

[54] **ARTICLE CARRIER**

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

[58] Field of Search **220/113, 112, 111**

[56] **References Cited**

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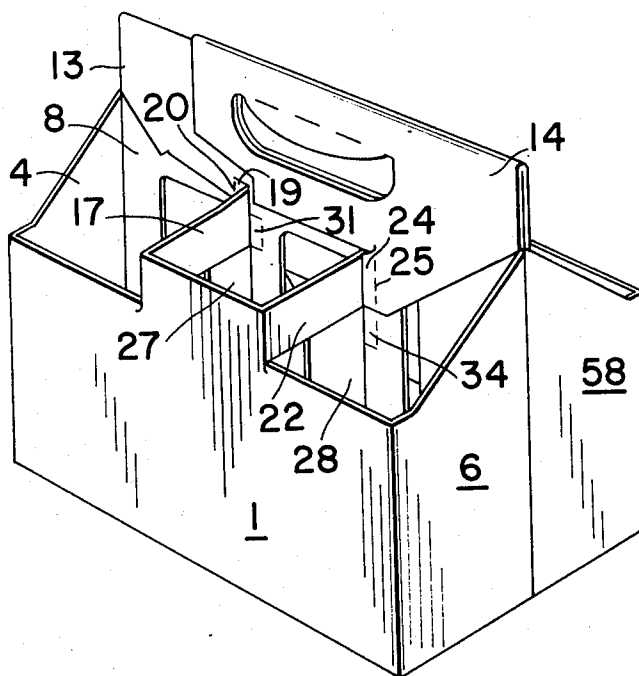
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[57] **ABSTRACT**

A basket style article carrier having full depth partition struc-

ture is formed from a single unitary blank. A partition element comprises a partition strip foldably joined to one side wall and to a handle panel through a relief tab arranged to render the partition strip extensible, and a transverse partition panel struck from longitudinal partition structure is adjoined thereto by a partition relief tab so that the effective length of the partition strip may be increased so as to afford hand gripping space adjacent the handle of the carrier. The longitudinal partition structure is arranged to extend to the bottom wall of the carrier and access to a locking tab disposed adjacent the bottom edge of the longitudinal partition structure is afforded by means of a hinge line adjoining the lowermost portion of the longitudinal partition structure to the upper part thereof so that when the carrier is set up the bottom wall engages and brushes to one side the lowermost portion of the longitudinal partition structure thereby to expose the locking notch for engagement by the end edge of the bottom wall. The carrier is strengthened by means of a medial partition panel which is struck from the pair of medial panels which form the longitudinal partition structure and folded downwardly along a diagonal fold line and is secured to an auxiliary reinforcing panel struck from one of the handle panels and folded downwardly into flat face contacting relationship to the medial partition.

10 Claims, 5 Drawing Figures



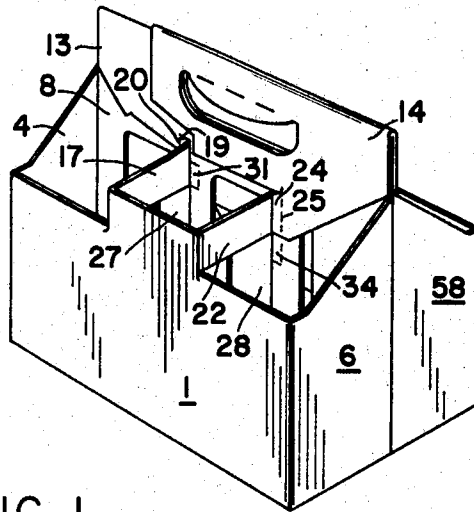


FIG. 1

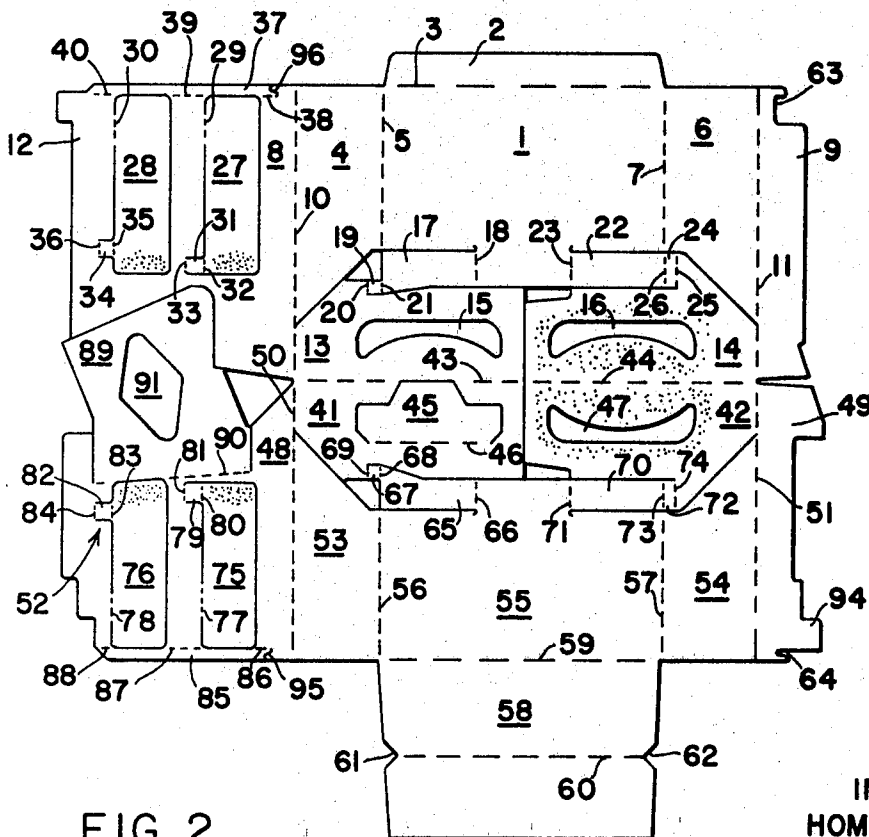


FIG. 2

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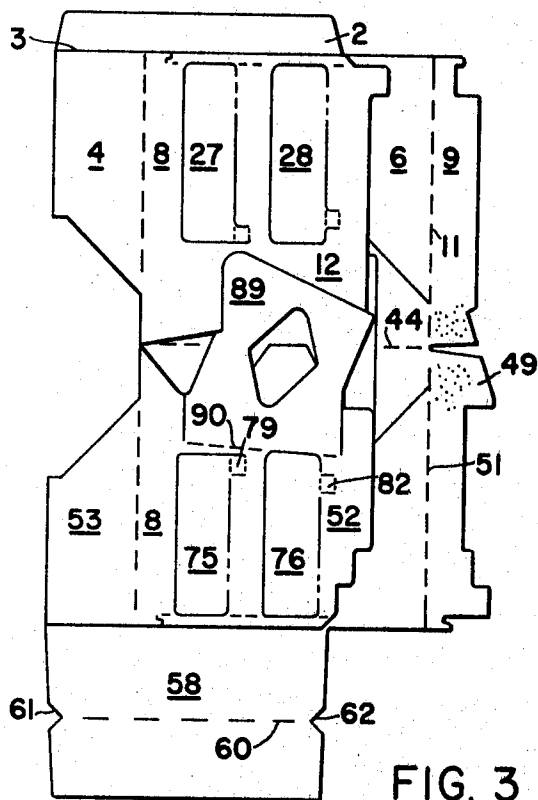


FIG. 3

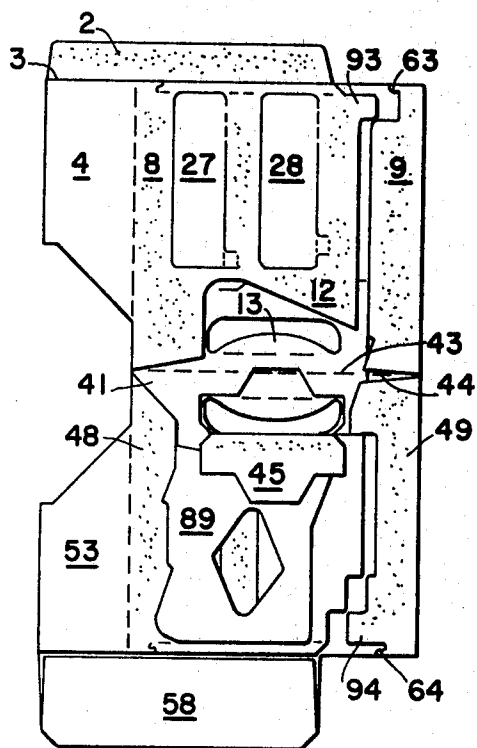


FIG. 4

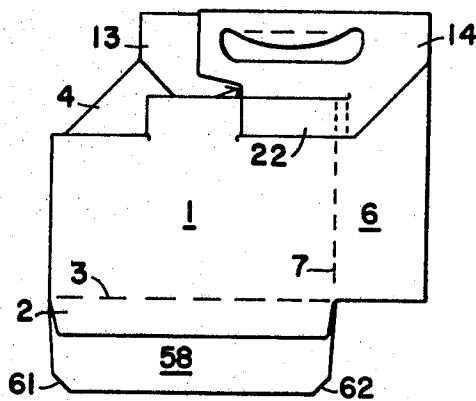


FIG. 5

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ARTICLE CARRIER

Basket style article carriers of the so-called full depth type wherein partition structure extends throughout the depth of the carton have been formed previously from a unitary blank but such structures have been very costly in that they require substantial amounts of material such as paperboard.

According to this invention, an economical yet sturdy article carrier is provided which is of the full depth type and which is formed from a unitary blank of paperboard. The carrier is rendered sturdy in part by the fact that longitudinal partition structure disposed beneath the handle is securely interconnected with the handle by virtue of an auxiliary reinforcing panel which is struck from one panel of the handle and folded downwardly into face contacting relationship and secured to a medial partition panel struck from the panels of the longitudinal partition structure and folded into flat face contacting relationship with one ply thereof. Hand gripping space is provided adjacent the handle by rendering the partition structure extensible. Toward this end partition strips are foldably joined to the side walls and are interconnected with the handle through strip relief tabs and a transverse partition panel struck from one panel of the longitudinal partition structure and secured in face contacting relationship to each partition strip is secured to the longitudinal partition structure through partition relief tabs. Thus the transverse partition strips may be effectively lengthened so as to afford hand gripping space adjacent the carrier handle. The longitudinal partition structure is extended completely to the bottom wall and in order to expose the locking notch disposed adjacent the bottom wall for engagement with the end edge thereof, the bottom edge of the longitudinal partition structure is yieldable and may be folded to one side so as to expose the locking notch for engagement by an end edge of the bottom wall.

For a better understanding of the invention reference may be had to the following detailed description taken in conjunction with the accompanying drawings in which

FIG. 1 is a perspective view of a set-up carrier constructed according to the invention;

FIG. 2 is a plan view of the blank from which the carrier of FIG. 1 is formed; and in which

FIGS. 3, 4 and 5 depict folding and gluing operations through which the blank of FIG. 2 is manipulated in order to form the completed collapsed carrier as shown in FIG. 5.

In the drawings the numeral 1 is used to designate a side wall of the carrier to which the glue flap 2 is foldably adjoined along the fold line 3. End wall panel 4 is foldably joined to side wall 1 along a fold line 5 while end wall panel 6 is foldably joined to side wall 1 along fold line 7. Riser panels 8 and 9 are foldably joined to end wall panels 4 and 6 along fold lines 10 and 11 respectively. As is apparent from FIG. 2, riser panel 8 is much wider than riser panel 9 and the left hand portion thereof constitutes a medial panel generally designated by the numeral 12. Handle panel 13 is foldably joined to riser panel 8 along fold line 10 while handle panel 14 is foldably joined to riser panel 9 along fold line 11. A hand gripping aperture 15 is formed in handle panel 13 and a similar hand gripping aperture 16 is formed in handle panel 14.

According to a feature of this invention, the transverse partition structure is rendered extensible so as to provide hand gripping space adjacent the handle of the carrier. Toward this end partition strip 17 is foldably joined at one end to side wall 1 along a fold line 18 and is anchored at the other end to handle panel 13 by means of a strip relief tab designated by the numeral 19 which tab is foldably joined to handle panel 13 along fold line 20 and to partition strip 17 along fold line 21. Ordinarily strip relief tab 19 is disposed in the plane of handle panel 13 but is arranged to swing out of the plane of that panel along fold line 20 so as to increase the effective length of partition strip 17 when a tension force is applied thereto. In like fashion partition strip 22 is foldably joined to side wall 1 along fold line 23 and to handle panel 14 by way of strip relief tab 24 which is foldably joined to handle panel 14 along fold line 25 and to partition strip 22 along a fold line 26. Partition strip 22 is extensible in a manner similar to partition strip 17.

In order to provide full depth transverse partition elements, downwardly extending partition panels 27 and 28 are struck from medial panel 12 and are foldably joined thereto along fold lines 29 and 30 respectively.

The partition panel 28 is secured to medial panel 12 by partition relief tab 31 which is foldably joined to transverse partition panel 27 along fold line 32 and to medial panel 12 along fold line 33. In similar fashion transverse partition panel 28 is foldably joined to medial panel 12 by means of partition relief tab 34 which is foldably joined to transverse partition panel 28 along fold line 35 and to medial panel 12 along fold line 36. A lowermost part 37 of medial panel 12 is foldably joined thereto along fold lines 38, 39 and 40, the upper edge of the lowermost part 37 of medial panel 12 coinciding with the lower edge of transverse partition panels 27 and 28.

The other side of the carrier is similar to that just described and comprises a pair of handle panels 41 and 42 which are foldably joined to handle panels 13 and 14 along medial fold lines 43 and 44 respectively. An auxiliary reinforcing panel 45 is struck from handle panel 41 and is foldably joined thereto along the fold line 46. Hand gripping aperture 47 is formed in handle panel 42. Riser panels 48 and 49 are foldably joined to handle panels 41 and 42 along fold lines 50 and 51 respectively. Riser panel 48 like riser panel 8 is quite wide and the left hand portion thereof as viewed in FIG. 2 is generally designated by the numeral 52 and is herein referred to as a medial panel. Riser panel 48 is foldably joined to end wall panel 53 along fold line 50 while end wall panel 54 is foldably joined to riser panel 49 along fold line 51. Side wall 55 is foldably joined to end wall panel 53 along fold line 56 and to end wall panel 54 along fold line 57. Bottom wall panel 58 is foldably joined to side wall 55 along fold line 59 and is provided with a medial fold line 60 at the ends of which a pair of locking notches 61 and 62 are disposed.

For cooperating with locking notch 62, a locking notch 63 is formed in riser panel 9 and a cooperating corresponding locking notch 64 is formed in riser panel 49. The notches 63 and 64 form a composite notch well known in the art.

Partition strip 65 is foldably joined to side wall 55 along a fold line 66 and to handle panel 41 by means of a strip relief tab 67 which is foldably joined to partition strip 65 along fold line 68 and to handle panel 41 along fold line 69. In similar fashion, partition strip 70 is foldably joined to side wall 55 along fold line 71 and to handle panel 42 by means of strip relief tab 72 which is foldably joined to partition strip 70 along fold line 73 and to handle panel 42 along fold line 74.

Transverse partition panels 75 and 76 are struck from medial panel 52 and are foldably joined thereto along fold lines 77 and 78 respectively. As explained previously in connection with fold lines 29 and 30, fold lines 77 and 78 are temporary fold lines which are ruptured when the carton is set up. Partition relief tab 79 is foldably joined to transverse partition panel 75 along fold line 80 and to medial panel 52 along fold line 81. In similar fashion partition relief tab 82 is foldably joined to transverse partition panel 76 along fold line 83 and to medial panel 52 along fold line 84.

Lowermost part 85 of panel 52 is foldably joined thereto along fold lines 86, 87 and 88.

In order to reinforce the carrier medially thereof and in the region underneath the handle and also to provide a medial separator between the bottles on one side of the handle and those on the other side of the handle, a medial partition panel 89 is struck from medial panels 12 and 52 and is foldably joined to medial panel 52 along diagonal fold line 90. A generally diamond shaped cut-out area 91 is formed in medial partition panel 89.

In order to form the carrier as shown in FIGS. 1 and 5 from the blank depicted in FIG. 2, an application of glue is made to the inner surface of handle panels 14 and 42 as indicated by stippling in FIG. 2 and to the transverse partition panels 27, 28, 75 and 76 also as indicated by stippling in FIG. 2. Thereafter end wall panels 4 and 53 and the structure to the left of fold lines 10 and 50 is elevated and swung upwardly and

toward the right along the fold lines 5 and 56. This operation causes the handle panels 13 and 41 to become elevated and swung to the right and into face contacting relation with the interior surfaces of handle panels 14 and 42. Simultaneously, partition strip 17 swings upwardly and toward the right along its fold lines 18 and of course simultaneously hinges about the fold line 21. Of course partition strip 65 also swings upwardly and toward the right along the hinge line 66 while simultaneously folding about the fold line 68. Upon completion of this folding operation, the blank appears as shown in FIG. 3. Of course this operation causes the upper part of transverse partition panels 27, 28, 75 and 76 to become adhered to the partition strips 17, 26, 65 and 70 respectively.

An application of glue is then made to the upper ends of riser panels 9 and 51 in the region adjacent fold line 44 and these panels are then swung upwardly and toward the left along the fold lines 11 and 51 to occupy the positions depicted in FIG. 4. In addition, the bottom panel 58 is collapsed on itself along medial fold line 60 and in addition the medial partition panel 89 is folded upwardly and forwardly along its diagonal fold line 90 following which folding operation, auxiliary reinforcing panel 45 is folded downwardly along its fold line 46, an application of glue having been interposed between the contacting faces of medial partition panel 89 and auxiliary reinforcing panel 45. Upon completion of these folding operations, the blank appears as depicted in FIG. 4. In FIG. 4 it is apparent that a protruding tab 93 is integrally formed on medial panel 12 and a protruding tab 94 is formed on riser panel 49 immediately above the locking notch 64.

In order to complete the carrier, an application of glue is made to the blank as indicated by stippling in FIG. 4 and thereafter the side wall 1, glue flap 2 and all parts of the blank disposed above the fold lines 43 and 44 are lifted and folded forwardly and downwardly to occupy the positions depicted in FIG. 5. Of course, this operation causes the glue flap 2 to become affixed to the upper edge of bottom wall 58 and also causes riser panel 9 to become secured to riser panel 49 while riser panel 8 adheres to riser panel 48. The inner surfaces of the handle panels are secured to each other. Projection 93 becomes adhered to projection 94 to form a strut which is disposed medially of the carrier and near the bottom thereof.

In order to set the carrier up from its collapsed condition shown in FIG. 5 to the condition depicted in FIG. 1, it is simply necessary to hold the side wall 1 against movement toward the left and to apply a force toward the left to the right hand edge of end wall panel 6.

It is necessary to utilize the locking action of locking notch 61 when the carrier is set up. Toward this end, the end portion 95 of riser panel 48 which is severed from the lowermost part 85 of medial panel 52 and the corresponding part 96 of medial panel 12 are arranged to define a notch similar to composite locking notch 63, 64.

From FIG. 2 it is apparent that the bottom edge of medial panel 52 and the bottom edges of end wall panels 53 and 54 coincide with the bottom edge of riser panels 48 and 49. Thus in order to cause the locking notch 61 to engage the locking notch 95, 96, it is necessary to expose the composite notch 95, 96. Toward this end upward movement of bottom panel 58 is effective to brush the lowermost part 87 of medial panel 52 to one side. Of course the lowermost portion 37 of medial panel 12 is simultaneously brushed to one side. In this manner locking notch 61 is afforded access to the composite locking notch 95, 96.

From the above description it is apparent that the longitudinal structure comprising medial panels 12 and 52 affords bottle protection completely down to the bottom panel 58. While the carton is locked, the lowermost parts of the medial panels 12 and 52 designated by the numerals 37 and 85 may be disposed at a slight angle to vertical. These panels can be received under the heels of the bottles without difficulty.

According to another feature of the invention, the carrier is rendered structurally strong in the region underneath the handle. This feature is achieved by the expedient of the medial

partition panel 89 which is a part of the longitudinal partition structure. Having been struck from the medial panels 12 and 52, panel 89 is affixed to the handle panels by virtue of the glued connection with the auxiliary reinforcing panel 45. Thus the carrier is rendered strong throughout the medial part thereof. Of course the diamond shaped opening 91 in medial partition panel 89 affords an opportunity for gluing through that panel of the part of medial panel 12 which is disposed between transverse partition panels 27 and 28 to that part of medial panel 52 which is disposed between transverse partition panels 75 and 76 as indicated by the stippling in FIG. 4.

In order to provide hand gripping space adjacent the handle panels it is simply necessary to tilt the middle bottles outwardly so as to impart a tension stress to the partition strips 17 and 26 on one side of the handle and to the partition strips 65 and 70 on the other side of the handle. These strips are allowed to extend their effective length by simply causing the strip relief tabs 19, 24, 67 and 72 to swing out of the planes of their associated handle panels 13, 14, 41 and 42 to occupy an angular relationship thereto. Simultaneously, outward movement of the transverse partition panels 27, 28, 75 and 76 is accommodated by the partition relief tabs 31, 34, 79 and 82. These partition relief tabs simply swing about their fold lines 33, 36, 81 and 84 to occupy angular positions relative to the medial panels 12 and 52. With reference to partition strip 22 and transverse partition panel 28, it is apparent from FIG. 1, for example, that strip relief tab 24 is disposed on the same side of the partition strip as is the partition relief tab 34. In the case of partition strip 17, however, the strip relief tab 19 is disposed on the opposite side of partition strip 17 from the partition relief tab 31 which is associated with transverse partition panel 27. Thus an outward force supplied to the bottle disposed between partition strips 17 and 26 effectively swings the strip relief tabs and the partition relief tabs out of the planes of the panels from which they are struck thereby to accommodate outward bodily movement of partition panels 27 and 28 away from the handle in unison with elongation of the partition strips 17 and 26.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An article carrier comprising a bottom wall, opposed side walls joined to said bottom wall along the side edges thereof, end wall panels joined to the ends of said side walls and extending transversely inward therefrom with the inner edges thereof disposed medially of the carrier at each end thereof, riser panels joined to the inner edges of said end wall panels, the riser panels at each end of the carrier being secured together in flat face contacting relation, a multiply medial handle secured at its ends to the riser panels at each end of the carrier, at least one transverse partition strip foldably joined to each side wall, a strip relief tab foldably joined to one ply of said handle on each side thereof and to the inner end of the adjacent one of said transverse partition strips, each of said strip relief tabs being normally disposed in the plane of its associated handle ply and being arranged to swing outwardly out of the plane of its associated ply so as to increase the effective length of its associated partition strip, a multiply longitudinal partition structure disposed underneath and in coincidental relation to said handle and extending between said riser panels at both ends of the carrier, a transverse partition panel struck out of one ply of said longitudinal partition structure on each side thereof and secured in face contacting relation to the adjacent one of said partition strips, and a partition relief tab foldably joined to each of said partition panels along an edge thereof adjacent said longitudinal partition structure and to one ply of said longitudinal partition structure, said partition relief tabs being normally disposed in the plane of the associated ply of said longitudinal partition structure and being arranged to swing outwardly from the plane thereof about the fold line therebetween so as to accommodate outward movement of said transverse partition panel in unison with an increase in the effective length of the associated partition strip.

2. A carrier according to claim 1 wherein said strip relief tab and said partition relief tab extend in opposite directions longitudinally of the carrier from the inner edges of said transverse partition strip and of said transverse partition panel respectively.

3. A carrier according to claim 1 wherein said strip relief tab and said partition relief tab extend in the same direction longitudinally of the carrier from the inner edges of said transverse partition strip and of said transverse partition panel respectively.

4. A carrier according to claim 1 wherein each of said partition relief tabs is disposed adjacent the lower edge of the associated transverse partition strip.

5. A carrier according to claim 1 wherein a locking notch is formed in the riser panels at the lowermost ends thereof at at least one end of the carrier for engaging the adjacent end of said bottom wall and wherein the lowermost part of said longitudinal partition structure is disposed at the level of said notch in said riser panels and wherein said lowermost part of said longitudinal partition structure is hingedly connected with the upper part of said partition structure whereby upward locking movement of said bottom wall effects sidewise swinging movement of said lowermost part of said longitudinal partition structure so as to expose said notch for locking engagement with the end edge of said bottom wall.

6. A carrier according to claim 1 wherein said longitudinal partition structure comprises a pair of inner medial panels integral with the riser panels at one end of the carrier and secured to the riser panels at the other end of the carrier and wherein a medial reinforcement partition panel is struck from both of said inner medial panels and foldably joined to the top edge of one of said inner medial panels along a diagonal fold line and disposed in flat face contacting relation therewith.

7. A carrier according to claim 6 wherein an auxiliary reinforcing panel is struck from one ply of said handle and folded downwardly into face contacting relation with said medial partition panel and secured thereto so as to afford a secure bracing connection between said handle and said longitudinal partition structure.

8. A carrier according to claim 6 wherein the general configuration and diagonal disposition of said medial reinforcement partition panel is such that one riser panel at one end of the carrier is wider than the other adjacent riser panel at the upper end thereof so as to afford reinforcement for the handle.

9. An article carrier comprising a bottom wall, opposed side walls joined to said bottom wall along the side edges thereof, end wall panels joined to the ends of said side walls and extending transversely inward therefrom with the inner edges thereof disposed medially of the carrier at each end thereof, riser panels joined to the inner edges of said end wall panels, the riser panels at each end of the carrier being secured together in flat face contacting relation and the riser panels at one end of the carrier being extended medially inward and constituting medial panels secured together to form longitudinal partition structure, a multiply medial handle secured at its ends to the riser panels at each end of the carrier, a locking notch formed in the riser panels at the lowermost ends thereof at at least one end of the carrier for engaging the adjacent end of said bottom wall and the lowermost part of said longitudinal partition structure being disposed at the level of said notch in said riser panels and said lowermost part of said longitudinal partition structure being hingedly connected with the upper part of said partition structure whereby upward locking movement of said bottom wall effects sidewise swinging movement of said lowermost part of said longitudinal partition structure so as to expose said notch for locking engagement with the end edge of said bottom wall.

10. An article carrier comprising a bottom wall, opposed side walls joined to said bottom wall along the side edges thereof, end wall panels joined to the ends of said side walls and extending transversely inward therefrom with the inner edges thereof disposed medially of the carrier at each end thereof, riser panels joined to the inner edges of said end wall panels, the riser panels at each end of the carrier being secured together in flat face to face contacting relation, and the riser panels at one end of the carrier extending longitudinally inward of the carrier to form inner panels of a longitudinal partition structure, a multiply medial handle secured at its ends to the riser panels at each end of the carrier, a medial reinforcement partition panel struck from said inner panels and foldably joined to the top edge of one of said inner panels along a diagonal fold line and disposed in flat face contacting relation therewith, and an auxiliary reinforcing panel struck from one ply of said handle and folded downwardly into face to face contacting relation with said medial reinforcement partition panel and secured thereto so as to afford a secure bracing connection between said handle and said longitudinal partition structure.

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