Feb. 9, 1954 E. L. ARNESON 2,668,653

BOTTLE CARRIER

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Fig. 1.

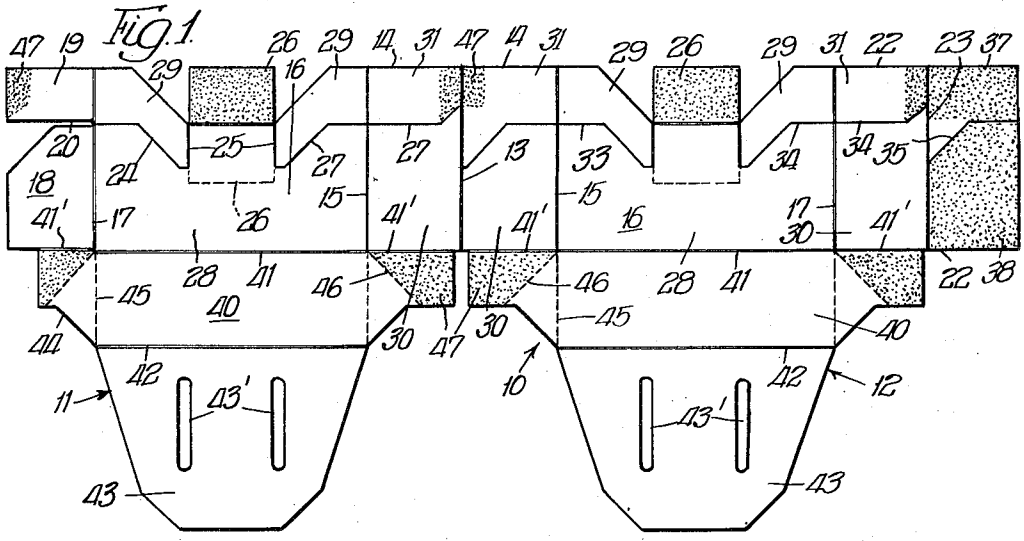


Fig. 2.

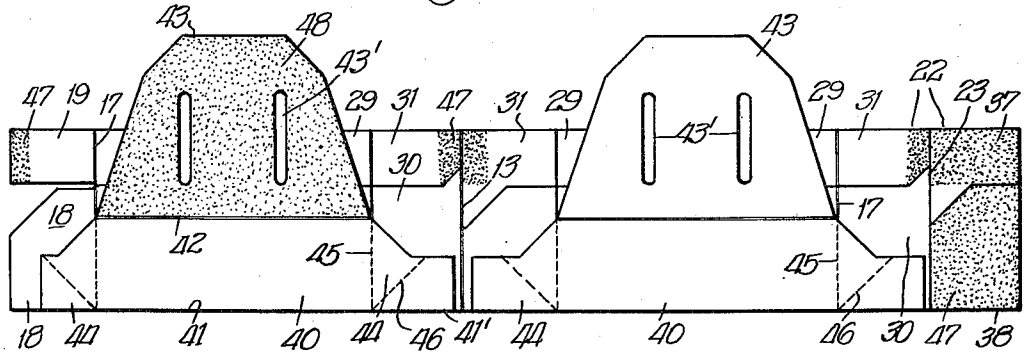
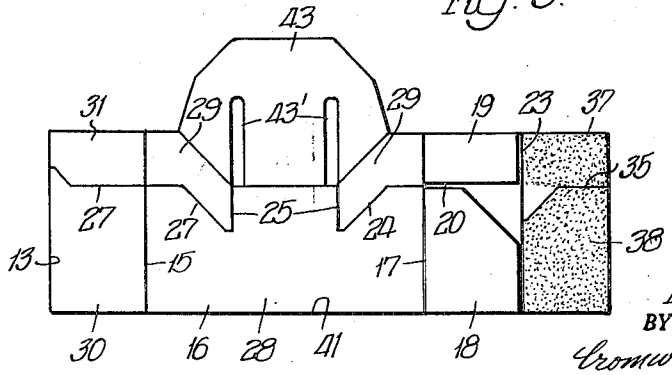


Fig. 3.



INVENTOR.
Edwin L. Arneson,
BY
Cromwell, Greist & Warden
Attys.

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Fig. 4

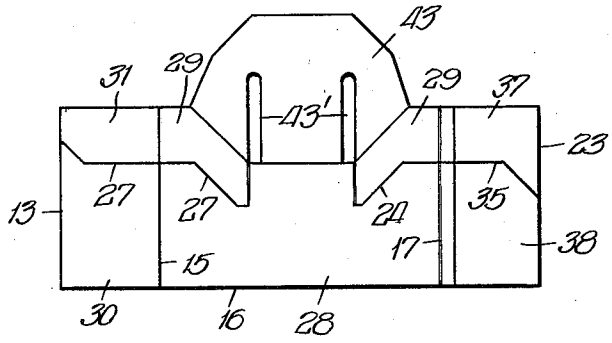


Fig. 5

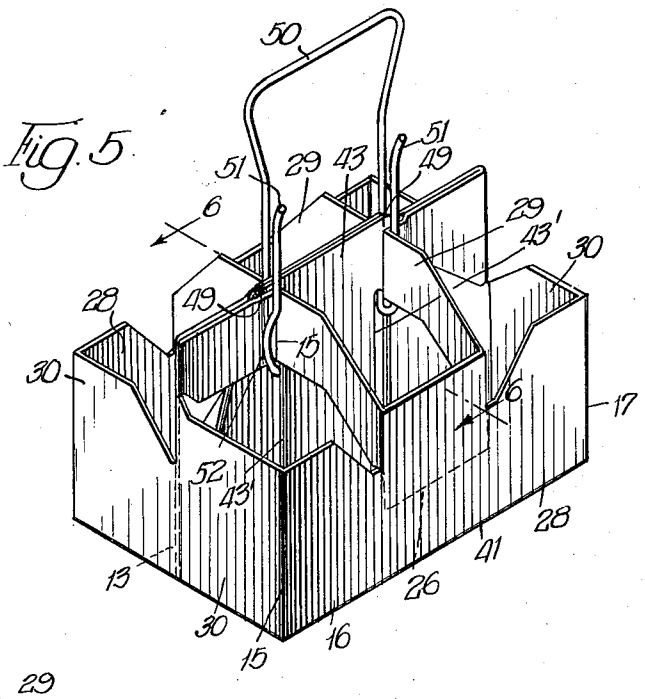
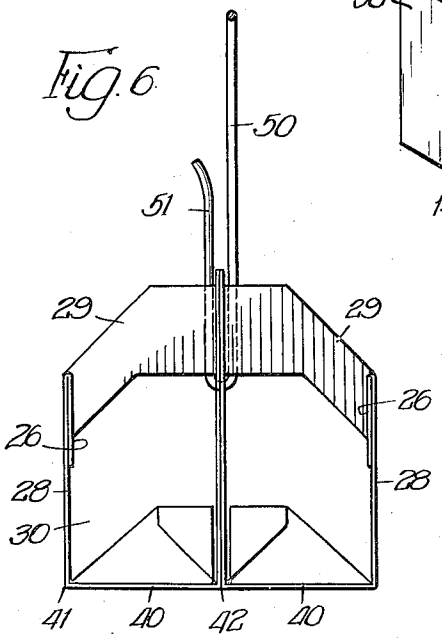


Fig. 6



INVENTOR.
Edwin L. Arneson,
BY
Cromwell, Mueller & Warden
attys.

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UNITED STATES PATENT OFFICE

2,668,653

BOTTLE CARRIER

Edwin L. Arneson, Morris, Ill., assignor to Morris Paper Mills, Chicago, Ill., a corporation of Illinois

Application February 12, 1949, Serial No. 76,124

8 Claims. (Cl. 229—28)

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The present invention pertains to an improved carrier for bottles or like elongated articles of uniform size and shape. More particularly, the invention relates to an improved carrier of this type which is fabricated of flexible paperboard stock and is of a collapsible character, adapted to be quickly and easily erected from a flat knocked-down condition to an erected, operative condition, and to improved means for holding the carrier in said erected condition.

It is an object of the invention to provide an inexpensive, collapsible, paperboard bottle carrier of the foregoing type which is featured by a central, upstanding suspending panel of composite, multi-part character, side walls parallel to and on opposite sides of said panel, end walls at opposite ends thereof and a transverse partition structure extending between said respective side walls and central panel, in which novel means are employed to interconnect and lockingly engage said transverse partition structure with the elements of said central panel, including a separate wire handle member serving as a suspending element for the carrier and its contents and as a locking element to lock the aforesaid panel and partition parts in operative relation.

Yet another object of the invention is to provide a bottle carrier of the type referred to in the preceding paragraph, in which portions of said central panel are integrally connected to certain bottom defining panels of the carrier as a vertical extension thereof, and in which certain further, centrally disposed elements integrally connected to the end walls and said cross partition structure of the carrier are interleaved with said central panel portions when the latter are in erected condition, being locked thereto by a separate vertically depressible handle element of the carrier.

A still further object is to provide a bottle carrier of the open top type, well adapted to be loaded by standard automatic filling machines, in which the loaded bottles are well separated from and protected from damage by one another, which occupies a minimum of space in its flat knocked-down condition and which is quickly and easily erected manually to operative position and locked in said position by the handle member referred to.

More specifically, it is an object of the invention to provide a flexible paperboard bottle carrier of the open top, upstanding center panel type, characterized by cross partition elements which are cut from the material of the carrier side walls and from the center panel, in which said center panel is constituted in part by an integral, upstanding extension of the bottom of the carrier and in part by certain coacting plies of material which are cut from the end walls

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of the carrier, the arrangement being such that the center panel is interleaved, at its opposite ends, between said plies, said center panel being further provided with elongated apertures adjacent the interleaved portions for the reception of the terminal bails of a wire handle member, which serves to lock the parts in their operative interleaved relationship.

The foregoing statements are indicative in a general way of the nature of the invention, but other and more specific objects will be apparent to those skilled in the art upon a full understanding of the construction and operation of the device.

A single embodiment of the invention is presented herein for purpose of exemplification, but it will be appreciated that the invention is susceptible of incorporation in other modified forms coming equally within the scope of the appended claims.

In the drawings,

Fig. 1 is a plan view of a paperboard blank employed in the construction of the present bottle carrier, illustrating said blank following certain preliminary slitting, creasing and gluing operations performed thereon;

Fig. 2 is a plan view illustrating the blank preliminarily folded on itself and provided with a further application of glue;

Fig. 3 is a plan view illustrating the blank following a succeeding folding operation;

Fig. 4 is a plan view illustrating the carton produced by the operations shown in Figs. 1, 2 and 3, in the completed knocked-down condition of said carton;

Fig. 5 is a perspective view illustrating the carrier in its fully erected condition, ready for the reception of its intended contents; and

Fig. 6 is a view in transverse vertical section along a line generally corresponding to line 6—6 of Fig. 5, further illustrating details of structure and relationship of the carrier and coacting suspending member therefor.

Referring to Fig. 1 of the drawings, the carrier of the present invention is fabricated from a died out blank, generally designated 10, of flexible paperboard stock of a suitable grade or thickness. It will be noted that the blank comprises two main sections 11, 12 which are approximately symmetric about the connecting vertical, creased fold line 13. Accordingly, to the extent that the parts of these sections correspond, they will be indicated by corresponding reference numerals and a description of but one of the sections will suffice. Specific differences in detail will be specially indicated.

Each section includes an end wall and longitudinal partition defining panel 14, said panels being flexibly conjoined by the vertical crease 13 referred to above, and said respective panels

are in turn integrally and flexibly connected by a crease 15 with a side wall and cross partition defining panel 16. Each of the respective panels 14 and 16 is subdivided into further elements or sections which will hereinafter be referred to in detail.

The panels 16 have the margins thereof opposite the crease 15 defined by a further crease 17 parallel thereto. In the case of the panel which is a part of the section 11, the crease 17 serves to flexibly hinge thereto a flap 18 which ultimately serves as a glue lap for an end wall of the carrier. A further flap 19 is separated from flap 18 by a slot 20, which flap 19 ultimately serves as a glue lap associated with the longitudinal partition structure of the completed carrier. In the case of the panel 16 which is associated with the carrier section 12, the crease 17 serves to hingedly conjoin thereto the successive end wall and longitudinal partition defining panels 22, 22. These are flexibly connected to one another by a vertical crease 23 paralleling the crease 17.

The panels 14, 16 and 22 are provided with various slits which parallel the upper margin of the blank, as viewed in Fig. 1, and serve to subdivide said respective panels into various wall sections and partition elements as follows: Considering the side wall and cross partition defining panel 16 on the section 11 of the blank, an angled slit 24 extends from slot 20 inwardly, then downwardly, terminating at a distance from crease 17 approximately one-third the width of the panel, at the inner end of one of a pair of parallel vertical creases 25 in said panel. Said creases 25 are aligned with the sides of an outwardly projecting reinforcing flap 26 of rectangular shape. Another angled slit 27 similarly extends from the end of the other crease 25 across the marginal crease 15 of said panel. Slits 24, 27 subdivide the panel 16 into a side wall member 28 and a pair of like cross partition straps 29 which are disposed at a right angle to said wall member when the carton is erected to its operative position shown in Figs. 5 and 6.

The above mentioned slit 27 extends across crease 15 into the adjacent end wall and longitudinal partition defining panel 14, angling upwardly and terminating at the crease 13. Slit 27 thus subdivides one of the panels 14 into an end wall member 30 and a longitudinal partition forming element 31.

The shaped slits 33, 34 and 35 in the remaining panel 14, in the side wall panel 16 of the remaining main carrier sections 12, and in the panels 22 serve a like function in subdividing said respective panels into partition elements and wall members, in a manner which will be evident to those skilled in the art. Thus, slit 33 separates the panel 14 into longitudinal partition forming element 31 and an end wall member 30, and also separates a cross partition element 29 of the adjacent panel 16 from the wall proper of said panel. A corresponding portion of the slit 34 defines the further cross partition element or strap 29, while the terminal portion of said slit 34 separates the longitudinal partition strap or element 31 from an end wall member 30. Slit 35 separates the outermost panel 32 into a longitudinal partition element 37 and an end wall member 38.

It will be noted that the reinforcing flaps 26 are of sufficient size that, when folded inwardly onto the side members 28, as shown in dotted lines in Fig. 1, they overlie the termini of the respective slits 24, 27 and 33, 34, thereby acting to prevent tearing at these slit termini.

Each side wall member 28 has a rectangular bottom forming panel 40 flexibly conjoined along one side thereof by an elongated crease 41, the opposite margin of said panel being defined by a parallel crease 42. Said crease serves to flexibly conjoin a handle panel 43 to the bottom panel 40. These handle panels are each provided with a pair of elongated, predeterminedly spaced, vertically extending slots 43' for a purpose to be described. Foldable gussets 44 are hingedly connected to the bottom forming panels 40 by parallel creases or scores 45, said gussets being similarly hinged to the respective end wall members 16 and 30 by extensions 41' of the elongated crease 40. These gussets are subdivided by the diagonal creases 46, each terminating at the juncture of the respective creases 41' and 45.

In completing the carrier, adhesive 47 is applied to the blank at predetermined areas as indicated by stippling. These areas include the reinforcing flaps 26 and portions of the longitudinal partition defining elements 31 immediately adjoining the respective creases 13, 23, also to the longitudinal partition forming element 19 adjacent its outer end. The gussets 44 are also glued as shown. The flaps 26 are then folded inwardly and downwardly and adhered to the side wall members 28, after which the handle panels 43, bottom panels 40 and associated gussets 44 are similarly folded inwardly and downwardly about crease 41 and adhered at their glued areas to the respective conjoined parts of the blank.

This leaves the blank in the condition shown in Fig. 2, at which time further adhesive 48 is applied to the upper surface of one of the handle panels 43. The thus prepared blank is then folded about the medial crease 13 to the position of the parts illustrated in Fig. 3, and the carrier is brought to completed form by folding the partition element 37 and end wall member 38 inwardly and downwardly about crease 23 onto the adjacent corresponding partition element 19 and end wall member 18, as illustrated in Fig. 4.

By reference to Fig. 5 it will be noted that the down turned flap 26 not only affords an additional thickness of material at the side wall, it also extends past the lower termini of the creases 25 which hinge transverse partition elements 29 to the side walls. It thus serves as a block across the side wall slit which frees partition elements 29 from the side wall, preventing horizontal tear of the side wall in this relatively weak, slitted zone.

In erecting the carton to operative condition illustrated in Figs. 5 and 6, it is merely necessary to exert compressive pressure on the opposite end margins of the completed, knocked-down article represented by the creases 13, 23, causing the side walls 28 to separate in parallel relation to one another and the end wall sections 30, 30 and 18, 30, 38 to approach coplanar relation to one another at the respective opposite ends of the carrier. Said sections hinge about creases 13, 23 respectively toward position normal to side walls 28.

In completed condition, the pair of longitudinal partition elements 31 at one end of the carrier are secured to one another by the adhesive 47 immediately adjoining crease 13 to constitute a two-walled longitudinal partition structure adjacent one end of the carton. However the plies of said structure are partially separated at a zone

remote from said crease to form a longitudinal pocket 49 disposed inwardly of the adjacent carrier end wall, defined by sections 30, 30. The elements 19, 31 and 37 which are at the opposite end of the carrier are correspondingly adhered to one another to provide a like pocket 49 adjacent and inwardly of the crease 23 of said opposite end wall. Element 37 overlies the side of element 19 and reinforces the longitudinal partition structure at this point.

Coincident with the swinging of the end wall members of the carrier about the medial creases or hinges 13, 23 thereof, the adhesively connected handle panels 43 are drawn downwardly, flexing about creases 42, and the bottom panels 40 shift towards horizontal position, bending about the respective creases 41, due to the separation of the side wall members 28. Gussets 44 swing open about the diagonal creases 46 in a manner which will be apparent.

During the above operations the longitudinal partition structures constituted by the elements 31, 31 at one end of the carrier and the elements 18, 31, 37 at the other, shift inwardly to overlapping relation to the sides of the central, two-ply handle panel 43 as the latter moves downwardly in a plane paralleling side walls 28. The end margins of said two-ply handle are thus received in the unadhered pockets 49 between said respective elements, and, in this condition of the parts, a separate wire handle 50 (preferably of the type shown and described in my copending application Serial No. 37,482, filed July 7, 1948) is inserted in the handle slots 43' and drawn upwardly on opposite outer sides of the cross partition elements 29, to the position illustrated in Fig. 5. This causes the pocket defining elements to be clamped tightly against opposite sides of the handle panel 40, immediately adjacent said slots, whereby to lock the partition structure in its erected condition.

The handle 50 includes upstanding bails 51 of considerable length, which enables the handle to be depressed to or beneath the tops of bottles loaded in the carrier without releasing this frictionally locked connection of the cross and longitudinal partition members, thereby enabling loaded carriers to be stacked one on top of another. The curved formations 52 on the gripping bails 51' increase the effectiveness and stability of the frictional grip. If it is desired to dismantle the carrier, this is easily accomplished by removing the handle, after which the carrier is readily collapsed to a flat, knocked-down condition.

I claim:

1. A carrier for bottles or like articles, said carrier being formed from a one-piece blank of flexible material and including opposed parallel side walls, bottom defining sections hingedly connected to lower margins of said side walls, at least one of said bottom sections being provided with an integral, one-piece vertical extension disposed parallel to and between said side walls in the erected condition of the carrier, end walls flexibly hinged to opposed end margins of said side walls and connected transverse and longitudinal partition elements integrally hinged to said side and end walls respectively on hinges generally paralleling the hinging of said walls to one another, said longitudinal partition elements being in parallel clamped side-by-side relation to said vertical extension in the erected condition of the carrier, said side walls being provided with flaps integrally hinged thereto by horizontal creases, said flaps extending across termini of the creases hinging said transverse partition elements to said side walls, thereby to block tearing of said transverse partition elements at said termini.

2. A carrier for bottles or like articles, said carrier being formed from a one-piece blank of flexible material and including opposed parallel side walls, bottom defining sections hingedly connected to lower margins of said side walls, at least one of said sections being provided with an integral, one piece vertical extension disposed parallel to and between said side walls in the erected condition of the carrier, end walls flexibly hinged to opposed end margins of said side walls, and connected transverse and longitudinal partition elements integrally hinged to said side and end walls respectively, said longitudinal partition elements providing inwardly opening pockets therebetween and coplanar therewith aligned with and receiving said vertical extension in the erected condition of the carrier, in frictional clamping engagement with said extension, said side walls being provided with flaps integrally hinged thereto by horizontal creases, said flaps extending across termini of the creases hinging said transverse partition elements to said side walls, thereby to block tearing of said transverse partition elements at said termini.

3. A carrier for bottles or like articles, said carrier being formed from a one-piece blank of flexible material and including opposed parallel side walls, bottom defining sections hingedly connected to lower margins of said side walls and provided with an integral, one-piece vertical extension disposed parallel to and between said side walls in the erected condition of the carrier, end walls flexibly hinged to opposed end margins of said side walls, and connected transverse and longitudinal partition elements integrally hinged to said side and end walls respectively on hinges generally paralleling the hinge connections of said side and end walls to one another, said partition elements being separated from said respective walls by cuts in the blank intersecting the respective hinge connections of said side and end walls, said longitudinal partition elements being in parallel clamped side-by-side relation to said vertical extension in the erected condition of the carrier, said side walls being provided with flaps integrally hinged thereto by horizontal creases, said flaps extending across termini of the creases hinging said transverse partition elements to said side walls, thereby to block tearing of said transverse partition elements at said termini.

4. A carrier for bottles or like articles, said carrier being formed from a one-piece blank of flexible material and including opposed parallel side walls, bottom defining sections hingedly connected to lower margins of said side walls and provided with an integral, one piece vertical extension disposed parallel to and between said side walls in the erected condition of the carrier, end walls flexibly hinged to opposed end margins of said side walls, and connected transverse and longitudinal partition elements of vertical dimension less than that of said walls integrally hinged to said side and end walls respectively, said partition elements being separated from said respective walls by cuts in the blank intersecting the respective hinge connections of said side and end walls, said longitudinal partition elements providing inwardly opening pockets therebetween and coplanar therewith aligned with and receiving said vertical extension in the erected condition of the carrier, in frictional clamping engage-

ment with said extension, said side walls being provided with flaps integrally hinged thereto by horizontal creases, said flaps extending across termini of the creases hinging said transverse partition elements to said side walls, thereby to block tearing of said transverse partition elements at said termini.

5. A carrier for bottles or like articles, said carrier being formed from a one-piece blank of flexible material and including opposed parallel side walls, bottom defining sections hingedly connected to lower margins of said side walls and provided with an integral, one piece vertical extension disposed parallel to and between said side walls in the erected condition of the carrier, end walls flexibly hinged to opposed end margins of said side walls, and transverse and longitudinal partition elements of vertical dimension less than that of said walls integrally hinged to said side and end walls respectively on hinges generally paralleling the hinge connections of said side and end walls to one another, said partition elements being separated from said respective walls by cuts in the blank intersecting the respective hinge connections of said side and end walls, said longitudinal partition elements providing inwardly opening pockets therebetween and coplanar therewith aligned with and receiving said vertical extension in the erected condition of the carrier, in frictional clamping engagement with said extension, said bottom defining sections and vertical extension thereof being disposed between said carrier side walls in a relatively flat, knock-down condition of the carrier, said side walls being provided with flaps integrally hinged thereto by horizontal creases, said flaps extending across termini of the creases hinging said transverse partition elements to said side walls, thereby to block tearing of said transverse partition elements at said termini.

6. A carrier for bottles or like articles, comprising opposed parallel side walls, a pair of like bottom defining sections each hingedly connected to a lower margin of one of said side walls and provided with an integral, one-piece upright extension disposed parallel to and between said side walls in the erected condition of the carrier, end walls flexibly hinged to opposed end margins of said side walls, and transverse and longitudinal partition elements integrally hinged to said side and end walls respectively, said longitudinal partition elements each including a pair of plies connected to said end walls and extending inwardly thereof in side-by-side relation to one another, said plies providing pockets therebetween aligned with said bottom extension and slidably receiving the latter in the operation of erecting the carrier, said extension being provided with slots adjacent said pockets for the reception of a locking element to frictionally secure the extension between said partition plies in the erected condition of the carrier, said side walls being provided with flaps integrally hinged thereto by horizontal creases, said flaps extending across termini of the creases hinging said transverse partition elements to said side walls, thereby to block tearing of said transverse partition elements at said termini.

7. A carrier for bottles or like articles, comprising opposed parallel side walls, a pair of like bottom defining sections each hingedly connected to a lower margin of one of said side walls and provided with an integral, one-piece upright extension disposed parallel to and between said side

walls in the erected condition of the carrier, end walls flexibly hinged to opposed end margins of said side walls, and transverse and longitudinal partition elements integrally hinged to said side and end walls respectively, said partition elements being separated from said respective walls by cuts in the blank intersecting the respective hinge connections of said side and end walls, said longitudinal partition elements each including a pair of plies connected to said end walls and extending inwardly thereof in side-by-side relation to one another, said plies providing pockets therebetween aligned with said bottom extension and slidably receiving the latter in the operation of erecting the carrier, said extension being provided with slots adjacent said pockets for the reception of a locking element to frictionally secure the extension between said partition plies in the erected condition of the carrier, said side walls being provided with flaps integrally hinged thereto by horizontal creases, said flaps extending across termini of the creases hinging said transverse partition elements to said side walls, thereby to block tearing of said transverse partition elements at said termini.

8. A carrier for bottles or like articles, comprising opposed parallel side walls, a pair of like bottom defining sections each hingedly connected to a lower margin of one of said side walls and provided with an integral, one-piece upright extension disposed parallel to and between said side walls in the erected condition of the carrier, end walls flexibly hinged to opposed end margins of said side walls, transverse and longitudinal partition elements integrally hinged to said side and end walls respectively, said longitudinal partition elements each including a pair of plies connected to said end walls and extending inwardly thereof in side-by-side relation to one another, said plies providing pockets therebetween aligned with said bottom extension and slidably receiving the latter in the operation of erecting the carrier, said extension being provided with slots adjacent said pockets for the reception of a locking element to frictionally secure the extension between said partition plies in the erected condition of the carrier, and a bail type locking element slidably associated in said slots with said extension and partition plies, said side walls being provided with flaps integrally hinged thereto by horizontal creases, said flaps extending across termini of the creases hinging said transverse partition elements to said side walls, thereby to block tearing of said transverse partition elements at said termini.

EDWIN L. ARNESON.

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