United States Patent [19]

Rossi, deceased et al.

[11] **3,893,565**

[45] **July 8, 1975**

[54] **BOTTLE CARRIER**

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[22] Filed: **Oct. 16, 1972**

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[52] **U.S. Cl.** **206/183;** 206/180; 206/191

[51] **Int. Cl.** **B65d 75/00**

[58] **Field of Search** ..... 220/113, 114, 115; 229/40, 229/28 BC, 52 BC; 206/170–191

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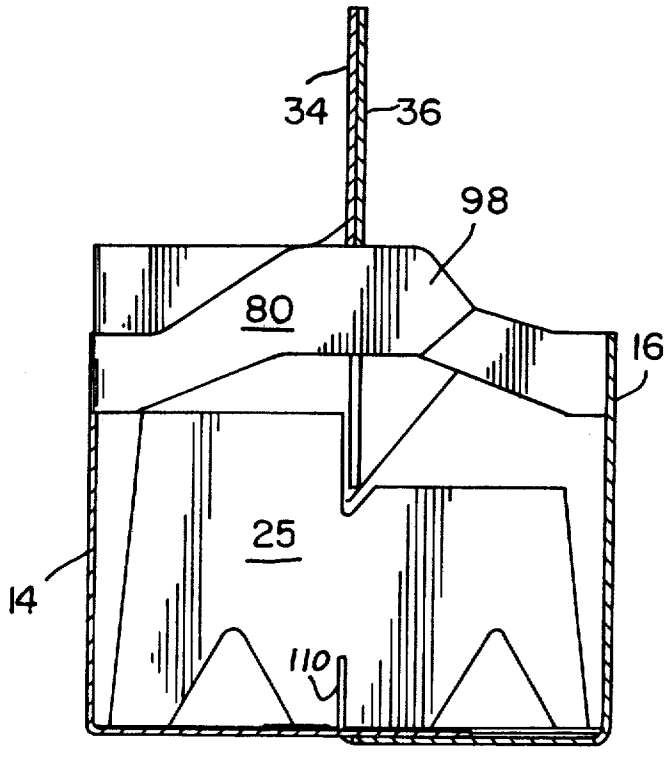
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[57] **ABSTRACT**

A multi-cellular strap-style carrier for bottled beverages, or like articles, which is formed from an elongate paperboard blank cut and scored so as to provide, when set up, a rectangular carrier having side and end walls and a bottom wall formed by two panels which are integrally hinged to the side walls and connected by a locking panel in the form of a strip which is hinged to the one bottom wall forming panel and on which there are pairs of latch elements adapted to interengage in locking relation in aligned apertures in the margin of the cooperating bottom wall forming panel. A combination handle and longitudinal partition structure is integrally hinged at the ends to the top portions of end wall forming members at the center thereof and cross partition straps which are cut from the top margins of the side wall members extend between the side walls and the vertically disposed, longitudinal partition and handle structure, with certain of the cross partition straps having the ends thereof extending on both sides of the partition and handle structure and adhesively connected to the corresponding partition straps which extend between the partition and handle structure and the opposite side wall. A reinforcing panel is hinged upwardly of the bottom edge of one or both end wall forming members and secured to the inside face of the associated end wall.

7 Claims, 8 Drawing Figures



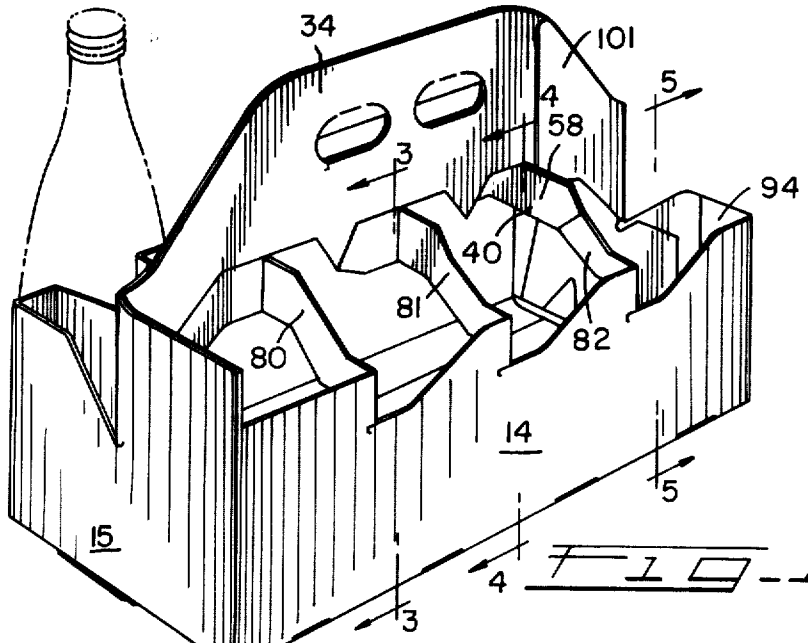


FIG-1

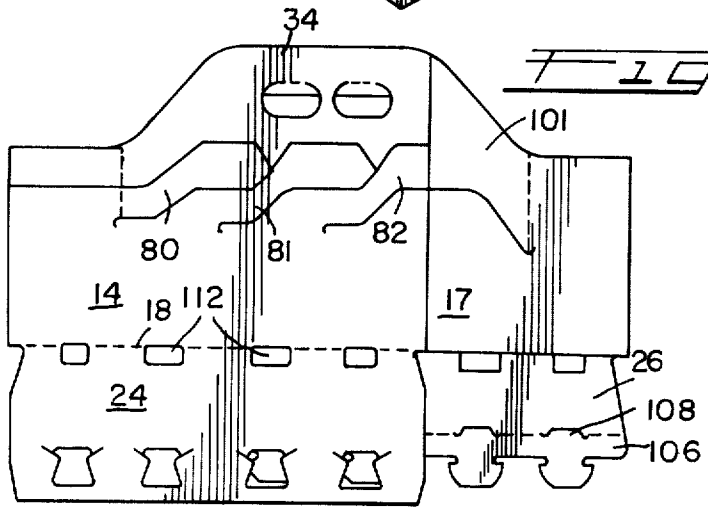


FIG-2

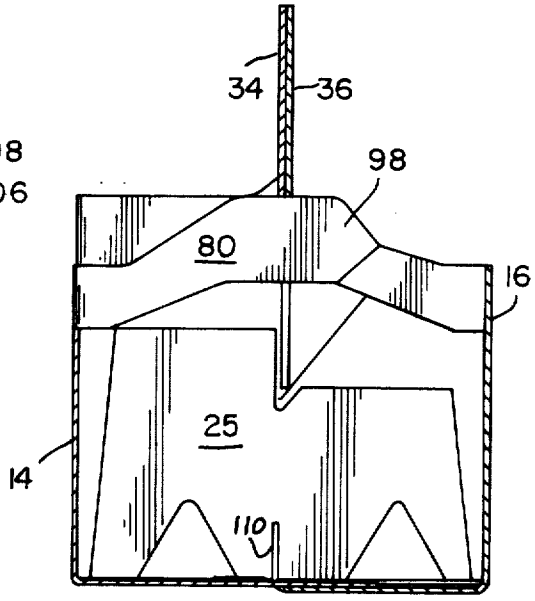


FIG-3

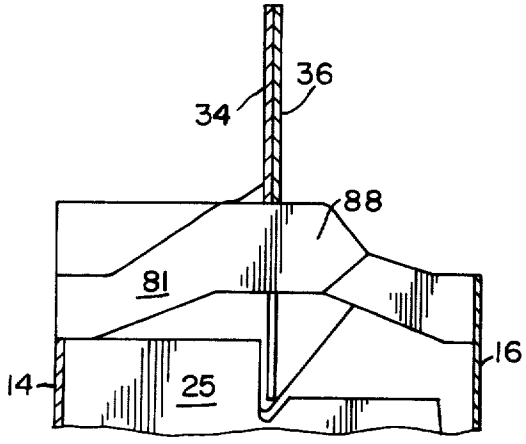


FIG-4

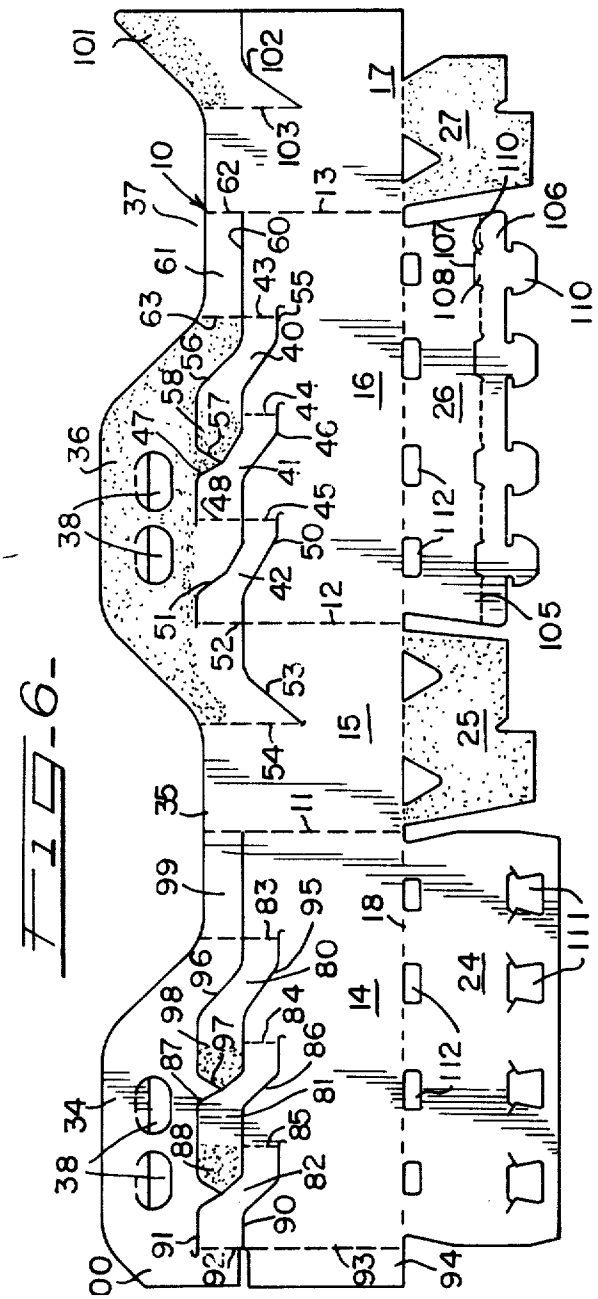


FIG-6-

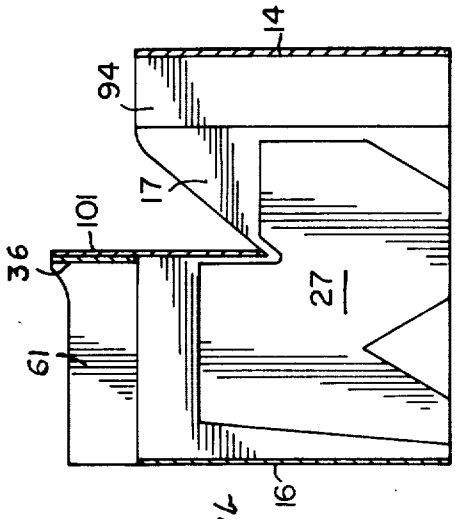


FIG-5-

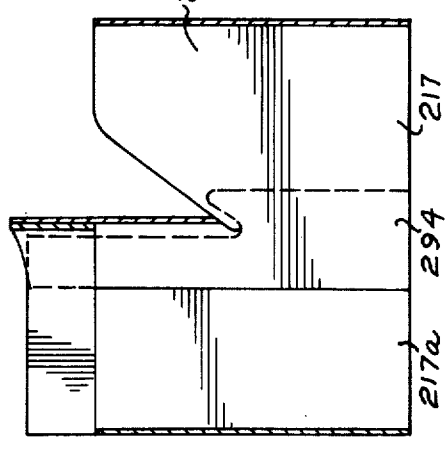


FIG-8-

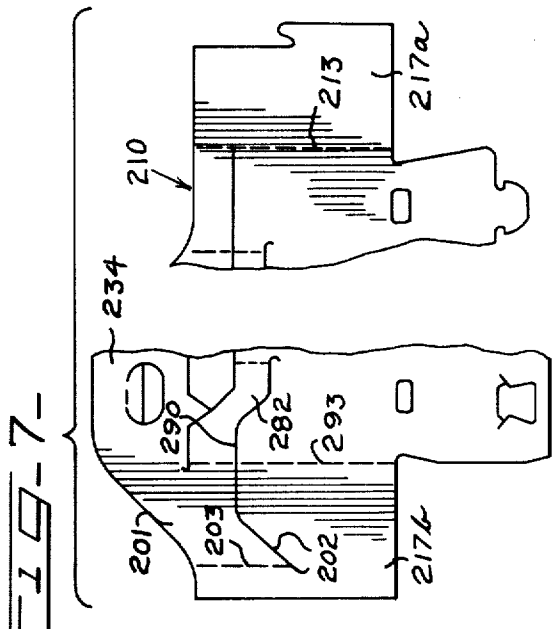


FIG-7-

BOTTLE CARRIER

This invention relates to the packaging of articles such as beverage bottles, or the like, and is more particularly concerned with improvements in cellular cartons or carriers for packaging a plurality of articles and an improved arrangement for fabricating the same from paperboard or similar foldable sheet material.

In the marketing of bottled beverages and like products, cartons or carriers have long been employed which are in the form of a basket divided into a multiplicity of cells designed to hold the articles, generally six or eight in number, and which are fabricated from foldable sheet material, such as, paperboard, or the like, and supplied in collapsed condition to the bottling plant where they are opened up and filled with bottles for delivery to retail stores or the like. In one type of such carriers or compartmented baskets which is provided with rows of bottle accommodating cells separated by a combination handle and partition member having its end hinged to middle portions of the end walls, the longitudinal partition and handle member is connected by bottle separating cross straps extending in longitudinally spaced, transverse planes and hingedly connected to the side walls and the center partition member. This type carrier may be fabricated from an elongate blank divided by transverse creases or scores into wall and partition forming sections with a pair of bottom forming panels extending along a side margin of the blank in hinged relation to the side wall panel sections. The bottom forming panels may be connected by overlapping and gluing the same as illustrated in copending application Ser. No. 62,360, filed Aug. 10, 1970. Alternately, the bottom wall forming panels may be connected by providing a marginal locking panel on the one bottom forming panel with latching elements for engaging in apertures in the associated bottom forming panel or by other connecting means. In a carrier which is formed from an elongate blank in which the handle and partition portions extend from one side thereof and the bottom wall forming panels extend from the other side thereof at least one of the end walls has heretofore comprised a single thickness of material and, when the carton is loaded, the single thickness material may not have sufficient strength to resist a tendency to tear or break down due to the stress exerted through the handle connection therewith. Also, in this type of carton or carrier in which cross straps are employed as transverse partitions the juncture of the cross straps with the longitudinal handle and partition assembly is a point of weakness where there is a tendency to tear or pull apart when pressure is exerted on the side walls by outward tilting of the bottles. A general object of the present invention is to design a strap-type multicellular bottle carrier for fabrication from an elongate blank which is strengthened by reinforcing arrangements so as to provide an improved structure which is less subject to rupture and which may be produced economically and used in the packaging of bottled goods on high speed packing or loading equipment without costly alteration of the equipment.

A more particular object of the invention is to provide a multi-cellular bottle carrier which may be fabricated from stock of paperboard or similar foldable sheet material with minimum weight and with more adequate reinforcement than provided in similar basket-type carriers heretofore provided.

Another object of the invention is to provide an improved cellular bottle carrier of the basket type wherein the end wall at one or both ends of the carrier is provided with a reinforcing panel which is hinged upwardly from the bottom edge thereof.

Still another object of the invention is to provide a multi-cellular basket-type carrier having side walls connected to a center partition and handle structure by bottle separating cross strap members which are cut from the top portions of the side walls and hingedly connected to the side wals and the partition and handle structure wherein certain of the cross strap members extend on both sides of the longitudinal partition and handle structure and are connected to the corresponding cross partition strap member which extends from the opposite side wall.

These and other objects and advantages of the invention will be apparent from a consideration of the several forms of the article carrier and the method of fabricating the same which is shown by way of illustration in the accompanying drawings wherein:

FIG. **1** is a perspective view of a bottle carrier adapted to receive two rows of four bottles each, the carrier being shown in set up condition with one of the bottles shown in phantom line;

FIG. **2** is a side elevation of the carrier shown in FIG. **1** in collapsed condition;

FIG. **3** is a cross section taken on the line **3—3** of FIG. **1**;

FIG. **4** is a cross section taken on the line **4—4** of FIG. **1**, with portions broken away;

FIG. **5** is a cross section taken on the line **5—5** of FIG. **1**;

FIG. **6** is a plan view showing a blank which is cut and scored for fabricating the carrier of FIG. **1**;

FIG. **7** is a fragmentary plan view showing opposite ends of a blank which is cut and scored for fabricating a modified form of the carrier; and

FIG. **8** is a cross sectional view corresponding to FIG. **5** but taken on a set up carrier which is fabricated from the blank of FIG. **7**.

The carrier or carton of FIG. **1** will be best understood by reference first to the cut and scored blank **10** which is employed for fabricating the carrier and which is illustrated in FIG. **6**. The blank **10** is of generally rectangular form and is cut from foldable sheet material, preferably, paperboard stock of suitable size and weight. The blank **10** is divided by longitudinally spaced, hinge forming, transverse crease or score lines **11**, **12** and **13** into a side wall and cross partition or strap forming section **14**, an end wall forming section **15**, a second side wall and cross partition or strap forming section **16** and a second end wall forming section **17**. Along one side margin of the blank **10** a longitudinal score line **18** divides from the main or center portion of the blank laterally extending panels **24**, **25**, **26** and **27**, all of which are adapted to hinge on the score line **18**. The panels **24** and **26** constitute bottom wall forming members and the panels **25** and **27** constitute end wall reinforcing panel members. The score line **18** defines the bottom edges of the side and end walls when the carrier is set up. At the opposite side, the blank is cut on a line so as to provide longitudinally spaced, laterally extending, center partition and handle forming panels **34** and **36**, which are very nearly identical, and inwardly recessed areas **35** and **37**, which are identical. The partition and handle forming panels **34**

and 36 extend laterally of the side wall forming panels 14 and 16 and are offset, relative to the side wall forming panels 14 and 16 and in the longitudinal direction of the blank, a distance equal to the width of the end cell. These panels are also in oppositely, oppositely disposed, relation to the bottom wall forming panels 24 and 26 as shown. The spaced partition and handle forming panel arrangement at this side of the blank permits nesting with the corresponding side of a like blank in cutting a plurality of blanks from a relatively wide web of stock material. Each of these panels 34 and 36 is provided with a pair of finger holes 38 which are aligned when the panels 34 and 36 are secured in face-to-face, double ply, handle forming relation.

Portions of the blank lying between the partition and handle forming panels 34 and 36 and the adjoining side wall formining sections 14 and 16 are cut and creased to form a plurality of cross partition strap members which are adapted to hinge on transverse score lines so that, when the carrier is set up, the side walls may be moved outwardly of the partition and handle forming panels 34 and 36, with the latter being secured in face-to-face engagement and constituting a multi-ply, vertically disposed, longitudinal center partition and handle structure in the center of the set up carrier. The side wall forming blank section 16 is cut and scored to provide cross partition forming strap members 40, 41 and 42 which are adapted to hinge on transverse score lines 43, 44 and 45, which extend into the panel 16, and which are parallel with the end edge forming crease lines 12 and 13 of the panel 16. The hinge forming score lines 43, 44 and 45 are spaced from each other and from the score lines 12 and 13 a distance corresponding to a cross dimension of the cells, that is, approximately equal to the diameter of the bottles which the carrier is adapted to accommodate in the cells which are formed in part by the cross straps or cross partition forming straps members 40, 41 and 42. The middle or intermediate cross strap 41 is formed by cutting on the generally parallel, transversely spaced lines 46 and 47 which extend between the transverse score line 44 and extension 48 of the score line 45 so that the strap 41 is hingedly connected at 44 to the side wall and at 48 to the longitudinal partition and handle panel 36. The strap 42 is formed by generally parallel, transversely spaced cutting lines 50 and 51 which extend between the transverse score line 45 and an end extension 52 of the transverse score line 12. The innermost cutting line 50 for deriving the cross strap 42 is extended on the cutting lines 53 into the end wall forming panel 15 and terminates at the inner end of a transverse score line 54, the latter extending generally parallel to the transverse score lines 11 and 12 and equally spaced between the same so as to provide a hinge for swinging the partition and handle panel 36 into longitudinal center partition forming position when the carrier is set up. The cross strap or cross partition 40 at the opposite end of the side wall panel 16 is formed by cutting on the generally parallel, transversely spaced lines 55 and 56. The cross strap 40 is adapted to hinge at the one end on the transverse score line 43 while the other end of the strap is extended an appreciable distance in the lengthwise direction of the blank beyond the transverse score line 44 and freed by cutting on the diagonal line 57 which extends between the cutting line 47 for the cross strap 41 and the outermost cutting line 56. The cutting line 56 defines one edge of the cross strap 40 so that the length of the cross strap 40 is extended and its end freed to provide a glue tab forming end portion 58. Cutting line 56 is extended at 60 to the transverse score line 13 which defines a top portion of the one corner of the carrier. The generally rectangular panel 61, which is formed between the top portion 62 of the transverse score line 13, and the transverse score line 63, which is an extension of the score line 43, enables the partition and handle panel 36 to swing into its longitudinal partition forming position, with the panel 61 resting against the top marginal portion of the end wall panel 17.

The partition and handle forming panel 34 is freed for movement relative to the panel 14 in the same manner as the panel 36. The area between the partition and handle panel 34 and the side wall panel 14 is cut and scored to provide cross partition straps 80, 81 and 82. The straps 80, 81 and 82 are adapted to hinge on transverse score lines 83, 84 and 85. The intermediate or center cross strap 81 is formed by cutting on the generally parallel lines 86 and 87. The cutting lines 86 and 87 extend from opposite ends of the score line 84 to a connecting point beyond the score line 85 in the lengthwise direction of the blank so as to form a free end or glue tab portion 88 on the cross strap 81 which is of the same character and for the same purpose as the end portion 58 on the cross strap 40. The cross strap 82 is formed by generally parallel, transversely spaced cutting lines 90 and 91 which extend between transverse score line 85 and the end extension 92 of a transverse score line 93. The score line 93 forms a hinge line for a glue tab 94 at the end of the side wall panel 14, the latter being cut free of the partition and handle panel 34. The cross strap 80 at the other end of the side wall panel 14 is formed by generally parallel cutting lines 95 and 96 which extend between the transverse score line 83 and a point beyond the transverse score line 84 where a diagonal cutting line 97 frees the end of the cross strap 80 and forms thereon a glue tab 98. At the opposite end the cutting line 96 is extended to the score line 11 to form a small panel 99 which corresponds to panel 61 and serves a like purpose.

The partition and handle panel member 34 extends to the end of the blank and has an end portion 100 which is adapted to be sandwiched between an end portion of the panel 36 and a longitudinal partition section 101 which constitutes a lateral extension of a terminal half panel portion at the end of the blank. The panel 101 is freed by the cutting line 102 for hinging on a transverse score line 103 in the middle of the end wall panel 17.

The one bottom wall panel 26 which adjoins the side wall panel 16 is scored on the longitudinal line 105 so as to divide therefrom along the side margin, a relatively narrow locking panel 106. The locking panel 106 has spaced along its hinge line 105 a series of generally C-shaped cuts 107 forming locking tabs 108 which are disposed opposite combination latching and bottle separating tabs or panels 110, the latter being spaced in the same manner along the free side edge of the panel 106. The locking tabs 108 and latching fingers 110 are adapted to co-operate with locking apertures 111 spaced along the outer side margin of the other bottom wall forming panel 24. The locking panel 106 and associated locking and latching elements 108, 110 and 111 may be of the same construction as shown and described in detail in U.S. Pat. No. 3,589,593. The bot-

tom wall forming panels **24** and **26** are provided with a series of apertures **112** which are spaced along the score line **18** and serve the dual purpose of providing bottle heel holes and openings for engagement by tightening fingers such as disclosed in U.S. Pat. No. 3,556,386 for insuring proper alignment and proper interlocking of the locking and latching elements in the openings **111** when the bottom wall panels are closed on an assembly of bottles.

In completing the fabrication of the carrier an adhesive is applied to one of the partition and handle forming panels **34, 36** as shown by the stipling in FIG. **6** or to both of these panels. The panel **101** and the tab forming free end portions **58, 88** and **98** of the cross straps **40, 80** and **81** are provided with an adhesive and in addition the end reinforcing panels **25** and **27** are adhesively coated as indicated. The end reinforcing panels **25** and **27** are folded initially into engagement with the end wall forming panels **15** and **17**, respectively. The blank is then folded on the transverse crease line **11**. An adhesive is applied to the side and end wall connecting panel **94** after which the end wall panel **17** is folded upon the transverse score line **13** which brings the margin thereof into overlying relation to the wall connecting panel **94**. The folding of the blank on the line **11** brings the cross strap end tabs **58, 88** and **98** into engagement with the mating cross straps **82, 41** and **42**, respectively, in the areas adjoining the hinge connection of these straps with the longitudinal partition panel members so as to extend across the latter when in the opened up position, as shown in FIG. **1**. The collapsed condition of the carrier which results when the folding operations are completed is illustrated in FIG. **2** and this is the condition in which it is furnished to the bottling plant or other user.

The carrier is adapted to be set up for use by squaring up the connected side walls, folding in the bottom wall panels **24** and **26** and engaging the latching elements **108** and **110** in the apertures **111**, with the latching elements **110** in an erect position as shown in FIG. **3** where they serve to separate the bottom portions of each pair of bottles.

A modified form of the carrier is illustrated in FIGS. **7** and **8**. The blank **210** in FIG. **7** is transversely scored in the same manner as the blank in FIG. **6** except for the end portions thereof. The transverse score **213** at the one end of the blank divides from the blank end margin the panel **217***a* which constitutes one half of an end wall corresponding to the end wall formed by panel **17** in FIG. **6**. At the other end of the blank **210** the transverse score line **293** separates therefrom the panel **217**b which constitutes the other half of the end wall. The top portion **201** of the panel **217***b* merges into the handle panel **234** and is freed for hinging on the transverse score line **203** by cutting on the line **202** which is an extension of the cutting line **290** defining the innermost limit of the end cross strap **282**. The blank portion **201** corresponds to the panel **101** in FIG. **6**. The dimensions of the panels **217***a* and **217***b* in the lengthwise direction of the blank are such that they may be connected by overlapping and gluing the margins as shown at **294** in FIG. **8**. This results in a double ply end wall section extending along one side and immediately below the hinge connection of the partition and handle structure with the end wall and strengthens the end wall sufficiently to eliminate any need for a wall reinforcing panel at that end of the carrier. The blank **210** is, of course, folded and glued in the same manner as the blank **10** to form the completed carrier.

I claim:

1. A multi-cellular carrier for bottled products which is formed from an elongate blank of foldable sheet material cut and scored to provide a plurality of connected wall and partition forming panels, said carrier comprising, in set up position, hingedly connected, body forming upstanding side and end walls and a bottom wall, which bottom wall comprises two panel members each having an integrally hinged connection with said side walls at the bottom edges of said side walls and having overlapping marginal portions which are opposite said hinged connection with the side walls and which have means securing said marginal portions in interlocked relation, a multi-ply longitudinal partition and handle structure, formed of a plurality of panel members in face engaging relation, which partition and handle structure is connected at its opposite ends to the end walls on vertical hinge lines, and longitudinally spaced cross partition panels in the form of strap members dividing the space on opposite sides of the longitudinal partition and handle structure into a plurality of bottle accommodating cells of equal size, said cross partition forming strap members each having one end integrally connected on a vertical hinge line to a top marginal portion of a side wall and said cross partition forming strap members each having an opposite end portion extending to a hinge connection with said longitudinal partition and handle structure so as to swing relative thereto on a vertical hinge line, and at least one of said cross partition strap members having said opposite end portion thereof extending beyond the plane of said longitudinal partition and handle structure and secured to a corresponding cross partition strap member on the opposite side of said longitudinal partition and handle structure so as to reinforce the hinge connection of said cross partition strap member with said longitudinal partition and handle structure.

2. A multi-cellular carrier as set forth in claim **1** wherein said cross partition forming strap members are arranged in transversely aligned pairs and one strap member of each pair thereof has said opposite end portion extended beyond the plane of said longitudinal partition and handle structure with said extended end portion secured to the other cross partition forming strap member of said pair which is on the opposite side of said longitudinal partition and handle structure.

3. A multi-cellular carrier for bottled products which is formed from an elongate blank of foldable sheet material and which is cut and scored to provide a plurality of connected wall and partition forming panel members, said carrier comprising, in set up condition, hingedly connected, body forming side and end wall panels arranged in upstanding relation to a bottom wall panel, a multi-ply longitudinal partition and handle structure which is connected at its opposite ends to the end wall panels on vertical hinge lines, cross partition panels in the form of strap members spaced longitudinally on opposite sides of said longitudinal partition and handle structure and dividing the space on each side of the longitudinal partition and handle structure into a plurality of bottle accommodating cells of equal size, which cross partition forming strap members each have one end integrally connected on a vertical hinge line to a top marginal portion of a side wall panel, certain of said cross partition strap members each having

an opposite end extending to a hinge connection with said longitudinal partition and handle structure, and said end wall panels each having a double ply of the material in an area adjacent the vertical hinge connection of the longitudinal partition and handle structure with the end wall panels and extending in the plane of the end walls below said vertical hinge connections, the double ply of material in said end wall panels being provided by an inner reinforcing panel member which is integrally hinged to the bottom edge of said end wall panel, which is folded upwardly, and which is secured in engagement with the inner face of the associated end wall panel whereby to reinforce the end wall panels.

4. A multi-cellular carrier for bottled products which is formed from an elongate blank of foldable sheet material and which is cut and scored to provide a plurality of connected wall and partition forming panel members, said carrier comprising, in set up condition, hingedly connected, body forming side and end wall panels arranged in upstanding relation to a bottom wall panel, a multi-ply longitudinal partition and handle structure which is connected at its opposite ends to the end wall panels on vertical hinge lines, cross partition panels in the form of strap members spaced longitudinally on opposite sides of said longitudinal partition and handle structure and dividing the space on each side of the longitudinal partition and handle structure into a plurality of bottle accommodating cells of equal size, which cross partition forming strap members each have one end integrally connected on a vertical hinge line to a top marginal portion of a side wall panel, certain of said cross partition strap members each having an opposite end extending to a hinge connection with said longitudinal partition and handle structure at least one of said cross partition strap members has the opposite end thereof extending beyond the plane of said longitudinal partition and handle structure and secured to a corresponding cross partition strap member on the opposite side of said longitudinal partition and handle structure so as to reinforce the hinged connection of said cross partition strap members with said longitudinal partition and handle structure, and said end wall panels each having a double ply of the material in an area adjacent the vertical hinge connection of the longitudinal partition and handle structure with the end wall panels and extending in the plane of the end walls below said vertical hinge connections whereby to reinforce the end wall panels.

5. An elongate blank of foldable sheet material which is adapted to form a multi-cellular carrier for bottled products, said blank being cut and scored to provide a plurality of connected wall and partition forming panels said blank being divided by longitudinally spaced transverse score lines into side wall and end wall forming panels, bottom wall forming panels extending laterally of a hinge forming longitudinal score line at one side of the side wall forming panels, an end wall reinforcing panel extending laterally of said longitudinal score line along at least one of said end wall panels, longitudinal partition and handle forming panels extending laterally along the opposite side of the side wall forming panels, and cross partition strap forming panel members cut in the area of the blank between the longitudinal partition and handle forming panels and the adjoining side wall forming panels, which cross partition forming strap members each have one end terminating at a hinge forming score line extending transversely of the blank and in the top marginal forming portion of a side wall and the hinge forming score lines being equally spaced in the direction longitudinally of the blank, the dimension of each said cross partition forming strap member in the direction longitudinally of the blank being at least equal to the dimension of a bottle accommodating cell in the same direction and certain of said strap members having a dimension in the direction longitudinally of the blank which exceeds one half the corresponding dimension of an end wall forming panel and having an end opposite the associated hinge forming score line which is cut free.

6. An elongate blank as set forth in claim **5** wherein said longitudinal partition and handle forming panels are spaced along the associated side of said blank and offset in the direction longitudinally of the blank relative to the bottom wall forming panels which extend along the opposite side of the blank.

7. An elongate blank as set forth in claim **5** wherein certain of said cross partition forming strap members which have an end cut free are provided at said cut free end with an extension in the form of a tab for connecting the respective strap member to the strap member which is on the opposite side of the carrier aligned therewith when the carrier is formed from the blank and set up.

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