

March 11, 1969

H. W. FORRER

3,432,073

ARTICLE CARRIER

Filed May 5, 1967

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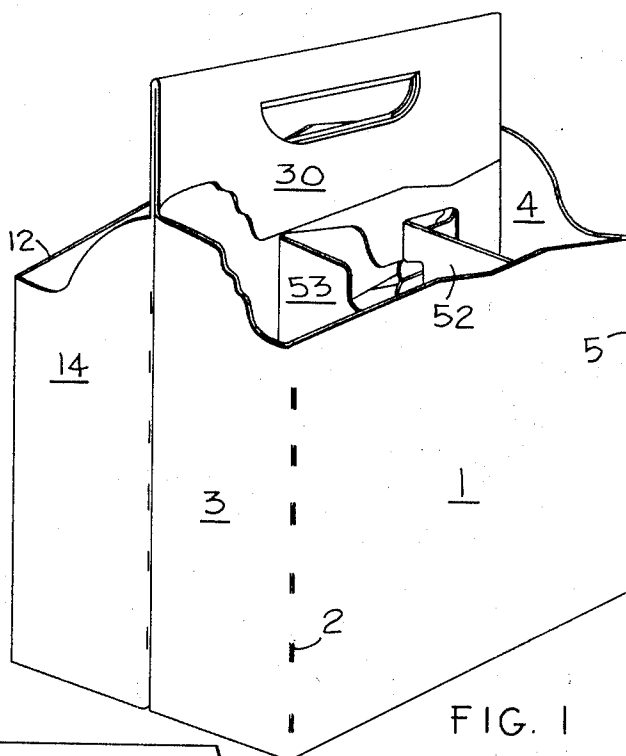


FIG. 1

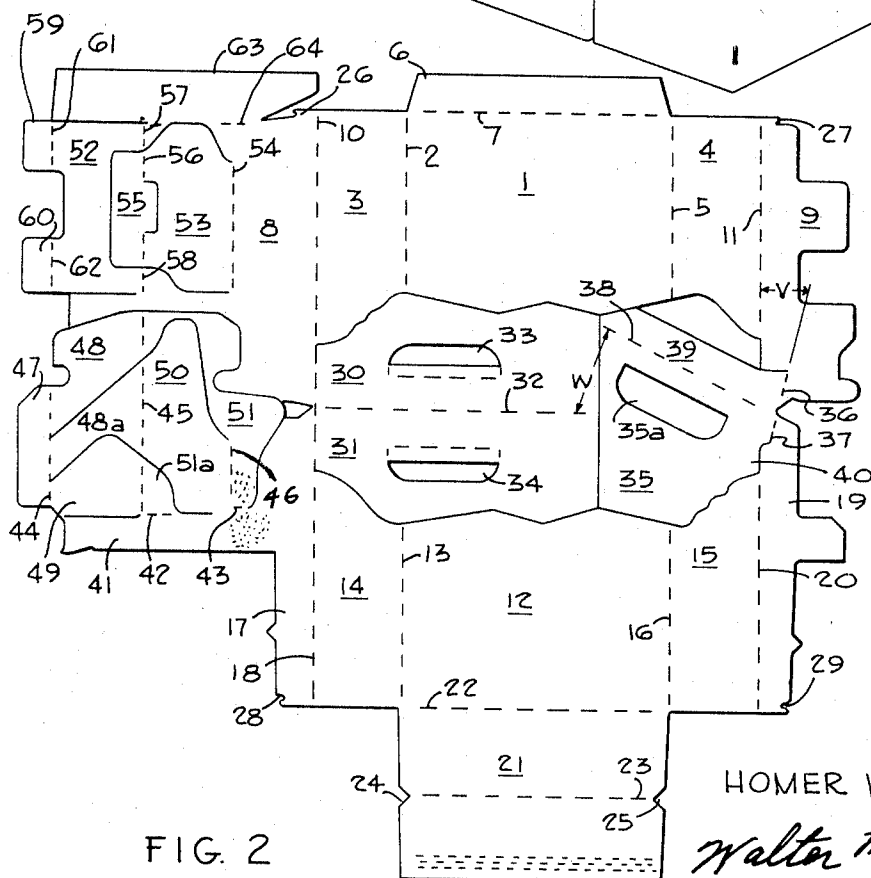


FIG. 2

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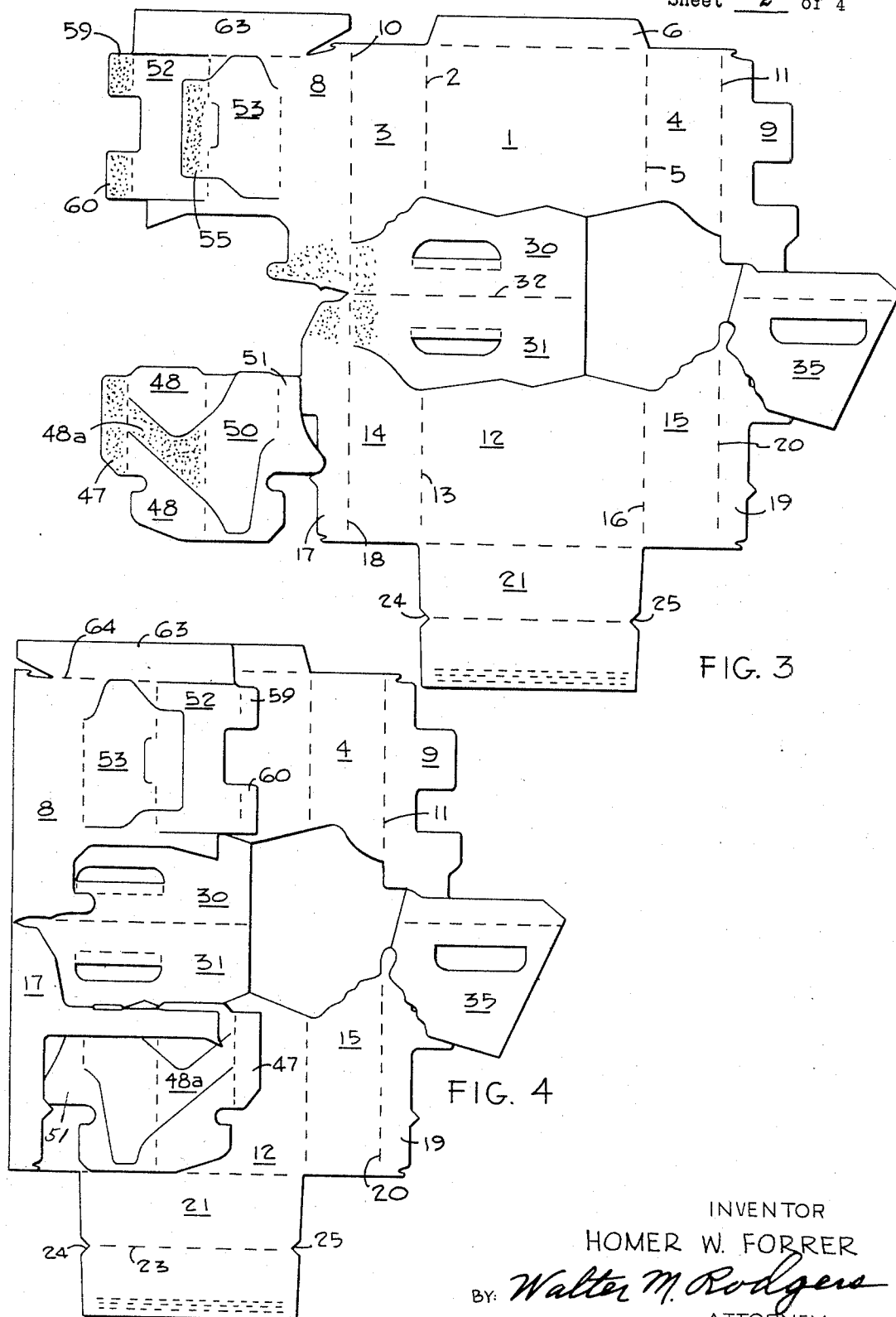


FIG. 3

FIG. 4

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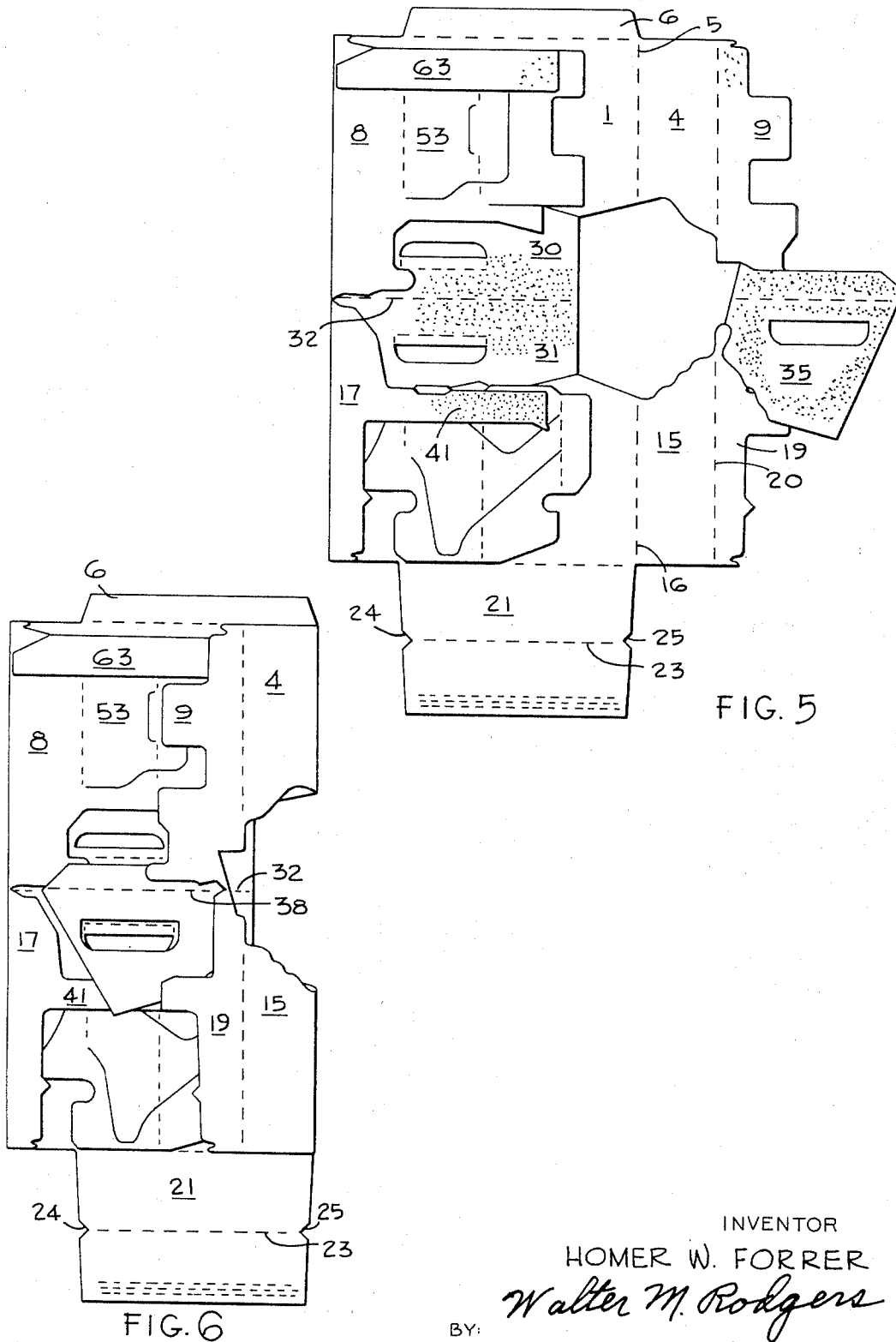


FIG. 5

FIG. 6

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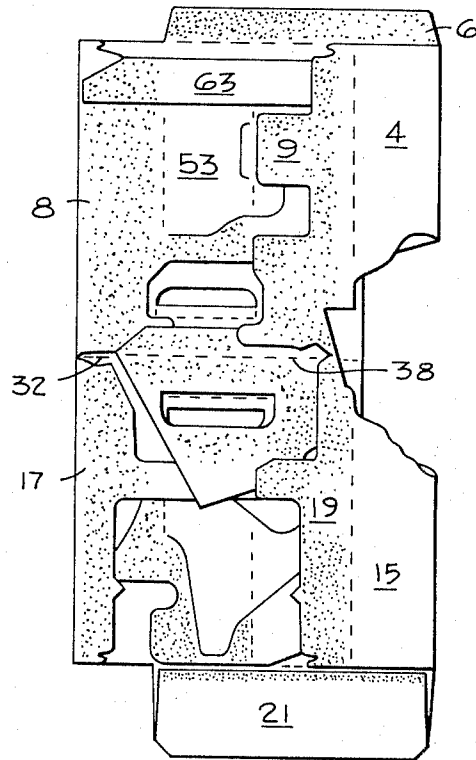


FIG. 7

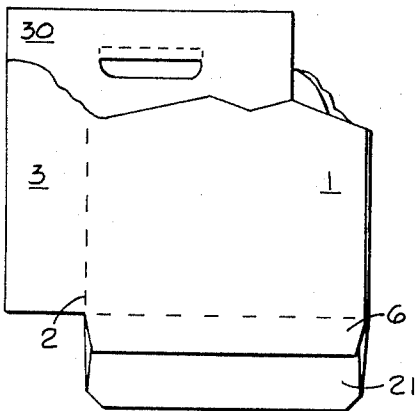


FIG. 8

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3,432,073

ARTICLE CARRIER

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U.S. Cl. 220-113

Int. Cl. B65d 75/24, 75/56

7 Claims

ABSTRACT OF THE DISCLOSURE

A basket style article carrier having bottom and side walls together with end wall panels is provided with a pair of outer handle panels between which a medial reinforcing partition is disposed, such partition being foldably joined at one end of the carrier to a pair of upstanding riser panels which in turn are secured in face contacting relation to each other and foldably joined to the associated end wall panels. At the other end of the carrier, a pair of riser panels are foldably joined to the end wall panels and secured to each other in face contacting relation and to the outer handle panels and one such riser panel is provided with a longitudinal medial strut to which transverse partitioning structure is foldably joined. A medial keel panel is foldably joined to a combination medial and transverse partition structure which is integrally formed with the other riser panel at the said other end of the carrier.

U.S. Patent 2,537,452 discloses and claims a handle structure wherein a pair of outer handle panels are secured respectively to riser panels at one end of the carrier and arranged in telescopic relation to a similar pair of handle panels secured to riser panels at the other end of the carrier. Such handle panels do not extend the entire length of the carrier.

According to the present invention, a pair of outer handle panels are constructed so as to extend for substantially the entire length of the carrier and a pair of internal reinforcing panels constitute medial reinforcing partitioning means secured to riser panels at the other end of the carrier along a diagonal fold line. The medial reinforcing partition structure is arranged in the carrier blank so that a fold line between the two panels thereof is disposed at an angle to the fold line between the outer handle panels which is approximately twice the angle between the diagonal fold line and the fold line which adjoins the riser panels and the end wall panels. According to a feature of the invention, transverse partitioning structure is overfolded and adjoined to a medial strut forming an extension of a riser panel at the end of the carrier opposite from the medial reinforcing partition structure and preferably at the same end of the carrier a large riser panel is formed which constitutes a combination medial and transverse partitioning structure to a bottom end edge of which a medial keel panel is foldably joined.

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 a unitary blank from which the carrier of FIG. 1 is formed; FIGS. 3-7 depict various glueing and folding operations performed on the blank depicted in FIG. 2 in order to form a complete collapsed carrier as depicted in FIG. 8.

In the drawings, the numeral 1 depicts a side wall of the carrier to an end edge 2 of which an end wall panel 2 is foldably joined. End wall panel 4 is foldably joined to the opposite end edge 5 of side wall 1 while a glue flap 6 is foldably joined to the bottom edge of side wall 1 along a fold line 7. Riser panels 8 and 9 are foldably joined to end wall panels 3 and 4 along fold lines 10 and 11 respectively.

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On the opposite side of the carrier, a side wall 12 is foldably joined along an end edge 13 thereof to an end wall panel 14 and at the other end of the carrier an end wall panel 15 is foldably joined to side wall panel 12 along fold line 16. A riser panel 17 is foldably joined to end wall panel 14 along fold line 18 and riser panel 19 is foldably joined to end wall panel 15 along fold line 20. Bottom panel 21 is foldably joined along fold line 22 to the bottom edge of side wall 12 and is provided with a medial fold line 23. A pair of notches 24 and 25 are formed at the ends of fold line 23 and cooperate in known manner with notches 26-29 formed in riser panels 8, 9, 17 and 19 respectively.

The handle structure of the carrier comprises a pair of full length outer handle panels 30 and 31 connected together along a medial fold line 32. Handle panel 30 is foldably joined to riser panel 8 along fold line 10 while handle panel 31 is foldably joined to riser panel 17 along fold line 18. Hand gripping apertures 33 and 34 are formed in outer handle panels 30 and 31 respectively in known manner.

In accordance with one feature of the invention, medial reinforcing partition structure 35 is foldably joined both to riser panels 9 and 19 along diagonal fold lines 36 and 37 which are arranged in alignment with each other. Hand gripping aperture 35a is formed in medial reinforcing partition structure 35 and a fold line 38 serves to separate the medial reinforcing partition structure into a pair of panels 39 and 40. According to a facet of the invention, fold line 38 is disposed at an angle W to the fold line 32 which is approximately twice the diagonal angle V by which fold line 36 and 37 are disposed with respect to the fold lines 11 and 20. This facet of the invention results in the approximate alignment of fold line 38 with fold line 32 when the carton is assembled as will be explained more fully.

For the purpose of providing transverse partitioning structure on the side of the carton adjacent the side wall 12, a medial strut 41 is formed integral with the riser panel 17. Transverse partitioning structure is secured to the medial strut 41 at short fold lines 42 and 43 and comprises a plurality of vertically disposed fold lines 44, 45 and 46. The transverse partitioning structure is secured to side wall 12 by simply affixing thereto by glue or another means the glue flap 47 and the small panel 48a which extends between fold lines 44 and 45. By arranging the transverse partitioning structure so that it straddles the medial fold line 32 areas of the blank opposite handle panels 30 and 31 are used and easy nesting of adjacent blanks is accommodated.

The transverse partitioning structure as depicted in the drawings is for the purpose of forming three cells between the handle and side wall 12 and constitutes a pair of transverse partition elements 48 and 49 which extend between the fold lines 44 and 45 and which in the assembled carrier are disposed in vertical alignment. A second transverse partitioning element is designated by the numeral 50 and extends between fold lines 45 and 46 and in the assembled carton extends transversely between the side wall 12 and the handle structure. The structure designated by the numeral 51 and which extends at its upper left hand edge from the fold line 45 above the transverse panel 50 and down to the fold line 43 as well as the small tab 51a defined by the bottom end of fold line 45 and the fold line 42 constitute medial panels which are disposed immediately underneath the handle panel and which are secured to the elements on the other side of the handle and which are disposed medially of the carrier.

In order to provide a combination medial and transverse partitioning structure which is disposed between the side wall 1 and the handle, the riser panel 8 is enlarged substantially so as to provide a pair of transverse panels

52 and 53. Panel 53 is foldably joined along fold line 54 to riser panel 8 and is provided with a glue flap 55 which is foldably joined along fold line 56 to the transverse panel 53. Thus with the glue flap 55 secured in flat face contacting relation in an appropriate position to the inner surface of side wall 1, panel 53 is disposed transversely with respect to the carrier and aids in defining a pair of cells.

In like fashion, transverse partition element 52 is foldably joined to riser panel 8 along fold lines 57 and 58 and is provided with a pair of glue flaps 59 and 60 which are foldably joined respectively to transverse partition element 52 along fold lines 61 and 62. Thus glue flaps 59 and 60 are affixed in an appropriate position to the inner surface of side wall 1 and transverse element 52 aids in forming a partition between a pair of adjacent cells on one side of the carrier.

In order to provide medial separation and support for the carrier, a keel panel 63 is foldably joined along fold line 64 to a part of riser panel 8 and to the small tab to the right of fold line 57 and above the transverse panel 53. Of course the keel panel 63 is severed by cut lines from transverse panels 52 and 53 as best shown in FIG. 2.

In order to perform the first folding separation, an application of glue is made to the blank depicted in FIG. 2 as indicated by stippling in the region adjacent the fold lines 43 and 46 and the transverse partitioning structure comprising panels 48, 50 and associated structure is swung forwardly and downwardly about the fold lines 42 and 43 to occupy the position depicted in FIG. 3. In like fashion, the medial reinforcing partition 35 is folded upwardly and outwardly along the fold lines 36 and 37 to occupy the position depicted in FIG. 3.

An application of glue is then made to the blank depicted in FIG. 3 as indicated by stippling in that figure. The next folding operation results in structure as depicted in FIG. 4 and simply constitutes swinging the riser panels 8 and 17 upwardly and toward the right along the fold lines 10 and 18 respectively. Such operation of course causes the transverse partitioning structure including panels 48 and 50 and associated elements as well as the medial strut 41 to swing over into face contacting relation with side wall 12 and simultaneously the combination medial and transverse partitioning structure associated with riser panel 8 falls into flat face contacting relation with the side wall 1. This folding operation causes the riser panel 8 to adhere to the inner surface of the left-hand end of handle panel 30 and also causes the riser panel 17 to adhere to the inner surface of outer handle panel 31. In like fashion, the glue flap 47 and the panel 48a are affixed to the inner surface of side wall 12. Of course glue flaps 59 and 60 as well as glue flap 55 become adhered to the inner surface of side wall 1 upon completion of the folding operation depicted in FIG. 4.

The keel panel 63 is then folded upwardly and forwardly from the position depicted in FIG. 4 to that depicted in FIG. 5 and the blank then appears as depicted in FIG. 5.

An application of glue is then made to the blank depicted in FIG. 5 as indicated by stippling on the right hand end of the keel panel 63 the bottom end of riser panel 9, medial reinforcing partition 35 and the inner surfaces of handle panels 30 and 31 and of medial strut 41. The end panels 4 and 15 are then lifted upwardly and swung toward the left along their respective fold lines 5 and 16 so as to swing the medial reinforcing partition 35 into flat face contacting relation with the inner surface of the handle panels 30 and 31 and so as to cause the stippled surface of riser panel 9 to adhere to the right hand end of keel panel 63. Simultaneously the lower downwardly protruding tip of medial reinforcing partition 35 is adhered to medial strut 41 as is the upper end of riser panel 19. Since medial strut 41 and riser panel 19 are secured together, the strength of the carrier is substantially enhanced by one facet of the invention.

It is apparent that the diagonal disposition of medial partition 35 as shown in FIG. 2 results in structure as shown in FIG. 6 which completely interconnects the riser panels 4, 15 with riser panels 8 and 17 and also affords a full hand hole 35a which coincides with hand gripping apertures 33 and 34. In this way the handle is greatly strengthened according to the invention. Furthermore the diagonal relationship between medial partition 35 and the other parts of the blank inherently provides a downwardly projecting keel at the center cell which separates the center articles on opposite sides of the handle. This keel can also be used as an anchor point to which separate inserts if used can be attached.

The blank as depicted in FIG. 6 is then manipulated by folding the bottom panel 21 medially along its fold line 23 by simply elevating the lowermost portion of panel 21 upwardly and forwardly so that the lower portion of bottom wall 21 is disposed in flat face contacting relation with the upper portion thereof and the blank then appears as depicted in FIG. 7.

An application of glue is then made to the blank as depicted in FIG. 7 at the places indicated by stippling and the handle panel 30, side wall 1 and parts associated therewith are lifted and folded forwardly along the fold lines 32, 38 so that the blank then appears in completed form as shown in FIG. 8. Of course the glue flap 6 is adhered to the upper edge of bottom wall 21 and the corresponding areas disposed symmetrically on opposite sides of the fold lines 32 and 38 become adhered to each other to form a medial partition for the carrier immediately below the handle.

By the invention an unusually strong as well as economical structure is provided. In this connection it is apparent that the medial reinforcing partition 35 is disposed inside the outer handle panels 30 and 31 and extends completely between the riser panels 9 and 19 at one end of the carrier and the riser panels 8 and 17 at the other end so that an unusually strong reinforcement is thus afforded while at the same time outer handle panels 30 and 31 may extend the full length of the carrier. The diagonal arrangement of medial reinforcing partition 35 results in a downwardly extending partition between the center cells on opposite sides of the handles affording article separation and protection and also providing a study area to which separate partitioning inserts may be glued if desired. For example, this facet of the invention may be applied to a carrier in which shallow straps extend from each side wall to the adjacent outer handle panel and in which full depth partition inserts are incorporated. In such case the transverse partitioning structure adjacent side wall 12 and the combination medial and transverse partitioning structure adjacent side wall 1 would not be necessary. Furthermore the medial strut 41, disposed immediately below the handle panels 30 and 31, interconnects the riser panels 17 and 8 at one end of the carrier with the riser panels 19 and 9 at the other end thus affording additional reinforcement for the carrier. The keel 63 affords a measure of support but primarily this element serves to separate the bottom portions of the articles disposed on one side of the handle from the bottom portions of articles disposed on the other side thereof. The combination medial and transverse partitioning structure associated with the riser panel 8 not only affords means for forming the cells on the side of the carrier adjacent side wall 1 but this structure also affords substantial additional structural reinforcement medially of the carrier and in the region below the handle panels 30 and 31.

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

1. An article carrier having 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

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of said end wall panels, the riser panels at each end of the carrier being secured together in flat face contacting relation, a pair of outer handle panels foldably joined to the riser panels at one end of the carrier respectively along fold lines which are substantially coincidental with each other and with the inner edges of the adjacent end wall panels and wherein the improvement comprises a medial reinforcing partition foldably joined to the riser panels at the other end of the carrier along a diagonal fold line offset inwardly from the fold lines between the riser and end wall panels, said medial reinforcing partition comprising a pair of panels foldably joined together along a fold line which is disposed at an angle to said diagonal fold line which is approximately twice the angle between said diagonal fold line and the fold lines between the associated riser and end wall panels.

2. An article carrier having 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 pair of outer handle panels foldably joined to the riser panels at one end of the carrier respectively along fold lines which are substantially coincidental with each other and with the inner edges of the adjacent end wall panels and wherein the improvement comprises a medial reinforcing partition foldably joined to the riser panels at the other end of the carrier along a diagonal fold line offset inwardly from the fold lines between the riser and end wall panels, a medial strut formed on the inner edge of a riser panel at said one end of the carrier, and cell forming transverse partitioning structure foldably joined to said strut along a longitudinal edge thereof.

3. An article carrier according to claim 2 wherein said transverse partitioning structure is foldably joined to an upper edge of said strut and overfolded into partial face contacting relation therewith.

4. An article carrier according to claim 2 wherein said medial strut is secured in flat face contacting relation

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to a part of said medial reinforcing partition so as to enhance the strength of the carrier medially thereof.

5. An article carrier according to claim 2 wherein the end of said strut remote from said one end of the carrier is secured to at least one riser panel at the other end of the carrier so as substantially to enhance the strength of the carrier.

6. An article carrier having 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 pair of outer handle panels foldably joined to the riser panels at one end of the carrier respectively along fold lines which are substantially coincidental with each other and with the inner edges of the adjacent end wall panels and wherein the improvement comprises a medial reinforcing partition foldably joined to the riser panels at the other end of the carrier along a diagonal fold line offset inwardly from the fold lines between the riser and end wall panels, a combination medial and transverse partition structure formed integrally with a riser panel at said one end of the carrier and a medial keel panel foldably joined to a medial part of said combination structure.

7. An article carrier according to claim 6 wherein said medial keel is overfolded into partial face contacting relation to said medial part of said combination structure and secured thereto and to at least one riser panel at said other end of the carrier.

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