

[54] **ARTICLE CARRIER HAVING
IMPROVED PARTITION STRUCTURE**

[72] Inventor: **Homer W. Forrer**, Jonesboro, Ga.

[73] Assignee: **The Mead Corporation**

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

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

[58] Field of Search 220/113, 111, 115

[56] **References Cited**

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Primary Examiner—Joseph R. Leclair

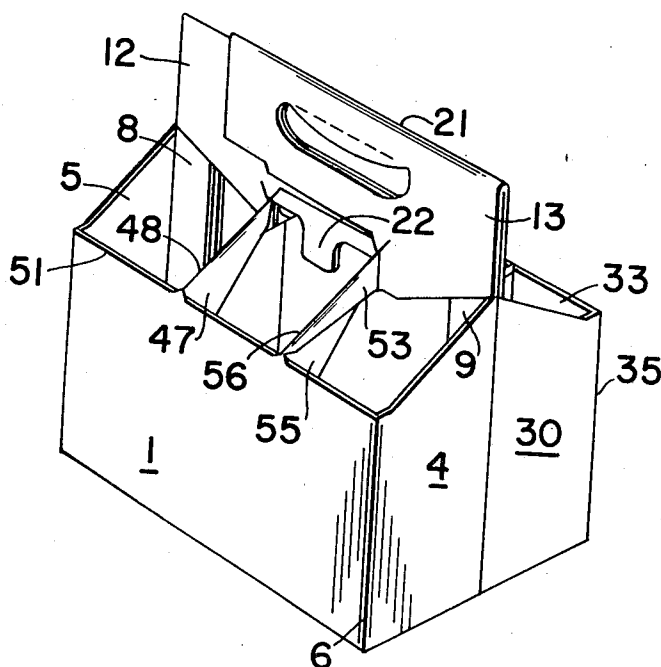
Assistant Examiner—James R. Garrett

Attorney—Walter M. Rodgers

[57] **ABSTRACT**

A basket-style article carrier having bottom, side and end walls and a multi-ply handle connected at its ends with the end walls is provided with improved transverse partition elements wherein a partition strip is foldably joined to one ply of the handle in conventional fashion and a reinforcing strip is foldably joined to the partition strip along the generally transverse fold line. An anchoring tab foldably joined to the end of the reinforcing strip which is remote from the handle is secured to the side wall in flat face contacting relation by means of glue or other suitable means. Preferably the anchoring tab is foldably joined to a portion of the top edge of the associated side wall. If desired, more than one partition structure may be employed.

9 Claims, 18 Drawing Figures



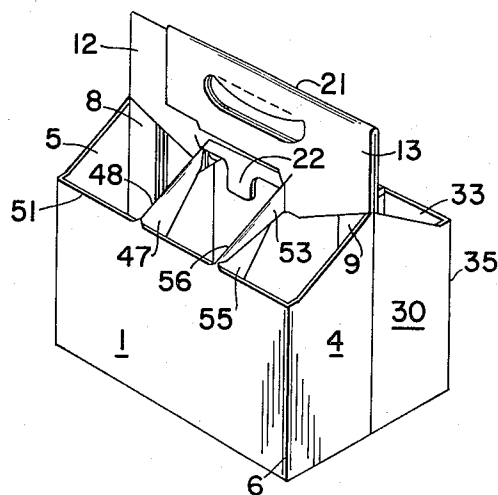


FIG. 1

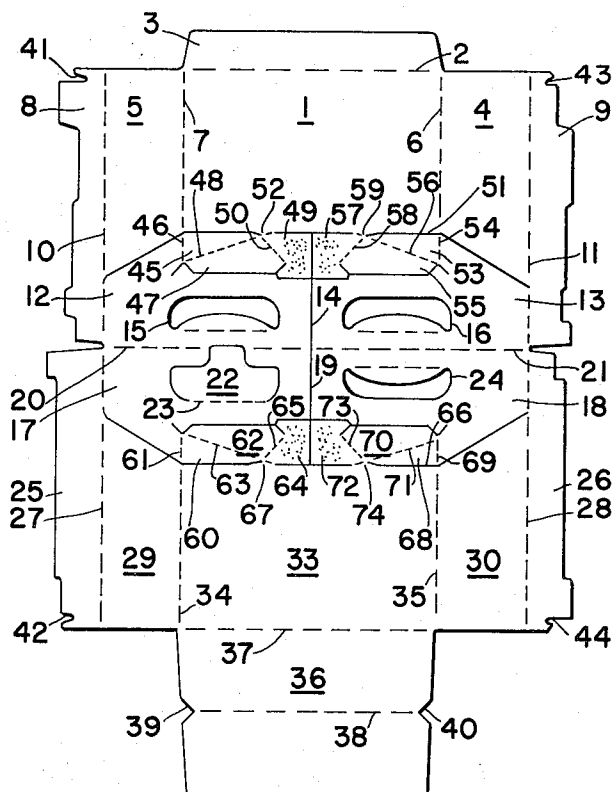


FIG. 2

INVENTOR
HOMER W. FORRER

BY *Walter M. Rodgers*
ATTORNEY

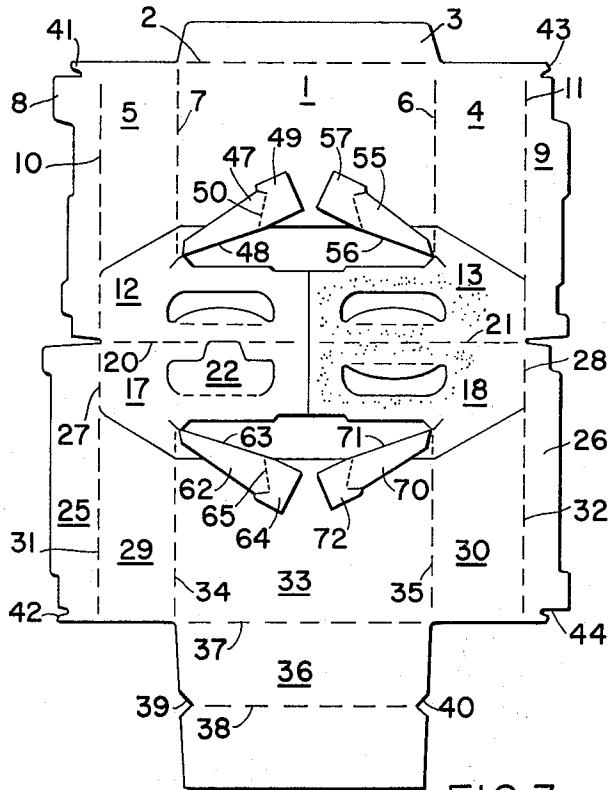


FIG. 3

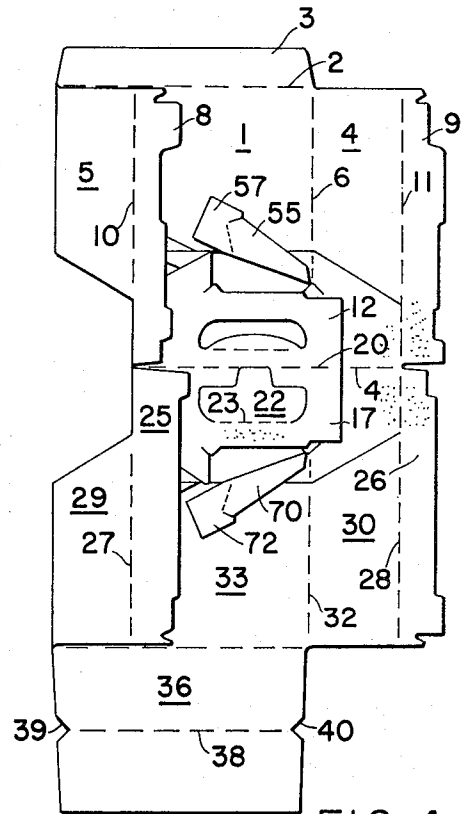


FIG. 4

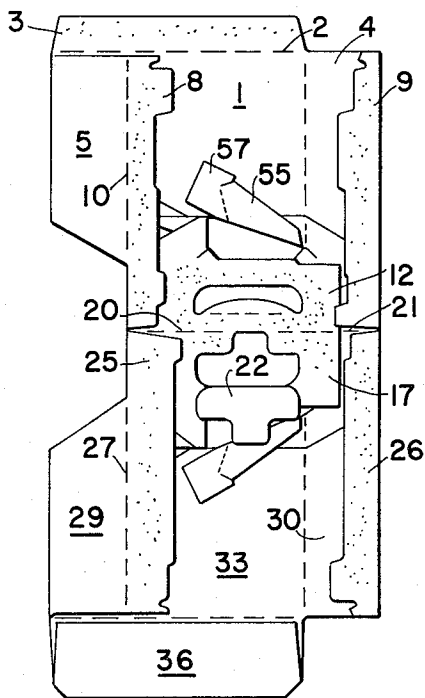


FIG. 5

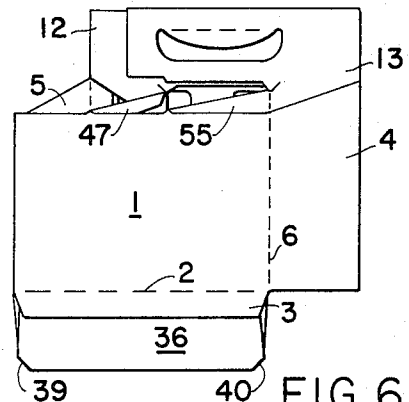


FIG. 6

INVENTOR
HOMER W. FORRER

BY *Walter M. Rodgers*
ATTORNEY

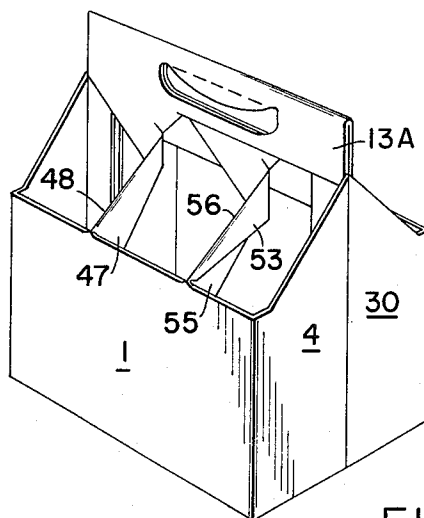


FIG. 7

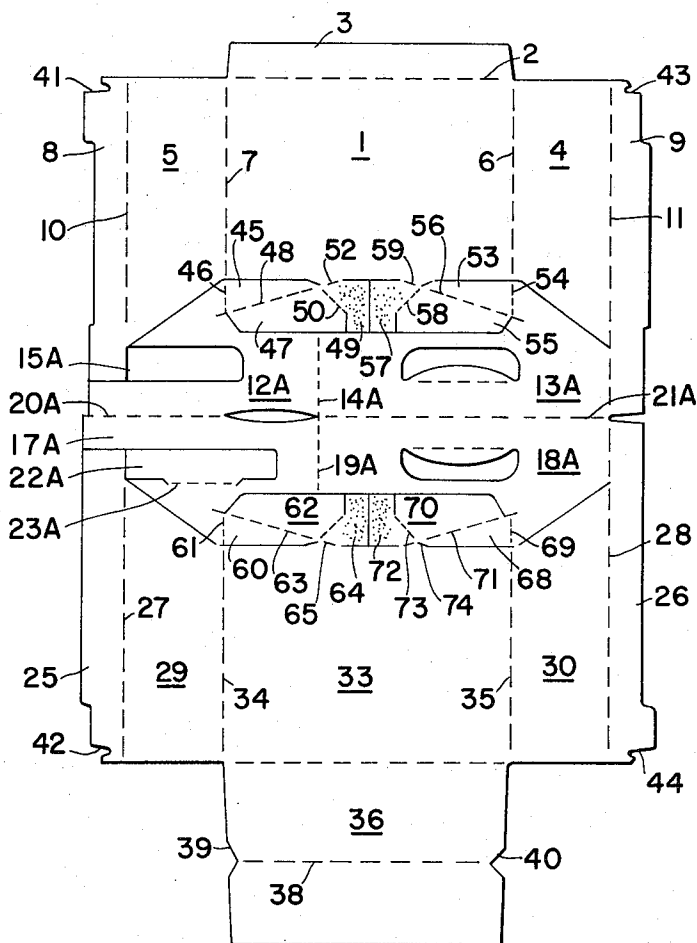


FIG. 8

INVENTOR
HOMER W. FORRER

BY *Walter M. Rodgers*
ATTORNEY

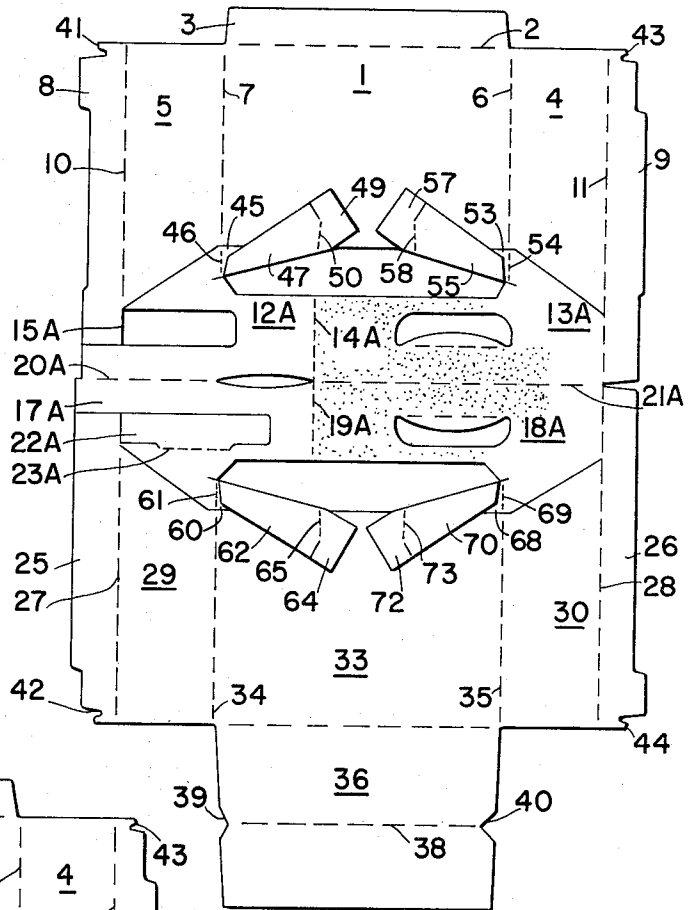


FIG. 9

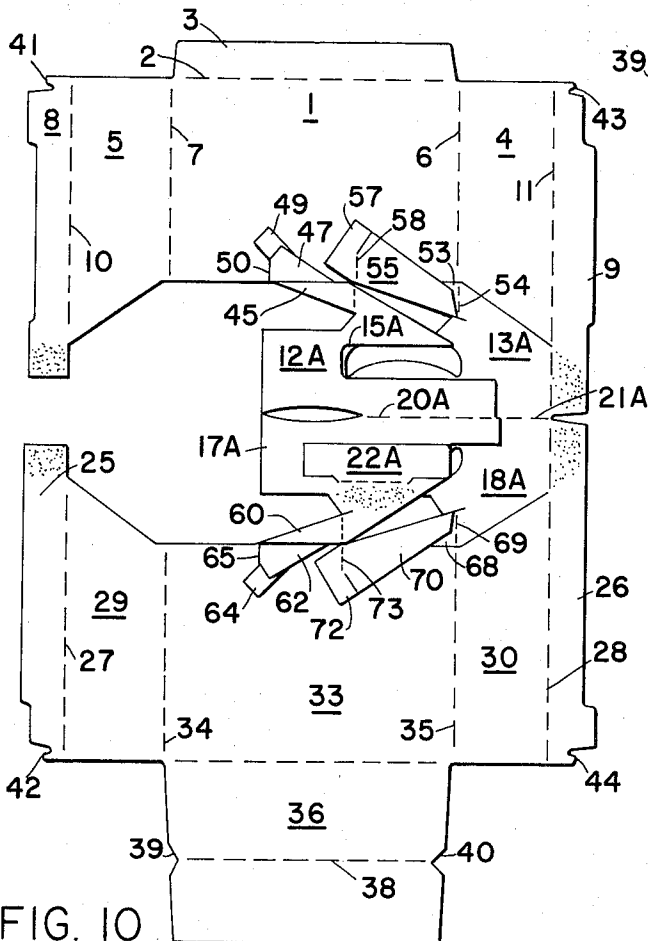


FIG. 10

INVENTOR
HOMER W. FORRER

BY *Walter M. Rodgers*
ATTORNEY

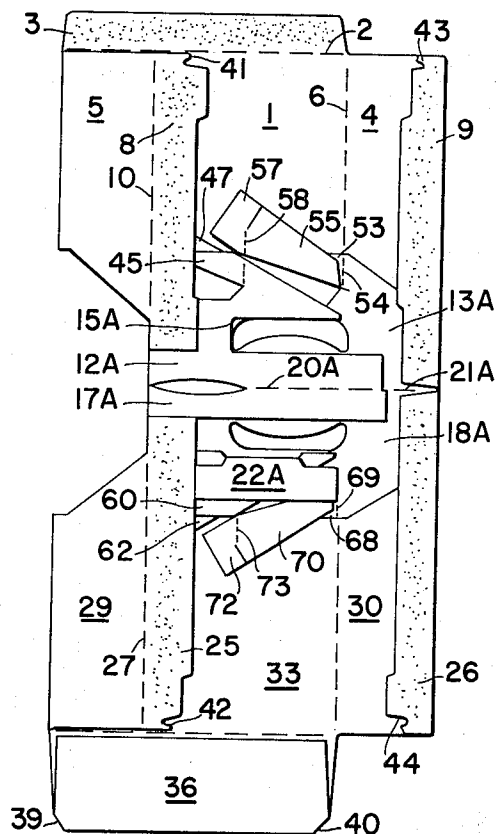


FIG. II

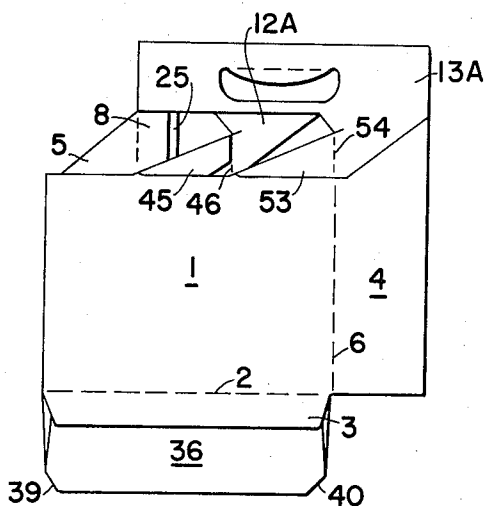


FIG. 12

INVENTOR
HOMER W. FORRER

BY *Walter M. Rodgers*
ATTORNEY

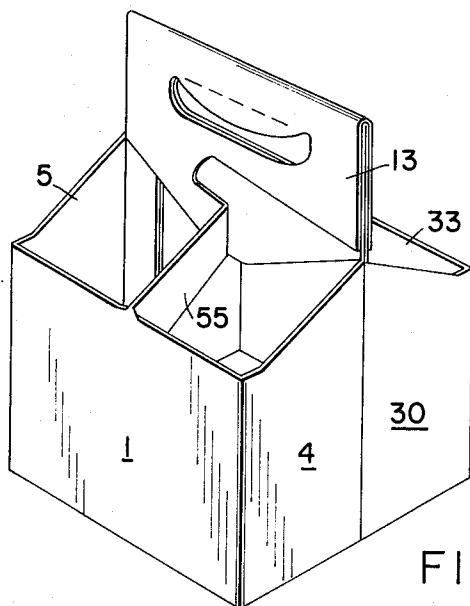


FIG. 13

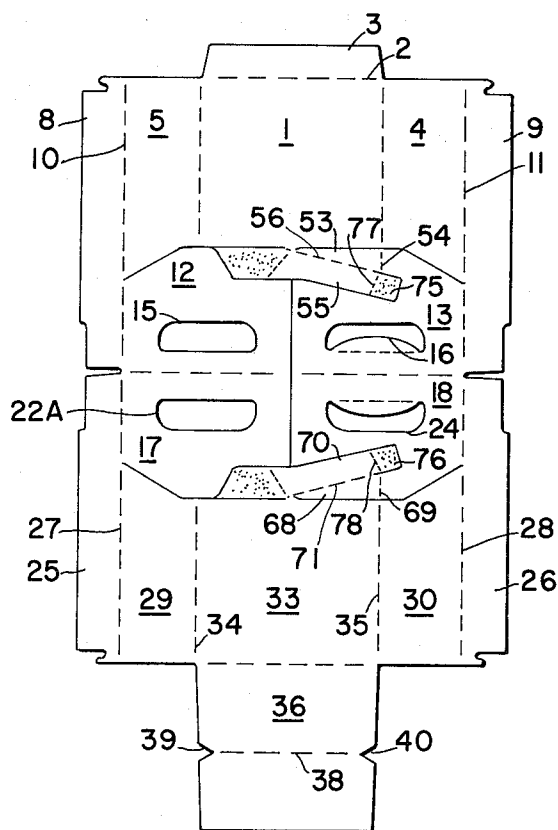


FIG. 14

INVENTOR
HOMER W. FORRER

BY *Walter M. Rodgers*
ATTORNEY

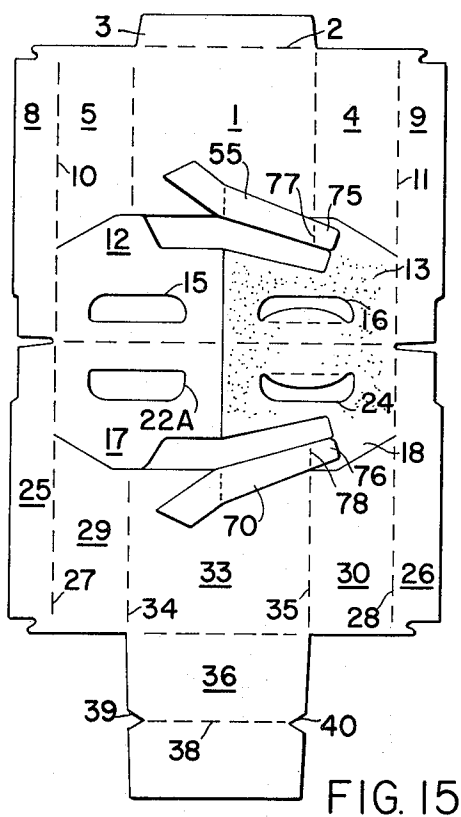


FIG. 15

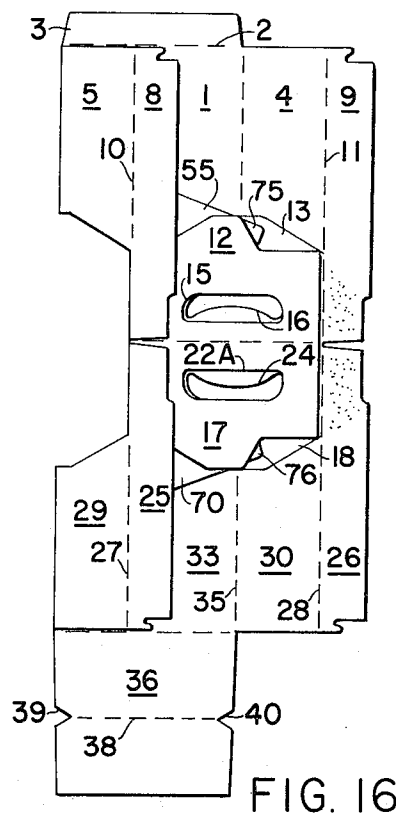


FIG. 16

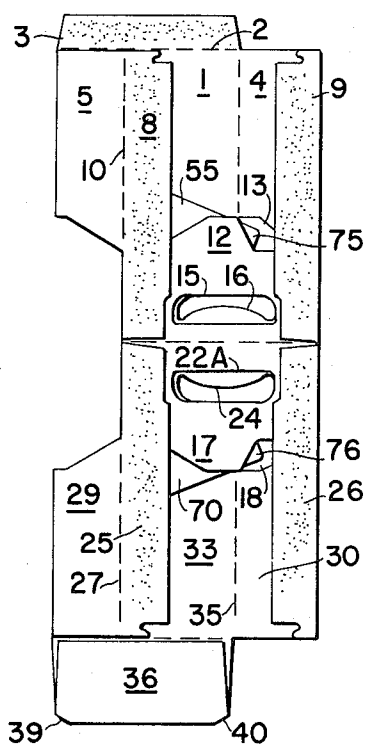


FIG. 17

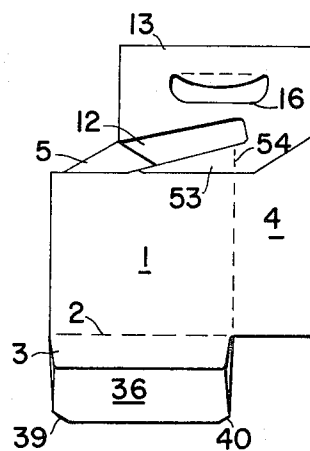


FIG. 18

INVENTOR

HOMER W. FORRER

BY *Walter M. Rodgers*
ATTORNEY

ARTICLE CARRIER HAVING IMPROVED PARTITION STRUCTURE

Conventional strap style carriers are durable, mechanically strong and economical to manufacture when the so-called high center cell feature is utilized wherein an upwardly protruding center portion of the carton side walls constitutes means for anchoring at its ends a pair of transversely disposed partition strips which define article receiving cells.

In order to provide a carrier wherein the side walls may be made relatively high when compared to conventional strap style carriers and wherein the top edges of the side walls are of uniform height, an improved partition structure is provided according to this invention. By this invention, a partition strip is foldably joined to one ply of the carrier handle in conventional fashion and a reinforcing strip struck from portions of the blank which normally constitute parts of the handle structure is foldably joined to the partition strip along a fold line which is generally transverse to the carrier, and an anchoring tab, foldably joined to the reinforcing strip, is affixed to the inner surface of the carrier side wall and near the top edge thereof. Preferably the anchoring tab is affixed by glue and in order to facilitate manipulation thereof by machine methods, the anchoring tab is foldably joined to the top edge of the side wall along a short portion of the length thereof. If desired, the reinforcing strip may be extended inwardly toward the handle beyond the fold line between the partition strip and the handle to define a reinforcing tab which may be secured to the handle in such manner as to serve as reinforcement for the fold line between the handle and its associated handle panel.

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

FIGS. 1-6 depict one form of the invention wherein a carrier of the telescopic handle type is shown and in which the partition structure of the invention is incorporated;

FIGS. 7-12 depict a carrier having a reinforced handle panel and to which the invention is applicable while

FIGS. 13-18 depict a four cell article carrier of the telescoped handle type which may incorporate the invention if desired.

FIG. 1 is a perspective view of a set-up carrier which incorporates the partition structure of this invention;

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

FIGS. 3-6 include folding and gluing operations through which the blank of FIG. 2 is manipulated to form the complete collapsed carrier shown in FIG. 6.

FIGS. 7-12 correspond respectively to FIGS. 1-6 as do FIGS. 13-18.

With reference to the telescopic handle construction depicted in FIGS. 1-6, the numeral 1 designates a side wall of the carrier to the bottom edge 2 of which a glue flap 3 is foldably joined. End wall panels 4 and 5 are foldably joined along fold lines 6 and 7 respectively to the end edges of side wall 1. Riser panels 8 and 9 are foldably joined along fold lines 10 and 11 respectively to the edges of end wall panels 5 and 4. Handle panels 12 and 13 are separated by cut line 14 and are foldably joined to riser panels 8 and 9 respectively along the fold lines 10 and 11. Hand gripping apertures 15 and 16 are formed within handle panels 12 and 13 respectively.

The other side of the carrier is of a similar construction and comprises a pair of handle panels 17 and 18 separated by a slit 19 and foldably joined to handle panels 12 and 13 respectively along medial fold lines 20 and 21. A partition flap 22 is struck from handle panel 17 and is foldably joined thereto along a fold line 23 while a hand gripping aperture 24 is formed in handle panel 18. Riser panels 25 and 26 are foldably joined to handle panels 17 and 18 along fold lines 27 and 28 respectively. End wall panels 29 and 30 are foldably joined to riser panels 25 and 26 respectively along fold lines 27 and 28 while side wall panel 33 is foldably joined to riser panels 29 and 30 along fold lines 34 and 35. Bottom panel 36 is foldably joined to the bottom edge of side wall 33 along fold line 37 and a medial fold line 38 is formed within the bottom panel 36.

Notches 39 and 40 are formed in bottom panel 36 at the ends of fold line 38. Notch 39 cooperates with a composite notch comprising the locking notches 41 and 42 formed in riser panels 8 and 25 in known manner while notch 40 cooperates with a composite notch comprising notches 43 and 44 formed in riser panels 9 and 26 respectively.

The carrier elements as described above are conventional. The improved partition structure of this invention may take the form of four partition elements defining 6 cells for the carrier of FIGS. 1-6. For example, one partition structure comprises a partition strip 45 which is foldably joined to handle panel 12 along fold line 46 together with a reinforcing strip 47 which is foldably joined to partition strip 45 along the diagonal fold line 48 together with an anchoring tab 49 foldably joined to reinforcing strip 47 along fold line 50. Anchoring tab 49 is foldably joined to the top edge 51 of side wall 1 for a short distance as indicated at 52. A second partition structure constructed according to this invention is disposed between the side wall 1 and the handle panel 13 and comprises a partition strip 53 foldably joined to handle panel 13 along a fold line 54 together with a reinforcing strip 55 foldably joined to partition strip 53 along a diagonal fold line 56 together with an anchoring tab 57 foldably joined to reinforcing strip 55 along fold line 58. As is apparent from FIG. 2 anchoring tab 57 is foldably joined to the top edge 51 of side wall 1 along a short fold line 59. In FIG. 2 anchoring tabs 49 and 57 are shown separated from each other by a slit line which forms a continuation of slit 14.

On the other side of the handle and interposed between the side wall 33 and the handle panel 17 is a partition structure comprising partition strip 60 foldably joined to handle panel 17 along a fold line 61 together with a reinforcing strip 62 foldably joined to partition strip 60 along a diagonal fold line 63 together with an anchoring tab 64 foldably joined to reinforcing strip 62 along fold line 65. Anchoring tab 64 is foldably joined to the top edge 66 of side wall 33 for a short distance as indicated at 67.

In like fashion a separate partition structure is interposed between side wall 33 and handle panel 18 and comprises partition strip 68 which is foldably joined to handle panel 18 along fold line 69 and reinforcing strip 70 which is foldably joined to partition strip 68 along diagonal fold line 71 together with an anchoring tab 72 foldably joined to reinforcing strip 70 along fold line 73. Anchoring tab 72 is foldably joined to the top edge 66 of side wall 33 as indicated at 74. Of course anchoring tabs 64 and 72 are separated from each other by a slit line which forms a continuation of slit 19.

In order to form a completed carrier in collapsed form as shown in FIG. 6 from the blank shown in FIG. 2, an application of glue is first made as indicated by stippling in FIG. 2. Thereafter the reinforcing strips 47, 55, 62 and 70 are engaged by suitable machine elements and are folded upwardly along fold lines 48, 56, 63 and 71 respectively and over into the positions indicated in FIG. 3. Of course this folding operation causes the anchoring tabs 49, 57, 64 and 72 to swing simultaneously with their associated reinforcing strips along short fold lines 52, 59, 67 and 74 respectively. When this folding operation is completed anchoring tabs 49, 57, 64 and 72 are affixed in face contacting relationship to the inner surfaces of the associated side walls.

After the partition structure is glued as shown in FIG. 3, an application of glue is made to the interior of handle panels 13 and 18 as indicated by stippling in FIG. 3. Thereafter handle panels 12 and 17 are elevated and swung toward the right to occupy the positions depicted in FIG. 4 wherein the handle panels 12 and 17 are secured in face contacting relation to the outer handle panels 13 and 18. This folding operation also causes the simultaneous folding of end wall panels 5 and 29 along their associated fold lines 7 and 34 and also folds the partition structure by causing the reinforcing panels 47 and 62 to fold along the fold lines 50 and 65 while simultaneously causing the partition strips 45 and 60 to fold along their associated fold lines 46 and 61. Upon completion of this folding operation, the blank then appears as indicated in FIG. 4.

An application of glue is then made to the upper ends of riser panels 9 and 26 in the region thereof adjacent the fold line 21 and to the inner surface of handle panel 17 in the region immediately below the fold line 23. Thereafter riser panels 9 and 26 are elevated and swung toward the left along their associated fold lines 11 and 28 respectively while the reinforcing panel 22 is folded downwardly into face contacting relationship with the inner surface of handle panel 17 and adhered thereto by the glue indicated by stippling below the fold line 23. Simultaneously or thereabout, the bottom panel 36 is collapsed upon itself by a medial folding operation along the fold line 38 and the blank then appears as indicated in FIG. 5.

In order to complete the carrier, an application of glue is made to the blank as indicated by stippling in FIG. 5 following which side wall 1 and all portions of the blank associated therewith and which are disposed above the fold lines 20 and 21 are elevated and folded forwardly and downwardly along the fold lines 20 and 21 to occupy the collapsed condition represented by FIG. 6.

In order to set up the carrier, an application of force is made to the right hand edge of end wall panel 4 toward the left while the side wall 1 is held against movement toward the left. This operation causes the locking notch 40 to engage the composite locking notch 43, 44 in conventional fashion and the carrier then appears as depicted in FIG. 1.

From the description thus far and particularly from FIG. 1, it is apparent that the top edge 51 of side wall 1 is straight and that a carrier constructed according to this invention does not incorporate the so-called high center cell construction. Furthermore the carton side wall 1 may be relatively deep compared to comparable carriers because the partition structure as is apparent from FIG. 2 is taken from areas of the blank which ordinarily constitute portions of the handle panels. In addition, it is apparent that each partition structure is of double thickness. For example, reinforcing strip 47 is disposed in flat face contacting relation to partition strip 45 affording a significant increase in protection of the packaged bottles. Furthermore, the uniform height of the side walls such as 1 and 33 and the downwardly tapered fold lines such as 48 and 56 which constitute the upper edges of reinforcing panels 47 and 55 and their associated partition strips 45 and 53 respectively facilitate loading operations of the carrier. The overall result of this invention is an improved partition structure which also increases the size of the exposed billboard area of the side walls and which also results in a carrier which is both sturdy and economical to produce from a single unitary blank.

The invention as described above is not limited to the so-called telescopic type handle as shown in FIGS. 1-6 but may also be employed in connection with a carrier of the type shown in FIGS. 7-12 inclusive. In these figures, all of the carton components are the same except the carrier of FIG. 7 incorporates a medial reinforcing structure which is foldably joined to the end edges of the outer handle panels instead of the telescoping handle structure. For this reason, the same reference numerals are used in connection with the carrier of FIGS. 7-12 as are used in connection with the carrier of FIGS. 1-6 except that the carrier of FIGS. 7-12 does not incorporate telescoping handle panels such as 12 and 17. Instead the carrier of FIGS. 7-12 incorporates reinforcing panels designated in FIG. 8 by the numerals 12A and 17A which are foldably joined to each other along medial fold line 20A and to the left hand edge of handle panels 13A and 18A along fold lines 14A and 19A respectively. Hand gripping aperture 15A is formed in reinforcing panel 12A while reinforcing panel 22A is foldably joined to reinforcing panel 17A along fold line 23A.

The partition structure of FIG. 8 which is associated with the outer handle panels 13A and 18A is identical to the corresponding partition structure of the carrier of FIGS. 1-6 as is apparent from a comparison of FIGS. 2 and 8 wherein partition strips 53 and 68 correspond to partition strips of the same number in FIG. 2 and wherein the reinforcing strips 55 and 70 and the anchoring tabs 57 and 72 are identical to the corresponding elements in FIG. 2.

In similar fashion the partition strips 45 and 60 are structurally the same as corresponding strips shown in FIG. 2 as well as the associated reinforcing strips 47 and 62 and anchoring tabs 49 and 64.

The only essential difference between the carrier of FIGS. 1-6 and the carrier of FIGS. 7-12 insofar as the formation thereof is concerned has to do with the manipulation of the reinforcing panels 12A and 17A. For example, after an application of glue is made as indicated by stippling in FIG. 8 and the reinforcing strips and anchoring tabs are folded over to occupy the positions indicated in FIG. 9, an application of glue is made to the inner surface of handle panels 13A and 18A as indicated by stippling in FIG. 9. After this application of glue, the reinforcing panels 12A and 17A are elevated and swung toward the right along the fold lines 14A and 19A respectively to occupy the positions depicted in FIG. 10. This folding operation causes the simultaneous folding of partition strip 45 along the fold line 46 and of the reinforcing strip 47 along the fold line 50 and upon completion of this folding operation the blank appears as depicted in FIG. 10. Partition strip 60 and associated reinforcing strip 62 are similarly manipulated.

An application of glue is then made to the inner ends of the riser panels 25 and 8, 9 and 26 as indicated by stippling in FIG. 10. Thereafter the end wall panels 5 and 29 together with the associated riser panels 8 and 25 are elevated and swung upwardly and toward the right along fold lines 7 and 34 while the riser panels 9 and 26 are elevated and swung toward the left along their associated fold lines 11 and 28 to occupy positions depicted in FIG. 11. Simultaneously the bottom panel 36 is collapsed on itself and the reinforcing panel 22A is folded downwardly to the position shown in FIG. 11 to become secured in position by the glue indicated by stippling in FIG. 10. The blank then appears as shown in FIG. 11. In order to complete the carrier to the collapsed condition depicted in FIG. 12, the side wall 1 and all other parts of the carrier disposed above the fold lines 20A and 21A are elevated and folded forwardly to secure the parts in the collapsed condition as indicated in FIG. 12. Of course the carton of FIG. 12 may be set up in a manner described in connection with FIG. 6 to occupy the position depicted in FIG. 7. From the above description it is apparent that reinforcing structure of the carrier of FIGS. 7 and 12 is virtually identical to that of the carrier of FIGS. 1-6.

In order to make clear the fact that the partition structure of this invention may constitute a single transverse partition or in order to demonstrate that the partition structure of this invention may be used in conjunction with a four bottle carrier, the carrier of FIGS. 13-18 is disclosed. The carrier of FIGS. 13-18 is provided with a telescopic handle of the type incorporated in the carrier of FIGS. 1-6. All elements of the carrier of FIGS. 13-18 are identified by the same reference numerals as are used in connection with the carrier of FIGS. 1-6. The principal difference between the two carriers is the fact that the partition structure of FIGS. 1-6 which is identified by the numerals 45-50, 52 is eliminated from the carrier of FIGS. 13-18 as is the structure identified by the numerals 60-65 and 67. Otherwise the carriers of FIGS. 1-6 and FIGS. 13-18 are identical except for dimensional relationships of the various parts whereby a four cell carrier of FIGS. 13-18 is distinguished from six cell carrier of FIGS. 1-6.

One structural feature is disclosed with respect to the carrier of FIGS. 13-18 which is not disclosed in the other two carriers. This feature is in the form of reinforcing tabs 75 and 76 which are foldably joined respectively along fold lines 77 and 78 to the reinforcing strips 55 and 70 respectively. These reinforcing tabs when the reinforcing strips 55 and 70 are folded to the positions depicted in FIG. 16 are foldably joined to the reinforcing tabs along their fold lines 77, 78 which are in alignment with the fold lines 54 and 69 of the partition strips. Since the reinforcing tabs 75 and 76 are applied with glue and fastened to their adjacent face contacting handle panels 13 and 18, they serve to provide a double ply thickness for the partition structure.

While the reinforcing tabs 75 and 76 are shown only in connection with the carrier of FIGS. 13-18, it will be understood that this structure could be incorporated as well into the carriers of FIGS. 1-6 inclusive and FIGS. 7-12 inclusive as will be obvious to those skilled in the art.

The folding operations whereby the carrier of FIGS. 13-18 is glued and completed into its collapsed condition as shown in FIGS. 13-18 are identical to the folding operations described above and shown in FIGS. 1-6 and will not here be described again for the sake of simplicity, it being obvious how the folding is effected from FIGS. 13-18 particularly in view of the description above in connection with the FIGS. 1-6. The numerals are the same except for the depiction of the reinforcing means 75 and 76 and the structure associated therewith.

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

1. Partition structure for a basket style article carrier having bottom, side and end walls and a multi-ply medial handle secured at its ends to said end walls, said partition structure comprising at least one transverse partition strip foldably joined to one ply of said handle, a reinforcing strip foldably joined to said partition strip along a fold line generally longitudinal of said strips and with said strips disposed in flat face to face contacting relation, and an anchoring tab foldably joined to said reinforcing strip and secured in flat face contacting relation with the inner surface of one of said side walls.

2. Partition structure according to claim 1 wherein said anchoring tab is foldably joined to the top edge of said one side wall.

3. Partition structure according to claim 1 wherein said generally longitudinal fold line between said partition and reinforcing strips defines the top edges of said strips.

4. Partition structure according to claim 3 wherein said top edges of said partition and reinforcing strips are downwardly inclined from said handle toward said side wall.

5. Partition structure according to claim 1 wherein a reinforcing tab is foldably joined to said reinforcing strip adjacent

said handle and wherein said reinforcing tab is affixed in flat face contacting relation to said handle so as to reinforce the fold line between said partition strip and said one ply of the handle to which said partition strip is foldably joined.

6. Partition structure according to claim 1 wherein a pair of partition strips are foldably joined to different plies of the handle on one side thereof and wherein a reinforcing strip is foldably joined to each partition strip with an anchoring tab foldably adjoined to each reinforcing strip and to the adjacent side wall.

7. Partition structure according to claim 1 wherein said partition and reinforcing strips are secured together in face to face contacting relation.

8. Partition structure according to claim 5 wherein said reinforcing tab is secured in flat face contacting relation to at least one ply of the handle.

9. An article carrier comprising a bottom wall, a side wall having a top edge of uniform height and foldably joined to each side edge of said bottom wall, an end wall panel foldably joined to each end edge of each side wall and extending transversely inward therefrom, a riser panel foldably joined to each inwardly extending edge of each end wall panel and extending medially inward therefrom, the two riser panels at each end of the carrier being secured together in flat face to face contacting relation, a multi-ply handle secured at its ends to upwardly extending portions of said riser panels at each end of the carrier, at least one transverse partition strip foldably joined to one ply of said handle, a reinforcing strip foldably joined to said partition strip along a fold line generally longitudinal of said strips and with said strips disposed in flat face to face contacting relation and an anchoring tab foldably joined to said reinforcing strip and to the top edge of one of said side walls, said anchoring tab being disposed in flat face contacting relation with the inner surface of said side wall and being secured thereto.

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