United States Patent [19]

Stone

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[54] **MULTI-CONTAINER CARRIER CARTON**

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[73] Assignees: **John R. Schovee,** Pittsford; **Thomas R. Boston,** Fairport, N.Y. ; part interest to each

[22] Filed: **Feb. 19, 1971**

[21] Appl. No.: **117,008**

[52] **U.S. Cl.** ..... **220/115,** 220/118, 229/28 BC, 229/45, 229/52 A, 229/52 B, 229/52 BC

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

[58] **Field of Search** ..... 220/115, 118, 114; 229/52 BC, 52 A, 52 B, 28 BC, 51 TC, 45, 51 SC

[56] **References Cited**

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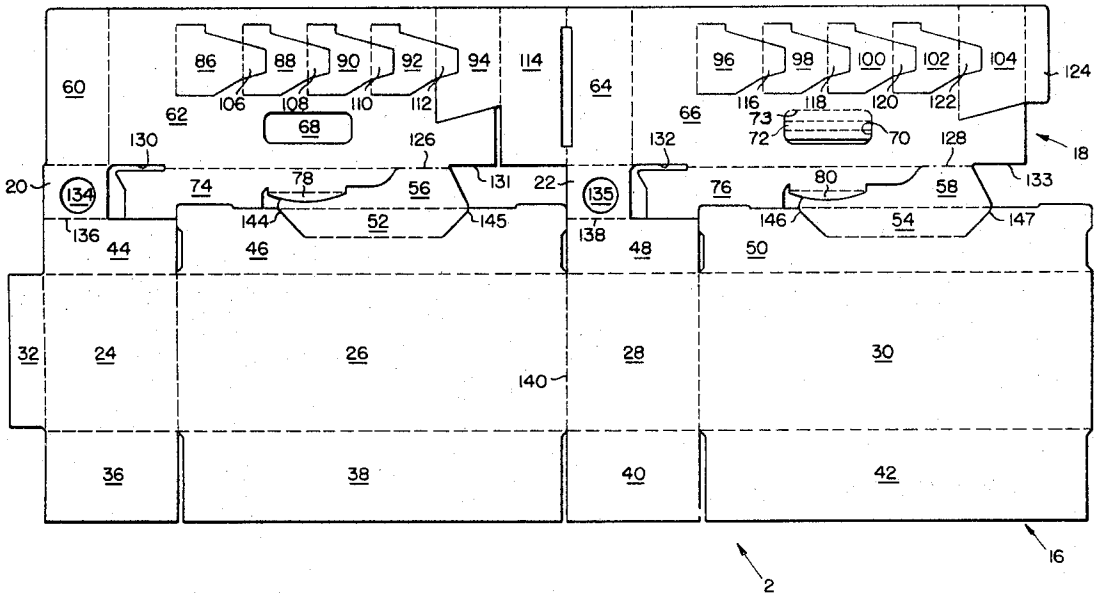
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Assistant Examiner—Stephen P. Garbe
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[57] **ABSTRACT**

An improved boxboard carton for use, in the preferred embodiment, as a twelve-bottle carrier, having an improved handle structure that includes means for holding or tilting the centrally located bottles outwardly to provide additional hand room. In one embodiment, the holding means cooperates with a hand inserted into the handle to provide the additional room, and the entire carton, including the outer structure, the central divider, the multi-cell structure and the handle, is of one-piece construction using a single carton blank with a minimum amount of boxboard area and without waste. In another embodiment, the holding means itself holds the bottles outwardly without the need for cooperation with an inserted hand to accomplish the holding. The handle does not project above the upper surface of the carton whereby excellent stackability is achieved. The carton blank can be formed into a preglued carton tube on known high speed gluers, and the glued, flat carton tube can be set up by the bottler using existing equipment. In another embodiment, the top wall includes slits in one set of flaps and mating score lines in the other set of flaps, so that the top wall can be re-closed and locked after being opened.

43 Claims, 11 Drawing Figures



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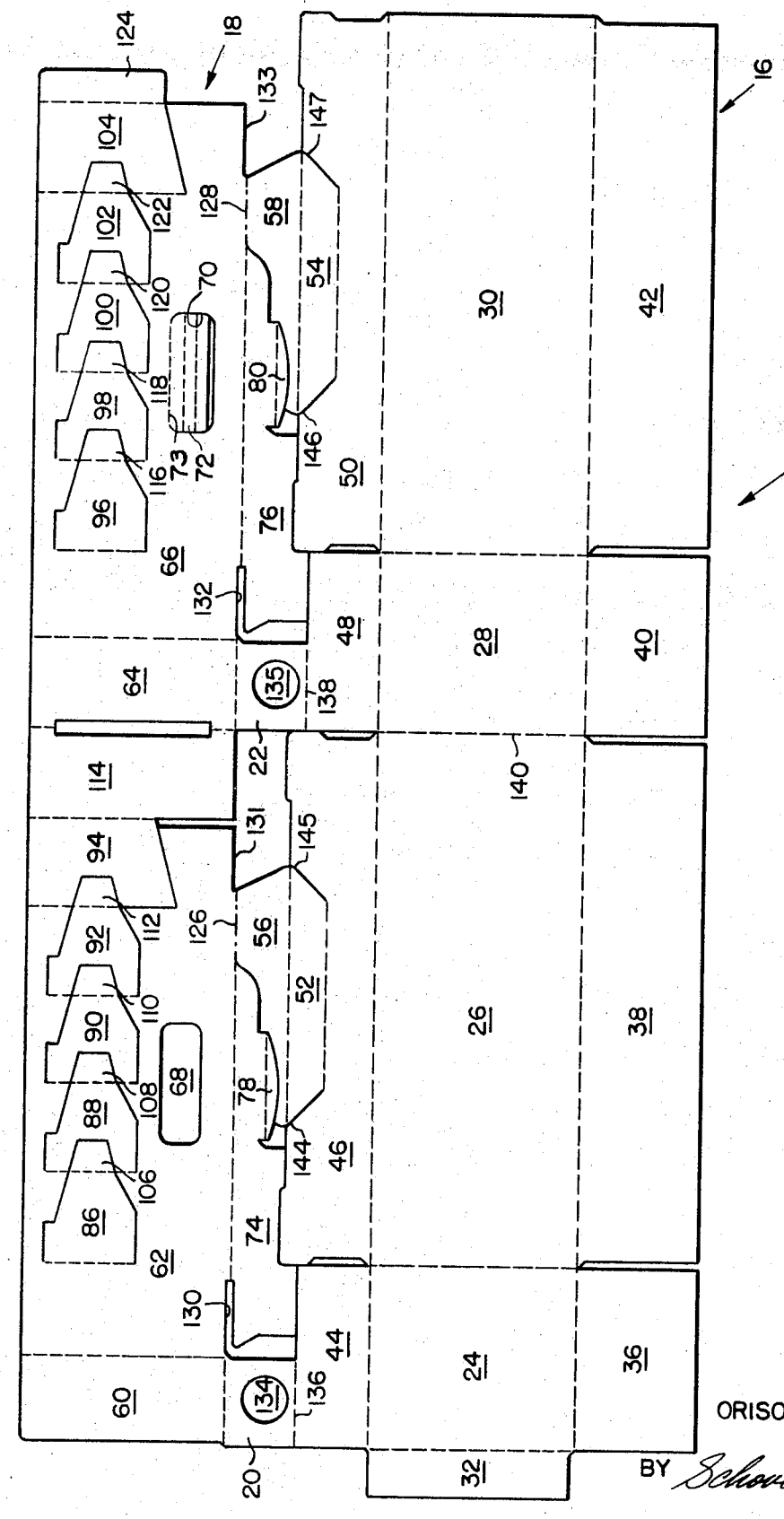


FIG. 1

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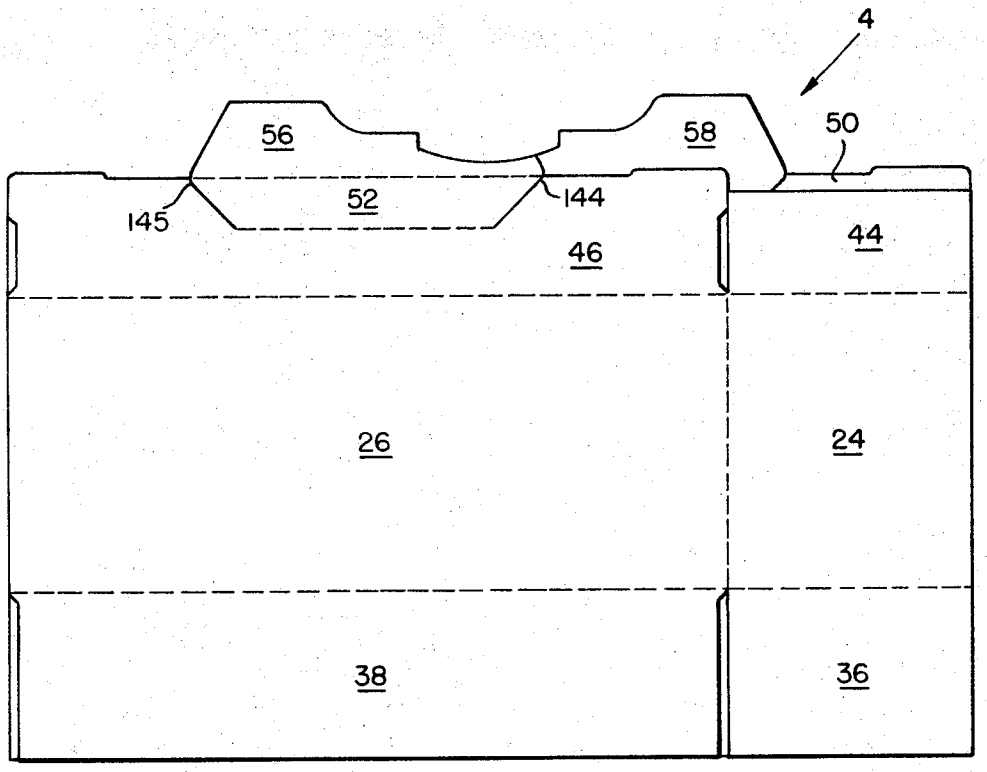


FIG. 2

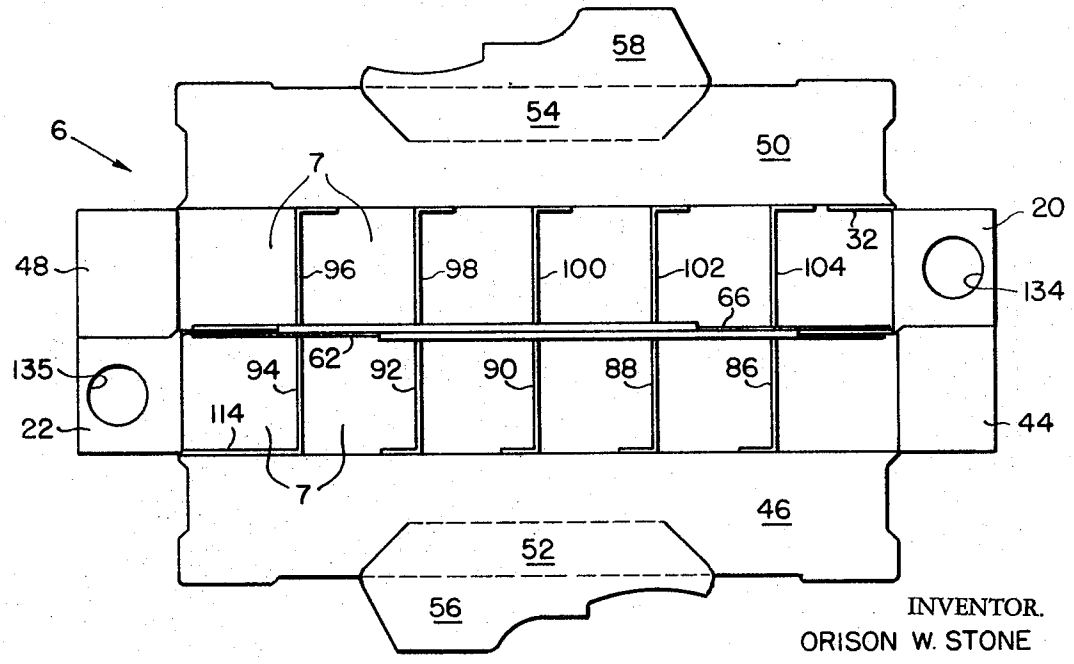


FIG. 3

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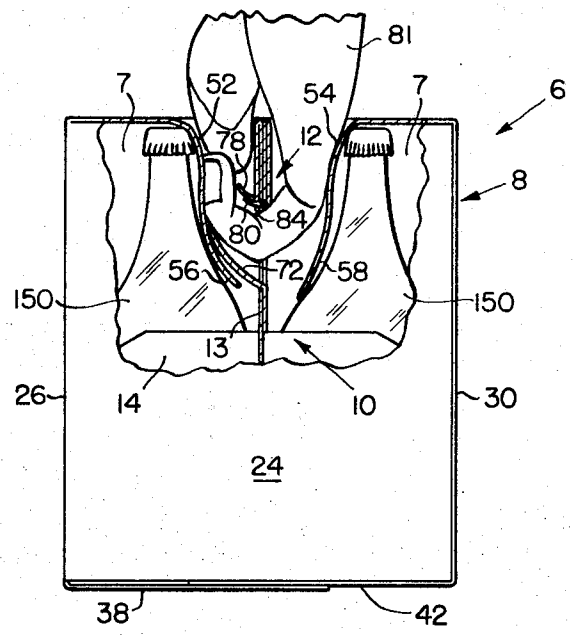
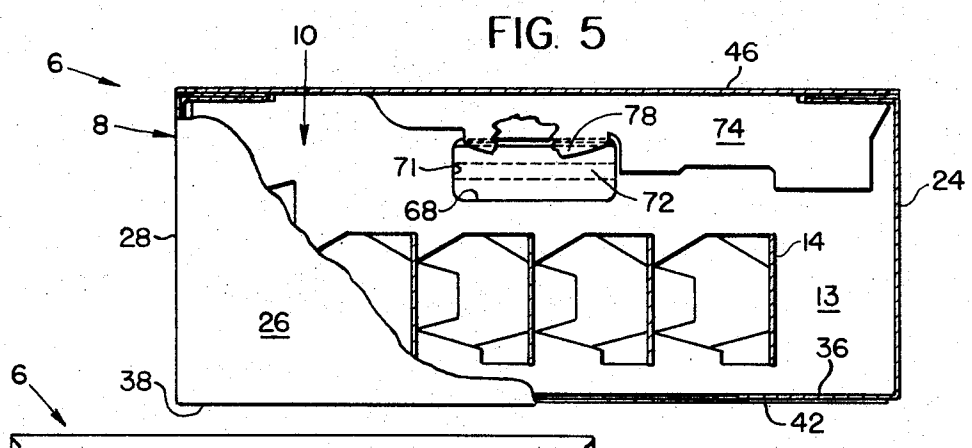


FIG. 4

FIG. 5



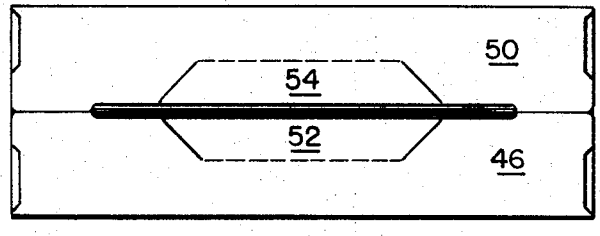


FIG. 6

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FIG. 7

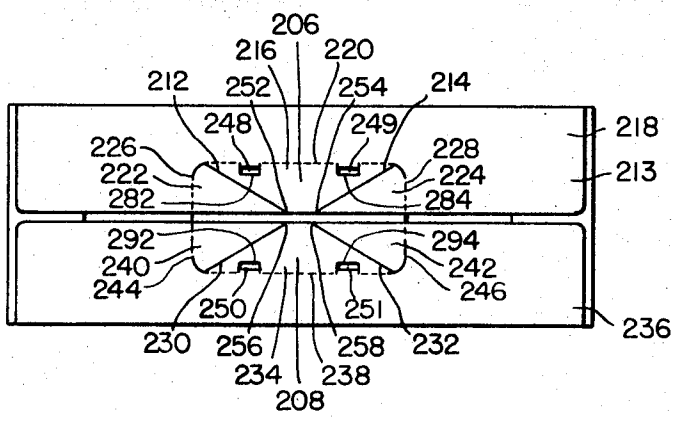
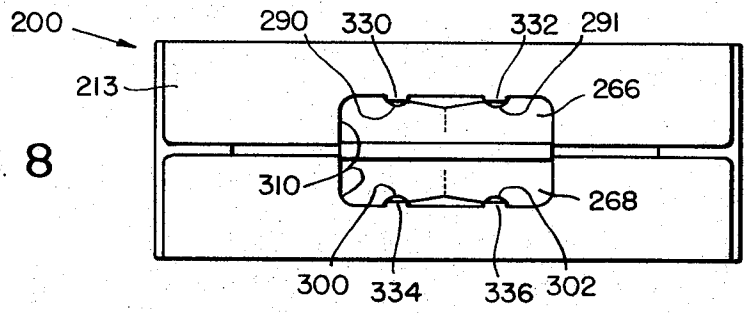


FIG. 8



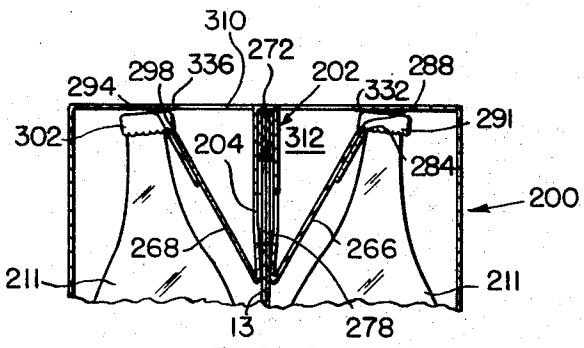


FIG. 9

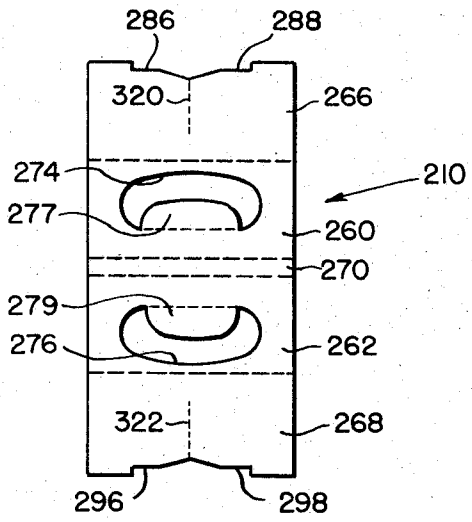


FIG. 10

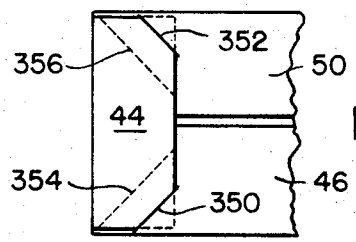


FIG. 11

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MULTI-CONTAINER CARRIER CARTON

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to cartons and in the preferred embodiment to an improved twelve-bottle carrier and handle therefor.

2. Description of the Prior Art

Boxboard cartons for use as twelve-bottle carriers are known, however, the known cartons are subject to various inherent disadvantages. For example, known carriers are relatively expensive because they have to be made from several separate pieces of boxboard. Further, known carriers employ handles that must be raised to be used; when let go of the handle can drop back down making it necessary to raise it again. The handles also make palletizing stacks of carriers difficult by sometimes remaining raised or partly raised above the top surface of the carton. The raised handle also causes problems in the bottle removal process at the bottling plant.

It is an object of the present invention to provide an improved carton blank and carton that do not have the above disadvantages.

It is another object of this invention to provide an improved multi-container carrier carton having a recessed handle and means for holding adjacent containers away from the handle to provide additional hand room.

It is a further object of the present invention to provide a carton blank and a carton produced therefrom, which carton is useful as a multi-cell carrier that can be of one-piece construction, that uses a minimum amount of boxboard and without waste, that provides greater protection between bottles, that provides excellent stackability, that can be run on high speed gluers, and that can be readily set up on existing brewery plant equipment.

SUMMARY OF THE INVENTION

An improved twelve-bottle carrier including a handle structure that exists below the top surface of the carton and means for holding the tops of bottles, adjacent the handle, tilted away from the handle to provide additional hand room. In a first embodiment the holding means cooperate with the hand to accomplish the holding and is formed from a one-piece boxboard carton blank. In another embodiment, a separate insert is added, and the adjacent bottles are held further outwardly than in the first embodiment and without the need for cooperation with a hand. The carrier comprises an outer structure including a top wall, a bottom wall, two side walls and two end walls, and an inner structure including a central divider and a multicell structure. The handle includes a hand hole in the central divider and a hand hole flap projecting partway down into the hand hole from above, to provide a relatively large, smooth support surface for the hand. A pair of breakaway flaps are positioned in the top wall above the hand hole and on opposite sides of the central divider. In the first embodiment, a pair of infolded shield flaps are hingedly connected to the breakaway flaps to protect the knuckles from any sharp edges on the bottle closures and to help force the centrally located bottles outwardly to provide additional knuckle room.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be more fully understood by reference to the following detailed description thereof, when read in conjunction with the attached drawings, wherein like reference numerals refer to like elements, and wherein:

FIG. 1 is a top planar view of a carton blank of the present invention;

FIG. 2 is a top planar view of a carton tube made from the carton blank of FIG. 1 and folded flat;

FIG. 3 is a top view of an erect carton made from the carton blank of FIG. 1 with the top flaps open and horizontal;

FIG. 4 is a partly broken away end view of the erect carton;

FIG. 5 is a partly broken away side view of the carton;

FIG. 6 is a top plan view of the carton of FIG. 3;

FIG. 7 is a top plan view of the carton of the second embodiment as it appears before the separate insert is added to complete the handle;

FIG. 8 is a top plan view of the carton of FIG. 7 showing the handle completely formed;

FIG. 9 is a partial cross-sectional view of the handle of FIG. 8;

FIG. 10 is a plan view of the separate insert; and

FIG. 11 is a top plan view of the carton showing a reclosure embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The three embodiments of the present invention will be separately described below with reference to FIGS. 1–6, 7–10, and 11.

With reference now to the drawings, FIG. 1 shows a one-piece carton blank 2 that can be formed into a carton tube 4 (FIG. 2) that can, in turn, be erected into a carton 6 (FIG. 4) having a multi-cell compartment 7, for use as a multi-container carrier. In the presently preferred embodiment of the invention, the carton 6 is used as a twelve-bottle carrier for beer, and it is this twelve-bottle carrier that will be described in detail below. It is to be understood, of course, that the carton 6 of the present invention can be designed to carry other quantities than twelve, for example, six, and to carry other containers than bottles.

Before beginning the detailed description, a brief, general description of the carton 6 will be helpful. The carton 6 comprises generally an outer structure 8, an inner structure 10, and a handle structure 12 made up partly from the inner structure 10 and partly from the outer structure 8. The outer structure 8 completely encloses the multi-cell compartment 7 and includes the various walls (discussed in detail below), and the inner structure 10 includes a central divider 13 and a multicell structure 14.

With detailed reference now to FIG. 1, the carton blank 2 comprises a first portion 16 and a second portion 18 hingedly connected together by a pair of hinge straps 20 and 22. The first portion 16 forms the outer structure, i.e. the top, side and bottom walls of the carton 6 while the second portion 18 forms the inner structure, i.e., the central divider 13 and the multi-cell structure 14.

The first portion 16 comprises, in series, a first end wall 24, hingedly connected to a first side wall 26,

hingedly connected in turn to a second end wall **28**, hingedly connected in turn to a second side wall **30**. A glue flap **32** is hingedly connected to the first end wall **24** and is glued at the right side (as viewed in FIG. **1**) of the second side wall **30** when the carton blank **2** is formed into the carton tube **4**. The first portion **16** further includes a first bottom end wall flap **36** hingedly connected to the first end wall **24**, a first bottom side wall flap **38** hingedly connected to the first side wall **26**, a second bottom end wall flap **40** hingedly connected to the second end wall **28**, and a second bottom side wall flap **42** hingedly connected to the second side wall **30**. The first portion **16** also includes a first top end wall flap **44** hingedly connected to the first end wall **24**, a first top side wall flap **46** hingedly connected to the first side wall **26**, a second top end wall flap **48** hingedly connected to the second end wall **28** and a second top side wall flap **50** hingedly connected to the second side wall **30**. Each of the top side wall flaps **46** and **50** includes a breakaway flap **52** and **54**, respectively. Hingedly connected to each of the breakaway flaps **52** and **54** is a shield flap **56** and **58** respectively, the purpose for which will be explained in detail below.

The second portion **18** comprises, in series, a first divider wall end support section **60**, hingedly connected to a first divider wall **62**, hingedly connected in turn to a second divider wall end support section **64**, hingedly connected in turn to a second divider wall **66**. The divider walls **62** and **64** form the central divider **13** in the erect carton **6**. The divider walls **62** and **66** each have a substantially rectangular opening **68** and **70**, respectively, therein which openings cooperate in the erect carton **6** to form a hand hole **71**. The second divider wall **66** includes a flap **72** hingedly connected to a bottom edge **73** of the opening **70**. The divider walls **62** and **66** each include a reinforcing flap **74** and **76**, respectively, connected to the top edges thereof. The shape of the reinforcing flaps **74** and **76** is such, with respect to the shape of the shield flaps **56** and **58**, as to minimize the total quantity of boxboard area required for the carton blank **2** while still providing sufficient material for the flaps **56**, **58**, **74** and **76**. The reinforcing flaps **74** and **76** each include an extension **78** and **80** respectively, hingedly connected thereto, which extensions **78** and **80** extend into the hand hole **71** (see FIG. **4**) formed by the two openings **68** and **70**. When a hand **81** (see FIG. **4**) is inserted into the hand hole **71**, the extensions **78** and **80** are forced to fold in the opposite direction to provide a relatively large, smooth surface **84** (FIG. **4**) for supporting the carton **6**.

The second portion **18** also includes a plurality of cell walls for dividing the compartment **7** into a predetermined number of preferably identical cells. Each of the divider walls **62** and **66** provide the cell walls for the adjacent half of the compartment **7**. The first divider wall **62** is hingedly connected to cell walls **86**, **88**, **90**, **92** and **94**. The second divider wall **66** is similarly hingedly connected to cell walls **96**, **98**, **100**, **102**, and **104**. Each of the cell walls **86–94**, in the erected carton **6**, extend perpendicularly to the first divider wall **62** and are connected to the adjacent first side wall **26** by means of glue flaps **106**, **108**, **110**, **112**, and **114**. Correspondingly, the cell walls **96–104** in the erect carton **6**, extend perpendicularly to the second divider wall **66** and are connected to the adjacent second side wall **30** by means of glue flaps **116**, **118**, **120**, **122**, and **124**, respectively.

Top edges **126** and **128** of the first and second divider walls **62** and **66**, respectively, include recessed or stepped edges **130–131** and **132–133** respectively. These recessed or stepped edges allow the top end wall flaps **44** and **48** to fold flat, in the erect carton, to provide a completely flat top surface to improve stackability of the cartons **6**.

As mentioned above, the two portions **16** and **18** are hingedly connected together by means of the hinge straps **20** and **22**. It is noted that the hinge straps **20** and **22** are each provided with circular openings **134** and **135**, respectively, for providing as much head room for the container or bottle positioned in the cell just below the particular hinge strap, as is provided for the other ten bottles. This provides as flat a top surface for the carton **6** as is possible, to improve stackability of the cartons **6**. The openings **134** and **135** can, of course, be of any desired shape and size. It is to be noted that the hinge straps **20** and **22** can be connected to the top side wall flaps **46** and **50** rather than to the top end wall flaps **44** and **48**, if desired, although the presently described structure is preferred.

FIG. **2** shows the carton tube **4** formed from the carton blank **2** of FIG. **1**. In forming the carton tube **4**, the first step is to apply glue to the reinforcing flaps **74** and **76** while the blank **2** is face down. These reinforcing flaps **74** and **76** are then folded onto the first and second divider walls **62** and **64**, respectively. Then glue is applied to the glue flaps **106-124** and also, if desired (although it is not essential), to the divider wall end support sections **60** and **64**. The second portion **18** is then folded over on top of the first portion **16** along a pair of hinge lines **136** and **138** connecting the hinge straps **20** and **22** to the top end wall flaps **44** and **48**, respectively. The glue flap **32** is then folded 180 ° to overly section **60** and glue is applied to the glue flap **32**. Glue is also applied to the portions of the central divider **13** that remain in face to face relationship in the erect carton **6**. Then the two portions **16** and **18** are folded along a hinge line **140** connecting the first side wall **26** to the second end wall **28**. The carton tube **4** can be transported in the flat orientation shown in FIG. **2** and can be readily and easily setup for packing at the brewery.

FIG. **3** is an open top view showing the carton tube **4** of FIG. **2** after it as been erected. When force is applied to erect the carton tube **4**, the various cell walls **86–104** are caused to fold along both of their fold lines to form the predetermined cell structure of the carton **6** for receiving the beer bottles. FIG. **6** shows the top of the carton **6** as it appears when packed and closed.

FIG. **4** is a partial cross-sectional end view of the carton **6** as it appears when assembled and loaded; FIG. **4** also diagrammatically shows the manner in which the handle structure **12** operates with respect to a hand **81** of a person carrying the carton **6**. In carrying the carton **6** the hand **81** first pushes down on the two breakaway flaps **52** and **54** breaking a weak connection at **144** and **145**(see FIG. **1**) for flap **52** and at **146** and **147** (FIG. **1**) for flap **54**. The breakaway flaps **52** and **54** and the shield flaps **56** and **58** are then pushed downwardly and fingers of the hand **81** are then inserted through the hand hole **71**, bending the extensions **78** and **80** to the left (as viewed in FIG. **4**) to provide the smooth holding surface **84**. The shield flaps **56** and **58** prevent the fingers from coming into contact with any sharp edges of the bottles **150** during insertion of the fingers into the

compartment 7. The fingers also force the flap 72 to the left. The shield flaps 56 and 58 press against the adjacent bottles 150 forcing them outwardly to provide additional room for the fingers of the hand 81.

Another embodiment of the present invention will now be described with reference to FIGS. 7–10. FIGS. 7–9 show a carton 200 identical to the carton 6 of FIGS. 3–6 except for a new handle structure 202. The new handle structure 202 provides more hand room than does the embodiment of FIGS. 1–6, and the additional hand room is provided by the structure itself, without requiring the cooperation therewith of the hand as is required in the FIGS. 1–6 embodiment. As will be seen from the following description, the new handle structure 202 does not employ either the shield flaps 56 and 58 nor the flap 72 of the embodiment of FIGS. 1–6.

The new handle structure 202 (see FIG. 8) comprises a hand hole 204, a pair of breakaway flaps 206 and 208, and a separate insert 210. The separate insert 210 is inserted and glued into place after the carton 200 has been filled with containers 211, and after the top surface 213 of the carton 200 has been glued down. FIG. 7 is a top plan view showing the carton 200 after it is filled with containers, and after the top wall is glued down, but before the insert 210 is inserted. Referring now to FIG. 7, the breakaway flap 206 is divided by slits 212 and 214 into a central section 216, hingedly connected to a top side wall flap 218 along a hinge line 220, and a pair of end sections 222 and 224 hingedly connected to the top side wall flap 218 along hinge lines 226 and 228, respectively. The breakaway flap 208 is similarly divided by slits 230 and 232 into a central section 234, hingedly connected to a top side wall flap 236 along a hinge line 238, and a pair of end sections 240 and 242 hingedly connected to the top side wall flap 236 along a pair of hinge lines 244 and 246, respectively. The breakaway flaps 206 and 208 each include a pair of cutouts 248–249 and 250–251, respectively, for reasons to be disclosed in detail below. The section 216 is temporarily connected to sections 222 and 224 at breakaway connections 252 and 254, and similarly the section 234 is temporarily connected to sections 240 and 242 at breakaway connections 256 and 258.

With reference now to FIG. 9, showing, in cross-section, the completely constructed handle structure 202, insertion of the separate insert 210 down into place causes the connections 252, 254, 256, and 258 to break and causes the sections 216, 222, 224, 234, 240, and 242 to all move downwardly about their hinge lines. The insert 210 comprises a pair of reinforcing panels 260 and 262 glued to opposite outside surfaces of a central divider 13, each of which panels 260 and 262 is hingedly connected to one of a pair of wedge panels 266 and 268. The two reinforcing panels 260 and 262 are also connected to a narrow central panel 270 that overlies a top edge 272 of the central divider 13. Each of the reinforcing panels 260 and 262 is provided with an opening 274 and 276, respectively, that register with an opening 278 in the central divider 13 to form the hand hole 204 in complete handle structure 202. Each one of the reinforcing panels 260 and 262 is hingedly connected to an extension tab 277 and 279 respectively, that extends partway into the hand hole 204 to form, when forced to one side or the other by a hand, a relatively large, smooth surface 265, similar to surface 84 of FIG. 4, for contacting the hand. Prior to the insert 210 being forced down into position into the carton 200, glue is applied to the inside surfaces of the reinforcing panels 260 and 262. As the insert 210 is forced down, the wedge panels 266 and 268 contact the central sections 234 and 216, respectively, and the sections 234 and 216 in turn contact the four centrally located containers 211 and force them to tilt outwardly. The containers are forced to tilt outwardly a sufficient distance such that a pair of free edges 282 and 284 of the section 216 and a pair of edges 286 and 288 of wedge panel 266 snap and lock under a pair of closures 290 and 291 of a pair of containers 211 on one side of the central divider 13. Similarly, on the other side of the central divider 13, a pair of edges 292 and 294 of the section 234 and a pair of edges 296 and 298 of wedge panel 266 snap and lock under a pair of closures 300 and 302 of a pair of containers 211 on the other side of the central divider 13. The term "free," used with respect to edges, means that the particular panel is not connected to another panel along the "free" edge thereof. The closures 290, 291, 300, and 302 snap into locking engagement with the various edges at that point in the outward movement of the containers 211 when the closures are forced into and received in the cutouts 248-251. The downward force exerted on the wedge panels 266 and 268 by the closures 290, 291, 300, and 302, force the glued reinforcing panels 260 and 262 tightly against the central divider 13 producing a good tight glued connection.

The angle of the slits 212, 214, 230, and 232 is such that in the completed handle structure 202, the end sections 222, 224, 240, and 242 abut the wedge panels 266 and 268 to enclose the compartment 7; a continuous series of walls separate the compartment 7 from the recess 312.

It is to be noted that the cutouts 248–251 do not extend all the way back to the hinge lines 220 and 238, respectively. The reason for this is to provide four short tabs 330, 332, 334, and 336 projecting over the tops of the four closures 290, 291, 300, and 302, to aid in protecting the hand from scraping on the edges of the closures.

The new handle structure 202 is similar to the handle structure 12 of FIGS. 1–6 in that the centrally located containers are tilted outwardly in both embodiments to provide additional room for the hand carrying the carton. However, whereas this feature is accomplished in the embodiment of FIGS. 1–6 by structure cooperating with the hand itself, the embodiment of FIGS. 7–10 accomplishes the same objective without the need for such cooperation. In the new embodiment, the handle structure 202 itself holds the centrally located containers outwardly. Further, in the new embodiment, there is no need to have to initially thrust the hand down to break the breakaway flaps, the new handle structure 202 provides an opening 310 and a recess 312 exposing the handle structure 202 while still forming an enclosed compartment for the containers within the carton.

The hand hole 204 is slightly closer to the top surface 213 of the carton 200 than is the hand hole 71 of the embodiment of FIGS. 1–6. This has been made possible by virtue of the additional reinforcing panels 260 and 262 of the insert 210, which strengthen the portion of the central divider adjacent the hand hole 204.

It should also be noted that the embodiment of FIGS. 7–10 provides more room for the hand than does the

embodiment of FIGS. **1-6.** This is accomplished by means of the cutouts **248–251** allowing the container-engaging flap to move outwardly into contact with the container itself rather than being stopped by the closure. This feature provides approximately ⅛ inch additional room on each side of the central divider **13.**

When the carton **200** is used for returning empty containers, the wedge panels **266** and **268** are simply pushed down by the containers into the two cells below the handle structure **202.** Each of the wedge panels **266** and **268** is provided with a break line **320** and **322,** respectively, that contacts the cell walls, **90** and **100,** respectively. When returnables are thrust into the cells, the wedge panels **266** and **268** are pushed down, tear along their break lines, and are forced down and along the central divider **13.**

While the embodiment of FIGS. **7–10** has been described with detailed reference to the presently preferred construction thereof, it is to be understood that other structures can be used to hold at least the centrally located containers on at least one side of the central divider (the knuckle side), in an outwardly tilted position to provide the additional hand room. This other structure can include various types of holding means, such as wedge panels, whether locked under the closures or not, and even locking lugs or separate elastic bands to pull and hold the tilted containers in the desired position.

Another embodiment of the present invention will now be described with reference to FIG. **11** showing only one end of the carton; it is to be understood that the other end is identically constructed. This embodiment is identical to that of FIGS. **1–6** above, with the exception that the top side wall flaps **46** and **50** are each provided with a diagonal slit **350** and **352,** respectively, adjacent one end thereof, and with the further exception that the top end wall flap **44** is provided with a pair of mating diagonal score lines **354** and **356,** allowing the corners of the flap **44** to be bent and inserted through the slits **350** and **352,** respectively. In this way, when the carton **6** is to be used to return empties, the top wall can be easily locked down into place, allowing convenient stacking and palletizing. The slits and score lines do not have to be positioned at **45** degrees, but can be at any desired diagonal angle, as long as the slits and score lines "mate," that is, are at the proper angle relative to each other whereby a corner will properly fit and lock into a slit.

The term "one-piece construction" as applied to the outer structure, the inner structure, and the handle structure of the carton **6** of the present invention is hereby defined to mean that the three structures are formed from a single carton blank.

The invention has been described in detail with particular reference to the preferred embodiments thereof, but it will be understood that variations and modifications can be effected within the spirit and scope of the invention as described hereinabove and as defined in the appended claims.

I claim:

1. In a carton having a flat top surface for use as a multi-container carrier, the improvement comprising:

a. a handle structure centrally located adjacent said flat top surface; and

b. said handle structure including means for contacting the upper portions of only centrally located containers, adjacent said handle structure, and for holding centrally located containers, when received in said carrier, tilted away from said handle structure, to provide additional hand room.

2. The carton according to claim **1** wherein said handle structure and said holding means are located completely below a top surface of said carton.

3. The carton according to claim **2** wherein said holding means includes an edge that locks under a closure of said containers.

4. The carton according to claim **3** wherein said holding means comprises a panel section hingedly connected to a top wall of said carton, said panel section including an edge spaced from said hinge and positioned such that when said panel section is pivoted down into said carton, said edge will lock under a closure of a container positioned below said edge.

5. The carton according to claim **4** wherein said holding means includes a wedge panel separate from said top wall, said wedge panel including a free edge at one side thereof for locking under a container closure at the same side thereof as does said panel section edge.

6. In a carton for use as a multi-container carrier, the improvement comprising:

a. a handle structure;

b. means for holding predetermined ones of containers, located in said carton adjacent said handle structure, tilted away from said handle structure, to provide additional hand room;

c. said handle structure and said holding means being located completely below a top surface of said carton;

d. said holding means including an edge that locks under a closure of said containers;

e. said holding means comprising a panel section hingedly connected to a top wall of said carton, said panel section including an edge spaced from said hinge and positioned such that when said panel section is pivoted down into said carton, said edge will lock under a closure of a container positioned below said edge;

f. said holding means including a wedge panel separate from said top wall, said wedge panel including an edge at one side thereof for locking under a container closure; and

g. wherein said wedge panel is glued adjacent the other side thereof to said handle structure and is adapted to be wedged with said edge under said closure.

7. The carton according to claim **3** wherein said holding means includes a wedge panel separate from said top wall said wedge panel being hingedly and movably connected to said handle structure along a hinge line, said wedge panel having a free edge located above said hinge line, for locking under a container closure.

8. In a carton for use as a multi-container carrier, the improvement comprising:

a. a handle structure;

b. means for holding predetermined ones of containers, located in said carton adjacent said handle structure, tilted away from said handle structure, to provide additional hand room;

c. said handle structure and said holding means being located completely below a top surface of said carton;

d. said holding means including an edge that locks under a closure of said containers; and

e. wherein said carton includes:

i. an outer structure of approximately rectangular parallepiped shape and including a top wall, a bottom wall, two sidewalls, and two end walls completely enclosing a multi-cell compartment;

ii. an inner structure including a central divider and a multi-cell structure connected between said central divider and said sidewalls; and

iii. said top wall including a pair of breakaway flaps one on each side of said central divider, a hand hole in said central divider beneath said breakaway flaps, and an insert, separate from the remaining elements of said carton, and glued to said central divider over said hand hole, said insert including a pair of wedge panels one on each side of said central divider, each of said wedge panels and each of said breakaway flaps including edges adapted to lock underneath a closure of a container positioned in said carton.

9. The carton according to claim **8** wherein said edges of said breakaway flaps are formed by means of cutouts in said breakaway flaps.

10. The carton according to claim **9** wherein said insert includes a pair of reinforcing panels hingedly connected together including one on each side of said central divider, and each of said reinforcing panels including an opening therein in register with said hand hole.

11. The carton according to claim **10** wherein each of said reinforcing panels includes an extension flap hingedly connected thereto and projecting partway down into said hand hole for pivoting one way or the other to provide a relatively large, smooth surface for carrying said carton.

12. The carton according to claim **8** wherein said wedge flaps overlie said breakaway flaps.

13. A carton for use as a multi-container carrier and comprising:

a. an outer structure of approximately rectangular parallelepiped shape and including a top wall, a bottom wall, two sidewalls, and two end walls completely enclosing a multi-cell compartment;

b. an inner structure including a central divider and a multi-cell structure connected between said central divider and said sidewalls;

c. a handle structure centrally located adjacent said top wall;

d. said outer structure, said inner structure, and said handle structure being of one-piece construction; and

e. said structures including means adjacent said handle structure for contacting the upper portions of only those containers located adjacent said handle structure and for holding only said adjacent containers tilted away from said handle structure to provide additional hand room.

14. The carton according to claim **13** including means cooperating with a hand associated with said handle structure for forcing containers adjacent said handle structure outwardly to provide additional knuckle room for said hand.

15. A carton for use as a multi-container carrier and comprising:

a. an outer structure of approximately rectangular parallelepiped shape and including a top wall, a bottom wall, two sidewalls, and two end walls completely enclosing a multi-cell compartment;

b. an inner structure including a central divider and a multi-cell structure connected between said central divider and said sidewalls;

c. a handle structure;

d. said outer structure, said inner structure, and said handle structure being of one-piece construction;

e. means cooperating with a hand associated with said handle structure for forcing containers adjacent said handle structure outwardly to provide additional knuckle room for said hand; and

f. wherein said handle structure is located completely below the upper surface of said top wall and includes a hand hole in said central divider and wherein said forcing means includes a pair of breakaway flaps hingedly connected to said top wall for providing a central opening in said top wall overlying said hand hole, said breakaway flaps being in directly opposed relationship to each other.

16. The carton according to claim **15** wherein each of said breakaway flaps is hingedly connected to an infolded shield flap extending down into said compartment for preventing said hand from scraping against said containers and for contacting centrally located containers for forcing them outwardly.

17. The carton according to claim **13** including means for holding predetermined ones of containers, located in said carton adjacent said handle structure, tilted away from said handle structure, to provide additional hand room.

18. A carton for use as a multi-container carrier and comprising:

a. an outer structure of approximately rectangular parallelepiped shape and including a top wall, a bottom wall, two sidewalls, and two end walls completely enclosing a multi-cell compartment;

b. an inner structure including a central divider and a multi-cell structure connected between said central divider and said sidewalls;

c. a handle structure;

d. said outer structure, said inner structure, and said handle structure being of one-piece construction;

e. means for holding predetermined ones of containers, located in said carton adjacent said handle structure, tilted away from said handle structure, to provide additional hand room; and

f. wherein said holding means includes an edge for locking under a closure of said containers.

19. The carton according to claim **18** wherein said holding means includes at least one panel section hingedly connected to said top wall, and a separate insert, each of said panel sections and said insert including edges for locking under a closure of said containers, and means for wedging said panel sections and inserts between said central divider and said containers.

20. The carton according to claim **13** wherein said multi-cell structure divides said compartment into a plurality of identical cells.

21. The carton according to claim **13** wherein said handle structure exists completely below the upper surface of said top wall.

22. The carton according to claim **13** wherein said inner structure can be preglued to said outer structure to form a carton tube that can fold flat.

23. The carton according to claim **13** wherein said handle structure includes a hand hole in said central divider.

24. The carton according to claim 23 wherein said central divider extends the length of said compartment from one end wall to the other, parallel to and midway between said side walls, and wherein said central divider comprises a pair of separate central divider walls in contact with each other throughout their length along their respective inside surfaces.

25. The carton according to claim 24 wherein said multi-cell structure comprises a plurality of cell walls on each side of said central divider, said cell walls extending perpendicularly to said central divider and being equally spaced along the length of said compartment, and each cell wall being positioned directly across from the adjacent cell wall on the opposite side of said central divider.

26. The carton according to claim 25 wherein each of said cell walls is formed from the material of the adjacent central divider wall and is hingedly connected thereto.

27. The carton according to claim 26 wherein each of said cell walls includes a terminal flap glued to the adjacent side wall.

28. A carton for use as a multi-container carrier and comprising:

a. an outer structure of approximately rectangular parallelepiped shape and including a top wall, a bottom wall, two sidewalls, and two end walls completely enclosing a multi-cell compartment;

b. an inner structure including a central divider and a multi-cell structure connected between said central divider and said sidewalls;

c. a handle structure;

d. said outer structure, said inner structure, and said handle structure being of one-piece construction;

e. said handle structure including a hand hole in said central divider;

f. said central divider extending the length of said compartment from one end wall to the other, parallel to and midway between said sidewalls, and wherein said central divider comprises a pair of separate central divider walls in contact with each other throughout their length along their respective inside surfaces;

g. said multi-cell structure comprising a plurality of cell walls on each side of said central divider, said cell walls extending perpendicualrly to said central divider and being equally spaced along the length of said compartment, and each cell wall being positioned directly across from the adjacent cell wall on the opposite side of said central divider; and

h. wherein said pair of central divider walls comprises a first divider wall and a second divider wall and wherein said first divider wall is hingedly connected at one end thereof to a first divider wall end support section positioned parallel to and in contact with a first end wall, and wherein said second divider wall is hingedly connected at one end thereof to a second divider wall end support section positioned parallel to and in contact with a second end wall.

29. The carton according to claim 28 wherein each of said cell walls is formed from the material of the adjacent central divider wall and is hingedly connected thereto and wherein said first and second divider walls are connected together by means of said second divider wall end support section being hingedly connected to a terminal flap hingedly connected to one of the cell walls formed from said first divider wall.

30. The carton according to claim 29 wherein said top wall includes a top side wall flap connected to each of said side walls and a top end wall flap connected to each of said end walls, and wherein said central divider is hingedly connected to said top end wall flaps.

31. The carton according to claim 30 wherein a first top end wall flap is hingedly connected to a first hinge strap, hingedly connected in turn to said first divider wall end support section, and wherein said second top end wall flap is hingedly connected to a second hinge strap, hingedly connected in turn to said second divider wall end support section.

32. The carton according to claim 31 wherein each of said first and second hinge straps include an opening therein sufficient to provide a container positioned in the cell directly below each of said hinge straps, the same head room as the remaining containers have.

33. The carton according to claim 32 wherein each of said separate central divider walls includes an upper reinforcing flap hingedly connected to the top edge thereof and folded down and glued to the respective outside surface thereof.

34. The carton according to claim 33 wherein at least one of said reinforcing flaps includes a hand hole flap hingedly connected thereto and extending partway into said hand hole for providing a relatively large, rounded carrying surface for a hand inserted into said hand hole.

35. The carton according to claim 23 wherein said top wall includes a pair of top sidwalls each of which includes a pair of hingedly connected breakaway flaps for providing a central opening for receiving a hand, said breakaway flaps being in directly opposed relationship to each other and being centrally positioned in said top wall directly over said hand hole.

36. A carton for use as a multi-container carrier and comprising:

a. an outer structure of approximately rectangular parallelepiped shape and including a top wall, a bottom wall, two sidewalls, and two end walls completely enclosing a multi-cell compartment;

b. an inner structure including a central divider and a multi-cell structure connected between said central divider and said sidewalls;

c. a handle structure;

d. said outer structure, said inner structure, and said handle structure being of one-piece construction;

e. said handle structure including a hand hole in said central divider;

f. said top wall including a pair of top sidewalls each of which includes a pair of hingedly connected breakaway flaps for providing a central opening for receiving a hand, said breakaway flaps being in directly opposed relationship to each other and being centrally positioned in said top wall directly over said hand hole; and

g. wherein each of said breakaway flaps is hingedly connected to an infolded shield flap extending down between said central divider and the adjacent containers, for preventing the hand from scraping against the containers, and for contacting the centrally located containers for forcing them outwardly to provide additional knuckle room.

37. A one-piece carton blank for forming a multi-cell carrier carton having an outer structure, an inner structure and a handle structure, said carton blank compris-

ing a first portion comprising an outer structure of a carton to be erected from said carton blank, a second portion comprising a central divider structure and a multi-cell structure, each of said portions including elements that cooperate in the carton to be erected from said carton blank to provide a complete handle structure for said carton, said first portion being hingedly connected to said second portion by means of a pair of hinge strap panel sections separate from said first and second portions, said hinge strap panel sections each including a central opening therethrough of sufficient size to accomodate a top of a container to be received within said carton.

38. A one-piece carton blank for forming a multi-cell carrier carton having an outer structure, an inner structure and a handle structure, said carton blank comprising a first portion comprising an outer structure of a carton to be erected from said carton blank, a second portion comprising a central divider structure and a multi-cell structure, each of said portions including elements that cooperate in the carton to be erected from said carton blank to provide a complete handle structure for said carton, said first portion being hingedly connected to said second portion by means of a pair of hinge straps; and wherein said first portion includes, hingedly connected together in series, a first end wall, a first sidewall, a second end wall, and a second sidewall, wherein said first and second end walls are hingedly connected to first and second bottom end wall flaps respectively, wherein said first and second sidewalls are hingedly connected to first and second bottom sidewall flaps respectively, all of said bottom wall flaps being adjacent one edge of said carton blank, wherein said first and second end walls are also hingedly connected to first and second top end wall flaps respectively, wherein said first and second sidewalls are hingedly connected to first and second top sidewall flaps respectively, and wherein said pair of hinge straps are hingedly connected respectively to said first and second top end wall flaps.

39. The carton blank according to claim **38** wherein said second portion includes, hingedly connected together in series, a first divider wall end support section, a first divider wall, a second divider wall end support section, and a second divider wall.

40. The carton blank according to claim **39** wherein said first and second divider walls are hingedly connected to first and second reinforcing flaps respectively, along an edge of said first and second divider walls adjacent said first section.

41. The carton blank according to claim **39** wherein each one of said pair of hinge straps is hingedly connected between a respective one of said first and second divider wall end support sections and a respective one of said top end wall flaps.

42. The carton blank according to claim **41** wherein each of said first and second divider walls includes a plurality of cell walls partially cut out of the material of said first and second divider walls.

43. The carton blank according to claim **42** wherein said hinge straps each include a circular opening of sufficient size to accomodate a top of a container to be received within said carton.

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