June 4, 1957 H. J. GOSS 2,794,572

BOTTLE CARRIER

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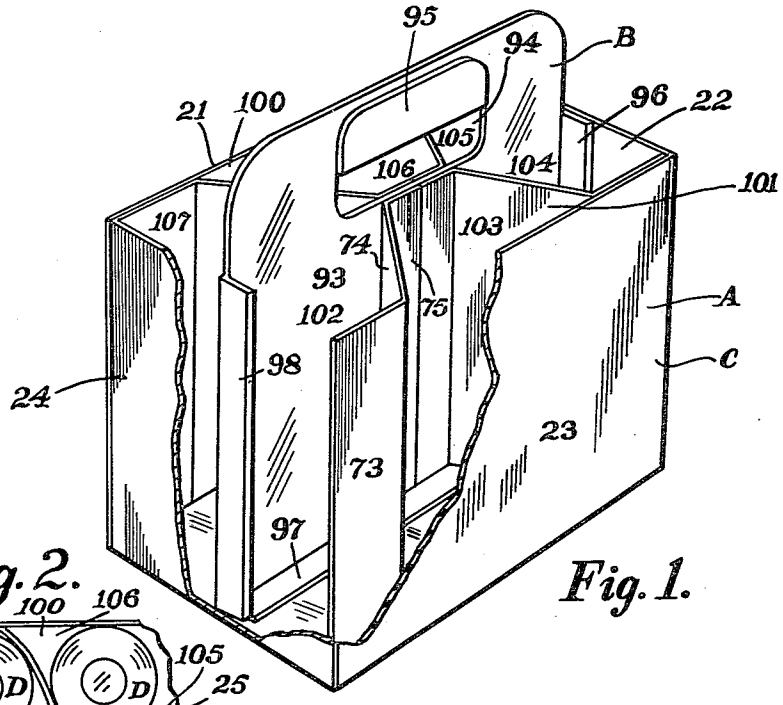


Fig. 1.

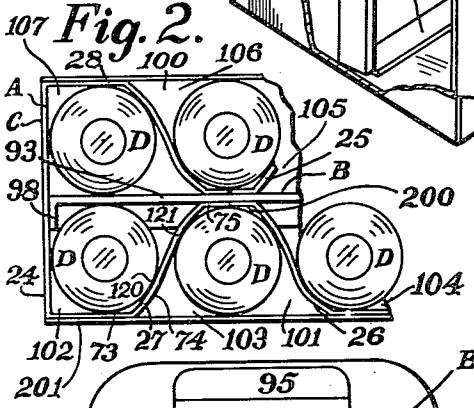


Fig. 2.

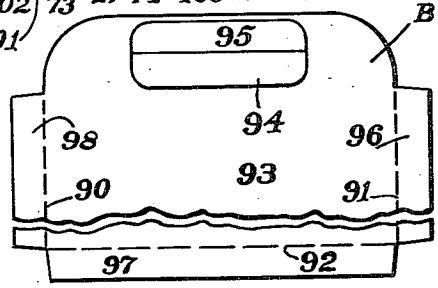


Fig. 3.

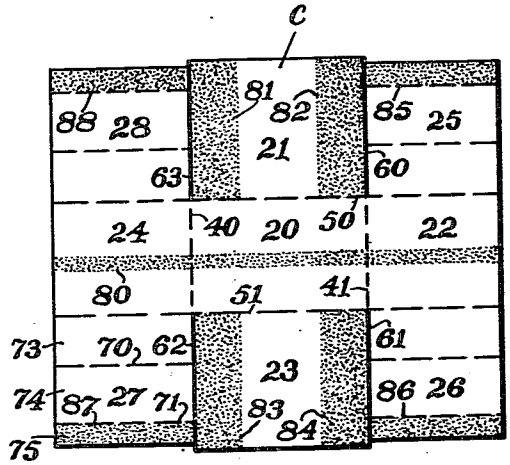


Fig. 4.

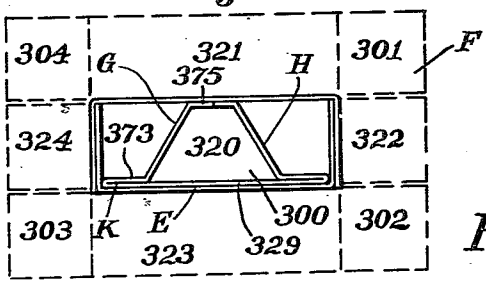


Fig. 5.

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BOTTLE CARRIER

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5 Claims. (Cl. 220—118)

This invention relates to new and useful improvements in thin paperboard carriers for bottles or the like.

An object of the invention is to provide a non-collapsible, rigid carrier which can be shipped in blank form and set up at the bottling plant on many well known types of gluing and folding machines.

Another object of my invention is to provide a carrier principally formed of a thin inexpensive paperboard but having one side wall or central, longitudinal, partition panel of greater thickness to lend the desired rigidity to the carrier.

Still another object of my invention is to provide such a rigid side wall or panel in the form of a separate insert, at least twice the thickness of the material of the remainder of the carrier, rather than merely doubling over said material as has sometimes been done in saddle bag type carriers.

A further object of my invention is to provide lateral cross partitions in a bottle carrier perpendicular to the bottom thereof but extending obliquely across the bottle compartments thereof at spaced distances therealong and fixed at each opposite edge to an opposite compartment side wall. By such construction the oblique partition contacts a bottle on each side tangentially and at non-adjacent points, therefore providing a cushioning effect of great value.

A still further object of my invention is to provide a cross partition member with an integral side wall glue flap and terminal glue flap located on each opposite side of the lateral, oblique cross partition portion thereof, the glue flaps being positioned to give added rigidity to a carrier when glued in place.

In the drawings, Fig. 1 is a perspective view of a bottle carrier made according to my invention with a portion of the carton walls cut away to show the construction.

Fig. 2 is a fragmentary plan view of the device shown in Fig. 1.

Fig. 3 is a plan view of a separate blank of extra thick paperboard, from which my rigid wall panel is formed.

Fig. 4 is a plan view on a reduced scale of a separate blank of thin, inexpensive paperboard from which the compartmented carton of my carrier is formed.

Fig. 5 is a view of a paperboard carton of another type having cross partition members according to my invention.

The preferred form of my invention is shown in Figs. 1–4 wherein the bottle carrier A is formed from a separate panel blank B, forming a central, longitudinal partition, and from a separate compartment-forming blank C.

The blank C is preferably formed of thin inexpensive paperboard, for example about twenty thousandths of an inch in thickness, and it should be noted that there is almost no waste material cut out therefrom. Crease lines **40**, **41** and transverse crease lines **50**, **51** together with slits **60**, **61**, **62** and **63** define a rectangular bottom wall **20**, a pair of elongated side walls **21** and **23** and a pair of end walls **22** and **24**, each of the walls being integral with the bottom wall **20** and foldable upwardly

therefrom to form a rectangular carton. A cross partition member **25** and **26** is integral with each of the opposite side edges of end wall **22** and a cross partition member **27** and **28** is integral with each of the opposite side edges of end wall **24**. Each cross partition member such as **27** is foldably connected to its end wall such as **24** by the line of articulation such as **51** and includes two additional lines of articulation **70**, **71** dividing it into a side wall glue flap portion **73**, an oblique lateral cross partition portion **74** and a terminal glue flap portion **75**. Glue, or other suitable adhesive is applied to blank C along the longitudinal centre line **80**, along the glue flap contacting surfaces **81**, **82**, **83** and **84** of side walls **21** and **23** and along the surface of the terminal glue flaps **85**, **86**, **87** and **88** of cross partition numbers **25**, **26**, **27** and **28**.

The blank B is preferably formed of a single piece of paperboard which is at least twice the thickness of that used in blank C for example of a thickness of forty thousandths of an inch. Crease lines **90**, **91** and **92** define a panel **93** which is equal in length to the elongated side walls **21** and **23** but which preferably is of greater height than any of the walls of blank C. A hand or finger opening **94** is provided in panel **93**, the cut out material being bent upwardly and glued in place as at **95** to give double strength to the handle portion of the carrier. A lower glue flap **97** and side glue flaps **96** and **98** are integral with panel **93** and are foldable at right angles on crease lines **90**, **91** and **92** when the carrier is to be assembled and set up. A row of finger holes, may be substituted for hand hole **94** if desired.

In assembling the carrier the adhesive is first applied to the portions of blank C indicated in Fig. 4. The blank B is then placed on blank C so that the lower glue flap **97** adheres along the glued centre portion **80** of bottom wall **20**. End walls **22** and **24** are then unfolded so that side glue flap **98** adheres along the glued line **80** of end wall **24** and side glue flap **96** adheres along the glued line **80** of end wall **22**. Each of the cross partition members **25**, **26**, **27** and **28** are then folded inwardly so that the undersurface of each side wall glue flap such as **73** adheres to the glued portion such as **83** of a side wall **73** and the glued surface **87** of terminal glue flap **75** adheres to the central portion of the central, longitudinal, partition panel **93**.

A six bottle carrier such as A is thus formed, of rectangular cross section, having a three bottle compartment **100**, **101** also of rectangular cross section on each side of panel **93**, each three bottle compartment having three individual bottle cells of trapezoidal cross section **102**, **103**, **104**, **105**, **106** and **107** formed by the lateral oblique cross partition such as **74** of each cross partition member **25**, **26**, **27** and **28**.

As best shown in Fig. 2, three bottles D are contained in each compartment **100** and **101** and the central longitudinal partition panel **93**, of double thick paperboard, serves as a separating partition between the compartments as well as forming the inner side wall of each compartment. The three bottles D in a compartment such as **101** are separated from each other by the lateral oblique cross partitions such as **74** of the cross partition members **27** and **26**. The bottom well **20** is of such dimensions that each outer side wall such as **21** is spaced from central longitudinal partition panel **93** a distance equal to the diameter of a bottle D. However, the end walls **22** and **24** are spaced apart a distance equal to the total diameters of three bottles D plus the thickness of the lateral, oblique cross partitions such as **74** and preferably plus a slight additional distance. A lateral, oblique cross partition such as **74** thus contacts a pair of adjacent bottles at tangential points **120**, **121** on opposite sides of the centre line of the oblique partition. In view

of the additional space between bottles, the oblique partition can yield a small distance to cushion the bottles upon sudden impact. In addition the oblique position of the lateral cross partition, with each side edge thereof held tightly against a side wall of the three bottle compartment, permits each bottle to be held in place as effectively as if a filler of much greater thickness was inserted between each adjacent pair of bottles.

It should be noted that the carrier A in addition to securing rigidity from the double thickness of panel 93, secures additional rigidity from the glued centre column at 200 made up the two thicknesses of panel 93 plus an additional thickness on each side thereof in the form of terminal glue flap such as 75. Each vertical corner of the carton has a vertical column 201 of two thicknesses of material made up of a side wall such as 23 and a side wall glue flap such as 73. The panel glue flaps 95, 97 and 98 of double thick material glued to the centre line of the bottom and end walls provide further rigidity to the carrier.

In Fig. 5 is shown a modified form of carrier E having only one elongated compartment 300 of rectangular cross section such as might be used to carry only three bottles such as D. Carrier E includes a carton D having a bottom wall 320, elongated side walls 321 and 323, end walls 322 and 324 and glue flaps 301, 302, 303 and 304, the blank therefor being shown in dotted lines. The carton D is glued together in a well known manner to assume a rigid non-collapsible form and is made of a single thickness of paperboard.

A separate insert K including an elongated side wall 329 and lateral, oblique cross partitions G and H, similar to oblique cross partition 74, is thereafter glued in place. Side wall glue flaps such as 373 of insert K are glued to side wall 329, terminal glue flaps such as 375 are glued to an intermediate portion of side wall 321 and wall 329 is glued to wall 323. While my new lateral, oblique cross partition members G and H, as shown in Fig. 5, can be used with other types of rigid cartons to form a bottle carrier, I prefer that one of the elongated side walls of each three bottle compartment be of double thickness and that it be a separate panel, as in the structure shown in Figs. 1–4. I also prefer that my lateral oblique cross partition members extend the full height of the walls of the carton thus strengthening the same and permitting the carrying of bottles or cans of various shapes and cross sections.

A large percentage of the cost of making paperboard carriers, in the vicinity of 80%, lies in the cost of the paperboard itself. It will therefore be apparent that the use of a thin paperboard for the major portion of my carrier, while still providing unusual strength and cushioning effect results in a saving in cost of manufacture. A further advantage of my carrier is the full display surfaces on each side thereof and the fact that printing can be applied to the entire undersurface without being affected by the adhesive on the upper surface.

It will be noted that there are no adhesive connections on the undersurface of the bottom wall 20, the wall 20 being integral with all four upstanding walls whereby a carton placed on a wet surface does not have its glue flaps loosened by the water. It should also be noted that certain laws or regulations require or suggest a definite thickness of material between adjacent glass bottles shipped in commerce. With the carrier of this invention the central longitudinal panel insert may be of the required thickness while the remainder of the carrier is of less costly and thinner paperboard in view of the cushioning effect of the lateral oblique cross partitions.

I claim:

1. In a six bottle carrier of paperboard, the combination of a panel insert formed of a single piece of a double thickness of paperboard, and forming the central, longitudinal partition of a double rectangular compartmented carrier, said panel having integral glue flaps along the lower end side edges thereof and a rigid carton formed of a single thickness of said paperboard, rigidly attached to said panel, said carton having a rectangular bottom wall glued intermediate thereof along its central longitudinal axis to the lower edge glue flap of said panel, a pair of end walls integrally upfolded from said bottom wall and each glued intermediate thereof along its central longitudinal axis to a side edge glue flap of said panel; a pair of elongated side walls integrally upfolded from said bottom panel and four identical cross partition members each integral with and foldably connected to an opposite side edge of one of said pair of end walls, each cross partition member having a side wall glue flap portion glued to an adjacent side wall of the carton, a lateral cross partition portion of greater width than the width of a compartment extending obliquely across the adjacent portion of a compartment at a spaced distance from the adjacent end wall and perpendicular to the bottom wall and a terminal glue flap portion glued to an adjacent portion of said central longitudinal panel, thereby forming two spaced apart oblique partitions on each side of said longitudinal partition panel dividing each of said rectangular compartments into three cells of trapezoidal cross section.

2. A combination as specified in claim 1 wherein the pair of parallel opposite sides of each cell of trapezoidal cross section, centrally disposed on each opposite side of said longitudinal panel, are formed by an outer cell wall of greater width, and an inner side wall of less width, than the width of the base portion of a bottle.

3. A combination as specified in claim 1 wherein each rectangular compartment of said six bottle carrier is substantially equal in inside lateral dimensions to the maximum outside diameter of a bottle but is substantially greater in inside longitudinal dimensions than the total outside maximum diameters of three said bottles.

4. A combination as specified in claim 1 wherein each said cross partition portion of said cross partition members converges toward the centre of said carrier and the terminal glue flaps thereof are glued in abutting relationship along the vertical axis of said central partition to form a reinforcing column therealong.

5. A box blank for a carrier for two rows of three identical bottles, said blank comprising an integral substantially rectangular sheet of paperboard longitudinally creased and laterally slit and creased to provide a centrally disposed rectangular bottom panel substantially equal in width to the total diameters of two bottles and substantially greater in length than the total diameters of three bottles; a pair of opposite end wall panels, each articulated to, and co-extensive with the lateral crease line of said bottom panel; a pair of opposite side wall panels, each articulated to, and co-extensive with, the longitudinal crease line of said bottom panel; four identical cross partition members, each cross partition member being articulated by a longitudinal crease line to one of the opposite sides of one of said end panels and separated from the adjacent side wall panel by a lateral slit and each cross partition member being divided by two spaced apart parallel longitudinal crease lines to define along its base a side wall panel glue flap substantially equal in width to the diameter of a bottle, to define, intermediate thereof, a lateral oblique cross partition panel of greater width than the diameter of a bottle, adapted to extend obliquely between adjacent bottles in a row of bottles when erected, and to define, at its terminal end, a glue flap for immovably fixing said cross partition in place when erected, and a separate panel insert of double the thickness of said box blank adapted to form a central longitudinal partition in said carrier when said box blank is erected, said panel insert having a glue flap along each opposite side edge for attachment to the centre of an end wall panel of said blank, a glue flap along its lower edge for attachment

to the centre of the bottom panel of said blank and a hand opening spaced inwardly from its upper edge.

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