 706,658

4 Claims. (Cl. 220—115)

The invention relates to folding paperboard carriers for bottles and the like, and particularly to improvements in what carton manufacturers call a "two by three" carrier designed to hold six bottles in two rows of three arranged back to back, and having a carrying handle above and between the rows.

Summary

Fundamentally, my invention, as applied to a bottle carrier of the type having a center handle partition between the rows of cells for the bottles, comprehends the forming of a center divider by doubling back an extension of such partition about a vertical fold line, the extension including a partition panel which is folded downwardly about a horizontal fold line of the doubled-back extension. This construction makes it possible to obtain several advantages. One of them is that the horizontal fold line can be made to bridge the space between the center cells and an adjacent pair of outer cells. The strength of the double thickness of paperboard stock, made rigid by the fold itself, is built into the carrier at the very point where it is most effective in transmitting load from the body of the carrier to the handles, with good resistance to distortion and tearing. And by dovetailing the ends of the partition panel with the edges of glue flaps at the center of the end walls of the carrier it becomes possible to obtain a uniform thickness of the center divider structure and also to produce a stronger glued joint at the ends of that structure. The reason the joint is stronger is that one glue flap at each end of the carrier is glued directly both to another glue flap and to the ends of the partition panel with all the surfaces of this glued joint lying in exactly the same plane. This avoids the weakness which occurs when one flap must be glued to two other elements whose glue faces partly overlap and are offset by the thickness of the paperboard stock, so that the flap must bend away from one face to reach the other. Another feature of my construction is that the steps of doubling back the extension of the center partition about a vertical fold line and folding the partition panel downwardly about a horizontal fold line can be performed concurrently with other folding steps in the manufacture of the carrier so that no additional separate steps are needed. This means that the advantages of my invention can be secured without the need for more complex manufacturing procedures than are required to produce carriers lacking such advantages.

Description

Referring to the drawings, I shall now describe the best mode contemplated by me for carrying out my invention.

Fig. 1 is a face view of the blank from which my improved carrier is constructed. The view shows that side of the blank which forms the inside surfaces of the carrier. Also, it shows areas to which glue is applied before performance of the first folding step.

Fig. 2 is a view of the partly assembled structure as it appears following the first folding step, and shows areas to which glue is applied before performance of the second folding step.

Fig. 3 is a view of the structure following the second folding step, and shows areas to which glue is applied before the third folding step.

Fig. 4 is a view following the third folding step.

Fig. 5 shows the completed carrier in its flat folded form.

Fig. 6 is a horizontal cross sectional view taken as indicated at 6—6 in Fig. 5, showing the carrier in process of erection.

Fig. 7 is a perspective view of the carrier as set up for use, partly broken away in front to show the center divided structure.

In the first sheet of drawings, a legend has been applied to help the reader. The legend shows the identification of fold lines, cut lines and fold lines with cuts. The blank ordinarily will be produced with the use of conventional cutting and scoring dies.

My invention comprises, in its general arrangement, a collapsible carrier for bottles and the like having two parallel rows of three cells each, this carrier being formed from one piece of paperboard and comprising, when erected, a bottom 8, side walls 9 extending upwardly from two opposite edges of the bottom, end walls 10 extending from the ends of the side walls and meeting one another in the middle of the carrier, glue flaps 11 extending inwardly from the meeting edges of the end walls, webs 12 cut from upper corners of the side walls and folded inwardly to form cross partitions for the cells, center partition sections 13 and 14 extending from end to end of the carrier, center partition section 13 having an extension 15 (Fig. 1) at one end thereof doubled back against said section (Fig. 2), the inner ends of the cross partitions 12 connected along vertical fold lines 16 to the center partition formed by section 13 and its extension 15, and a partition panel 17 extending from the extension 15 comprised in the center partition and folded downwardly about a fold line 18 substantially parallel to the bottom of the carrier.

Center partition section 14 has an extension 19 (Fig. 1) at one end thereof doubled back against said section (Fig. 2). A top flap 20 extending from center partition section 13 is folded down over the upper edge of center partition section 14 (Fig. 4).

One of the important features of my invention, as applied to a bottle carrier of the type having a center handle partition 13 between the rows of cells for the bottles, comprehends the forming of a center divider by doubling back an extension 15 of partition section 13 about a vertical fold line, extension 15 including a partition panel 17 which is formed initially as an upwardly extending part of such extension and which is folded downwardly about a horizontal fold line 18 of the doubled-back extension.

Another feature resides in the construction wherein the fold line 18 of the partition panel 17 bridges between the center cells and a pair of the outer cells (see Figs. 2 and 3 in their comparative relation to Figs. 6 and 7). The strength of the double thickness of paperboard stock where the downwardly folded partition panel 17 overlies part of extension 15, made rigid by the fold 18 itself, is built into the carrier at the point where it is most effective in transmitting load from the body of the carrier to the handle, affording excellent resistance to distortion and tearing.

Another advantageous feature is that the inner edges of glue flaps 11 at opposite ends of the carrier are recessed as at 21 and 22 to receive end portions of the partition panel 17. Thus these glue flaps dovetail in jigsaw fashion with the partition panel, and the other

glue flap **11** at each end of the carrier is glued directly both to the first pair of glue flaps and to the end portions of the partition panel. This makes it possible to obtain a uniform thickness of the center divider structure and also to produce a stronger glued joint at the ends of the structure. As explained in the summary, and as will now be comprehended more fully, the reason the joint is stronger is that one glue flap at each end of the carrier is glued directly both to another glue flap and to the ends of the partition panel with all the surfaces of this glued joint lying in exactly the same plane. This avoids the weakness which occurs when one flap must be glued to two other elements whose glue faces partly overlap and are offset by the thickness of the paperboard stock so that the flap must bend away from one face to reach the other. With such a condition there is always a tendency, due to the "fight" or inclination of the paperboard to resume its original flat form, for the glued joint to pull apart.

The steps in manufacturing the carrier from the blank of Fig. 1 will be understood by comparison of Figs. 1 to 5 inclusive. After application of glue to the areas indicated by stippling in Fig. 1, one pair of glue flaps **11** and extensions **15** and **19** are folded over to the positions shown in Fig. 2. Then following application of glue to the additional areas shown by stippling in Fig. 2, the right-hand end walls **10** are folded into the positions shown in Fig. 3. Also, the center partition panel **17** is folded down into the position here shown. Next we have the application of glue over the additional areas shown in Fig. 3 and the folding of the structure about the center of bottom panel **8**. Finally, the top flap **20** extending from center partition section **13** is folded down over the upper edge of center partition section **14** to which it is glued over the area indicated by the stippling in Fig. 4, completing formation of the carrier in its flat folded form. The carton is erected for use in the usual manner by squaring up the cells in the manner pictorially represented in Figs. 6 and 7.

The terms and expressions which I have employed are used in a descriptive and not a limiting sense, and I have no intention of excluding such equivalents of the invention described, or of portions thereof, as fall within the scope of the claims.

I claim:

1. A collapsible carrier for bottles and the like having two parallel rows of three cells each, said carrier formed from one piece of paperboard and comprising, when erected, a bottom, side walls extending upwardly from two opposite edges of the bottom, end walls extending from the ends of the side walls and meeting one another in the middle of the carrier, glue flaps extending inwardly from the meeting edges of the end walls, cross partitions adjoining the upper portions of the side walls at vertical fold lines and extending inwardly therefrom, the inner ends of said cross partitions connected along vertical fold lines to a center partition, and a partition panel connected to said center partition along a fold line substantially parallel to the bottom of the carrier and extending downwardly from said fold line with its lower portion projecting a substantial distance below the lower edges of said cross partitions and forming a solid divider between the two rows of cells.

2. A carrier as defined by claim 1 in which the inner edges of glue flaps at opposite ends of the carrier are recessed, and end portions of the partition panel are received in the recesses of the glue flaps.

3. A collapsible carrier for bottles and the like having two parallel rows of three cells each, said carrier formed from one piece of paperboard and comprising, when erected, a bottom, side walls extending upwardly from two opposite edges of the bottom, end walls extending from the ends of the side walls and meeting one another in the middle of the carrier, glue flaps extending inwardly from the meeting edges of the end walls, a center partition section extending from end to end of the carrier, said section having an extension at one end thereof doubled back against said section, cross partitions adjoining the upper portions of the side walls at vertical fold lines and extending inwardly therefrom, the inner ends of said cross partitions connected along vertical fold lines to the center partition formed by said section and its extension, and a partition panel connected to the extension comprised in the center partition along a fold line substantially parallel to the bottom of the carrier.

4. A carrier as defined by claim 3 in which one glue flap at each end of the carrier is recessed to receive end portions of the partition panel and the other glue flap at each end of the carrier is glued directly both to the one glue flap and to said end portions of the partition panel.

References Cited in the file of this patent

UNITED STATES PATENTS

2,337,197	Holy	Dec. 21, 1943
2,755,960	Kramer	July 24, 1956
2,765,100	De Maria	Oct. 2, 1956
2,776,072	Forrer	Jan. 1, 1957
2,848,136	Ringler	Aug. 19, 1958