Oct. 15, 1968 C. L. CHAMPLIN 3,405,840

BOTTLE CARRIER

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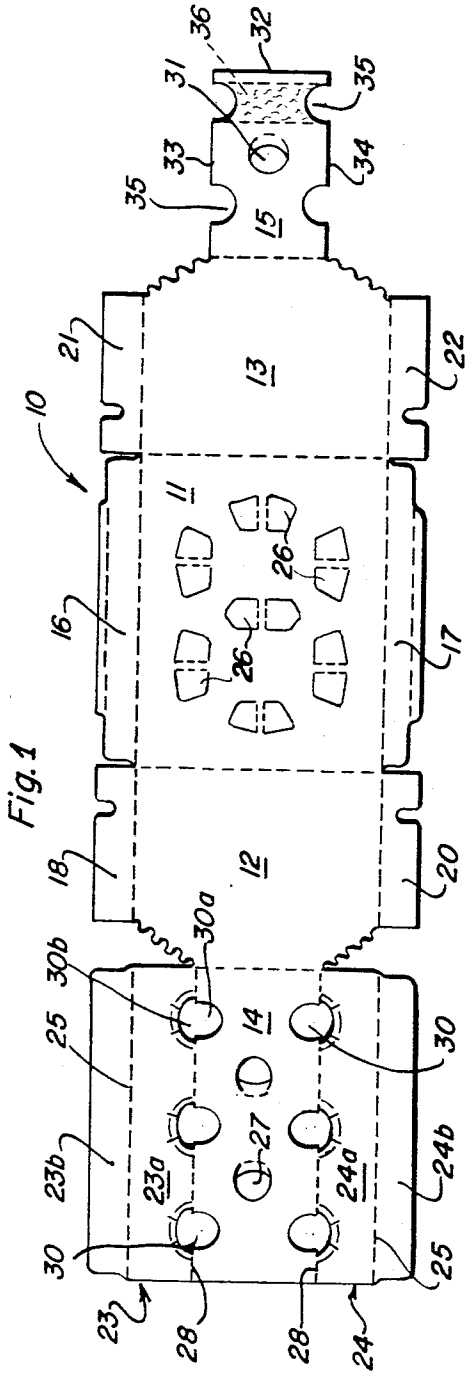


Fig. 1

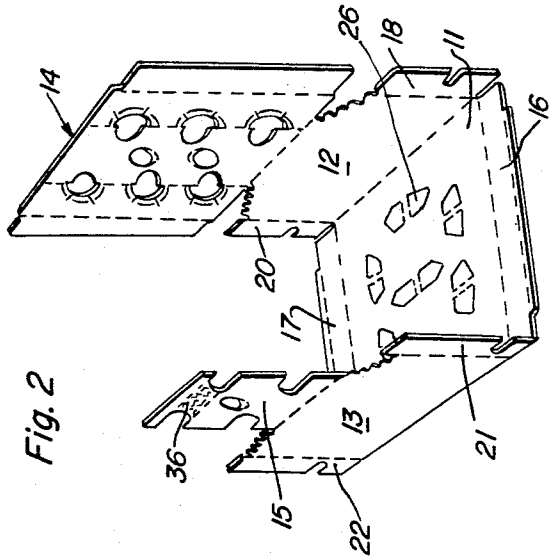


Fig. 2

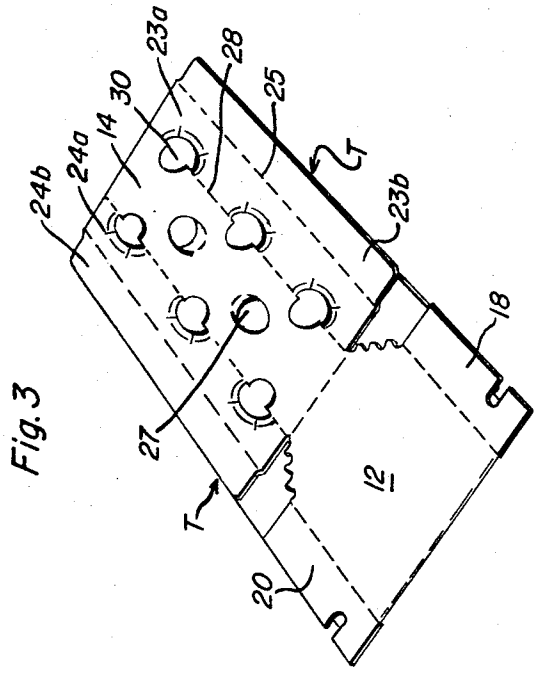


Fig. 3

INVENTOR.
CHARLES L. CHAMPLIN
BY PENDLETON, NEUMAN
SEIBOLD & WILLIAMS
ATTORNEYS

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Fig. 4.

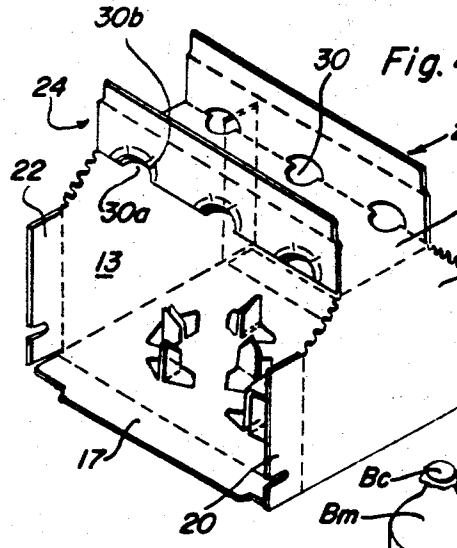


Fig. 5

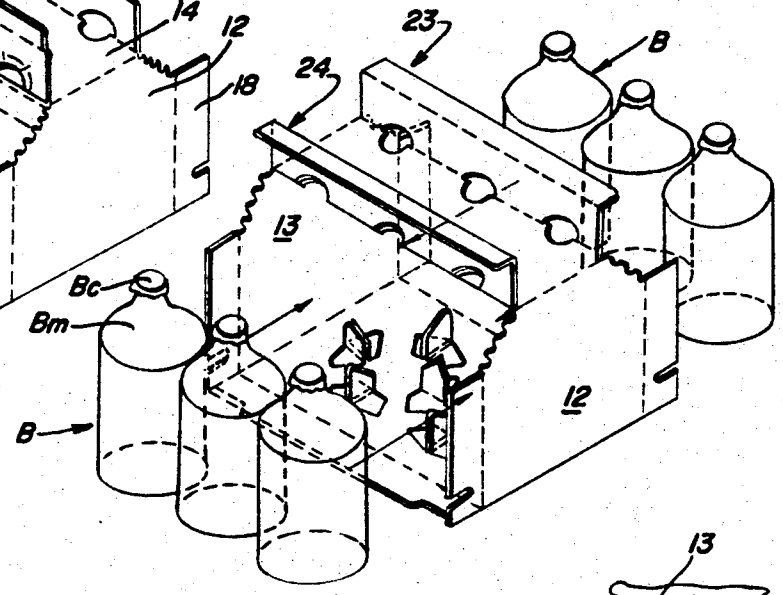


Fig. 6

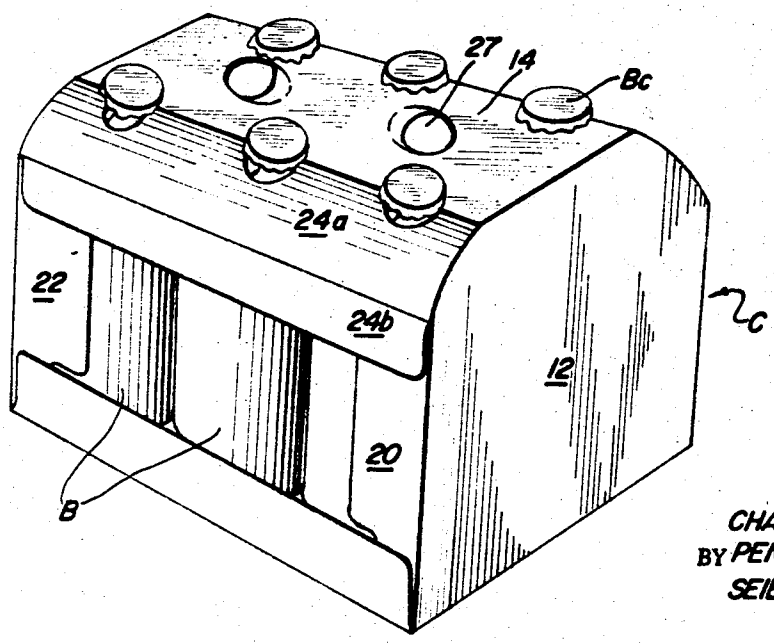
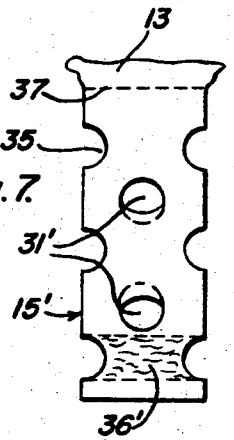


Fig. 7.



INVENTOR.
CHARLES L. CHAMPLIN
BY PENDLETON, NEUMAN
SEIBOLD & WILLIAMS

ATTORNEYS

United States Patent Office 3,405,840 Patented Oct. 15, 1968

3,405,840

BOTTLE CARRIER

Charles L. Champlin, Rittman, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware

Filed Nov. 10, 1966, Ser. No. 593,430
6 Claims. (Cl. 220—114)

ABSTRACT OF THE DISCLOSURE

A foldable bottle carrier for accommodating a plurality of bottles arranged side-by-side in two parallel rows. The carrier includes a bottom, side wall, end wall and top panels which cooperate to form a compartment for the rows of bottles. The top panel is formed in two sections, one section of which subtends the other and is secured thereto in overlapped relation. The top panel sections include means for engaging and retaining the upper portions of the accommodated bottles in predetermined relative positions.

Background of the invention

The recent trend in distributing and transporting a plurality of loaded carriers of the type in question has been away from the conventional closed corrugated shipping container and toward a corrugated tray because of the substantial cost savings involved. When shipping trays are utilized, the upper portions of the accommodated loaded carriers are exposed and as a result the latter are subjected to a substantially greater amount of shock. By reason of this repeated shock, the carrier material (usually paperboard) disposed between the upper ends of the adjacent accommodated bottles tend to buckle, tear, or otherwise become substantially weakened due to wear, with the result that the upper ends of the accommodated bottles will contact or strike one another causing breakage. It is desirable that the carrier top panel have some flex or spring thereto so as to function as a shock absorber; however, it must nevertheless be possessed of sufficient inherent stiffness to prevent bottle to bottle contact. Furthermore, the carrier must be possessed of sufficient strength to effectively carry the load even though the carrier is placed in an environment of high humidity.

Summary of the invention

Thus, it is an object of this invention to provide a carrier which affords adequate protection for the accommodated bottles notwithstanding that the loaded carrier is subjected to repeated shock.

It is a further object of this invention to provide a simple, inexpensive carrier which is possessed of a reinforced top panel and is readily capable of being comfortably carried manually notwithstanding that the carrier is exposed to undesirable climatic conditions.

Further and additional objects will appear from the description, accompanying drawings, and appended claims.

In accordance with one embodiment of this invention a carrier of paperboard is provided which is adapted to accommodate a plurality of beverage bottles preferably arranged in side by side relation to form two parallel rows. The bottles accommodated by the carrier are normally formed of glass or some other suitable but fragile material and each is provided with a necked open upper end which is initially closed by a clamp or screw type cap. The carrier in question includes a bottom panel upon which the accommodated bottles rest. The bottom panel is provided with a plurality of spacer members which are adapted to be interposed the lower ends of adjacent bottles and prevent direct contact therebetween. Foldably connected to opposite ends of the bottom panel are upright end panels. To the upper edge of one of the end panels is foldably connected a first member and in a like manner a second member is foldably connected to the upper edge of the other end panel. The second member subtends at least half of the first member and is attached thereto so that said members cooperate with one another to form a top panel which is in superposed relation with respect to the bottom panel. The top panel-forming members are provided with a plurality of spaced apertures which are adapted to receive the necked ends of the accommodated bottles and retain same in proper spaced relation.

The bottom panel has a pair of first side panels foldably connected to opposite sides thereof. The first side panels, when in upright positions, are affixed to the end panels. To opposite sides of the top panel-forming first member are foldably connected second side panels which depend therefrom and are affixed to the end panels. The second side panels each have an apertured portion whereby the apertures thereof cooperate with the apertures in said top panel and lockingly encompass the necked portions of said accommodated bottles.

For a more complete understanding of the invention reference should be made to the drawings wherein:

FIGURE 1 is *a* plan view of the blank for one embodiment of the improved carrier;

FIG. 2 is a perspective view of the blank of FIG. 1 shown in a partially folded condition;

FIG. 3 is a perspective view of the blank of FIG. 1 shown folded to form a collapsed tubular member;

FIG. 4 is a perspective view of the improved carrier shown in erected position for loading;

FIG. 5 is like FIG. 4 but showing bottles in position for loading sidewise into the erected carrier;

FIG. 6 is an enlarged perspective view of the loaded improved carrier in condition for manual carrying; and

FIG. 7 is a fragmentary plan view of a modified form of one of the top panel-forming members which is adapted to subtend the other top panel-forming member when the blank is set up.

Description

Referring now to the drawings and more particularly to FIG. 1, a blank **10** formed preferably from a sheet of paperboard is shown which is adapted, when partially folded, to form a collapsed tubular member T, FIG. 3 or, when fully folded or set up, is adapted to form a carrier C for conveniently carrying a plurality of bottles B or the like. The blank, when folded to form the collapsed tubular member T, may be arranged in stacked relation with other like members for bulk storage, or shipment.

The blank **10** is provided with a plurality of foldlines, shown in dotted lines, which cooperate to define a rectangular bottom panel **11**, a pair of end panels **12** and **13** disposed at opposite ends of panel **11**, a narrow rectangular first top panel or section **14** connected to panel **12**, and a second top panel or section **15** connected to end panel **13**.

Foldably connected to opposite sides of bottom panel **11** is a pair of lower side walls **16** and **17**. Foldably connected in a similar manner to opposite sides of the end panels **12** and **13** are side flaps **18–20** and **21–22**, respectively. Top panel **14** has foldably connected to opposite sides thereof upper side walls **23** and **24**. Each upper side wall includes an inner section **23***a* or **24***a* and an outer section **23***b* or **24***b* which are interconnected by a foldline **25**.

Bottom panel **11** is provided with a plurality of pairs of tabs **26** which are adapted to be struck out or folded upwardly as shown in FIGS. 4 and 5, and be interposed

the lower ends of the accommodated bottles B and prevent contact therebetween.

First top panel **14** is provided with a pair of spaced fingerholes **27** which are centrally disposed. Formed along each foldline **28** between panel **14** and inner section **23***a* or **24***a* is a row of apertures **30**. Each aperture **30** has one portion **30***a* thereof disposed within panel **14** and a contiguous portion **30***b* disposed within section **23***a* or **24***a*. The configuration and location of apertures **30** are well known in this art and are adapted to accommodate and encompass the upper necked portions B_m of the bottles B when they are disposed within the carrier C. The size of aperture portion **30***a* is smaller than portion **30***b* and is such that a bottle cap B_c will not pass therethrough. By reason of this fact, therefore, it is necessary, when the carrier C is being loaded, for the upper side walls **23** and **24** to be folded upwardly relative to panel **14**, see FIGS. 4 and 5, so that a row of three bottles each can be moved as a unit through the open side of the tubular member T when it is in erected position. This method and procedure for loading is also well known in the art.

After the rows of bottles have been properly positioned within the erected tubular member T so that a pair of upright tabs **26** are between the lower end portions of adjacent bottles and the necked portions B_m of the bottles are disposed within aperture portions **30***a*, the upper side walls **23** and **24** may be folded downwardly whereby aperture portions **30***b* will permit segments of the bottle caps B_c to pass therethrough, see FIG. 6. The inner sections **23***a* and **24***a* of the upper side walls **23** and **24** extend divergently downwardly and conform substantially to the tapered upper portions of the bottles.

Prior to upper side walls **23** and **24** being folded downwardly, side flaps **18–20** and **21–22** are folded inwardly so as to overlie a part of the exposed surfaces of end bottles of the rows. Subsequent to the folding of the side flaps **18–20** and **21–22**, the lower side walls **16** and **17** are folded upwardly either before, simultaneously with, or after the downward folding of upper side walls **23** and **24**. It will be noted in FIG. 6 that the end portions of the side walls **16**, **17**, **23** and **24** overlap portions of the folded side flaps **21** and **22**. To retain same in overlapping positions, a suitable adhesive may be utilized.

As aforenoted, carriers C of this general type are frequently subject to tearing, rupture, or excessive wear particularly in the top panel thereof. The instant invention therefore is directed to overcoming this difficulty. The excessive wear or rupture of the top panel usually occurs primarily in two places, (a) in the area between the fingerholes, and (b) in the area circumjacent the apertures for the bottle necked portions. To overcome the above problems, the instant carrier C utilizes the second top panel **15** which is adapted to subtend a substantial portion of first top panel **14**.

In the form of panel **15** shown in FIG. 1, a single fingerhole **31** is provided which is adapted to register with the fingerhole **27** formed in panel **14** and disposed adjacent the free edge thereof (the left hand hole **27** shown in FIG. 1). The outer or distal edge **32** of panel **15** is adapted to be substantially tangentially disposed with respect to the other hand hole **27**, when panel **15** subtends panel **14**.

The opposing side edges **33** and **34** of panel **15** are provided with open end apertures **35**, which conform substantially to the configuration of aperture portions **30***a* of panel **14**. In order to retain panel **15** in proper overlapped relation with respect to panel **14**, a strip of adhesive **36** (see FIG. 2) may be applied to the surface of panel **15** which will engage the underside of panel **14**. It is desirable that the adhesive strip **36** extend transversely across the full width of panel **15** and be disposed between fingerhole **31** and edge **32**.

FIG. 7 discloses a modified form of a second top panel **15'** which is connected by a foldline **37** to the upper end of end panel **13**. Panel **15'** differs primarily from panel **15** in length. Panel **15'** has two spaced fingerholes **31'** which are adapted to register with fingerholes **27** when the blank is set up. Because of the increased length panel **15'** has a greater number of open end apertures **35'** along each side edge thereof. The number of open end apertures **35'** correspond to the number of aperture portions **30***a* formed in panel **14**. As in the case of panel **15**, panel **15'** may be provided with a transversely extending strip of adhesive **36'**. If desired the strip of adhesive **36** or **36'** may be located in positions other than shown. Furthermore, additional adhesive strips may be utilized; however, it is preferred that there be a slight amount of play between the panels **14** and **15** when the carton is set up. By reason of such play, the panels act more effectively as shock-absorbers and thereby reduce substantially the force of shock applied to the carrier being transmitted to the bottles. The panels **15** and **15'** provide double ply material in the area of the carrier where greatest wear or rupture is to occur and thereby minimizes same. The double ply thickness between the fingerholes provides greater comfort when carrying a loaded carrier.

Thus, it will be seen that a carrier is provided which is provided with reinforcement in the areas of normal weakness and thereby permits paperboard stock of thinner, less expensive grade to be utilized without impairing the structural stability of the carrier. The carrier blank is of simple configuration and is readily capable of being set up by automatic equipment.

While several embodiments of this invention have been described above, further modifications may be made thereto and it is contemplated, therefore, by the appended claims to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. A carrier for accommodating a plurality of bottles arranged in aligned side-by-side relation, each bottle having a necked upper end, said carrier comprising a bottom panel for contacting and subtending the lower ends of the accommodated bottles, spacer means carried by said bottom panel for disposition intermediate adjacent bottles, upright end panels foldably connected to opposite ends of said bottom panel and including flaps foldably connected to peripheral portions of said end panels, a sectional top panel disposed in registered relation with respect to said bottom panel, one of said top panel sections being exposed and foldably connected to the upper edge of one end panel and a second of said top panel sections subtending and being overlapped by said one section, said second section being foldably connected to the upper edge of the other end panel, lower side walls disposed intermediate said end panels and foldably connected to and extending upright from opposite sides of said bottom panel and being affixed to said foldable flaps, and upper side walls disposed intermediate said end panels and foldably connected to and depending from opposite sides of said one top panel section and being affixed to said foldable flaps; said top panel sections being provided with aligned apertures for engaging the necked upper ends of the accommodated bottles and retaining same in predetermined spaced relation whereby said sections remain in overlapping relation.

2. The carrier of claim **1** wherein the apertures formed in said one top panel section each has a segment thereof disposed within the corresponding upper side wall, said aperture segment being of greater size than the portion of said aperture disposed within said one top panel section.

3. The carrier of claim **2** wherein said one top panel section apertures are arranged in two parallel rows and and a pair of fingerholes are formed therein and disposed intermediate the rows of apertures.

4. The carrier of claim **1** wherein said one top panel section spans the distance between said end panels and said second top panel section spans at least one-half of the said distance.

5. The carrier of claim 4 wherein a portion of said second top panel section is affixed to said one top panel section.

6. A blank for a bottle carrier comprising a bottom panel, end panels foldably connected to opposite ends of said bottom panel, a first top panel foldably connected to the side of one end panel opposite the side connected to said bottom panel, a second top panel foldably connected to the corresponding side of the other end panel opposite said bottom panel, said second top panel being adapted to subtend said first top panel when said blank is set up, lower side walls foldably connected to opposite sides of said bottom panel and disposed between said end panels, upper side walls foldably connected to opposite sides of one of said top panels, the axes of fold of said upper side walls being substantially transverse to the foldline connections between said top panels and said end panels, and pairs of flaps foldably connected to each of said end panels intermediate said bottom and top panels for engagement with said upper and lower side walls when said blank is set up; said first top panel being provided with a plurality of spaced apertures for engaging the upper ends of accommodated bottles, each aperture having an enlarged portion thereof disposed within the adjacent upper side wall, said second top panel being provided with a plurality of peripheral apertures which are adapted to register with said first top panel apertures when said blank is set up.

References Cited

UNITED STATES PATENTS

2,899,123	8/1959	Currie	229—40
3,090,520	5/1963	Wuerthner	220—112
3,119,546	1/1964	Wuerthner	229—40
3,176,902	4/1965	Champlin	229—40
3,186,545	6/1965	Conrades	206—65
3,217,924	11/1965	Chidsey	220—112
3,253,706	5/1966	Spillson	206—65

DAVIS T. MOORHEAD, *Primary Examiner.*