

United States Patent

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 [73] Assignee **Olinkraft, Inc.**

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[54] **FULL PROTECTION BOTTLE CARRIER**
11 Claims, 7 Drawing Figs.

[52] U.S. Cl..... **220/113**

[51] Int. Cl..... **B65d 5/02,**

B65d 5/48

[50] Field of Search..... **220/110-**

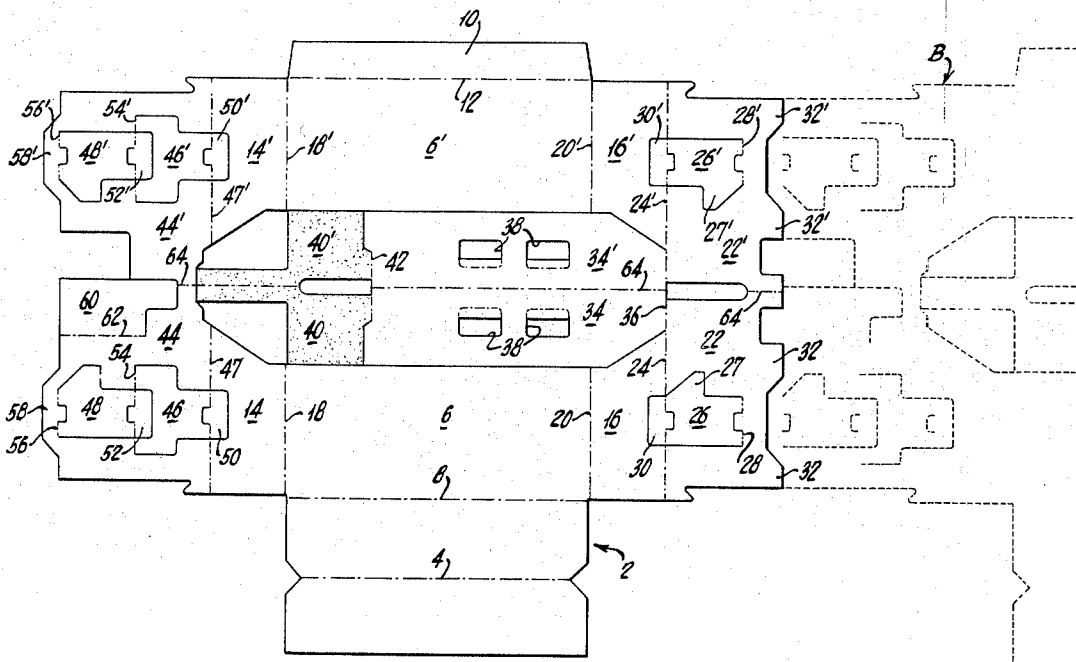
—115; 229/28 (BC)

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ABSTRACT: A full protection basket-style bottle carrier having two pairs of riser panels of substantial longitudinal dimension, each riser panel having dimension, each riser panel having at least one lateral divider panel cut therefrom and hinged thereto to define bottle-receiving cells. The innermost edges of the riser panels are obliquely cut to form bottle separating extensions of limited vertical dimension.



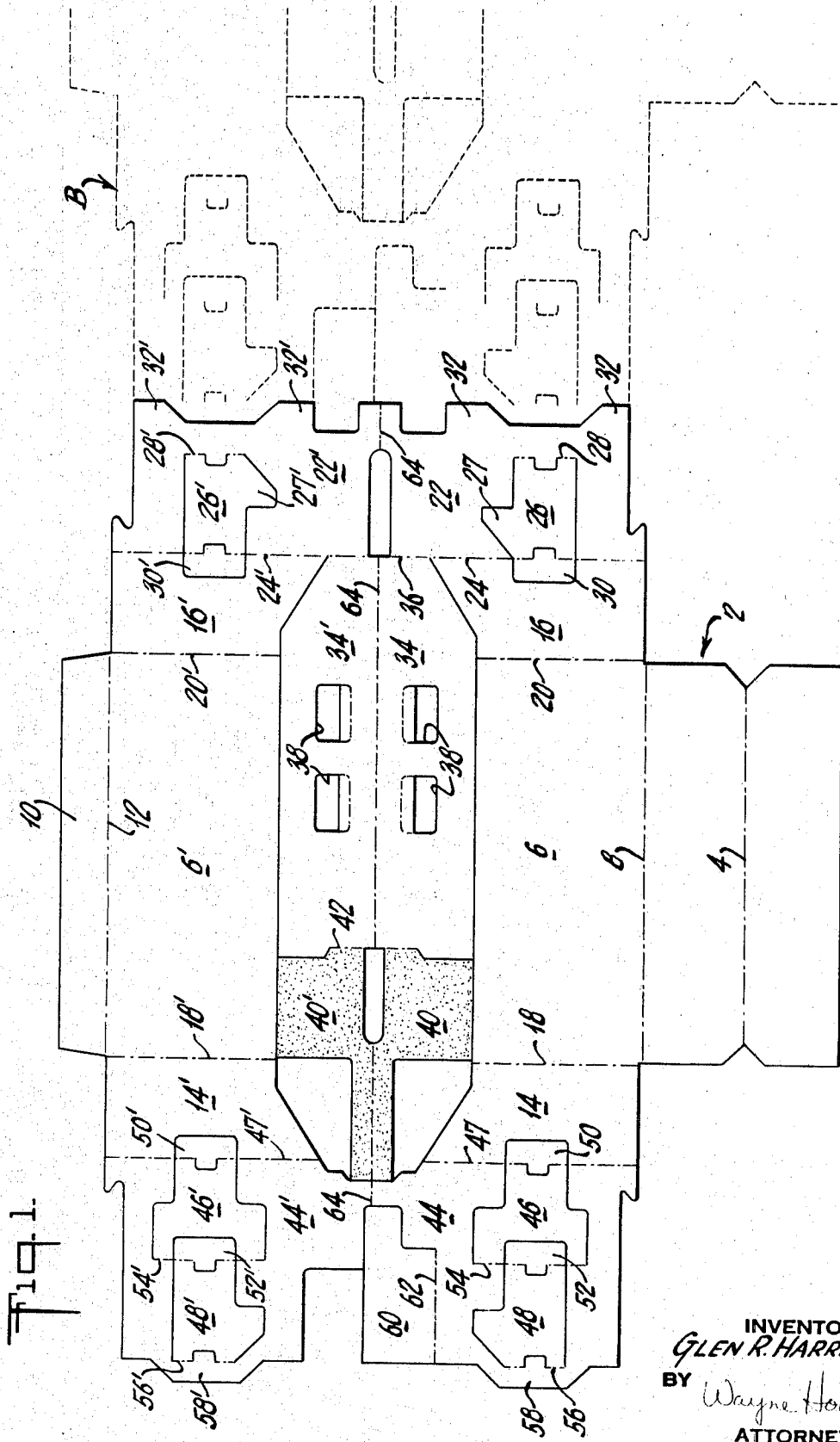
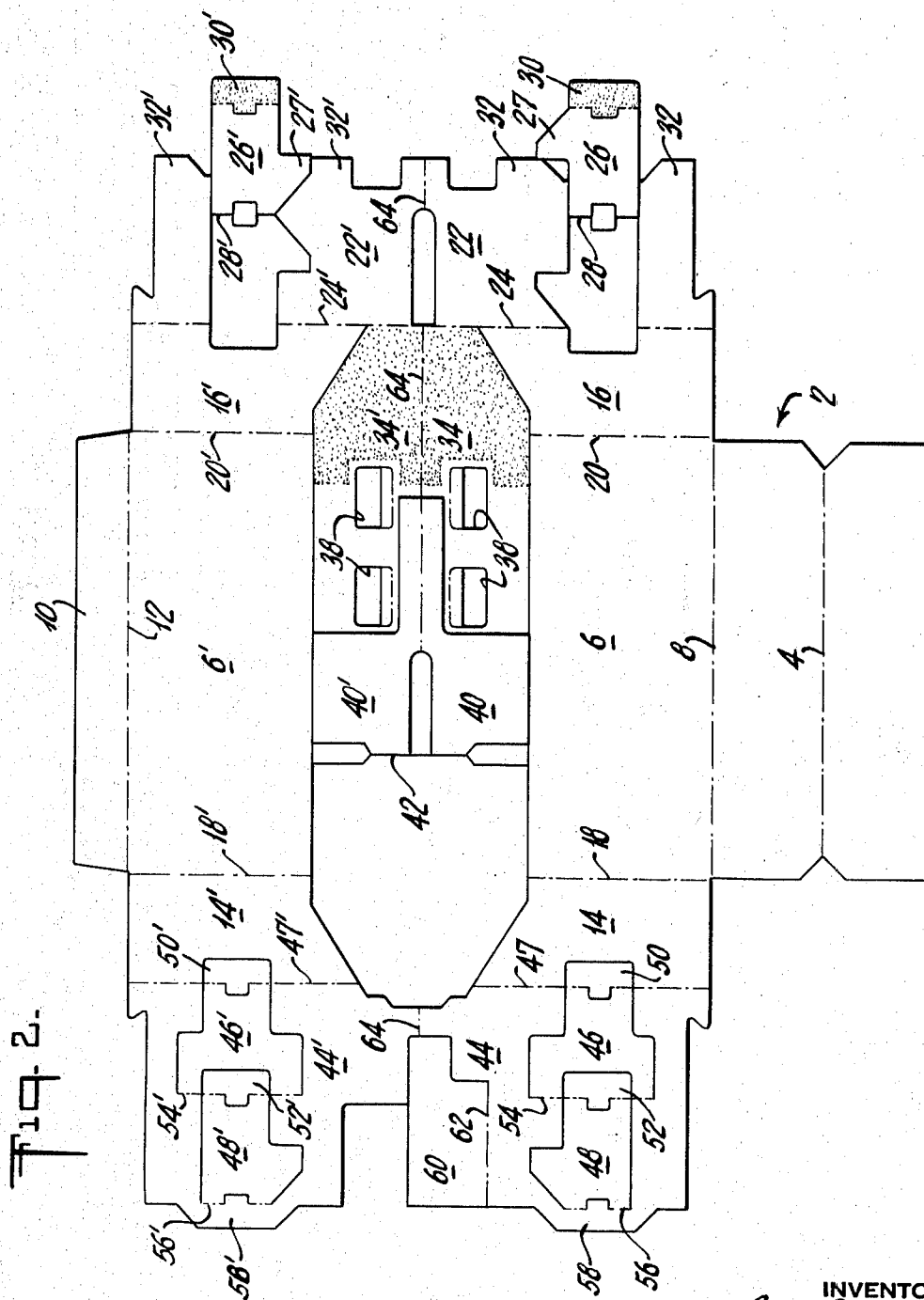
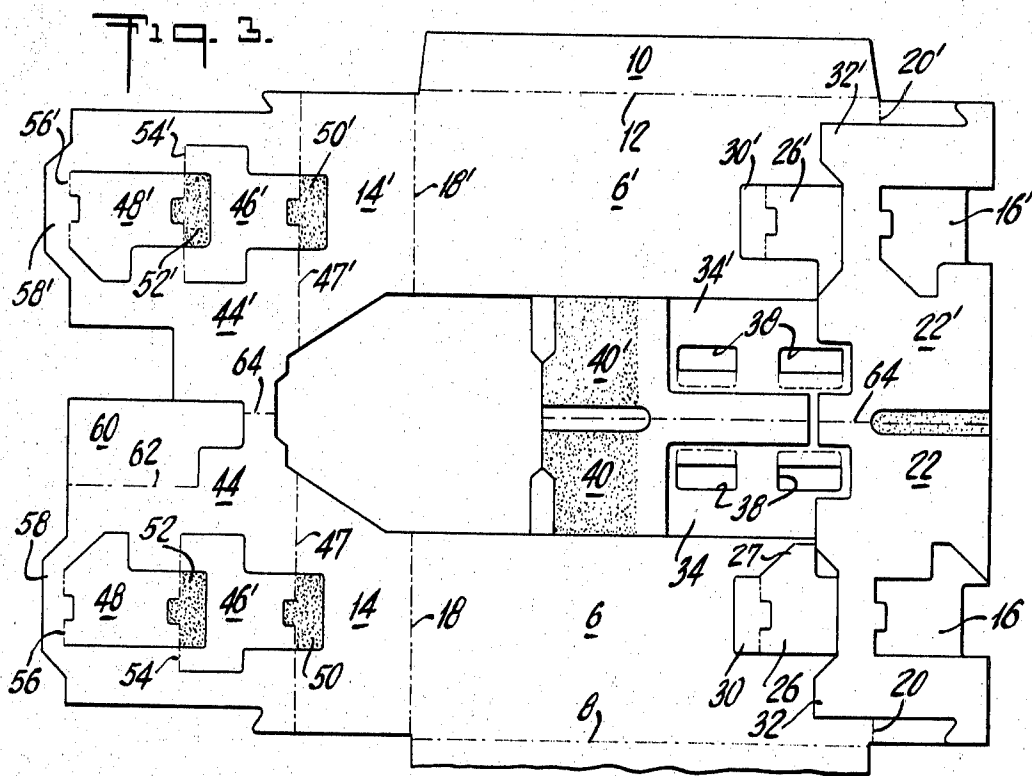
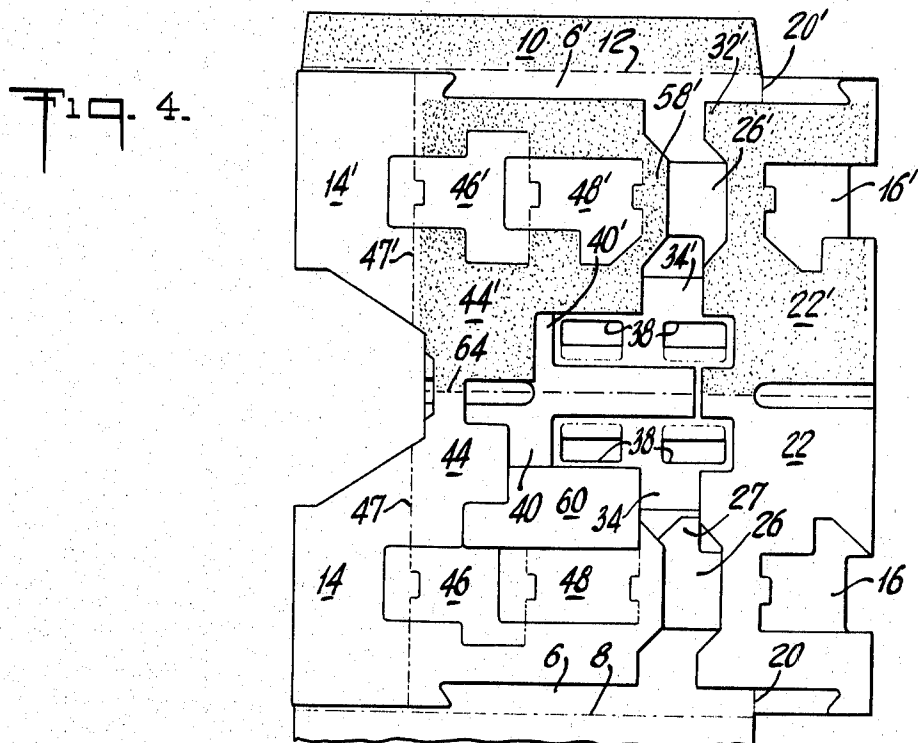


Fig. 1.

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Fig. 5.

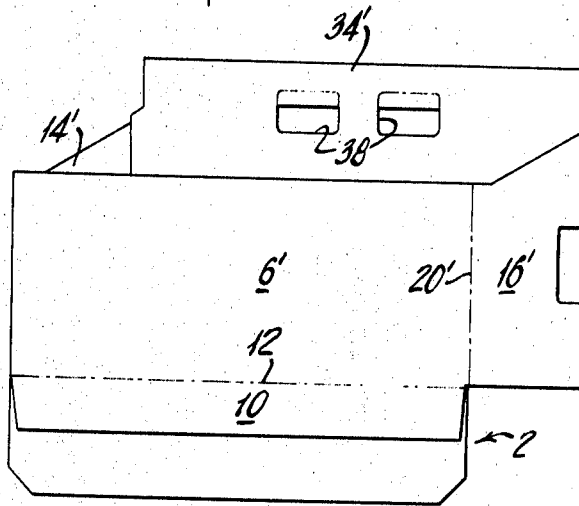
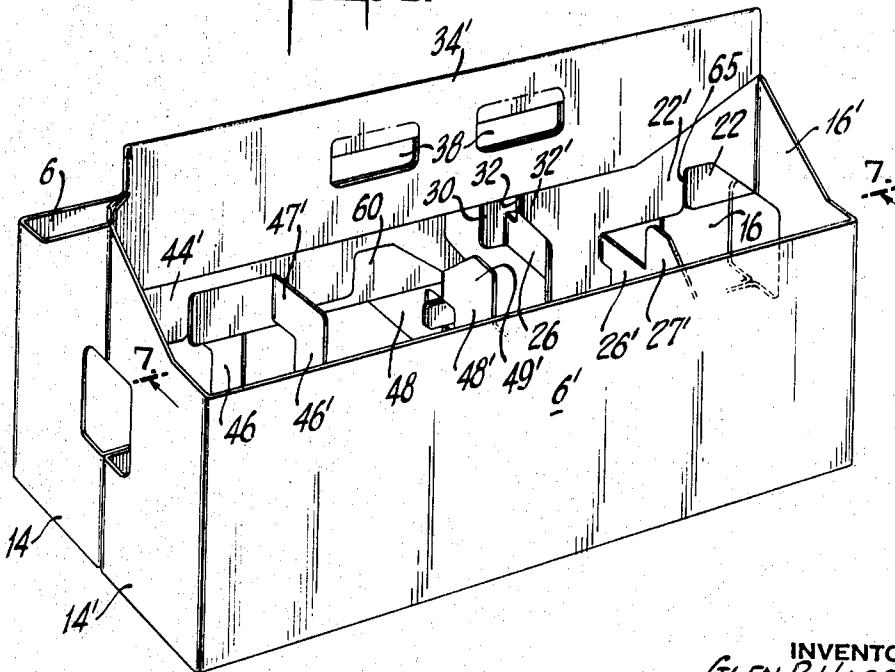
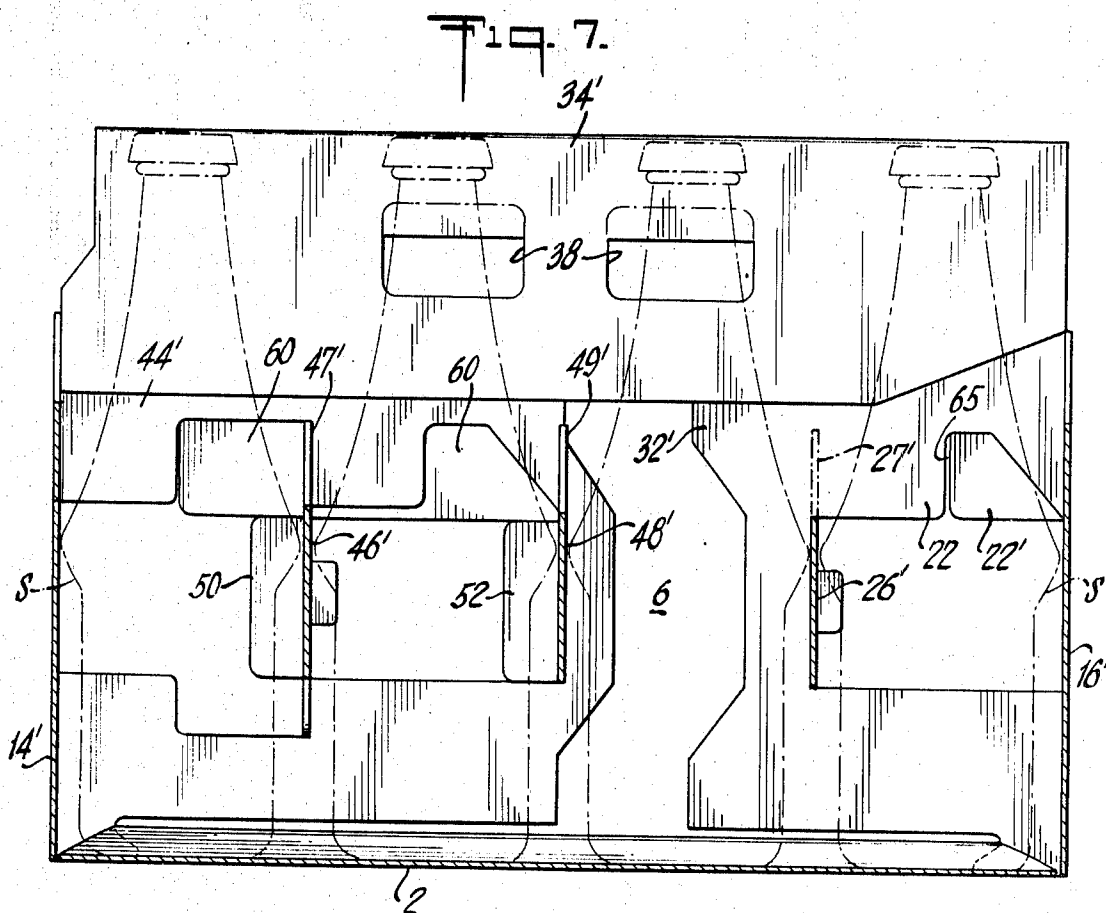


Fig. 6.



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FULL PROTECTION BOTTLE CARRIER

BACKGROUND

This invention relates to a multicell, basket-style bottle carrier having sidewalls of undiminished height throughout their entire longitudinal dimension. Such carriers are commonly known as "full protection" carriers inasmuch as each cell in the carrier has a sidewall with a height equal to that of every other cell in the carrier.

Since the sidewalls of a full protection carrier are of undiminished height, the lateral partitions are cut from and hinged to pairs of riser panels which are hinged to end wall panels and which form a central longitudinal partition. It is desirable to form the full protection carriers from a single sheet, or blank, of material which is properly cut and scored to permit folding the blank into the carrier, rather than providing a number of cut and scored blanks which must be combined, often adhesively, to form the carrier. By using a single sheet of material, the blanks are more compactly shipped in flat condition, and are more easily erected since each blank alone forms a complete carrier.

It is, furthermore, preferable to form the carrier blank from a minimum amount of sheet material for economic reasons, but at the same time the bottles in each cell must be adequately protected against contact with the bottles in the adjacent cells to ensure against breakage which might result from knocking together of bottles as the carrier is transported. Since the lateral partitions are cut from the central longitudinal partition, a resultant opening is formed in the longitudinal partition which should at least partially be filled to prevent undesirable contact between adjacent bottles.

A further gap in the longitudinal partition will occur at the interface of the pairs of riser panels unless the latter are longitudinally lengthened so as to terminate in closely adjacent edges. This lengthening, however, undesirably increases the amount of material needed to form a blank, as may the provision of extra panels which are used to close the first-mentioned openings in the longitudinal panels. The increase in material is particularly great when the extra panels are formed as extensions of the handle panels, as shown in the prior art, as exemplified by U.S. Pat. No. 3,093,265 to Edwin L. Arneson.

The carrier of this invention provides for adequate protection for the packaged bottles while requiring a minimum amount of sheet material for its production. The gap at the interface of the pairs of riser panels is partially filled and modified in configuration by providing complimentary projections on the opposite edges of the riser panels. The openings in the riser panels, which are formed by cutting the lateral divider partitions may be partially filled by a tab hinged to one of the riser panels along a longitudinal hinge line, or may be partially filled by appropriately displacing vertically projecting tabs which are formed on the lateral partitions to provide additional protection for adjacent bottles.

BRIEF DESCRIPTION OF THE INVENTION

It is, therefore, an object of this invention to provide a full protection bottle carrier made from a one-piece blank of sheet material of minimum size, and yet affording adequate bottle protection.

It is a further object of this invention to provide a bottle carrier of the character described wherein lateral divider panels are cut from a central longitudinal partition and glued to sidewalls, and openings thus caused in the central partition are at least partially filled.

It is yet another object of this invention to provide a bottle carrier of the character described, wherein the central longitudinal partition is to be formed by pairs of riser panels hinged to end wall panels, and a gap formed at the interface of opposed pairs of the riser panels is lessened by providing complimentary projections on the opposed edges of the riser panels.

These and other objects and advantages of this invention will become more readily apparent from the following detailed description and accompanying drawings:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a blank of sheet material from which a preferred embodiment of the carrier of this invention is formed, the preferred cut and score lines being shown on the blank;

FIGS. 2-5 are plan views of the blank of FIG. 1 showing the intermediate stages in a succession of folding operations performed to transform the blank of FIG. 1 into the collapsed carrier shown in FIG. 5;

FIG. 6 is a side perspective view of an erected carrier formed from the blank of FIG. 1; and

FIG. 7 is a vertical sectional view taken along line 7-7 of FIG. 6.

DETAILED DESCRIPTION OF THE INVENTION
(EMBODIMENT PREFERRED)

Referring now to FIG. 1, a blank for forming a preferred embodiment of the carrier of this invention is shown. The blank includes a bottom wall 2 bisected by a longitudinal fold line 4. The bottom wall 2 is hinged to a first sidewall 6 along a fold line 8, there being a second wall 6' having a glue tab 10 hinged thereto along a fold line 12. End wall panels 14 and 16, and 14' and 16' are hinged to the sidewall panels 6 and 6' respectively along fold lines 18 and 20, and 18' and 20'. A pair of riser panels 22 and 22' are hinged to the end wall panels 16 and 16' along fold lines 24 and 24'. Lateral partition panels 26 and 26' are cut from the riser panels 22 and 22' respectively and hinged thereto along fold lines 28 and 28'. The lateral or cross partition panels 26 and 26' include terminal glue tabs 30 and 30' respectively which are cut from the end wall panels 16 and 16' in order to minimize the overall required length of the blank. It is noted that the glue tabs 30 and 30' are hinged to the lateral partition panels 26 and 26' along the fold lines 24 and 24'. The partition panels 26 and 26' are formed with projections 27 and 27' which afford greater protection for bottles disposed in the carrier, the projections 27 and 27' being longitudinally offset one from the other. The terminal transverse edges of the riser panels 22 and 22' are formed with spaced apart projections 32 and 32', the function of which will be set forth in greater detail hereinafter.

A pair of handle-forming panels 34 and 34' are hinged to the riser panels 22 and 22' respectively along fold line 36. The handle panels 34 and 34' are provided with finger-receiving apertures 38. Handle-reinforcing panels 40 and 40' are hinged to the handle panels 34 and 34' respectively along fold line 42.

A second pair of riser panels 44 and 44' are hinged to the end wall panels 14 and 14' respectively along fold lines 47 and 47'. A pair of cross partition panels 46 and 48, and 46' and 48' are cut from each of the riser panels 44 and 44' respectively. The cross partition panels 46 and 46' have glue tabs 50 and 50' being hinged to the panels 46 and 46' respectively along the fold lines 47 and 47'. It is noted that the cross partition panels 46 and 48, and 46' and 48' are nested, that is to say, glue tabs 52 and 52' on the panels 48 and 48' are cut from the panels 46 and 46' respectively to minimize the required overall length of the blank. The panels 46 and 46' are hinged to the riser panels 44 and 44' along fold lines 54 and 54', and the panels 48 and 48' are hinged to the riser panels 44 and 44' along fold lines 56 and 56' respectively. The terminal edges of the riser panels 44 and 44' are formed with projections 58 and 58', the purpose of which will be set forth in greater detail hereinafter. A reinforcing tab 60 is hinged to the riser panel 44 along a fold line 62.

It is noted that a central fold line 64 bisects the blank to provide a hinge connection for the riser panels 44 and 44', the handle-reinforcing panels 40 and 40', the handle panels 34 and 34', and the rise panels 22 and 22'.

FIG. 1 shows, in phantom, a second blank B as the latter would appear when the blanks are cut from a single sheet of material and showing how the riser panel projections 32, 32', 58, and 58' may be cut from a single span of sheet material, thereby increasing the number of blanks which can be obtained from a given length of material.

With respect to all of the drawings, those portions of the blank which are coated with glue or other adhesive during the erecting of the carrier are shown as being stippled.

To erect the carrier from the blank of FIG. 1, the handle-reinforcing panels 40 and 40' are first coated with adhesive and folded along line 42 against handle panels 34 and 34', as shown in FIG. 2. At the same time the cross partition panels 26 and 26' are folded about their respective hinge lines 28 and 28', to the positions shown in FIG. 2. The tabs 30 and 30' and a portion of the handle panels 34 and 34' are then coated with adhesive and the riser panels 22 and 22' are folded over on the fold lines 24 and 24', to the position shown in FIG. 3. The tabs 30 and 30' are thus adhered to the sidewall panels 6 and 6' respectively. It is noted that the end edges of the riser panels 22 and 22', and the handle reinforcing panels 40 and 40' are immediately adjacent each other so as to combine with the handle panels 34 and 34' to form a weight-bearing handle of four ply.

The cross partition tabs 50, 50', 52, and 52' are then coated with adhesive, as is a portion of the handle-reinforcing panels 40 and 40'. The rear face of the reinforcing tab 50 (as viewed in FIG. 3) is partially coated with adhesive so that the tab 60 may be folded rearwardly and downwardly about the score line 62 and secured to the riser panel 44. The riser panels 44 and 44', and the end wall panels 14 and 14' are then folded about the score lines 18 and 18' to the position shown in FIG. 4 to secure the tabs 50 and 52, and 50' and 52' to the sidewall panels 6 and 6' respectively. This folding step also secures the riser panels 44 and 44' to the handle-reinforcing panels 40 and 40'. It is noted that FIG. 4 clearly shows that the reinforcing tab 60 partially fills the opening in the riser panel 44 which is formed from cutting the cross partition panels 46 and 48 from the riser panel 44.

The glue flap 10 then coated with adhesive, as are the riser panels 22' and 44', the handle panel 34', and the handle-reinforcing panel 40'. The bottom panel 2 is then folded upwardly along its medial score line 4 and the upper half of the blank is folded downwardly along the fold line 64 a to secure the riser panels together, and to secure the tab 10 to the bottom panel 2. The resulting collapsed blank is shown in FIG. 5.

To transform the collapsed blank of FIG. 5 into the erected blank of FIG. 6, one need merely pull the sidewalls 6 and 6' away from each other, in a conventional manner. Referring now to FIG. 6, it is readily apparent that each of the cross partition panels 26', 46' and 48' includes an upwardly extending projection 27', 47', and 49' respectively which provide material at the mid point, as measured laterally on the carrier, between adjacent cells. The placement of this material at the mid point prevents contact between bottles disposed in longitudinally adjacent cells, which bottles have raised shoulders on the upper portions thereof (see FIG. 7). Were it not for the projections 27', 47', and 49', the bottle shoulders would contact each other and risk of damage to the bottles would present itself. It is also apparent that the tab 60 fills the openings which are created in the riser panel 44' by the projections 47' and 49'. Thus the tab 60 prevents contact from occurring between shoulders of laterally adjacent bottles. Since the projections 27' and 27' are cut from longitudinally offset portions of the riser panels 22' and 22', the riser panel 22 partially fills the opening formed in the riser panel 22' by the projection 27', and the riser panel 22' partially fills the opening created in the riser panel 22 by the projection 27. A small gap 65 is present between adjacent edges of the riser panels 22 and 22' at the center of the right handmost cells, as seen in FIG. 6, however, this gap 65 is so narrow that the shoulders of laterally adjacent bottles are prevented from contacting each other by the riser panels 22 and 22'. The gap 65 is present because each of the projections 27' and 27' must be cut so as to extend slightly through the lateral mid plane of the cells.

The projections 32 and 32' on the riser panels 22 and 22' respectively extend slightly beyond the mid plane of the laterally adjacent cells so as to prevent contact from occurring between the shoulders of bottles disposed in these cells.

FIG. 7 is a cross-sectional view of the erected carrier of FIG. 6 taken along line 7-7 of FIG. 6, and showing a plurality of bottles (in phantom) positioned in the cells of the carrier. The shoulders on the bottles are labeled S for clarity. FIG. 7 clearly illustrates how the projections 27', 47', and 49', the tab 60, the riser panel projection 32' and the riser panels 22 and 22' all combine to prevent the shoulder S on any given bottle from contacting the shoulder S on any adjacent bottle.

Since the shoulders on the bottles are commonly formed at the juncture between the body and the neck of the bottle, the shoulder is disposed upwardly on the bottle and will project beyond the cross partition straps presently found in multicell carriers. The cross partition straps on the carrier of this invention are formed with upward projections which provide material for interdisposition between adjacent carriers. The fact that the cross partition straps are cut from riser panels which form a longitudinal partition on the carrier presents a problem in that the cross partition strap projections create openings in the riser panels which must be filled to prevent contact between laterally opposed bottle shoulders. The provision of a tab hinged to one riser panel and downwardly foldable thereon permits closure of the openings without enlargement of the blank. Longitudinal staggering of the position of the cross partition strap projections permits material from one riser panel to substantially fill the opening created by the projection cut from the adjacent riser panel. Finally, longitudinal projections formed on one pair of opposed riser panels provide material for preventing contact between laterally adjacent bottles shoulders without increasing the amount of material needed to form the carrier blank.

Since many changes and variations of the disclosed embodiment of the invention may be made without departing from the inventive concept, it is not intended to limit the invention otherwise than as required by the appended claims.

I claim:

1. A carrier blank, cut and scored to define the elements of a multicell, basket-style carrier, comprising:

- a. a bottom wall panel;
- b. a sidewall panel pivotally connected to said bottom wall panel along a scored fold line;
- c. a second sidewall panel;
- d. end wall panels hingedly connected, along scored fold lines, to the longitudinal ends of each of said sidewall panels;
- e. riser panels hingedly connected along scored fold lines to at least two of said end wall panels such that at least one pair of riser panels is provided at one end of the carrier blank, the riser panels comprising said pair of riser panels being hingedly connected to each other;
- f. lateral partition panels defined by cut lines in said riser panels and hingedly connected to said riser panels along scored fold lines, said partition panels comprising a glue tab, at least two such glue tabs being defined by one or more cut lines in the end panels to which said pair of riser panels is hingedly connected; and
- g. handle-forming panels hingedly connected to said pair of riser panels.

2. The blank of claim 1 wherein said lateral partition panels comprise a projection designed to afford greater protection to articles placed in the carrier after said carrier is erected.

3. The blank of claim 2 wherein at least one pair of said projections are offset, longitudinally, one from the other.

4. The blank of claim 1 wherein at least six lateral partition panels are provided in four riser panels.

5. The blank of claim 4 wherein the glue tabs of the lateral partition panels which are not defined by one or more cut lines in the end panels are defined by one or more cut lines in the next adjacent lateral partition panel.

6. The blank of claim 1 wherein said riser panels have their terminal transverse edges formed with one or more projections.

7. The blank of claim 1 wherein at least one of said riser panels comprise a reinforcing tab, said tab defined by one or

more cut lines in said riser panel and being hingedly connected thereto.

8. A carrier blank, cut and scored in a manner such as to define the elements of a multicell, basket-style carrier comprising:

- a. a bottom wall panel;
 - b. a sidewall panel hingedly connected to said bottom wall panel along a scored fold line;
 - c. a second sidewall panel;
 - d. end wall panels hingedly connected, along scored fold lines, to each longitudinal end of each of said sidewall panels;
 - e. riser panels hingedly connected along scored fold lines to each of said end wall panels such that a first pair of riser panels is provided at one end of the carrier blank and a second pair of riser panels is provided at the opposite end of said carrier blank, the riser panels of each pair being hingedly connected to each other along a scored fold line, which scored fold line is perpendicular to the scored fold line along which said pair of riser panels is connected to the end wall panels, said first pair of riser panels having their terminal transverse edges formed with spaced-apart projections, and said second pair of riser panels having their terminal transverse edges formed with a projection, the position of which projection corresponds, substantially, to that of the space between said spaced-apart projections;
 - f. lateral partition panels defined by cut lines in said riser panels and hingedly connected to said riser panels along scored fold lines, said partition panels comprising a glue tab, four of which glue tabs are defined by one or more cut lines in each of a said end wall panels, and a projection, designed to afford greater protection to articles in the carrier after said carrier is erected, at least one pair of the projections being offset, longitudinally, one from the other;
 - g. handle-forming panels hingedly connected to one said pairs of riser panels;
 - h. handle-reinforcing panels hingedly connected to said handle panels; and
 - i. a reinforcing tab defined by one or more cut lines in at least one of said riser panels and hingedly connected to the riser panel along a scored fold line.
9. A multicell, basket-style carrier comprising:
- a. a bottom wall panel;

- b. a first sidewall panel hingedly connected to said bottom wall panel and extending upwardly from said bottom wall panel;
 - c. a second sidewall panel extending upwardly from said bottom wall panel and position in a plane substantially parallel to said first sidewall panel;
 - d. end wall panels hingedly connected to each end of said sidewall panels and extending upwardly from said bottom wall panel at each longitudinal end thereof and in a plane substantially perpendicular to the planes formed by said sidewall panels;
 - e. riser panels hingedly connected to each of said end wall panels such that a first pair of riser panels is provided at one end of said carrier and a second pair of riser panels is provided at the opposite end of said carrier, both pair of said riser panels extending upwardly from said bottom wall panel and inwardly from said end wall panels, the riser panels of each of said pairs being fixedly attached to each other, both pair of said riser panels being positioned in the same plane, which plane is substantially parallel to the planes defined by said sidewall panels;
 - f. lateral partition panels hingedly connected at one end to a riser panel and fixedly attached at the opposite end thereof to a sidewall panel, at least four of the tabs used for attaching said lateral partition panels to said sidewall panels having been cut from said end wall panels thereby providing at least one opening in each end of said carrier, said lateral partition panels comprising an upwardly extending projection of sufficient height to afford greater protection to the articles carried in said carrier;
 - g. a reinforced handle connected to at least one pair of said riser panels and extending upwardly therefrom; and
 - h. a reinforcing tab positioned as to fill at least a portion of the opening formed by lateral partition panels being cut from the riser panels.
10. The carrier of claim 9 wherein at least two of the projections extending upwardly from said lateral partition panels are offset longitudinally one from the other.
11. The carrier of claim 9, wherein the terminal transverse edges of said riser panels are formed with one or more projections, which projections are capable of interlocking when both pairs of riser panels are extended inwardly from the end wall panels, but which projections are not interlocked, thereby reducing the amount of blank material required for said carrier.

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