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Holmes

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[54] **BOTTLE CARRIER**

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[52] **U.S. Cl.** ..... **229/40**, 206/65 E

[51] **Int. Cl.**..... **B65d 5/02**, B65d 71/00

[58] **Field of Search**..... 229/40; 206/65 E

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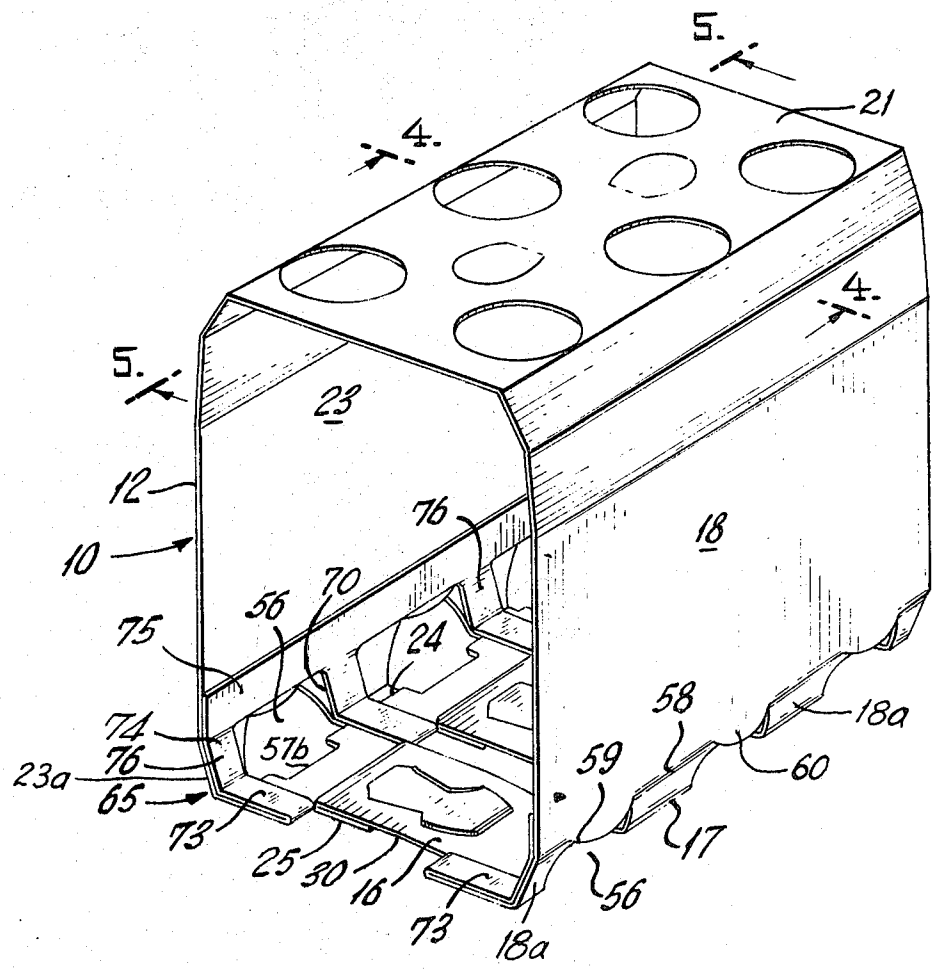
[57] **ABSTRACT**

A wraparound bottle carrier provided with heel opening reinforcing means. The carrier including a bottom wall having interlocked inner and outer closure panels and side walls having heel openings at the base thereof. The reinforcing means being folded terminal portions of the inner and outer closure panels overlying the bottom wall and the adjoining portions of the side walls.

8 Claims, 5 Drawing Figures



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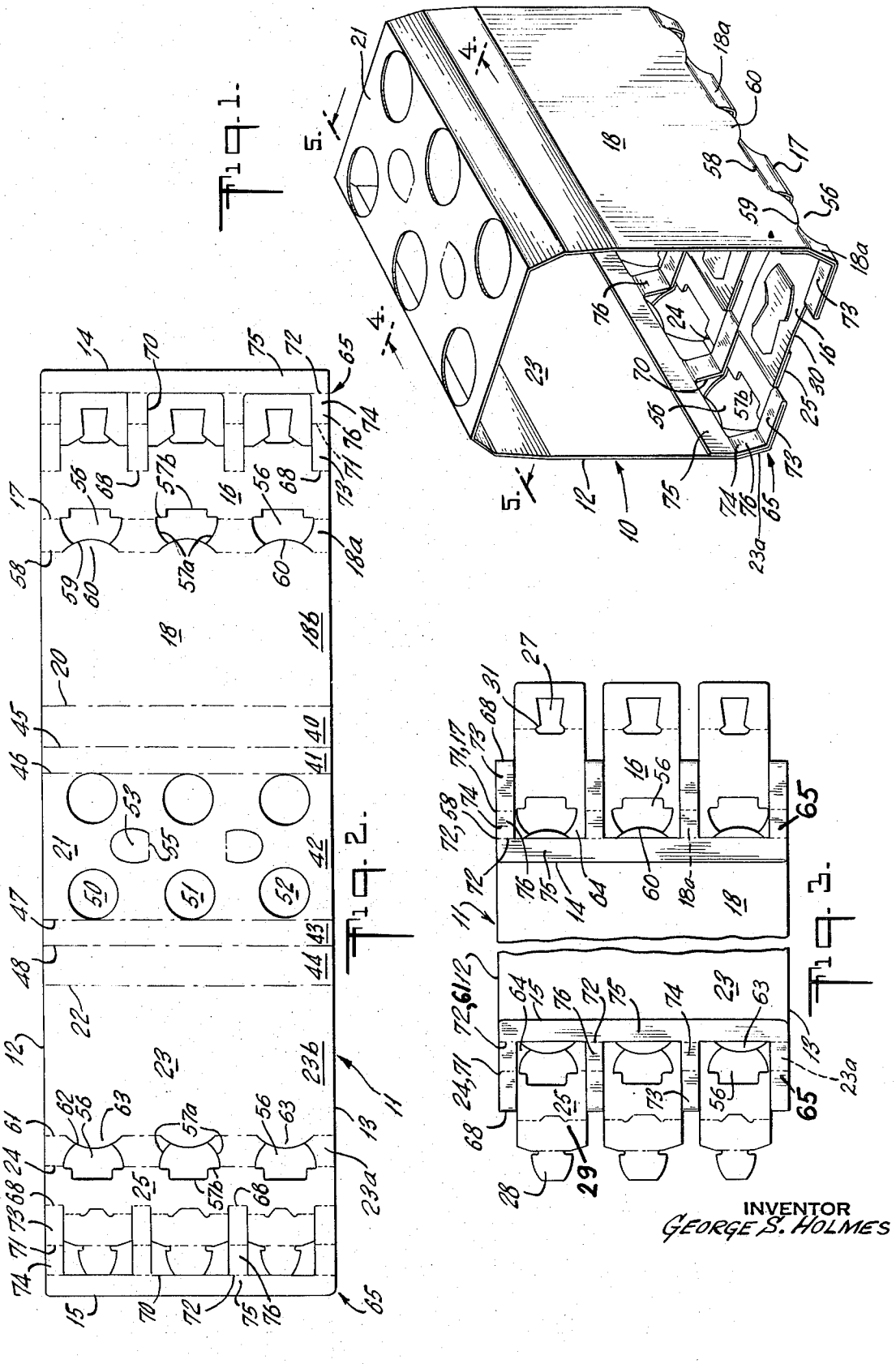
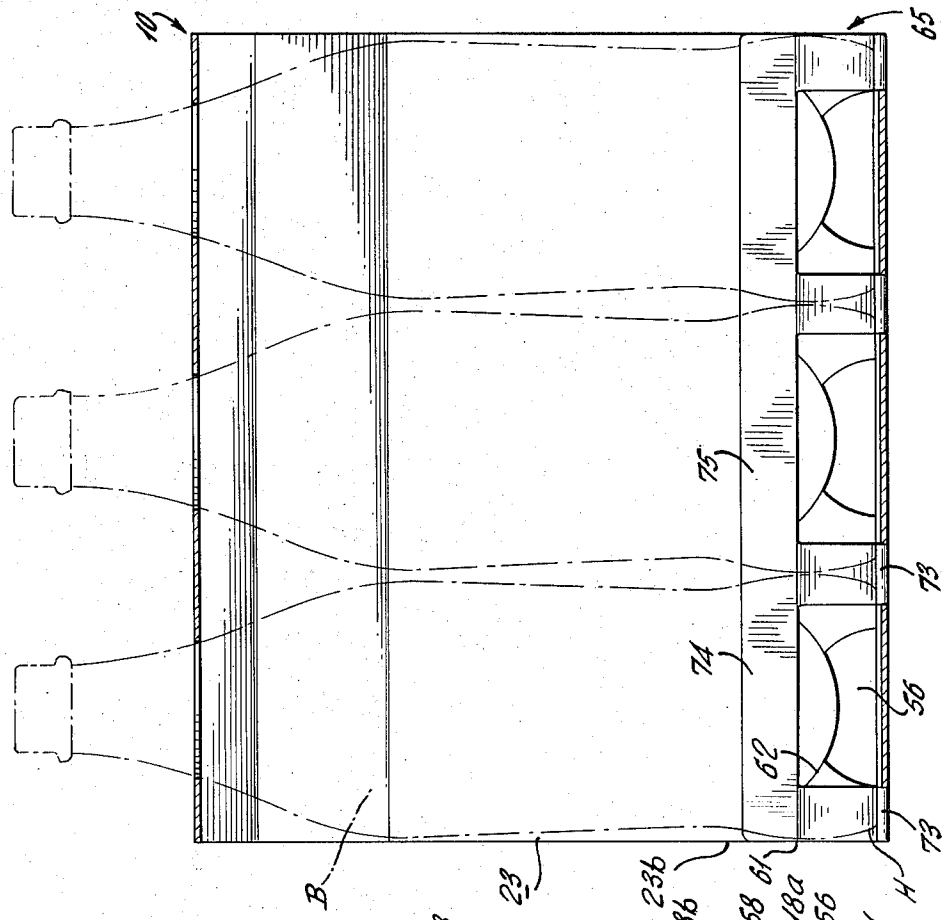


FIG. 5.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GEORGE S. HOLMES

FIG. 4.

BOTTLE CARRIER

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to bottle carriers and more particularly to a new and improved bottle carrier having reinforcing means for preventing the tearing of the carrier.

2. The Prior Art

Carriers of the wraparound paperboard type wherein the side walls of the carrier are provided with openings therein along the base thereof for receiving glass or plastic bottle heels are not entirely satisfactory for the packaging of bottles. These carriers are susceptible to tearing about the openings along the base thereof due to pressure exerted by the bottles. Furthermore, portions of the carrier outwardly of the endmost bottles are especially weak in the wraparound carrier construction. Moreover, in many instances, the endmost bottle in the carrier cannot be restrained from moving slightly. This movement usually results in tearing or rupturing of the carrier along the base thereof.

These problems which are common to all wraparound type bottle carriers are attributable primarily to the large permissible variation in bottle diameter. In addition, bottle variation is incrementally increased in proportion to the number of bottles in the carrier pack. For example, in 2 × 3 six pack, bottle variation is multiplied twice widthwise of the carrier pack and thrice lengthwise of the carrier pack. Yet at the same time, the wraparound bottle carrier must form a snug enclosure to be effective. In a large number of wraparound carriers, the carrier is pulled so tightly around the bottles that the fibers are strained or may have begun to tear at the outer edges of the heel openings.

Heretofore, conventional carriers for the present purpose have generally been constructed with flaps struck from the walls thereof and folded into a partial overlying relation to the side and bottom walls of the carrier in the neighborhood of the openings formed so as to reinforce the fold lines of the carrier at opposite ends of the openings. In addition, prior art carriers have also been provided with outer edge flaps hingedly connected to the top, bottom and side walls and folded interiorly of the carrier for engaging the seams of the outermost bottles to resist outward movement thereof. Alternatively, the above folded edge flaps have been utilized singularly without the flaps struck from the walls to facilitate bottle retention to prevent tearing of the container.

In the conventional turned over edge blank, from which these prior art carriers are constructed, the turn over edges are provided for by the addition of narrow strips hingedly connected to the longitudinal edges of the blank. While this conventional blank forms a satisfactory assembled bottle carrier, the additional material requirement of the paperboard strips plus the necessity of an additional manufacturing operation for gluing the turned over edges are objectionable features. Moreover, the uneven thickness of the blank causes feeding problems in the wrapping machines due to the tendency of the turned over edge blank to sag in the middle of the blank and take a "set".

Reinforcement of the carrier outwardly of the endmost bottles without the necessity of an additional gluing operation has not been satisfactorily solved.

While prior art carrier and blank constructions have afforded protection against tearing and rupture of the carrier, the art is continually seeking to produce a simpler, more effective and more economical carrier with heel opening reinforcing means.

SUMMARY OF THE INVENTION

By the present invention, it is proposed to provide a new and improved wraparound carrier with heel opening reinforcing means so as to overcome the difficulties as encountered heretofore.

This is accomplished generally by the provision of a carrier of the wraparound paperboard type including a bottom wall composed of interlocked inner and outer closure panels and side walls connected to the bottom wall and having spaced heel openings at the base thereof. The reinforcing means for preventing the tearing of the bottle carrier at the base thereof comprises folded terminal portions of the inner and outer closure panels overlying the bottom wall and the adjointing portions of the side walls.

In view of the foregoing, the primary object of this invention is to provide a novel bottle carrier of the wraparound paperboard type wherein portions of the carrier outwardly of the endmost bottle openings are provided with a double thickness of material to prevent the tearing of the bottle carrier.

Another object of this invention is to provide a novel bottle carrier of the wraparound paperboard type wherein the openings in the side walls at the base thereof for receiving bottle heels are provided with suitable reinforcing means to prevent the tearing of the bottle carrier along the base thereof.

Another object of this invention is to provide a novel bottle carrier of the wraparound paperboard type wherein at least the endmost ones of the openings in the side walls at the base thereof for receiving bottle heels are provided with suitable reinforcing means to prevent the tearing of the bottle carrier along the base thereof and bottle retaining means to oppose movement of the bottles.

Another object of this invention is to provide a novel blank for forming a bottle carrier, the blank having foldable edge portions along the transverse edges of the blank thereof defining flaps which on assembling of the carrier will serve as suitable reinforcing means for openings formed in the side walls of the bottle carrier at the base thereof.

A further object of this invention is to provide a novel blank for forming a bottle carrier, the blank having foldable edge portions along the transverse edges of the blank thereof defining flaps which on assembling of the carrier will serve as suitable bottle retaining means to oppose movement of the bottles.

With the above, and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a wraparound paperboard bottle carrier constructed in accordance with this invention, and illustrates heel opening reinforcing means disposed about the heel openings.

FIG. 2 is a top plan view of a substantially rectangular paperboard blank from which the bottle carrier of FIG. 1 is constructed.

FIG. 3 is a view similar to FIG. 2 showing the blank having the foldable flaps in the reinforcing position.

FIG. 4 is an (enlarged) transverse sectional view taken along line 4—4 of FIG. 1, and illustrates the position of a pair of bottles in phantom outline after the carrier blank has been wrapped about the bottles.

FIG. 5 is an (enlarged) longitudinal sectional view taken along line 5—5 of FIG. 1, and illustrates the position of one row of bottles in phantom outline after the carrier blank has been wrapped about the bottles.

PREFERRED EMBODIMENT

A novel wraparound bottle carrier constructed in accordance with this invention is best illustrated in FIGS. 1, 4 and 5 of the drawings and is generally designated by the reference numeral **10**. The bottle carrier **10** is constructed from the blank **11** of FIGS. 2 and 3. For the most part, the blank **11** is of conventional construction, but incorporates the novel details of the present invention. Accordingly, all of the details of the blank will not be specifically described here.

As shown in FIGS. 2 and 3, the blank **11** comprises a substantially rectangular blank of paperstock material defined by a pair of longitudinal edges **12, 13** and first and second transverse edges **14, 15.**

An inner closure panel **16** of the carrier blank **11** is set off by the first transverse edge **14,** a first transverse fold line **17** and portions of the pair of longitudinal edges **12** and **13.**

A first side panel or wall **18** of the carrier blank **11** is set off between the first transverse fold line **17,** a second transverse fold line **20** and portions of the pair of longitudinal edges **12** and **13.** First side wall **18** is composed of two side wall panels **18***a*, **18***b*.

A top panel or wall **21** of the carrier blank **11** is set off between the second transverse fold line **20,** a third transverse fold line **22** and portions of the pair of longitudinal edges **12** and **13.**

A second side panel or wall **23** is defined by portions of the pair of longitudinal edges **12, 13,** the third transverse fold lines **22** and a fourth transverse fold line **24.** Second side wall **23** is composed of two side wall panels **23**a, **23**b.

An outer closure panel **25** of the carrier blank **11** is defined by portions of the pair of longitudinal fold lines **12, 13,** the fourth transverse fold line **24** and the second transverse edge **15.**

The inner closure panel **16** and the outer closure panel **25** combine to define a bottom wall **30** of the bottle carrier **10.** In order to connect together the panels **16** and **25,** the panel **25** includes a plurality of transversely spaced primary locking tabs **29** which are engageable in a plurality of transversely spaced openings **27** struck from the inner closure panel **16.** Each of the openings **27** and primary locking tabs **29,** respectively, is identical, and each one of the openings **27** is in longitudinal alignment with an associated one of the primary locking tabs **29.**

In addition to the primary locking tabs **29,** the panel **25** has projecting therefrom a plurality of transversely spaced secondary locking tabs **28** which are hingedly connected to the outermost edges of the locking tabs **29** and which are engageable in openings **27.** The secondary locking tabs **28** also pass through slits **31** at the innermost side or end of the openings **27** in the inner closure panel **16.** The secondary locking tabs **28** serve to keep the panels **16** and **25** from unfolding and releasing the primary locking tabs **29.**

The top panel or wall **21** of the carrier blank **11** is divided into five top panel portions **40–44** by third, fourth, fifth and sixth transverse lines, **45, 46, 47** and **48** respectively. The second transverse fold line **20** and the third transverse line **45** set off the first side portion **40** of the top panel **21.** The third transverse line **45** and the fourth transverse line **46** set off the second side portion **41** of the top panel **21.** The fifth transverse line **47** and the sixth transverse line **48** set off the third side portion **43** of the top panel **21.** The sixth transverse line **48** and the third transverse fold line **22** set off the fourth side portion **44** of the top panel **21.** Between the fourth and fifth transverse lines **46** and **47** respectively lies the central portion **42** of the top panel **21.** The transverse lines **45, 46, 47** and **48** are illustrated as fold lines, but these lines may be partial lines of severance.

A plurality of opposed pairs of bottle neck receiving circular openings **50–52** are formed in the central portion **42** of the top panel **21.** Each of the pairs of opposed openings **50–52** is identical and in longitudinal alignment and in opposed relationship along a center line through the central portion **42** of the top panel **21.**

A pair of identical, oppositely directed finger gripping tabs **53** are struck from the center portion **42** of the top panel **21** and hinged thereto along identical fold lines **55.**

A plurality of identical, transversely spaced cutouts **56** are formed in the inner closure panel **16** and first side panel **18** along first transverse fold line **17** and in the outer closure panel **25** and the second side panel **23** along second transverse fold line **24.** Curved edges **57***a* define portions of cutouts **56** in the side wall panels **18***a* and **23***a*. The fold lines **17** and **24** are interrupted by straight line cuts **57***b* having portions offset into the inner and outer closure panels **16** and **25** and defining the outermost edges of the cutouts **56.**

A fold line **58** adjacent the first transverse fold line **17** and parallel thereto is interrupted along its length by a plurality of arcuate cut lines **59** adjacent each of the cutouts **56.** Each of the cut lines **59** sets off an identical bottle engaging tab **60.** A similar fold line **61** in the second side panel **23** adjacent the second transverse fold line **24** and parallel thereto is interrupted along its length by a plurality of arcuate cut lines **62** adjacent each of the cutouts **56.** Each of the cut lines **62** sets off an identical bottle engaging tab **63.**

As shown in FIGS. **1, 4** and **5** in the completed bottle carrier, each cutout **56** results in the formation of bottle heel receiving openings **56** in the respective side panels **18** and **23,** at the bases thereof, and in the inner and outer closure panels **16** and **25,** along the transverse fold lines **17** and **24** respectively. The purpose of the openings **56** is to permit the heels H of the bottles to project through the side panels **18, 23** and to interlock the bottles B with the bottle carrier **10** so as to prevent movement of the bottle B relative to the bottle carrier **10.**

Referring again to FIGS. 2 and 3, reinforcing means, generally designated by the reference numeral **65** are integrally formed from portions of inner and outer closure panels **16** and **25,** respectively. Reinforcing means **65** are formed as terminal portions of inner and outer

closure panels 16 and 25 at opposite ends of the blank 11 as hereinafter described.

Each of the inner and outer closure panels 16 and 25, respectively, is provided with a plurality of C-shaped cuts 70 which face respective ones of the cutouts 56. C-shaped cuts 70 terminate on fold lines 68, which are disposed parallel to first transverse line 17 and to second transverse line 24. Fold lines 68, extend between the centermost and endmost of the C-shaped cuts 70 and between the endmost of the C-shaped cuts 70 and the longitudinal edges 12 and 13. C-shaped cuts 70 together with fold lines 68 and longitudinal edges 12 and 13 and transverse edges 14 and 15 define flaps, generally referred to by the numeral 65.

Each flap 65 is provided with fold lines 71 parallel and longitudinally aligned with fold lines 68. Fold lines 71 divide flaps 65 into first and second flap portions 73, 74. First flap portions 73 comprise a plurality of transversely spaced parallel legs, hingedly connected to inner and outer closure panels 16, 25 along fold lines 68, and which in the erected carton overlap portions of the bottom wall 30. Second flap portions 74 comprise transverse strip portions 75 adjacent the transverse edges 14, 15 and a plurality of transversely spaced parallel struts 76. Struts 76 are attached to strip portions 75 along fold lines 72 and hingedly connected to legs 73 along fold lines 71. In the erected carton, second flap portions 74 oppose portions of the side walls 18, 23.

Considering now FIG. 3, it will be seen that blank 11 is shown with flaps 65 folded about fold lines 68 to its reinforcing position overlying panels 16, 18, 23 and 25. Flaps 65 may be folded over immediately prior to carrier assembly about the bottles H.

It may also be desirable to securely attach flaps 65 to panels 16, 18, 23 and 25. A suitable glue may be utilized for this purpose.

As illustrated in FIG. 3, fold lines 71 are disposed coextensive with portions of first transverse fold line 17 and second transverse fold line 24. Also, fold lines 72 are disposed coextensive with portions of fold lines 58 and 61. In addition, as a result of C-shaped cuts 70 being formed in panels 16, 25, when flaps 65 are folded about fold lines 68, openings 64 are superimposed over cutouts 56 to provide reinforcement thereof. The openings 64 are defined on three sides by struts 76 and portions of strip portions 75.

Considering now the assembled bottle carrier 10 in detail as shown in FIGS. 1, 4 and 5, the folded flaps 65 can be readily viewed in the folded condition. Each flap 65 extends about its associated openings 56 and provides a double thickness of material along portions of its associated one of transverse fold lines 17, 24 extending between the bottom wall 30 and the side walls 18, 23. In addition, each of second flap portions 74 provides a double thickness of material along portions of its associated one of transverse fold lines 58, 61 extending between first side wall panels 18a and 18b and second side wall panels 23a and 23b. Furthermore, each of second flap portions 74 provides a double thickness of material along portions of side wall panels 18b and 23b adjacent fold lines 58, 61 and arcuate cut lines 59, 62.

First flap portions 73 provide a double thickness of material intermediate openings 56 and outwardly of endmost openings 56. As shown in FIGS. 4 and 5, each of first flap portions 73 is overlapped by at least one of said bottle heels H. In the overlapped condition, portions of each bottle heel H rest on bottom wall 30 while other portions rest on first flap portions 73.

While preferred forms and arrangement of parts have been shown in illustrating the invention, it is to be clearly understood that various changes in details and arrangement of parts may be made without departing from the spirit and scope of the invention as defined in the appended claimed subject matter. For example, the disclosed invention is equally applicable to be used with 2 × 2 four packs and 2 × 4 eight packs of bottles as well as the 2 × 3 illustrated six pack. In addition, the disclosed invention may be adaptable to be used with other container packs, such as cans or the like, needing reinforcing in the area about the heel openings at the base of the container pack.

What is claimed:

1. In a bottle carrier of the wraparound paperboard type comprising a top wall, a bottom wall, and side walls connected to said top and bottom walls along upper and lower fold lines respectively, wherein each of said side walls have openings therein at the base thereof spaced along one of said lower fold lines for the reception of portions of bottle heels, and wherein said bottom wall includes inner and outer closure panels having portions overlapped and interlocking connecting means, the improvement comprising reinforcing means for preventing the tearing of said bottle carrier at said heel receiving openings, said reinforcing means being in the form of flaps, each of said flaps being derived from a marginal portion of one of said inner and outer closure panels and being folded on a hinge line which is in the plane of said closure panel and generally parallel with the fold line connecting the associated top and bottom wall and which is spaced inwardly of said heel openings, each of said flaps having openings therein spaced in accordance with the spacing of said heel openings and located so as to align with said heel openings when the flap is folded to a position overlying a portion of said bottom wall and an adjoining portion of one of said side walls with a free marginal edge portion in the form of a strip extending along the top edges of said heel openings and with portions between said flap openings extending at said fold line along the side edges of said heel openings.

2. In a bottle carrier of the wraparound paperboard type comprising a top wall, a bottom wall, and side walls connected to said top and bottom walls along upper and lower fold lines respectively, wherein each of said side walls have openings therein at the base thereof spaced along one of said lower fold lines for the reception of portions of bottle heels, and wherein said bottom wall includes interlocked inner and outer closure panels, the improvement comprising reinforcing means for preventing the tearing of said bottle carrier at said heel receiving openings, said reinforcing means being in the form of flaps, each of said flaps being derived from a marginal portion of one of said inner and outer closure panels and being folded on a hinge line which is generally parallel with the fold line connecting the associated top and bottom wall to a position overlying a portion of said bottom wall and an adjoining portion of one of said side walls, each of said flaps being divided into first and second flap portions by a fold line extending coextensively along one of said lower fold lines, said first flap portion directly overlying portions of said bottom wall and said second flap portion di-

rectly overlying adjoining portions of one of said side walls, said second flap portion comprising a strip portion and a plurality of spaced struts, said strip portion being spaced from and generally parallel to said fold line and being positioned upwardly adjacent the edges of said openings, and said struts being positioned transversely to said fold line and said strip portion and connected at opposite ends thereof to both said strip portion and said first flap portion at said fold line.

3. The bottle carrier as described in claim 2 wherein said second flap portion has at least one opening therein defined by said strip portion and a pair of said struts which are disposed along opposite sides of said opening.

4. The bottle carrier as described in claim 3 wherein said first flap comprises a plurality of spaced parallel legs each of said legs being an extension of an associated one of said struts, at least a portion of each of said legs being overlapped by a portion of a heel of a bottle received in the associated opening.

5. The bottle carrier as described in claim 4 wherein said openings and said struts and said legs are alternately spaced, said openings being three in number and said struts and said legs being four in number.

6. A bottle carrier of the wraparound paperboard type comprising a top wall, a bottom wall, and side walls connected to said top and bottom walls along upper and lower fold lines; said bottom wall including inner and outer closure panels having portions at the end margins which are in the form of overlapping flaps with interengaged locking and latching elements therein; said side walls having openings therein at the base thereof along each of said lower fold lines for the reception of bottle heels; and reinforcing means integral with said bottle carrier for preventing the tearing of said bottle carrier at said base about said openings, said reinforcing means being in the form of strip members and integral struts which are derived from portions of one of said inner and outer closure panels and folded on a hinge line parallel with the associated lower fold line to a position overlying a portion of said bottom wall and an adjoining portion of one of said side walls so as to extend along the sides and tops of the associated side wall opening.

7. A blank for a bottle carrier of the wraparound type, said blank being of a rectangular shape and being divided into panels by transverse fold lines, said panels including inner and outer bottom closure forming panels, said wall forming panels and a central top wall forming panel, at least two of said fold lines being interrupted by a plurality of openings extending into said side wall forming panels and defining bottle heel receiving openings, each of said inner and outer bottom closure pannels having cut and fold lines defining flaps in alignment with said openings, each of said flaps constituting an end marginal portion of one of said inner and outer closure panels and terminating at a transverse fold line which is spaced inwardly of said panel end a distance sufficient to enable said flap to be folded to a position overlying a portion of the associated bottom closure panel and an adjoining portion of the adjacent side wall panel so that portions are disposed about said openings to reinforce the material about said openings when the carrier is erected.

8. A blank for a bottle carrier of the wraparound type, said blank being of rectangular shape and being divided by transverse score lines into inner and outer bottom closure forming panels at opposite ends of the blank, side wall forming panels adjoining said bottom closure forming panels and a central top wall forming panel, at least two of said fold lines being interrupted by a plurality of openings extending into said side wall forming panels and defining bottle heel receiving openings, each of said inner and outer bottom closure forming panels having a plurality of transversely spaced, generally U-shaped cutting lines which are spaced inwardly of the end edges of the blank so as to leave a relatively narrow transverse marginal strip at each end of the blank with integral portions extending between spaced, longitudinally extending side portions of said cutting lines, which portions extend to transverse fold lines spaced inwardly of the ends of the blank and outwardly of the transverse fold lines separating the associated bottom closure forming panels and the adjoining side wall panels, said cutting lines defining closure panel portions in alignment with said openings, each of said closure panel portions constituting an end marginal portion of one of said inner and outer closure panels which extends from the transverse fold line separating the associated bottom closure forming panel and the adjoining side wall panel a distance sufficient to enable said marginal portion to overlie a like portion of the associated bottom closure forming panel when the blank is folded into a tube so as to form the bottle carrier and said closure panel portions each having locking elements cut therein for co-operation with locking elements in the portions with which it is in overlapping relation.

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