Nov. 8, 1966 L. S. WYSOCKI 3,283,949

BOTTLE CARRIERS

Filed Oct. 6, 1965 2 Sheets-Sheet 1

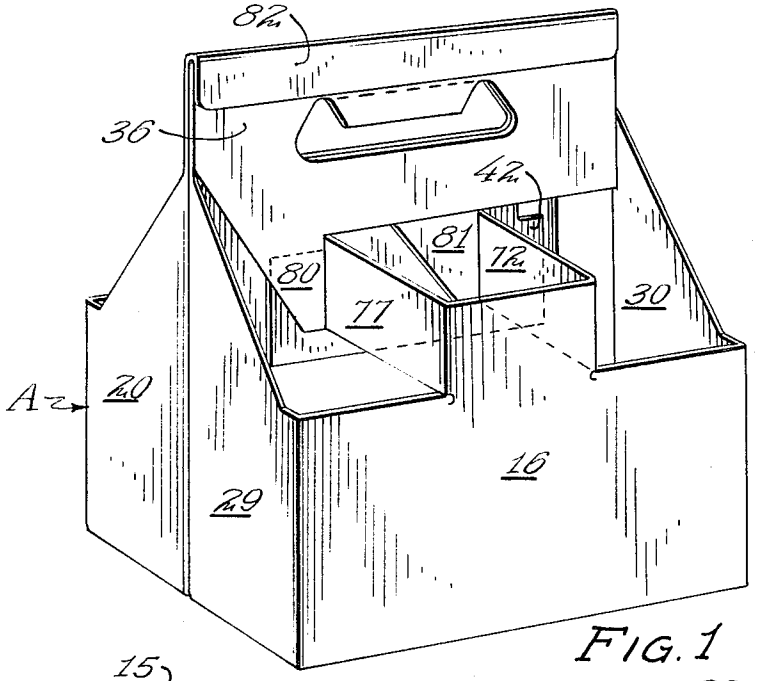


FIG. 1

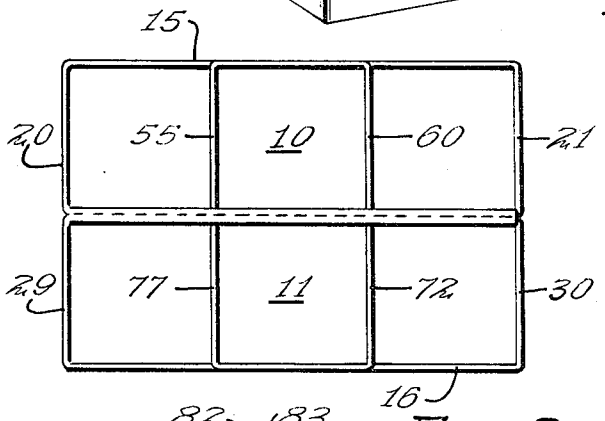


FIG. 2

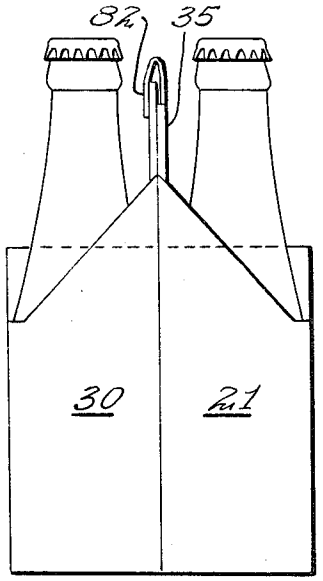


FIG. 3

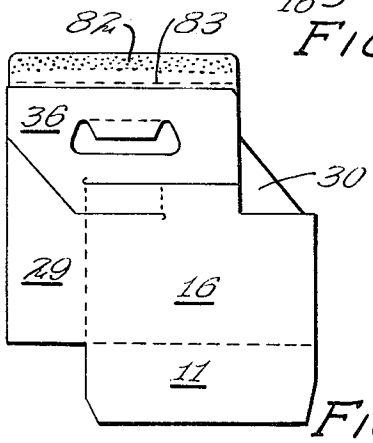


FIG. 4

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BOTTLE CARRIERS

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2 Sheets-Sheet 2

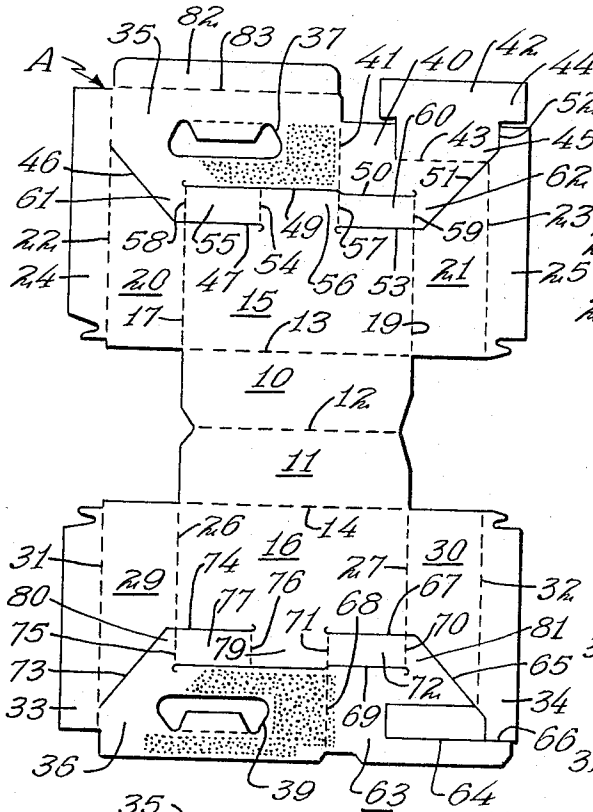


FIG. 5

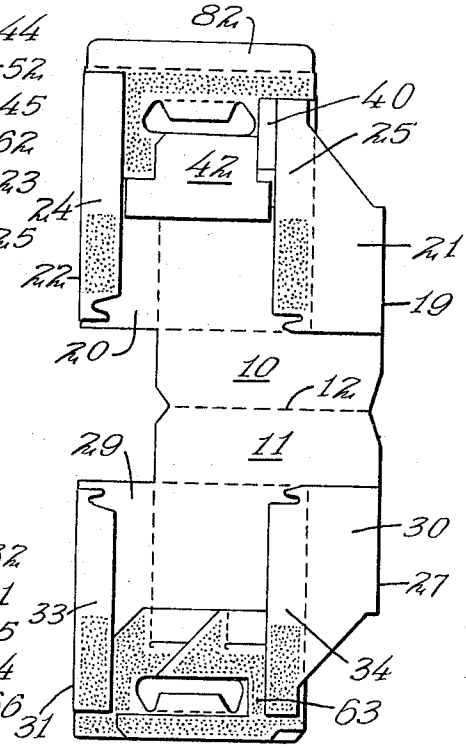


FIG. 7

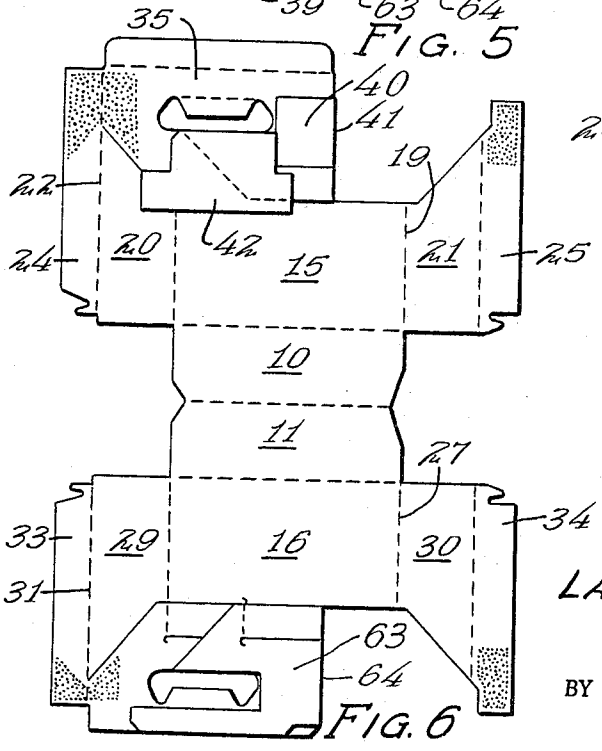


FIG. 6

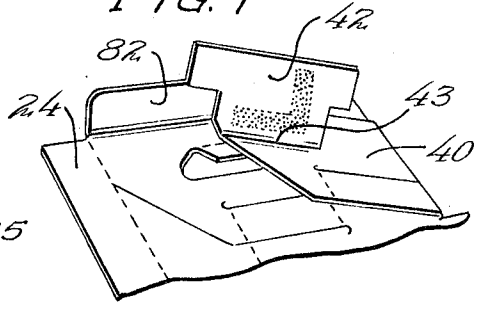


FIG. 8

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BOTTLE CARRIERS

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Filed Oct. 6, 1965, Ser. No. 493,421
4 Claims. (Cl. 220—113)

This invention relates to an improvement in bottle carriers, and deals particularly with an inexpensive carrier having a reinforced partition structure.

Carriers of the type illustrated in Patents 2,692,700, issued October 26, 1954, and 2,712,397, issued July 5, 1955, to M. H. Kowal have been produced in considerable volume. One of the biggest difficulties with carriers of this type lies in the weakness in the connection between the transverse separating bars which connect the side walls of the carrier to the center partition structure. The handle panels are provided with downwardly projecting extensions which are adhered together in face contact. If the carrier containing bottles is handled somewhat roughly, or subjected to unusual strain, there is a tendency to bend these downward extensions and tear or break them. It is an object of the present invention to provide a means of reinforcing this area of the carrier.

A feature of the present invention resides in the provision of a carrier having a bottom wall, side walls hinged to opposite edges of said bottom wall, end walls connected to the ends of the side walls, and connecting panels hinged to the edges of said end walls and secured in face contact. Handle panels are hingedly connected to two opposed of said connecting panels, and handle reinforcing panels are connected to the ends of said panels and are folded between the handle panels. The side walls are provided with upward extensions formed thereon throughout the middle one-third of the length thereof, and separating bars are pivoted to opposite and edges of the upward extensions to extend in parallel relation to the central partition structure. The handle panels and handle reinforcing panels are provided with downward extensions affording vertical edges located at the one-third points along and below the lower edge of the handle panels and handle reinforcing panels. These vertical edges are connected to the ends of the separating bars to connect the side walls to the center partition structure.

The structure defined to this point is illustrated in general in the aforementioned patents. However, the present structure includes a reinforcing flap hingedly connected to one of the handle reinforcing panels along a horizontal longitudinal fold line, and which is folded down between the handle reinforcing panels. This reinforcing flap extends below the level of the handle panels and handle reinforcing panels, and the downward extensions on these latter panels are adhered to opposite surfaces of the reinforcing flap. As a result, the connection between the side walls and the center reinforcing structure is materially strengthened and reinforced.

A feature of the present invention resides in the provision of a reinforcing flap which is generally of T-shaped form having a stem portion and a crossbar portion. The crossbar portion is of a width which substantially equals the distance between the connecting panels so as to substantially fill this space. The horizontal fold line connecting the reinforcing flap to its handle reinforcing panel is connected to the end of the stem of the T-shaped flap most remote from the crossbar.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims.

In the drawings, forming a part of the specification,

FIGURE 1 is a perspective view of the carton in set-up condition.

FIGURE 2 is a top plan view of the carrier carton shown in FIGURE 1.

FIGURE 3 is an end elevational view of the same.

FIGURE 4 is a plan view of the blank in flat folded form.

FIGURE 5 is a diagrammatic view of the flat blank.

FIGURE 6 is a diagrammatic view of the blank after the first folding operation.

FIGURE 7 is a diagrammatic view of the blank after the second folding operation.

FIGURE 8 is a perspective view showing the manner in which the reinforcing flap is folded about its horizontal fold line.

As indicated in FIGURE 5 of the drawings, the carrier A includes a pair of bottom panels 10 and 11 which are foldably connected along a fold line 12. The bottom panels 10 and 11 are connected along fold lines 13 and 14, respectively, to side wall panels 15 and 16.

The end edges 17 and 19 of the side wall 15 are foldably connected to end wall panels 20 and 21, respectively. The end walls 20 and 21 are connected along parallel fold lines 22 and 23, respectively, to connecting panels 24 and 25. In a similar manner, the side wall 16 is connected along parallel fold lines 26 and 27 to end wall panels 29 and 30, respectively. The end walls 29 and 30 are connected along parallel fold lines 31 and 32 to connecting panels 33 and 34, respectively.

A handle panel 35 is connected to the connecting panel 24 along an extension of the fold line 22. The opposed connecting panel 33 is connected to a handle panel 36 along an extension of the fold line 31. The handle panels 35 and 36 are of similar shape, and the panels are provided with handle openings 37 and 39 which are in registry in the finished form of the carrier carton.

A handle reinforcing panel 40 is hingedly connected to the edge of the handle panel 35 opposite that foldably connected to the connecting panel 34 along a fold line 41. A handle reinforcing flap 42 is foldably connected to the handle reinforcing panel 40 along a longitudinal horizontal fold line 43. The reinforcing flap 42 is of generally T-shaped form including a cross bar portion 44 and a stem portion 45. The flap 42 is foldably connected to the reinforcing panel 40 along the base of the stem 45. The location of the fold line 43 is such that the crossbar of the flap lies below the handle panels and handle reinforcing panels when the carrier is completed.

A diagonal cut line 46 extends across the end wall 20, separating the handle panel 35 from the end wall 20. A horizontal cut line 47 extends approximately one-third of the width of the side wall 15, defining the upper edge of the side wall 15. The handle panel 35 is separated from the side wall 15 by a transverse cut line 49 which extends two-thirds of the width of the side wall 15, and a continuation 50 of the fold line 49 extends to a point in line with the fold line 15, or the remainder of the way across the side wall. A diagonal cut line 51 extends across the end wall panel 21 and a vertical cut line 52 at the end of the cut line 50 separates the flap 42 from the connecting panel 25. A cut line 53 extends from the end of the cut line 51 across one-third of the side wall 15 defining the upper edge of the side wall 15.

A pair of vertical fold lines 58 and 54 extend between the cut lines 47 and 49, the fold line 58 being aligned with the fold line 17 and the fold line 54 being one-third of the distance across the front panel 15 therefrom. The area between the fold lines 58 and 54 forms a separating bar connected to an edge of the vertical extension 56 which extends above the level of the remainder of the front panel 15. A pair of parallel fold lines 57 and 59 extend between the cut lines 53 and 50 and the area between these fold lines forms a separating bar also connected to an edge of the upward extension 56. The area

to the left of the fold line 58 forms a downward extension 61 on the front panel 35, and the area to the right of the fold line 59 forms a downward extension 62 on the handle reinforcing panel 40. The ends of the separating bars 55 and 60 are connected to these downward extensions along the fold lines 54 and 59, respectively.

A handle reinforcing panel 63 is connected to the handle panel 36 along a vertical fold line 68. The handle reinforcing panel 63 is notched as indicated at 64 so as to straddle the handle openings 37 and 39 when the carton is formed. The reinforcing panel 63 is separated from the end wall 30 by a diagonal cut line 65 and a horizontal cut line 66 separates the reinforcing panel 63 from the connecting panel 34. A horizontal cut line 67 extends from the lower end of the diagonal cut line 65 across one-third of the width of the side wall 16. A cut line 69 parallel to the cut line 67 also extends across the width of the wall panel 16. A pair of vertical parallel fold lines 70 and 71 extend between the cut lines 67 and 69, and define a separating bar 72 which is equal to one-third the width of the wall panel 16.

A diagonal cut line 73 extends across the end wall panel 29 separating the handle panel 36 from the end wall, and a horizontal cut line 74 extends from the lower end of the cut line 73 one-third of the distance across the wall panel 16. Parallel fold lines 75 and 76, which extend from the cut line 69 to the cut line 74, and which are spaced apart a distance equal to one-third the width of the wall panel 16 define a separating bar 77 which is connected along the fold line 76 to the upward extension 79 of the wall panel 16 and the fold line 75 connects the separating bar 77 to the downward extension 80 of the handle panel 36. In a similar manner, the fold line 71 connects the separating bar 72 to the vertical edge of the upward extension 79 of the side wall 16 while the fold line 70 connects the bar 72 to the downward extension 81 on the handle reinforcing panel 63.

The manner in which the carrier is folded is indicated in the drawings. As indicated in FIGURE 6, the handle reinforcing panels 40 and 63 are folded along the fold lines 41 and 64, respectively, the handle reinforcing panels overlying the handle panels to which they are secured. During this folding operation, the reinforcing flap 42 is folded throughout 180 degrees about the fold line 43, the reinforcing flap 42 and overlying the lower portion of the handle panel 35 to which it is attached through the handle reinforcing panel 40.

From the position illustrated in FIGURE 6 of the drawings, the carrier is folded into the position shown in FIGURE 7. This is accomplished by folding the blank along the aligned fold lines 19 and 27, so that the connecting panels 25 and 34 overlie end portions of the handle reinforcing panels 40 and 63 and are adhered thereto. At the same time, the blank is folded along the fold lines 22 and 31 to fold the connecting panels 24 and 33 into position overlying end portions of the handle reinforcing panels. The shading indicates the adhesive coated areas which are used to secure the various plies of paperboard together.

From the position shown in FIGURE 7, the bottom panels 10 and 11 are folded along the fold line 12 to bring one side of the carrier into contact with the other, and to adhere the handle portions and the connecting panels together. As a final step of the assembly, the handle flange 82 which is connected to the upper edge of the handle panel 35 along a horizontal fold line 83 is folded through approximately 180 degrees and is adhered to the upper edge of the handle panel 36 as is indicated in FIGURE 1 of the drawings. FIGURE 4 of the drawings shows the blank just before the handle flange 82 is folded into place.

The T-shaped reinforcing flap 42 is substantially equal in width to the distance between the innermost edges of the connecting panels 24, 33, and 25, 34. In the past, carriers of the same general form were made by securing the downward projections 61 and 80 in face contact, and also securing the downward extensions 62 and 81 of the handle reinforcing flaps 40 and 63 in face contact. These downward extensions are not particularly large in size, and as a result, the paperboard had a tendency to come apart or tear in this area. By providing the reinforcing flap 42 between the downward extensions on the handle panels and handle reinforcing panels, the carrier is materially reinforced at this point. This is accomplished without increasing the size of the blank, as the crossbar 44 of the T-shaped flap is formed of paperboard which would otherwise be stripped away in the formation of the carriers.

In accordance with the patent statutes, I have described the principles of construction and operation of my improvement in bottle carriers; and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A collapsible bottle carrier including:
a sheet cut and creased to provide;
a pair of bottom panels hingedly connected along a central longitudinal fold line,
a pair of side walls hingedly connected along their lower edges to the respective bottom panels,
two pairs of end panels disposed at opposite ends of said side walls and hinged to the end edges of said side walls,
connecting panels pivotally connected to the other edges of the respective end panels and extending inwardly from their end panels and secured in face contact to provide connections between said end panels, at the respective ends of the carrier,
a pair of handle panels disposed on opposite side faces of said connecting panels and foldably connected to two opposed of said connecting panels along extensions of the fold lines connecting these connecting panels to their respective end panels,
said side walls having upward extensions formed thereon throughout the middle one-third thereof,
separating bars pivoted to opposite end edges of said upward extensions, said separating bars extending in parallel relation to points located below the one-third points of said handle panels,
handle reinforcing panels hinged to the end edges of said handle panels opposite the ends hinged to said two opposed connecting panels and folded between said handle panels,
extensions fixedly connected to said handle panels and handle reinforcing panels and affording vertical edges located at the one-third points along and below the lower edge of said handle panels and handle reinforcing panels,
said last named extensions being connected along vertical fold lines at said vertical edges to the other ends of said separating bars, and
a reinforcing flap hinged to one of said handle reinforcing panels along a longitudinal fold line and folded between the lower portions of said handle reinforcing panels and said last named extensions,
said connecting panels being between said handle panels and handle reinforcing panels and secured thereto,
at least a portion of said last named extensions residing between said handle panels when said carrier is erected.

2. The structure of claim 1 and in which said reinforcing flap extends substantially the full distance between said connecting panels at opposite ends of said carrier, said portions of said last named extensions being oppositely secured to said flap.

3. The structure of claim 2 and in which said reinforcing flap is of generally T-shaped form, with the base of

the stem of the T hingedly connected to said one handle reinforcing panel.

4. A collapsible bottle carrier including:

a sheet cut and creased to provide;

a pair of bottom panels hingedly connected along a central longitudinal fold line,

a pair of side walls hingedly connected along their lower edges to the respective bottom panels,

two pairs of end panels disposed at opposite ends of said side walls and hinged to the end edges of said side walls,

connecting panels pivotally connected to the other edges of the respective end panels and extending inwardly from their end panels and secured in face contact to provide connections between said end panels, at the respective ends of the carrier,

a pair of handle panels disposed on opposite side faces of said connecting panels and foldably connected to two opposed of said connecting panels along extensions of the fold lines connecting these connecting panels to their respective end panels,

said side walls having upward extension formed thereon throughout the middle one-third thereof,

separating bars pivoted to opposite end edges of said upward extensions, said separating bars extending in parallel relation to points located below the one-third points of said handle panels,

handle reinforcing panels hingedly connected to the end

edges of said handle panels opposite the ends thereof hinged to said two opposed connecting panels and lying between said handle panels,

a reinforcing flap hingedly connected to one of said handle reinforcing panels along a longitudinal fold line and lying between said reinforcing panels to extend below the lower edges thereof,

extensions fixedly connected to said handle panels and handle reinforcing panels and affording vertical edges located at the one-third points along and below the lower edge of said handle panels and handle reinforcing panels and secured in face contact with opposite surfaces of said reinforcing flap,

portions of said extensions extending intermediate intermediate said handle panels in opposed relation, and

said last named extensions being connected along vertical fold lines at said vertical edges to the other ends of said separating bars.

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GEORGE O. RALSTON, *Primary Examiner.*