United States Patent [19]

Struble

[11] **3,744,704**

[45] **July 10, 1973**

[54] **FOLDABLE CARRIER FOR BOTTLES, GLASSES AND THE LIKE**

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[73] Assignee: **Diamond International Corporation,** New York, N.Y.

[22] Filed: **Dec. 2, 1971**

[21] Appl. No.: **204,119**

[52] **U.S. Cl.**..... **229/28 BC,** 229/52 BC, 224/45 AB

[51] **Int. Cl.**..... **B65d 5/48,** B65d 5/50

[58] **Field of Search**..... 214/45 AB, 45 R, 214/45 P; 206/65 R, 65 C, 65 E, 64 C; 229/52 B, 52 R, 52 BC, 28 BC

[56] **References Cited**

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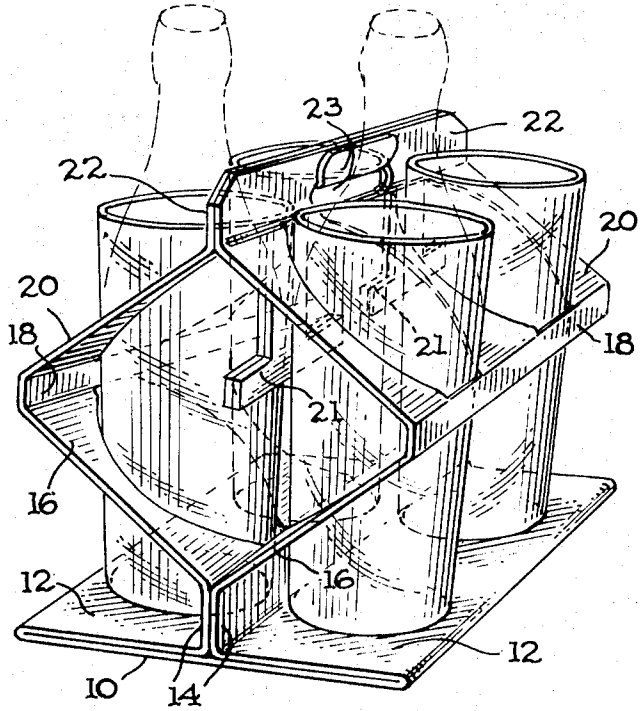
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Primary Examiner—Gerald M. Forlenza
Assistant Examiner—Kenneth Noland
Attorney—Karl W. Flocks

[57] **ABSTRACT**

A foldable carrier for articles such as bottles, glasses, and the like comprising a horizontal base, a partition, article retaining sections, a carrying handle, and optional locking tabs, and a blank for forming said carrier.

22 Claims, 16 Drawing Figures



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SHEET 1 OF 4

FIG. 1.

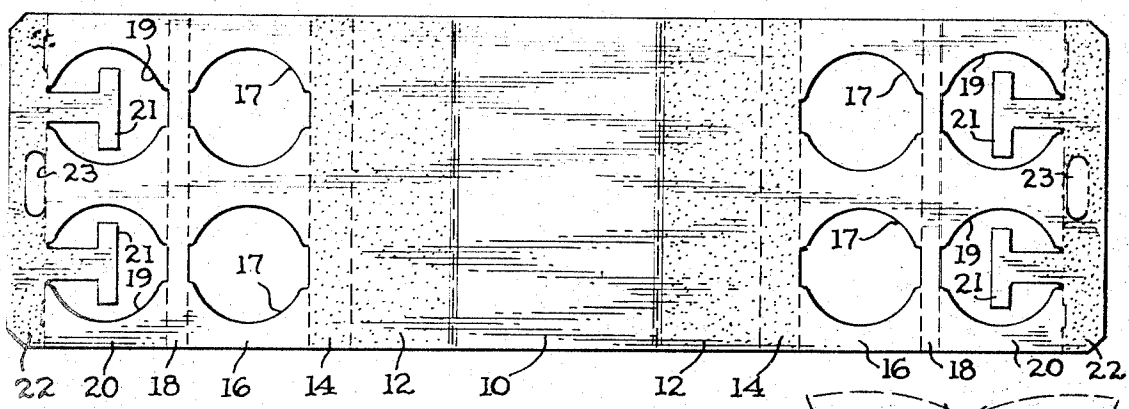


FIG. 2.

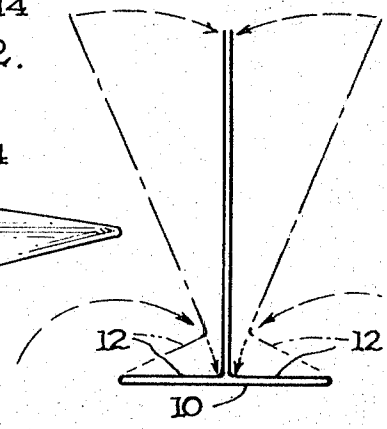
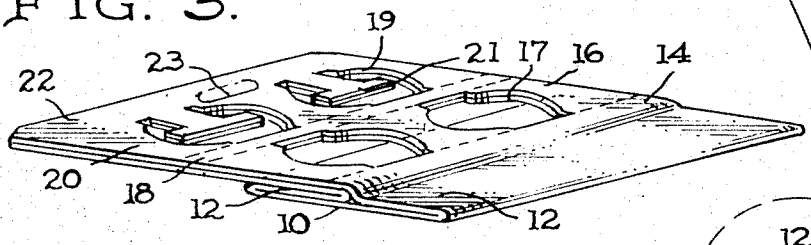


FIG. 3.



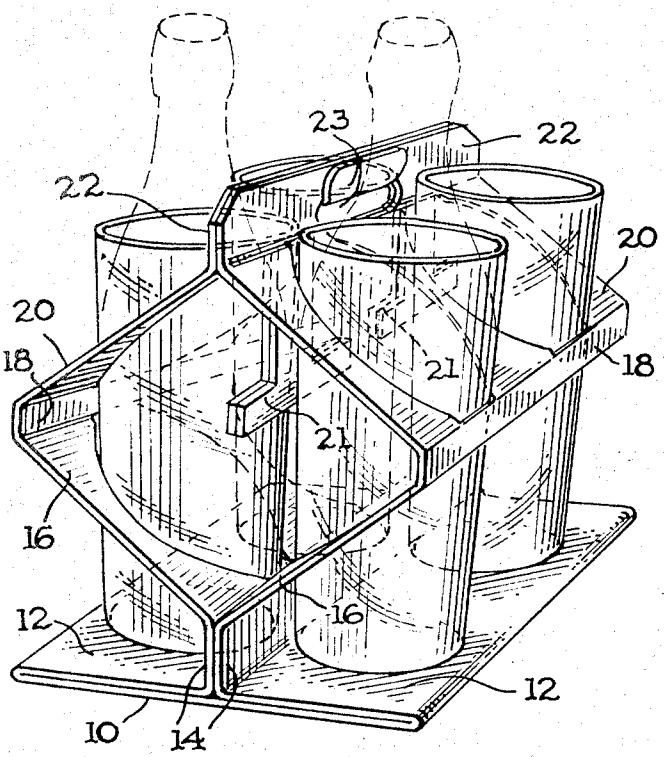


FIG. 4.

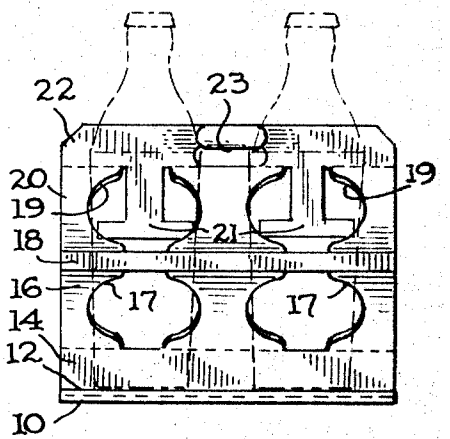


FIG. 5.

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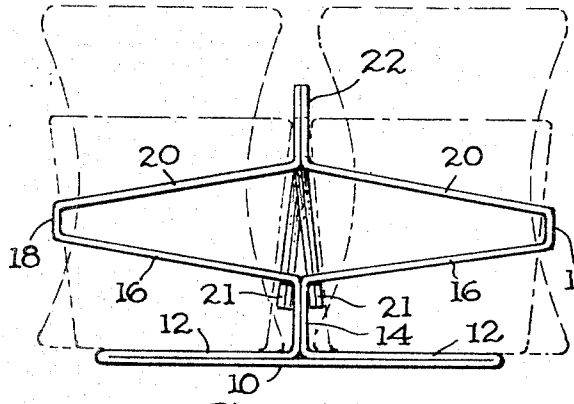


FIG. 7.

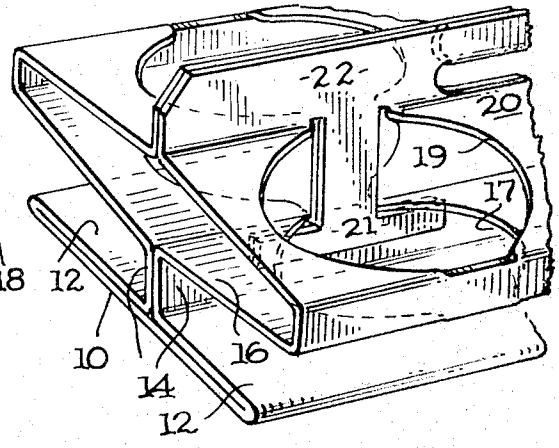


FIG. 6.

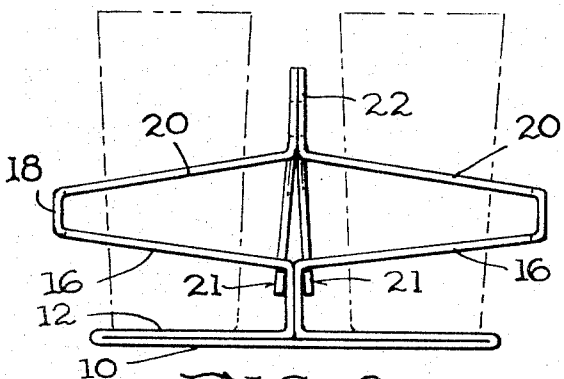


FIG. 8.

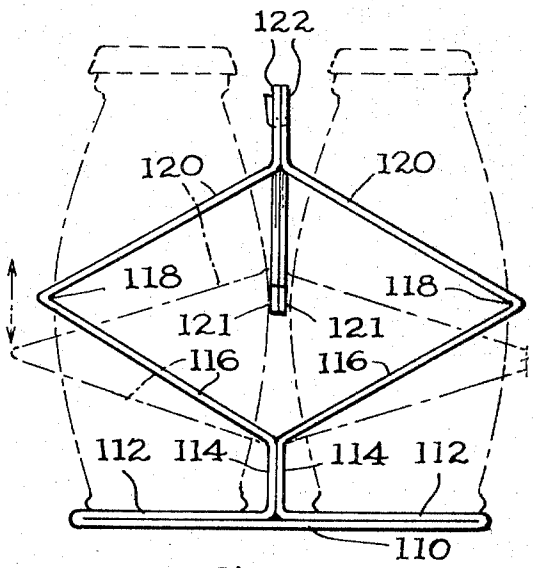


FIG. 9.

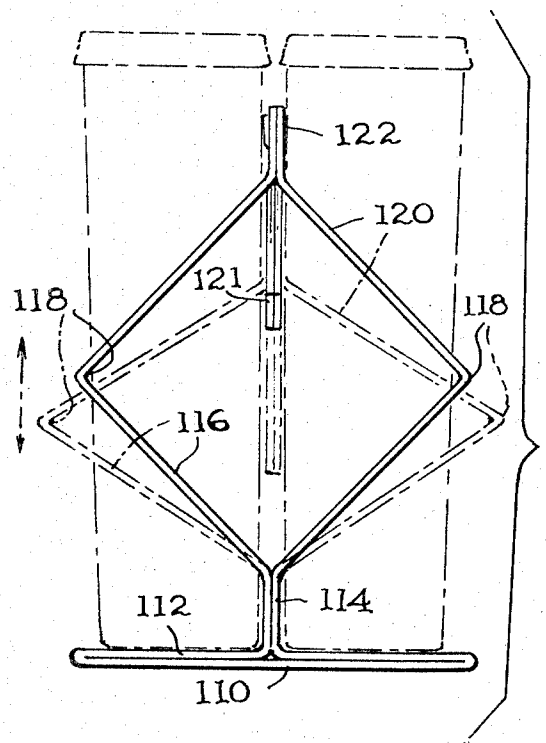


FIG. 10.

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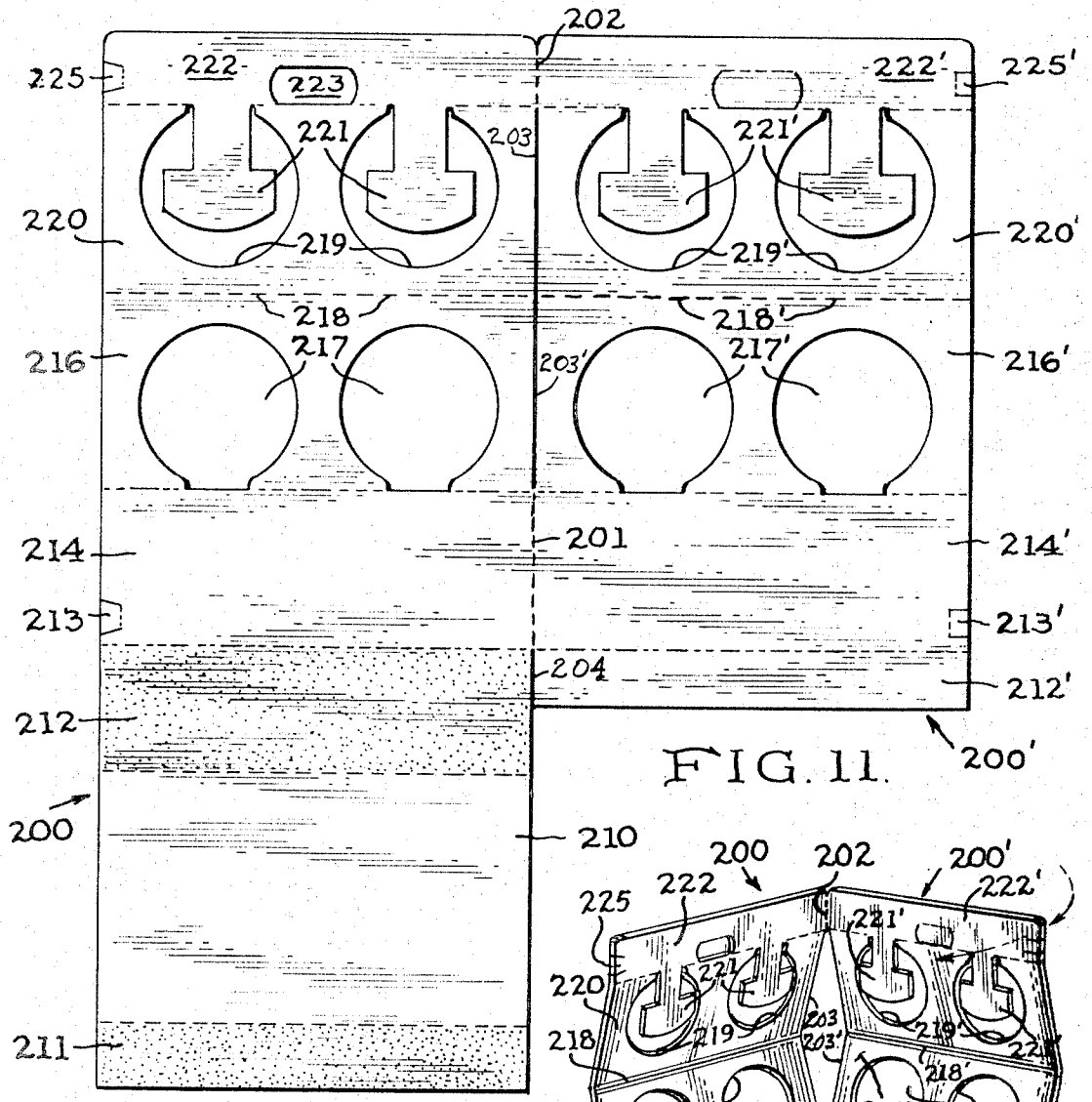


FIG. 11.

FIG. 12.

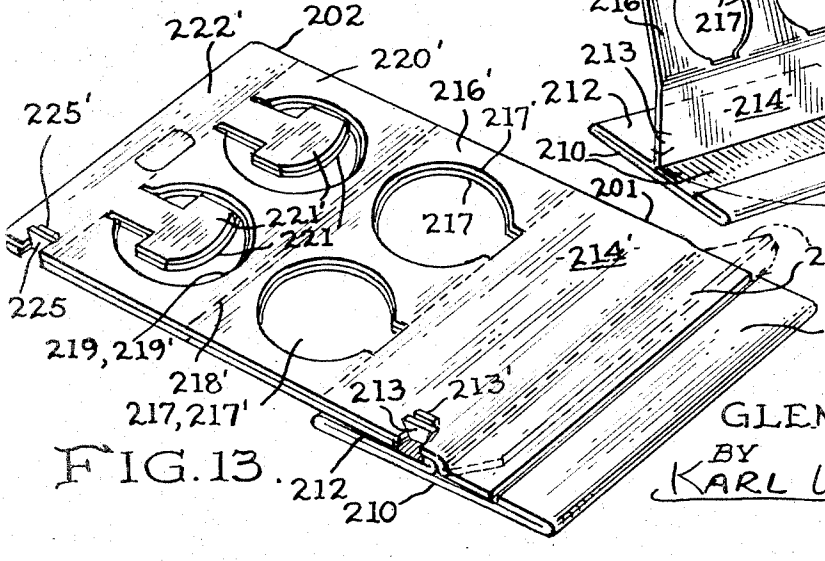


FIG. 13.

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FIG. 14.

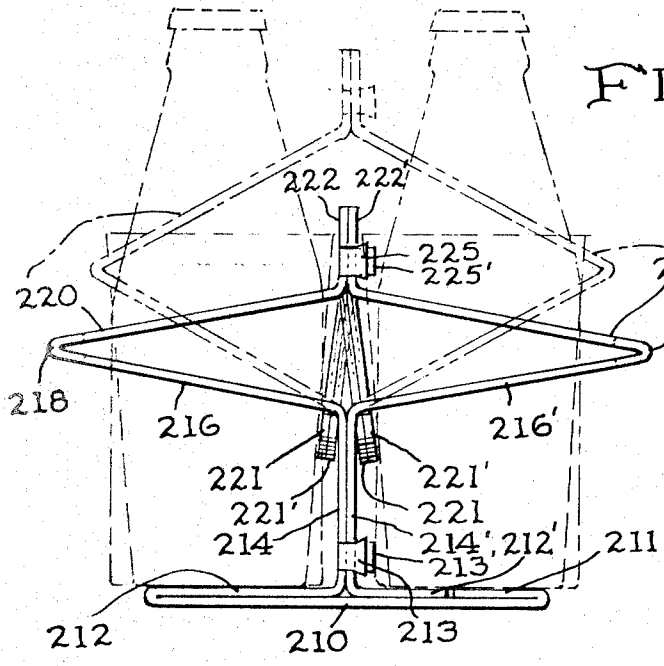


FIG. 16.

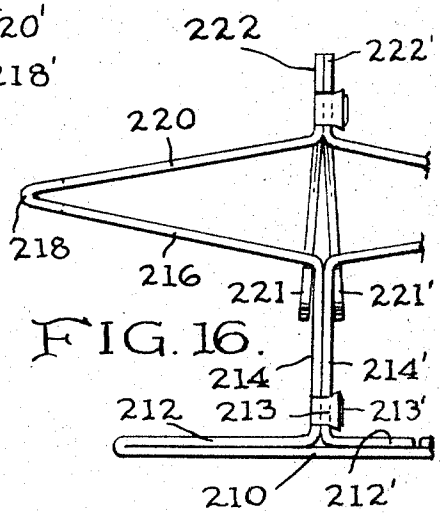
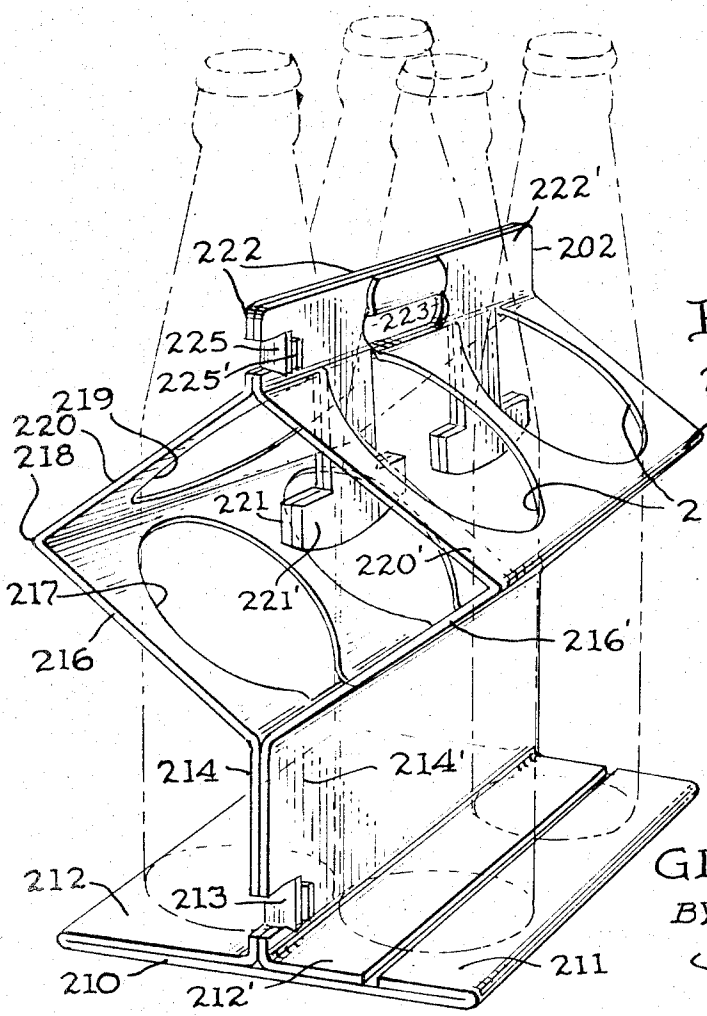


FIG. 15.



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FOLDABLE CARRIER FOR BOTTLES, GLASSES AND THE LIKE

DISCUSSION OF PRIOR ART

Foldable or collapsible carriers for bottles, glasses and the like of the type for which patent protection is sought herein are exemplified by the construction disclosed in the patents to Keith, U.S. Pat. No. 2,094,744; Warren, U.S. Pat. No. 2,200,813; Davis, U.S. Pat. No. 2,802,597 and Altenburg, U.S. Pat. No. 2,896,814. The carriers of the prior art noted above have apparently been useful in meeting the requirements for which they were designed as evidenced by a number of which are in current commercial use.

BACKGROUND OF THE INVENTION

Because of the competitive nature of merchandise, so many products are marketed today in containers of varying sizes and shapes. Serving the convenience of the consumer and enhancing the sale of the retailer are carriers for bottled products sold in bulk, as exemplified, for example, by the well-known "six-pack". The present invention relates to a versatile carrier which readily adapts itself to the varying sizes and shapes of containers and additionally displays the articles to be carried thereby in an attractive manner.

OBJECTS OF THE INVENTION

The primary object of this invention is to provide a foldable carrier to form a merchandise package for multiple items which is top loadable and is easy to handle and pack at the processing plant.

Additionally, it is an object of this invention to provide a stackable package for display in stores.

A further object of this invention is to provide a carrier for a package which may be conveniently carried home the merchandise of which is locked in the carrier while being carried.

These together with other objects and advantages will become apparent from a consideration of the following description when taken in conjunction with the drawings forming a part thereof, in which:

FIG. 1 is a plan view of a blank for forming the carrier according to this invention;

FIG. 2 is an end elevation view showing the blank of FIG. 1 as it is assembled into a carrier according to this invention;

FIG. 3 is a view in perspective showing the assembled carrier according to this invention in collapsed or folded condition;

FIG. 4 is an enlarged view in perspective of a preferred embodiment of the carrier according to this invention as loaded with glasses or bottles;

FIG. 5 is a side elevational view of the carrier shown in FIG. 4;

FIG. 6 is a fragmentary view in perspective of the carrier shown in FIG. 5 with the article retaining sections locked in proximate relationship with each other by the optional locking tab elements;

FIG. 7 is an end elevational view of the carrier shown in FIG. 6;

FIG. 8 is an end elevational view of the carrier the in FIG. 7 with the lock tabs applied in a different manner to secure the article retaining sections in proximate relationship with each other;

FIG. 9 shows an end elevational view of a second embodiment of the carrier according to this invention; and

FIG. 10 shows a side elevational view of the carrier shown in FIG. 9 with differently shaped bottles received therein;

FIG. 11 is a plan view of a blank for forming a third embodiment of the carrier according to this invention;

FIG. 12 shows a view in perspective of the manner in which the carrier formed with the blank of FIG. 11 is assembled;

FIG. 13 shows a view in perspective of the carrier of FIG. 12 in collapsed condition;

FIG. 14 is an end elevational view of the carrier of FIG. 12 with relatively short containers carried therein;

FIG. 15 is an elevational view of the carrier of FIG. 12 with relatively tall containers carried therein; and

FIG. 16 is a fragmentary end elevational view of the carrier of FIG. 12 with the carrier locking elements applied in an optional manner.

THE PREFERRED EMBODIMENT

Referring to FIGS. 1 – 8 of the drawings in detail, the foldable or collapsible carrier according to this invention may be seen as being produced from any suitable paperboard, laminated paperboard, plastic and paperboard combination, etc. The blank for forming a foldable carrier in accordance with this invention as illustrated in FIG. 1 is generally rectangular in shape and comprises in combination a central panel **10** for forming a bottom layer of an article supporting base. The central panel **10** has extending on opposite sides thereof successive integral hinged panels **12, 14, 16, 18, 20** and **22.** Each panel **16** and **20** is formed with die cut article receiving apertures **17** and **19,** respectively. The opposite end panels **22** each include article spacing members in the shape of inverted T-shaped elements, the cross bars **21** of which additionally serve as lock tabs in the assembled carton as may be desired. Each of the end panels **22** also include a cut out carrying slot **23.** Adhesive is applied to the surfaces of panels **12, 14, 22** and vertical portions of T-shaped elements **21.**

To assemble the blank shown in FIG. **1** into a carrier according to this invention, the panels **12** are folded over and adhesively secured to the bottom panel **10** as shown in FIG. **2** with the folding movement of the blank illustrated in phantom in the direction of the arrows. Each of the panels **14** and **22,** as well as the vertical portions of the T-shaped elements **21** having adhesive thereon, are brought into contact with corresponding members and are adhesively secured thereto to form the assembled carton as shown in collapsed or folded condition in FIG. **3.**

The assembled carrier shown in FIG. **3** may be erected for use by lifting carrying handle **22** to hinge the panels **14, 16, 18, 20** and **22** about the fold lines between panels **12** and **14** to a generally vertical position relative to the bottom panel **10** and then applying a downward pressure on the carrying handle **22** so that the panels **18,** upon which product indicia may be printed, will move transversely apart from each other and the retaining sections **16** and **20** will assume the angularly extending positions illustrated in FIG. **4.** Partition **14** as seen in FIG. **4** extends longitudinally along a plane generally bisecting the base **10** into two sides to which panels **12** are adhesively secured. Each of the article receiving apertures **19** of the upper retaining section **20,** which is top-loadable, is now in vertical alignment with an aperture **17** of the lower retaining

section 16 to cooperatively receive a glass (or a bottle as shown in phantom). The panels 14 combine to serve as a separating partition and as a height adjusting member.

FIG. 6 shows the carrying handle 22 depressed to the extent that retaining sections 20 and 16 are brought into proximate relationship to each other and locked in such relationship and from upward movement thereof by inserting the horizontal cross bar of inverted T-shaped lock tab 21 through the aperture 17 and hooked under peripheral portions of lower retaining section 16 defining the aperture 17. Each lock tab 21 may be inserted as a unit through a single aperture 17 on opposite sides of partition 14 in the manner illustrated in FIG. 7 to lock the retaining sections 20 and 16 together. Alternatively, the horizontal bar portion of each lock tab 21 may be spread apart and inserted through apertures 17 on opposite sides of partition 14 as illustrated in FIG. 8 to provide a very stable locked relationship between the upper retaining sections 20 and the lower retaining sections 16. The natural tendency of the locking tab 21 to resiliently return to the undeflected vertical center position and the natural tendency of the retaining sections 16 and 20 to resiliently return to the undeflected or folded position enhances the locking ability of the lock tabs 21.

With the article retaining sections 20 and 16 locked in proximate relationship as shown in FIGS. 7 and 8, the carrier according to this invention is adapted to carry glasses or other containers which have a concave configuration, or are shorter, or smaller in diametrical dimension, or possessing some other irregular configuration or dimensional characteristic. Without the locked relationship between the retainer sections 20 and 16 as provided by the locking tabs 21, articles having irregular configuration or dimensions as mentioned would tend to slip through the apertures 19 and 17 and drop out of the carrier since the weight of such articles on the support panels 10 and 12 naturally tend to collapse the carrier.

ALTERNATIVE EMBODIMENTS

FIGS. 9 and 10 show an alternative embodiment of the carrier according to this invention with the vertically extending panel 18 of the preferred embodiment, upon which product indicia may be printed to capture the attention of prospective consumers, being omitted. The alternative carrier according to this invention comprises a bottom support base 110 having superposed thereover and adhesively secured thereto support panels 112 from which hinged partitions 114 extend vertically in the erected position. Extending upwardly from partition 114 are the lower retaining sections 116, an angular hinge joint 118, upper retaining section 120, carrying handle 122 and locking tabs 121, all arranged in a manner generally similar to that of the preferred embodiment.

FIGS. 11–16 show a further embodiment of the carrier according to this invention. In FIG. 11 the blank for making a further embodiment of the carrier according to this invention comprises two generally rectangular sections 200 and 200'. Section 200 includes a bottom panel 210 and panels 211 and 212, which are integrally hinged to opposite edges of panel 210. A suitable adhesive is applied to one side of panels 211 and 212, which are folded over and adhered to panel 210 as shown in FIG. 12. As clearly seen in FIG. 11, section 200 is somewhat longer than section 200' since the former includes entire bottom panel 210 for the article support base and also panels 211 and 212 which together with panel 212' of section 200' form an upper coplanar layer of the article supporting base as shown in FIGS. 13–15. Note the phantom position of 212' to which this panel is free to flex, depending upon the inherent stresses thereof. Section 200 of the blank also includes partition panel 214, article retaining panels 216 and 220, and carrying handle panel 222. Panels 216 and 220 are provided with article receiving apertures 217 and 219, respectively, similar to those in the earlier embodiments. Section 200 is also provided with hinge joint 218, carrier locking tabs 221, and carrying handle panel to form elements similar to those in the earlier embodiment of FIGS. 9 and 10. Panel 222 is provided with a carrying slot 223. Section 200' is a substantial mirror image of section 200 insofar as panels 214', 216', 220' and 222'. Panels 216' and 220' include article receiving apertures 217' and 219', respectively. Section 200' is also provided with hinge joint 218', carrier locking tabs 219', and carrying handle panel 222'. Section 200' is substantially shorter than section 200 in that the former includes the relatively small panel 212' as the only portion thereof for forming the article support base, as clearly seen in FIGS. 14 and 15, in contrast to the latter which includes panels 200, 211 and 212 for forming the article support base.

Sections 200 and 200' are separate from each other along edges 203 and 203' and 204 except for integral hinged line bridging portions 201 and 202 which connect panel 214 to panel 214' and panel 222 to panel 222', respectively.

Panel 214 and panel 222 are provided with cut-out folding lock lugs 213 and 225 for cooperation with cut-out folding lock lugs 213' and 225' formed in panel 214' and 222', respectively. Cut-out folding lock lugs 213 and 225 are sized and/or shaped differently from lugs 213' and 225' for purposes to be described below.

The carrier according to FIGS. 11–16 as shown in FIG. 12 is completely assembled for end use, except for swinging section 200' about hinged bridging portions 201 and 202 in the direction of the arrows and locking these sections together. To assemble this form of carrier for use it is only necessary to fold sections 200 and 200' together and to apply the folding lock lugs 213,213' and 225,225'. The completely assembled carrier is shown in folded or collapsed condition in FIG. 13 with folding lock lugs 213 and 225 forcibly folded through the respective recesses vacated by lugs 213' and 225'. Because lugs 213 and 225 are larger or of greater breadth than lugs 213' and 225' the former are inherently locked in the recesses through which they are forcibly folded and thus lock the sections 200 and 200' together. In use of this carrier no adhesive is relied upon to hold this form of the carrier together other than that mentioned in connection to panels 211 and 212.

According to this embodiment of the carrier the carrier locking tabs 221 and 221' may be applied together in pairs as shown in FIG. 14 on opposite sides of partition panels 214 and 214' to accommodate relatively short bottles or glasses to be carried thereby. Alternatively, the locking tabs 221 and 221' may be individually applied on the side of the partition 214 and 214' of the respective sections 200 and 200' as shown in FIG. 16. As a further option the carrier according to

the instant embodiment may be extended to the condition shown in FIG. 15 to accommodate relatively tall containers to be carried thereby.

To facilitate folding and flexing the various panels of the carrier, weakened score lines (the unnumbered dotted lines) may be provided between adjacent panels as shown, for example, in FIG. 11.

It is to be understood that the present disclosure has been made only by way of example and that numerous details and changes of construction in the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. A foldable carrier for articles such as bottles, glasses and the like comprising a horizontally extending base upon which articles to be carried may be supported, a vertical partition extending upwardly from said base bisecting said base whereby articles to be carried on opposite sides of said partition may be maintained out of contact from each other, two pairs of article retaining sections extending upwardly from said partition, a lower pair of said retaining sections being hingedly connected to said partition, an upper pair of said retaining sections being hingedly connected to said lower pair of retaining sections, each of said upper and lower retaining sections being provided with article receiving apertures, each of said upper retaining sections and each of said lower retaining sections being adapted to be flexed away from a corresponding retaining section on opposite sides of said partition and toward a retaining section hinged thereto to vertically line up said article receiving apertures to facilitate insertion or removal of articles, said upper retaining sections being hingedly connected to a carrying handle extending vertically upward therefrom, and article spacing means extending downwardly from said carrying handle in vertical alignment with said article receiving apertures, to optionally lock said upper and lower retaining sections in proximate relationship to each other.

2. A foldable carrier as defined in claim 1 wherein said article spacing means comprises at least one tab member with a horizontal cross bar on the end thereof to form an inverted T, opposite ends of the horizontal bar being adapted to pass through the article receiving aperture of at least one of the lower article retaining sections and hook against portions of the lower retaining section defining the aperture through which said bar is adapted to pass and thereby optionally lock said upper retaining sections in proximate relationship to each other.

3. A foldable carrier as defined in claim 2 wherein said lock tab comprises two separable layers whereby said layers may be flexed apart so that separate horizontal bar portions of said lock tab may be passed through article receiving apertures of said lower retaining sections on opposite sides of said partition into locking condition.

4. A foldable carrier as defined in claim 3 wherein said locking means comprise a plurality of locking tabs arranged to provide a balanced and stable locking relationship between said upper and lower retaining sections.

5. A foldable carrier as defined in claim 4 wherein said article receiving apertures are die cut.

6. A foldable carrier as defined in claim 5 characterized in that each of said upper and lower retaining sections on opposite sides of said partition are hingedly connected to each other by a vertically extending bridge of substantial dimension upon which product indicia may be printed.

7. A blank for forming a foldable carrier for articles such as bottles, glasses and the like, said blank comprising in combination a plurality of panels defined by mutually parallel fold lines, said plurality of panels including a panel for forming a bottom layer of an article supporting base, a plurality of panels for forming coplanar portions of a top layer of an article supporting base, a partition, a lower article retaining section, an upper article retaining section, and a carrying handle, said article retaining sections including die cut apertures into which articles may be inserted in the assembled carrier, and tab elements extending from said carrying handle into the apertures of said panel for forming a lower article retaining section.

8. The blank according to claim 7 further characterized in that said tab elements are each in the form of an inverted T.

9. The blank according to claim 8 further characterized in that said blank is generally rectangular in shape, and said panel for forming the bottom layer of an article supporting base is the central panel in the blank and corresponding panels extend from opposite sides thereof.

10. The blank according to claim 9 including an adhesive applied to surface portions of each of said panels for forming half of a top layer of an article supporting base, a partition, a carrying handle, and verticle portions of said tab elements.

11. The blank according to claim 9 comprising a panel extending between and in integral hinged relationship with said upper and lower retaining section forming panels.

12. The blank according to claim 7 further characterized in that said blank comprises two generally rectangular sections, one section of which is longer than the other section, said sections being separate from each other except for integral hinge portions bridging adjacent ends of respective panels of said sections for forming said partition and said carrying handle.

13. The blank according to claim 12 wherein said longer section includes panels for forming some of the coplanar portions of a top layer of the article supporting base and the entire bottom layer of the article supporting base.

14. The blank according to claim 13 wherein said other section includes a panel for forming one of the coplanar portions of the top layer of the article supporting base.

15. The blank according to claim 14 including an adhesive applied to one side of said panels of said longer section for forming some of the coplanar portions of the top layer of the article supporting base.

16. The blank according to claim 15 further characterized in that said tab elements are each in the form of an inverted T.

17. The blank according to claim 16 including precut folding locking lugs provided on the panels for forming said partition and said carrying handle at the end of said panels opposite from the respective integral hinge portions thereof.

18. The blank according to claim 17 wherein the precut folding locking lugs formed on one of said sections

are larger than corresponding locking lugs formed on the other of said sections.

19. A foldable carrier as defined in claim **1** wherein said carrier comprises two substantially vertical sections which extend upwardly from said base and form parts of said vertical partition, said article retaining sections and said carrying handle, said two substantially vertical sections being separate from each other except for integral hinge joints at one end of each of said partition and said carrying handle, whereby said two substantially vertical sections are adapted to be selectively swung together or away from each other.

20. A foldable carrier as defined in claim **19** wherein said article spacing means comprises at least one tab member with a cross bar on the end thereof to form an inverted T, opposite ends of the horizontal bar being adapted to pass through the article receiving aperture of at least one of the lower article retaining sections and hook against portions of the lower retaining section defining the aperture through which said bar is adapted to pass and thereby optionally lock said upper retaining sections in proximate relationship to each other.

21. A foldable carrier as defined in claim **20** wherein said partition and said carrying handle includes folding locking lugs at the end opposite from the integral hinge joints thereof.

22. A foldable carrier as defined in claim **21** wherein at least one of said folding locking lugs is larger than a cooperating folding locking lug whereby when said larger folding locking lug is folded into locking position in the recess vacated by the smaller folding locking lug said larger lug is inherently locked therein.

* * * * *