July 19, 1966 G. ERICKSON 3,261,498

BOTTLE CARRIER

Filed May 4, 1964 2 Sheets-Sheet 1

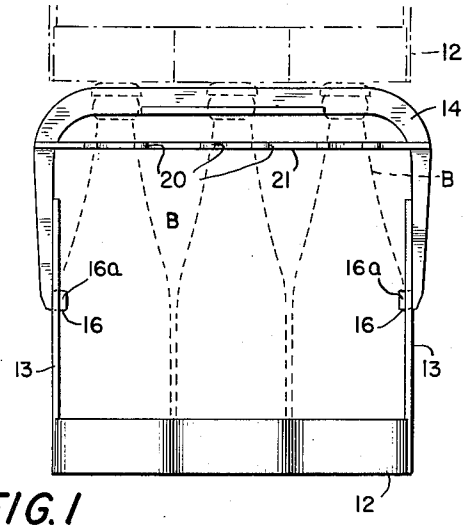



FIG. 1

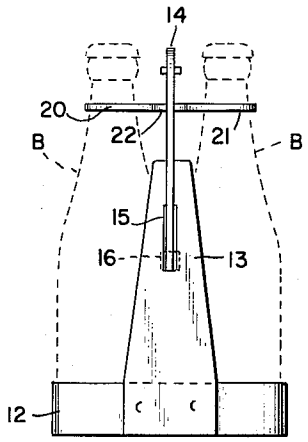



FIG. 2

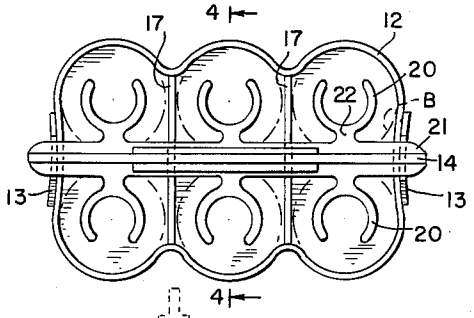



FIG. 3

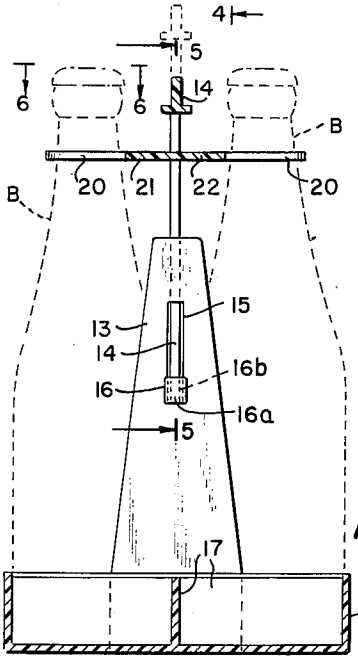



FIG. 4

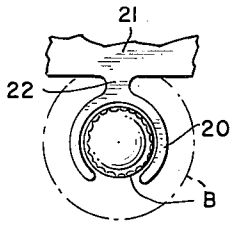



FIG. 6

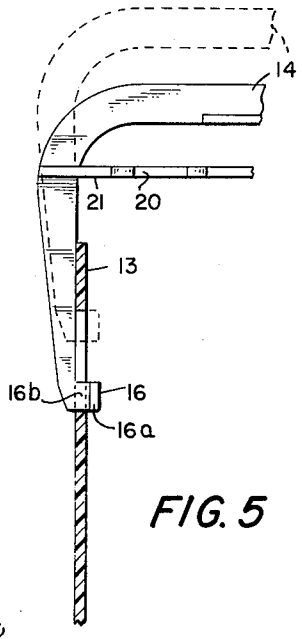



FIG. 5

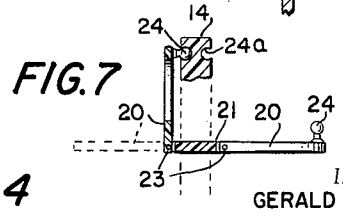



FIG. 7

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FIG. 8

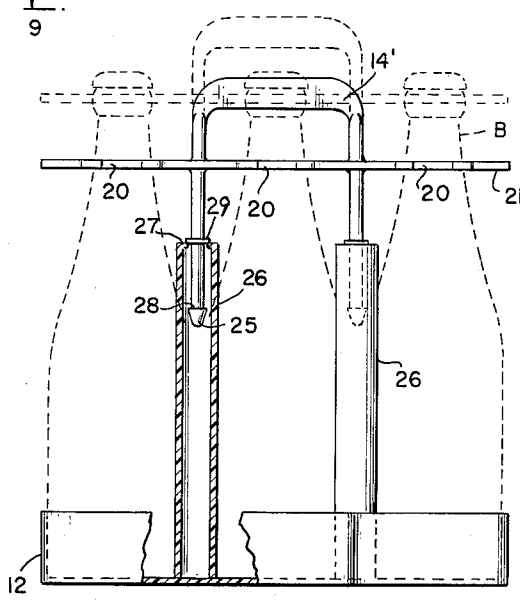
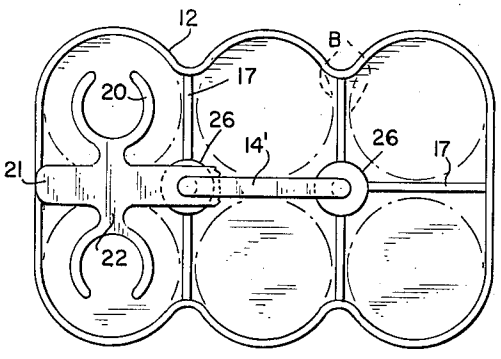



FIG. 9



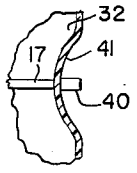




FIG. 12

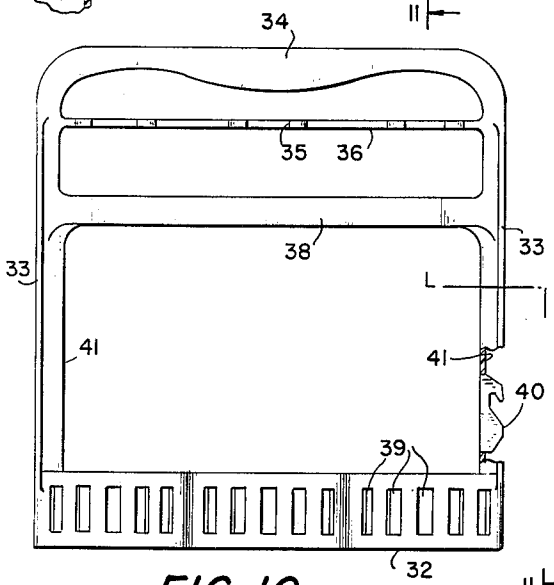



FIG. 10

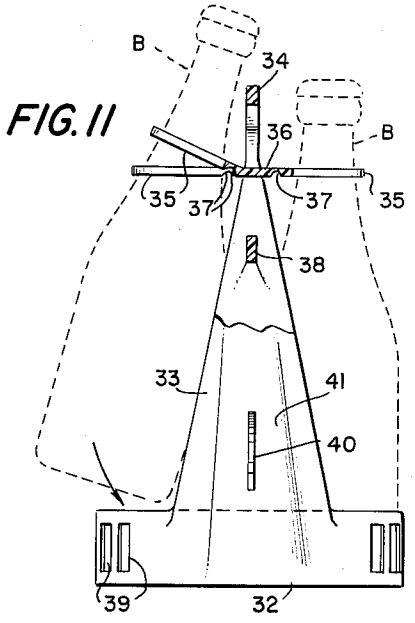



FIG. 11

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3,261,498

# BOTTLE CARRIER

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10 Claims. (Cl. 220—104)

This invention relates to a bottle carrier in which the bottles are accommodated in a lower tray and retained therein by resilient means at least partially encompassing the girths of the bottles at a height substantially above the bases of the bottles. These bottle-retaining means prevent the accidental removal of the bottles from the carrier, such as when the bottle carrier is upset, but do not prevent the bottles from being readily inserted in or removed from the bottle carrier by hand or automatic machinery.

Bottles are presently available in retail stores in paperboard carriers which enable the customer to carry home conveniently a number of bottles. The condition and appearance of these paperboard bottle carriers are important factors in the merchandising of bottled products. Some of these paperboard carriers are disposable and are expected to be destroyed by the consumer. Others are re-usable, and because of their cost, the bottlers hope that a large percentage will be returned in a condition which will make possible their re-use several times. However, the number of times that these paperboard bottle carriers can be used is limited by their lack of durability and their tendency to deteriorate in appearance. For example, paperboard carriers will lose their shape and may tear, particularly if subjected to rough handling. If they become wet, the paperboard carrier loses its strength, and the carrier is rendered useless. They quickly lose their shape, stain, and become dirty even with normal handling. Also they may be attacked by or harbor insects.

A major disadvantage of conventional, re-usable bottle carriers is that when they upset, topple or are knocked over on their sides, as frequently happens in handling, due to the shape of the bottles a number of them may fall out, and if they are not damaged in the fall some tend to roll, making them difficult to reassemble in the bottle carrier, and sometimes causing injury to the unwary.

The bottle carrier of the present invention, in its preferred form, overcomes the above-mentioned disadvantages of conventional paperboard bottle carriers in that it is made of an attractive, durable, washable material which can be roughly handled without being damaged or losing its appearance. The bottle carrier of the present invention comprises a tray having a plurality of bottle-receiving areas, each supporting the base of a bottle, a handle for carrying the tray and the bottles therein, resilient bottle-retaining means for each bottle-receiving area of the tray which, when the appropriate portion of the bottle is forced therein, at least partially surrounds the girth of the bottle to retain it therein and prevent accidental removal of the bottle, but being yieldable to permit the bottle to be intentionally removed therefrom, and support means for the bottle-retaining means positioning each bottle-retaining means a substantial height above the respective bottle-receiving area.

The bottle carrier of the present invention is preferably made of a tough, resilient, moldable, plastic material which can be attractively colored. Such a bottle carrier will not rust, dent, warp or fade. It requires no gluing operations during assembly and, therefore, does not depend on the use of glue to hold it together during its useful life. It can be hosed down or washed with soap and water to remove dirt, even with the bottles therein, and then readily dried with the water escaping through various drain holes. Due to the fact that the bottles are positively retained within the carrier, the carrier does not depend on deep receptacles to retain the bottles and consequently requires but a minimum of material. This, in turn, makes it possible to expose to the customer's view a greater portion of the bottles so that both the product and the carrier contribute to the overall attractive appearance of the package.



A feature of the bottle carrier in its preferred form is that the handle is connected to the tray portion of the carrier by sliding connections which permit the handle to be moved vertically from a lowermost position recessed below the tops of the bottles to permit stacking to a position substantially above the tops of the bottles so that it can be conveniently grasped without scratching one's hand on the bottle caps. In this embodiment of the bottle carrier, the resilient bottle-retaining means are carried by the handle not only as an economy measure to save material, but also to permit the handle to be conveniently raised from its recessed to its uppermost position without requiring the consumer to reach downwardly between the bottle caps and risk scratching his hand.

Still another feature of the bottle carrier in its preferred form is that it may incorporate a bottle opener, either as a fixture or an integral part of the carrier. In this connection, the tough, durable material of which the bottle carrier is made has sufficient rigidity to permit a bottle opener to be molded as an integral part of the carrier, preferably in a recessed portion at one end of the carrier.

For a more complete understanding of the bottle carrier of the present invention, reference can be made to the detailed description which follows, and to the accompanying drawings, in which:

FIGURE 1 is a side view of the bottle carrier of the present invention showing the handle in recessed position and another bottle carrier (shown in broken lines) stacked above it;

FIGURE 2 is an end view of the bottle carrier shown in FIGURE 1;

FIGURE 3 is a plan view;

FIGURE 4 is a sectional view taken along the line 4—4 of FIGURE 3, looking in the direction of the arrows;

FIGURES 5 and 6 are views taken along the lines 5—5 and 6—6, respectively, of FIGURE 4, looking in the direction of the arrows;

FIGURE 7 is a fragmentary view of an alternative form of the bottle-retaining means shown in FIGURES 1 through 4 and 6;

FIGURE 8 is a side elevation of an alernate embodiment of the bottle carrier having one portion broken away and another shown in cross-section;

FIGURE 9 is a plan view of the bottle carrier shown in FIGURE 8;

FIGURE 10 is a side view of still another embodiment of the bottle carrier;

FIGURE 11 is a view partly in cross-section taken along the line 11—11 of FIGURE 10, looking in the direction of the arrows; and

FIGURE 12 is a fragmentary plan view of the bottle carrier shown in FIGURES 10 and 11.

The bottle carrier shown in FIGURES 1 through 6 of the drawings comprises a lower tray **12**, a pair of end pieces **13** upstanding from the opposite ends of the tray, and a vertically movable handle **14** attachable to the upstanding end pieces **13**. The parts are preferably molded of a tough, durable, resilient plastic material, such as polyethylene, rigid polyethylene, styrene or the like.

The lower ends of the handle **14** are connected to the upstanding end pieces **13** by tongue-and-slot connections which include a narrow, relatively long, vertically disposed slot **15** in each of the end pieces, and substantially shorter, inwardly projecting tongues **16** formed integrally on both lower ends of the handle. As best shown in

FIGURE 5, the tongues **16** each include an enlarged portion **16***a* somewhat wider than the corresponding slot **15**, and a portion **16***b* intermediate the handle and the enlarged portion **16***a*, which portion **16***b* is narrower or approximately the same width as the slot **15** so that it can slide vertically therein. The handle **14** is readily attached to the end pieces **13** by forcing the enlarged portions **16***a* of the tongues **16** through and to the opposite sides of the corresponding slots **15**, leaving the portion **16***b* accommodated within the slot. When the handle is attached in this manner, the handle can be moved vertically from the lowermost position shown in solid lines in FIGURES 1, 2, 4 and 5 of the drawings, at which position the upper edge is recessed below the tops of the bottles B to permit stacking (see FIGURE 1) to an uppermost position shown in broken lines in FIGURES 4 and 5 in which position the handle can be conveniently grasped without danger of being scratched by the bottle caps.

The tray **12** is divided by internal partitions **17** into a plurality of bottle-receiving areas each accommodating the base of a bottle. At a distance substantially above the tray **12**, the bottles are each received within a split bottle-retaining collar **20** formed by a pair of cooperating oppositely curved gripping elements which together partially surround the girth of the bottle. The opening between the ends of the grippers is substantially less than the width or diameter of the bottle at that height so that the bottle cannot be accidentally removed from the bottle carrier. The grippers, however, are sufficiently resilient to be forced apart when the bottle is deposited in or removed intentionally from the bottle carrier.

The bottle-retaining collars **20** are formed integrally on a common horizontal support **21** which, in turn, is formed integrally with the handle, spanning the distance between the downwardly depending ends of the handle at a distance from the upper part of the handle sufficient so as not to interfere with the grasping of the handle. The bottle-retaining collars **20** have relatively flat, bendable extensions **22** which connect them with the common support **21**, the spacing of the collars and the length of the extensions positioning the center of each collar directly above the center of one of the bottle-receiving areas of the tray. The bendable extension **22** serves as a hinge which permits each to be separately raised upwardly out of the path of a bottle vertically loaded in the carrier. Alternatively, the extension **22** of the collar **20** can be hinged to the common support **21** by a pivot shaft **23**, as shown in FIGURE 7.

The collars are preferably circular in shape and have diameters slightly larger than the diameter of the part of the bottle which they encompass. The collars also are preferably at a level to receive the relatively narrow necks of the bottles. In most conventional bottles, the necks are of fairly uniform diameter between the positions which the collars partially surround when the handle is in its lowermost position and the portions which the collars partially surround when the handle is in its uppermost position. If the depth of the tray **12** is greater than the vertical distance the handle is raised, the bases of the bottles cannot be jounced out of the tray when the handle is raised because the collars will limit the vertical travel of the jounced bottle to less than the depth of the tray.

In the embodiment shown in FIGURE 7, the hinged collars are formed with male elements **24** which snap-lock into female recesses **24***a* in the sides of the handle **14** to hold the collars in raised positions, for example, to facilitate vertical loading of the bottles in the carrier.

A modified form of bottle carrier is shown in FIGURES 8 and 9 of the drawings in which the upstanding end pieces **13** of the embodiment described above are eliminated and the lower enlarged tapered ends **25** of the handle **14'** are force-fitted into upstanding tubular columns **26** formed integrally with the base of the tray **12**. Once the lower tapered ends of the handle are inserted within the tubular columns, they cannot be accidentally removed by the weight of the loaded bottle carrier. More specifically, the opening at the upper end **27** of each of the columns **26** is smaller than the diameter of the size of the enlarged lower end **25** of the handle. When the lower ends of the handle are forced into the upper ends of the columns, the restricted upper ends of the columns are enlarged due to the ability of the material to expand and permit passage of the enlarged tapered ends **25** therethrough. The inherent resiliency of the material permits the restricted openings to contract once the handle is coupled to the tray. The upper shoulders **28** of the tapered ends do not tend to enlarge the restricted opening so that the enlarged ends will not readily pass through the restricted openings in the opposite direction to permit uncoupling of the handle.



Each of the downwardly depending portions of the handle **14'** has a peripheral flange **29** formed integrally thereon which engages the upper restricted end **27** of the corresponding column to determine the lowermost position of the handle. The distance between shoulders **28** on the flanges **29** determines the extent of the vertical movement permitted to the handle. When the flanges **29** are in engagement with the upper restricted ends of the columns, the handle is recessed below the tops of the bottles as shown in solid lines in FIGURE 8. When the handle is raised until the shoulders **28** engage the upper restricted ends of the columns, the handle will be in the position shown in broken lines in FIGURE 8, a position well above the caps of the bottles, so that the handle can be conveniently grasped.

The bottle carrier shown in FIGURES 10 through 12 of the drawings comprises a lower tray **32** partitioned internally into a plurality of separate bottle-receiving areas, a pair of end pieces **33** upstanding from opposite ends of the tray, a handle **34** formed integrally with the upstanding end pieces **33**, a plurality of bottle-retaining collars **35** similar to the collars **20**, a common support **36** spaced below the handle and formed integrally at both ends with the end pieces **33**, hinged connections **37** connecting each bottle-retaining collar **35** with the common support **36**, and a reinforcing strip **38** spaced below the support **36** and connecting the end pieces **33**. The bottle carrier, insofar as it is described above, can be molded in one piece.

The vertical walls of the tray **32** contain a plurality of openings **39** which minimize the material required and provide attractive drainage openings so that the tray will not retain water. Drainage holes are also provided in the base of the tray.

The bottle carrier shown in FIGURES 10 through 12 also has a bottle opener **40** on the outer concave, recessed surface **41** of one of the end pieces **33**, as shown in FIGURE 12. The bottle opener can be formed integrally as part of the one-piece plastic bottle carrier or it can be a separate plastic or metal insert. By accommodating it in a recessed portion of the carrier so that it does not protrude beyond the ends of the tray, they will not prevent the bottle carriers from being placed end-to-end.

The invention has been shown and described in preferred forms and by way of example only, and many modifications and variations can be made therein without departing from the spirit of the invention. For example, it is obvious that features of the bottle carrier can be used to the exclusion of others, or the features of the various embodiments can be selectively combined. By way of example, in the embodiment of the bottle carrier shown in FIGURES 1 through 6, the tray **12** can be made of paper and the handle of plastic. The invention, therefore, is not limited to any particular form or embodiment, except insofar as such limitations are expressly set forth in the claims.

I claim:

**1.** A bottle carrier comprising a tray having a plurality of bottle-receiving areas each accommodating the base

of a bottle thereon, a handle for carrying the tray, bottle-retaining means for each bottle-receiving area of the tray partially surrounding a portion of the bottle to retain it in the carrier and prevent accidental displacement thereof, each bottle-retaining means being of resilient material to permit the bottle to be forced into partially surrounding relation with the bottle-retaining means in filling the carrier and forced out of said relation to remove a bottle from the carrier, common support means for said bottle-retaining means positioning each a substantial distance above the respective bottle-receiving area, and means individually connecting each bottle-retaining means with the common support means for movement from a horizontal position to an upstanding position so that any one of the bottle-retaining means can be raised separately or all raised simultaneously to facilitate filling of the bottle carrier from above.

2. A bottle carrier as set forth in claim 1 including means connecting the handle and the tray to afford vertical movement to the handle from a lowermost position at which the handle will not interfere with stacking of the bottle-filled carriers to an uppermost position above the bottles at which the handle can be conveniently grasped.

3. A bottle carrier as set forth in claim 2 characterized in that the common support means is carried by the vertically movable handle.

4. A bottle carrier comprising a tray having a plurality of bottle-receiving areas each accommodating the base of a bottle thereon, a handle for carrying the tray, means coupling the handle to the tray permitting vertical translation of the handle in a vertical plane from a lower position which permits stacking to an upper position above the bottles which permits convenient grasping of the handle, a plurality of split bottle-retaining collars carried by the vertically movable handle, and means individually connecting each bottle-retaining collar with the handle for movement from a horizontal position to an upstanding position to permit the collars to be raised independently or all raised simultaneously to facilitate filling of the bottle carrier from above.

5. A bottle carrier as set forth in claim 4 in which the coupling means includes means defining an elongated vertically disposed slot, and tongue means shorter than the length of the slot and having an enlarged portion wider than the slot which is pushed through the slot.

6. A bottle carrier as set forth in claim 4 in which the coupling means includes tubular means having a restricted opening at one end, and means insertable with in the tubular means and relatively movable with respect to the tubular means.



7. A bottle carrier comprising a relatively shallow tray having a plurality of bottle-receiving areas each accommodating the base of a bottle therein, an overhead handle for said tray, a plurality of bottle-retaining split collars each made of a flexible, resilient plastic and positioned directly above one of the bottle-receiving areas, said split in each collar permitting the neck of a bottle to be forced into the collar and removed therefrom, a common support for said split collars, the split collars being supported in the same horizontal plane at a height to receive therein the necks of the bottles, and means connecting each split collar and the common support means permitting each split collar to be pivotally removed from the horizontal plane.

8. A bottle carrier as set forth in claim 7 including means connecting the handle for vertical movement with respect to the tray, said common support means being carried by said vertically movable handle.

9. A bottle carrier comprising a tray, a handle connected to the tray, a plurality of bottle-retaining means, means hingedly connecting each bottle-retaining means to said handle to permit each bottle-retaining means to be raised from a horizontal bottle-retaining position to an inoperative position out of engagement with the bottle, permitting the bottle-retaining means to be raised separately or all raised at the same time, and means carried by the handle for detachably locking the bottle-retaining means in raised positions.

10. A bottle carrier as set forth in claim 9 in which the locking means includes cooperating snap-lock elements carried by the bottle-retaining means and the sides of the handle.


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