Dec. 26, 1950 G. M. ACTON 2,535,113

BOTTLE CARRIER

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Fig. 1.

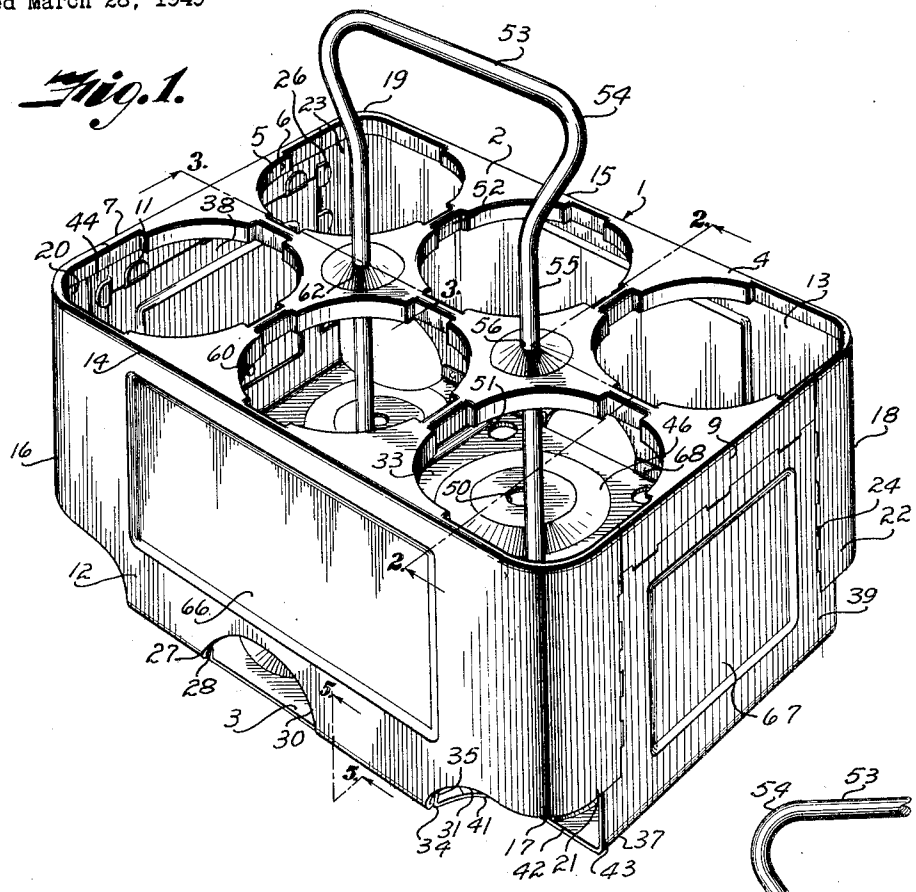


Fig. 2.

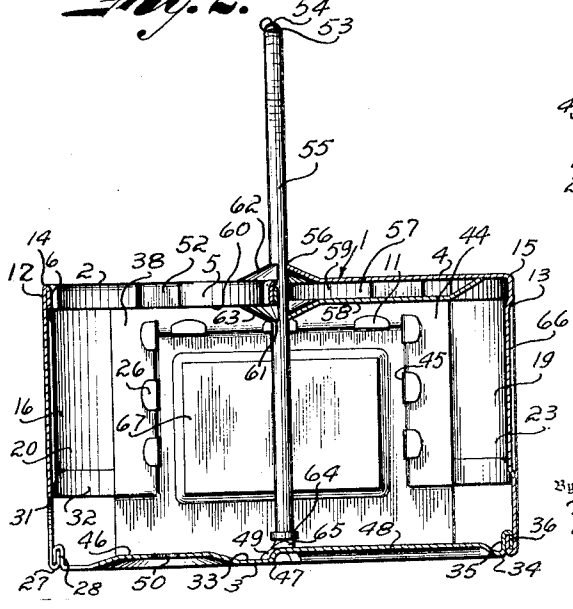
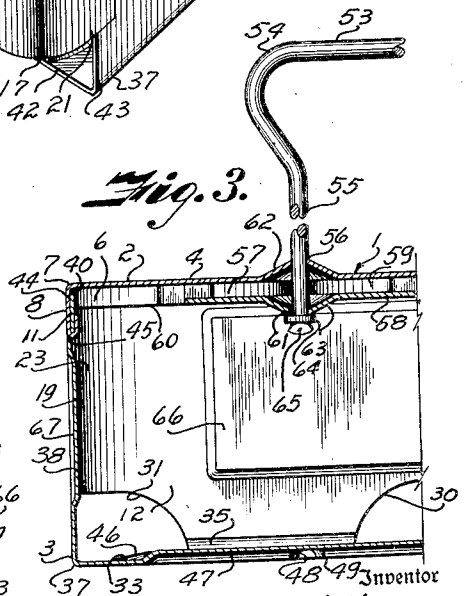


Fig. 3.



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Fig. 4.

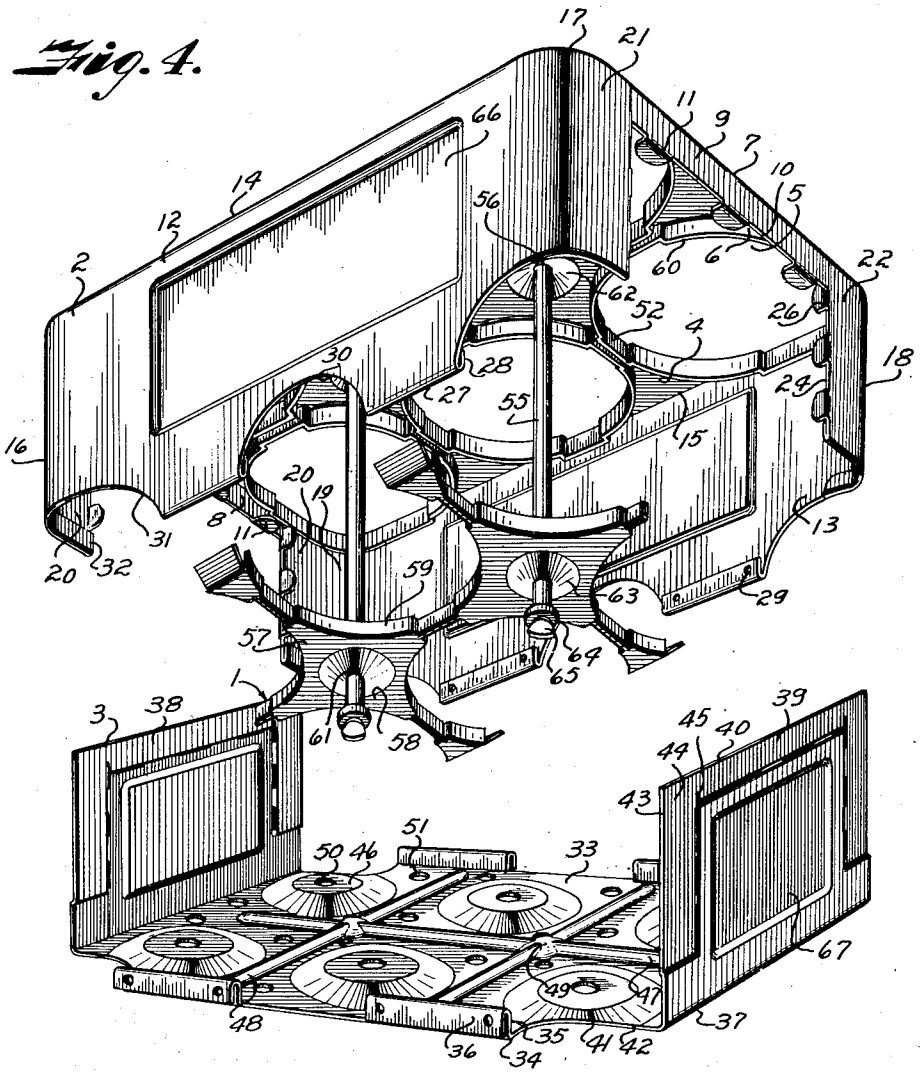


Fig. 5.

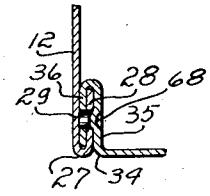
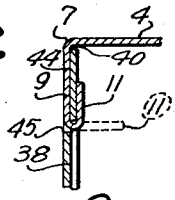


Fig. 6.



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UNITED STATES PATENT OFFICE

2,535,113

BOTTLE CARRIER

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Application March 28, 1949, Serial No. 83,789

5 Claims. (Cl. 224—48)

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This invention relates to bottle holders and carriers and more particularly to a device for holding and carrying bottles used for beverages such as soft drinks and the like, the principal object of the invention being to provide a bottle holder and carrier adapted for use with bottle handling machines such as automatic bottle case unloaders, and for transporting bottles of beverages as when carrying them from retail stores.

The present invention is an improved bottle holder and carrier particularly adapted for use with automatic machines in bottling plants, that is the same use as the structures shown in my copending applications, Serial No. 8,022 filed February 13, 1948; Serial No. 16,032 filed March 20, 1948, now Patent No. 2,522,978, September 19, 1950; and Serial No. 34,768 filed June 23, 1948, now Patent No. 2,502,690, dated April 4, 1950.

Further objects of the present invention are to provide a carrier of such size and shape that a plurality of same fit in the usual wooden case which is minus the conventional separators whereby the bottles need only be removed from the carrier at the bottling plant and in the home for use; to provide debossed panels in the side and end walls which may carry indicia or the like without said indicia being subjected to wear or abrasion when carriers are moved or placed in side by side position, yet have engagement of the side and end walls with the case and adjacent carriers when placed in a wooden case; to provide a carrier of suitable material and adapted to be formed and assembled by stamping and pressing operations into a reinforced rigid structure capable of continued use in automatic machines and for all transportation, storage and cooling of the bottled beverages; to provide an upper bottle divider integral with and in the same plane as the upper edges of the side and end walls to facilitate quick and easy placing and removing of bottles in the carrier; to provide co-operating ribs and bosses in the bottle carrier to separate the bottles and prevent impact of any portions of adjacent bottles during transportation or handling of same particularly by automatic equipment; to provide a carrier and bail structure in which the bail is adapted for engagement with suitable holddowns on automatic bottle case unloaders to transmit pressure to the bottom of the carrier during removal of bottles therefrom, said bail structure being simple and easily assembled and adapted for telescoping into the carrier allowing filled carriers to be stacked; to provide a rigid seam structure for connecting the bottom and sides of the carrier; to provide holes and

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apertures in the bottom and sides for facilitating cleaning and unloading from automatic unloading machines; and to provide a carrier consisting of relatively few pieces, that is quickly and easily manufactured and assembled into a compact, sturdy and efficient device for carrying and holding beverage bottles in transportation and use with automatic machines in bottling plants.

In accomplishing these and other objects of the present invention I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of the improved bottle carrier.

Fig. 2 is a transverse sectional view through the carrier taken on the line 2—2, Fig. 1.

Fig. 3 is a partial longitudinal sectional view taken on the line 3—3, Fig. 1.

Fig. 4 is a disassembled perspective view of the improved bottle carrier.

Fig. 5 is a detail sectional view through the seam joint connecting the bottom and sides on the line 5—5, Fig. 1.

Fig. 6 is a detail sectional view through the upper edge of the carrier end wall and upper divider illustrating the fastenings for same.

Referring more in detail to the drawings:

1 designates a bottle carrier and holder generally consisting of a body member 2 and a bottom member 3. The body member is cut from a single piece of sheet metal or the like and formed by suitable dies. The central portion of the body member forms a horizontal panel 4 serving as the top spacer of the carrier, said panel being of suitable size to accommodate the desired number of bottles, the illustrated structure being adapted to receive six bottles, two rows in width and three rows in length, said horizontal panel being cut and formed to provide apertures 5 for receiving said bottles. The edges of the apertures 5 are turned downwardly to form flanges 6 to provide additional surface contact between the panel and the bottles received therein. The apertures 5 are suitably arranged to provide a space between the flanges 6 of the respective apertures. Portions of the body member at the ends of the panel 4 are turned downwardly as at 7 substantially tangentially with the end apertures 5 to form flanges 8 and 9, said flanges being substantially one-half the width of the panel. The flanges 8 and 9 terminate in lower edges 10 and extending from said lower edge and spaced across the flanges is a plurality of tangs 11 for use in assembling the device as later described.

The body member includes sides 12 and 13 preferably integral with the panel 4. The flat sheet of which the body member is formed is bent downwardly as at 14 and 15 on longitudinal lines substantially tangential with the outside portion of the apertures 5 to form the side members 12 and 13. Said side members are longer than the panel sides and are bent as at 16—17 and 18—19 respectively to form end portions 20, 21, 22 and 23 which terminate in edges 24 abutting and in alignment with the side edges of the flanges 8 and 9. Integral with and spaced along the edges 24 of the end portions 20, 21, 22 and 23 is a plurality of tangs 26 for use in assembling the device as later described. The lower edges of the side members 12 and 13 are turned inwardly as at 27 to form flanges 28 overlying the inner surface of said side members. The flanges 28 form rounded lower edges on the side members 12 and 13 providing a finished appearance, eliminating sharp edges and stiffening the sides to provide suitable rigidity therein. The flanges 28 preferably are provided with a plurality of spaced openings 29 for facilitating assembly as later described. The lower edges of the side members 12 and 13, midway the length thereof, are provided with an arcuate notch 30, also the ends of the lower edges of the side members 12 and 13 are provided with notches 31. Flanges 32 on the lower edges of the end portions 20, 21, 22 and 23 are turned inwardly and folded against the inner surface of said end portions to form a rounded lower edge which is substantially in alignment with the upper edge of the notches 31, the notches 30 and 31 cooperating to form apertures at the lower portion of the body member to facilitate passage of water therefrom.

The bottom member 3 is cut from a single piece of sheet metal or the like and formed by suitable dies, said bottom member consisting of a horizontal panel 33 substantially the same size as the panel 4, the side edges of said bottom member being turned upwardly as at 34 to form upwardly extending side members 35, the upper portion of said side members 35 being turned outwardly and downwardly to form flanges 36 adapted to be inserted between the flanges 28 and the side members 12 and 13, the extremities of the flanges 28 and 36 engaging the inner surfaces of the respective bends forming said flanges. The flanges and side members 35 on the sides of the bottom member are substantially coextensive with the flanges 28 on the side members 12 and 13, thereby providing no obstructions extending across the notches 30 and 31 in said side members. The flange 36 may have a plurality of openings in registry with the openings 29 if desired.

The bottom member 3 is bent upwardly as at 37 at the ends of the bottom panel 33 forming upwardly extending end members 38 and 39, the height of said end members being such that the upper edges 40 thereof engage the bottom surface of the panel 4, whereby said end members 38 and 39 are substantially the full height of the body member, which is preferably substantially the same as the inside height of the side walls of a conventional wooden case. The bottom member 3 is notched as at 41 at each of the corners of the panel 33, the location of the notches 41 corresponding to the notches 31 in the side members 12 and 13. The notches 41 form the side edges 42 of the panel 33 adjacent the ends thereof and the side edges 43 of the end members 38 and 39 are in alignment with the edges 42, the width of the end members being greater than the spacing between the edges 24 of the end portions 20, 21, 22 and 23, whereby said end portions overlie the side edges of the end members 38 and 39. Also the flanges 8 and 9 overlie the upper portion of said end members. The portions adjacent the side edges and upper edge of the end members 38 and 39 that are overlapped by the end portions 20, 21, 22 and 23 and the flanges 8 and 9 are provided with inwardly struck portions 44 substantially the same size as the overlapping portions whereby the outer faces of the inwardly struck portions 44 lie against the inner faces of the flanges 8 and 9 and the end portions 20, 21, 22 and 23 of the side members, and the outer faces of the flanges 8 and 9 and end portions 20, 21, 22 and 23 are flush with the adjacent outer faces of the end members 38 and 39. The instruck portions 44 are provided with a plurality of spaced slots 45 adjacent the edges 10 of the flanges 8 and 9 and the edges 24 of the end portions 20, 21, 22 and 23, and in alignment with the tangs on said edges whereby said slots register with the tangs on the end portions of the side members and on the flanges 8 and 9 for assembling the respective parts of the carrier as later described.

Formed in the bottom panel 33 is a plurality of circular embossed portions 46 forming seats for the bottles adapted to be received in the carrier, said embossed portions aligning with the apertures 5 in the panel 4. A rib 47 is arranged on the longitudinal center of the bottom panel 33 and ribs 48 are arranged transversely of the bottom substantially equally spaced from the circular embossed portions. The ribs 47 and 48 are stamped upwardly in the bottom panel 33 during the blanking operation whereby said ribs are positioned between bottles placed in the carrier and prevent the lower part of one bottle contacting another bottle during handling of the carriers. At the points of intersection of the longitudinal and transverse ribs are enlarged portions forming bosses 49 having flattened upper faces adapted to align with the ends of a bail member as later described. Openings 50 are arranged in the bottom substantially at the center of the embossed portions 46 and apertures 51 are provided in the bottom adjacent the corners formed by the longitudinal and transverse ribs and their ends adjacent the side and end walls, said openings 50 and 51 cooperating with the notches 30, 31 and 41 for facilitating cleaning and drainage of water from the carrier as said carrier is removed from a cooling chamber.

In the carrier illustrated the edges of the apertures 5 are preferably provided with recesses 52 arranged substantially tangentially of the respective apertures and parallel with the sides and ends of the carrier. This structure provides four recesses for each aperture whereby spring fingers on automatic bottle case loaders may engage in said recesses to aid in guiding the bottles in the respective apertures, the recesses being of suitable width to accommodate the width of the fingers.

The carrier is provided with a handle or bail formed of wire or the like of suitable size and stiffness to withstand longitudinal pressure on the members thereof without any bending. The bail consists of a bar member 53, the ends of said bar member being curved downwardly as at 54, the curve being substantially an ogee curve and terminating in downwardly extending vertical members 55, said members 55 being spaced substantially the same as the spacing between

the bottle apertures 5 whereby said vertical members are slidably mounted in apertures 56 arranged on the longitudinal center of the panel 4 and are equally spaced from the geometric center of said panel for equal distribution of the weight on said bail, said apertures 56 also being in vertical alignment with the bosses 48 in the bottom panel 33.

In order to provide additional support for the bail and reinforce the top panel 4, a reinforcing member 57 is secured thereto. Said reinforcing member preferably is formed of sheet metal and consists of a horizontal wall 58 provided with upwardly extending flanges 59 of suitable size to substantially lie between the flanges 6 of the apertures 5. The flanges 59 are shorter in height than the flanges 6 whereby the wall 58 is parallel with the panel 4 and is arranged above the lower edge 60 of the flanges 6, the edges 60 being turned inwardly to crimp the reinforcing member in place. The wall 58 of the reinforcing member is provided with apertures 61 in alignment with the apertures 56 and adapted to slidably mount the vertical members 55 of the bail. The apertures 56 and 61 are of such size that there is sliding engagement between said apertures and the vertical members 55. To provide further support for the vertical members, the panel 4 and the wall 58 are provided with upwardly and downwardly struck portions 62 and 63 respectively substantially conical in shape whereby the apertures 56 and 61 have greater spacing than the panel 4 and the wall 58, this spaced engagement with the vertical members 55 providing adequate support for the bail.

Sleeved over the lower ends of the vertical members 55 are washers 64, said washers being held on the vertical members by deformities 65 at the lower ends of said vertical members 55 whereby the washers 64 are adapted to be moved into engagement with the lower face of the downwardly struck portions 63 to support the weight of the bottles and carrier when being carried by the bail. The vertical members 55 are of such length that when the washers 64 are in engagement with the downwardly struck portions 63 of the reinforcing member 57, the bar member 53 is above the caps of the bottles to provide sufficient clearance between said caps and the bar member for the insertion of the hand of a person to permit the carrier to be transported without danger of striking the hand or fingers on the tops of said bottles. The relationship of the length of the vertical members and other portions of the carrier is such that when the bail is moved downwardly in telescoped position, the deformed portions 65 of the vertical members 55 engage the faces of the bosses 49 and the bar 53 of the bail lies below the ends or caps of the bottles. The height of the bosses 49 and the bail is such that when the deformed portions 65 engage the bosses 49 the bar member 53 is accurately positioned below the tops of the bottles in the carrier in position for engagement with a suitable device in an automatic bottle case unloader to apply pressure to the bosses 49, holding the carrier down as bottles are removed by the unloading devices in the machine.

In the carrier illustrated the side and end members are preferably provided with debossed panels 66 and 67 respectively to provide surfaces adapted to carry suitable indicia formed in or applied to said panels, whereby said indicia will not be subjected to wear or abrasion when moving the carriers as when placing a plurality of same in a wooden case.

In assembling a carrier of parts constructed as described, the reinforcing member 57 is arranged between the flanges 6 of the top panel 4 with the apertures 56 and 61 in alignment. The lower edges 60 of the flanges 6 are then crimped to anchor the reinforcing member in place. The vertical members 55 of the bail are then inserted into the apertures 56 and 61 and moved therethrough and the washers 64 sleeved over the lower ends of the vertical members and said lower ends deformed as at 65 to retain the washers 64 thereon. Prior to inserting the bottom member 3, the flanges 8 and 9 and end portions 20, 21, 22 and 23 of the side members extend outwardly at the ends of the body member. This arrangement permits the bottom member 3 to be moved between the side members 12 and 13 whereby the flanges 36 on said bottom member may be inserted between the flanges 23 and the side members 12 and 13. The flanges 35, 36 and 28 are then crushed against the side members 12 and 13 and indentations 69 formed in the side members 35 in alignment with the openings 29 in the flanges 28 whereby said indentations 69 key the respective flanges together. The end members 38 and 39 are then moved into an upright position whereby the upper edge 40 thereof engages the lower surface of the panel 4. The flanges 8 and 9 and the end portions 20, 21, 22 and 23 of the side members are then bent whereby the portions adjacent the edges thereof overlie the instruck portions 44 of the end members 38 and 39. During this bending operation the tangs 11 and 26 are inserted in the slots 45. The tangs are then tightly folded over and pressed against the inner faces of the instruck portions 44 in the end members 38 and 39 to secure the flanges 8 and 9 and end portions 20, 21, 22 and 23, and end members 38 and 39 into solid and rigid end structure. This forms a completed carrier as illustrated in Fig. 1 adapted to carry a plurality of bottles of beverage, the particular carrier illustrated being adapted for six bottles. The dimensions of the respective parts of the carrier are such that the bottles substantially engage the flanges 6, around the apertures 5 in the top panel 4, and the ribs 47 and 48 prevent contact of the lower ends of said bottles, the bottom of each bottle resting on the circular embossed portions 46 of the bottom panel 33.

It is believed obvious that I have provided a bottle holder and carrier of rigid structure, capable of holding a plurality of bottles which may be easily inserted in said carriers and particularly adapted to fit in wooden cases and for efficient use in automatic case unloaders and case loading machines, the telescoping bail and associated carrier structure functioning with the case unloader machine to hold the carrier and facilitate removal of the bottles. The bail also permits stacking of the carriers when filled with bottles and provides efficient transportation of the carrier and bottles without danger of striking the hand on said bottles.

What I claim and desire to secure by Letters Patent is:

1. A bottle holder and carrier of the character described including, a bottom member, end members on said bottom and extending upwardly therefrom, an upper spacer having a plurality of apertures for receiving and substantially engaging bottles, side members on the up-

per spacer and extending downwardly therefrom, end portions on the side members and extending inwardly therefrom with the terminal edges overlying the adjacent edges of the end members, end flanges on the upper spacer and extending downwardly therefrom, said end flanges overlying the upper edge of the end members, means on the end portions and end flanges securing the end portions and end flanges to the end members, and a bail engaging the upper spacer for supporting the bottle carrier.

2. A bottle holder and carrier of the character described including, a bottom member, end members on said bottom and extending upwardly therefrom, an upper spacer having a plurality of apertures for receiving and substantially engaging bottles, side members on the upper spacer and extending downwardly therefrom, interengaging flanges on the lower edges of the side members and side edges of the bottom member securing said bottom to said side members, end portions on the side members and extending inwardly therefrom with the terminal edges overlying the adjacent edges of the end members, end flanges on the upper spacer and extending downwardly therefrom, said end flanges overlying the upper edge of the end members, said end members having spaced slots along the overlying edges of the end flanges and end portions, means on the end portions and end flanges securing the end portions and end flanges to the end members, and a bail engaging the upper spacer for supporting the bottle carrier.

3. A bottle holder and carrier of the character described including, a bottom member, end members on said bottom and extending upwardly therefrom, an upper spacer having a plurality of apertures for receiving and substantially engaging bottles, side members on the upper spacer and extending downwardly therefrom, interengaging flanges on the lower edges of the side members and side edges of the bottom member securing said bottom to said side members, end portions on the side members and extending inwardly therefrom with the terminal edges of the end members, end flanges on the upper spacer and extending downwardly therefrom, said end flanges overlying the upper edge of the end members, said end members having spaced slots alongside the overlying edges of the end flanges and end portions, tangs on the end portions and end flanges extending through the slots in the end members and folded over to secure the end portions and end flanges to the end members, and a bail engaging the upper spacer for supporting the bottle carrier.

4. A bottle holder and carrier of the character described including, a bottom member, end members on said bottom extending upwardly therefrom, an upper spacer having a plurality of

apertures for receiving and substantially engaging bottles, side members on the upper spacer and extending downwardly therefrom, inwardly folded flanges on the lower edges of the side members, flanges on the sides of the bottom member engaging the inwardly folded flanges on the side members, means for locking the flanges in interengaging position, end portions on the side members and extending inwardly therefrom with the terminal edges overlying the adjacent edges of the end members, end flanges on the upper spacer and extending downwardly therefrom, said end flanges overlying the upper edge of the end members, said end members having spaced slots therein, tangs on the end portions and end flanges extending through the slots in the end members and folded over to secure the end portions and end flanges to the end members, and a bail engaging the upper spacer for supporting the bottle carrier.

5. A bottle holder and carrier of the character described including, a bottom member, end members on said bottom and extending upwardly therefrom, an upper spacer having a plurality of apertures for receiving and substantially engaging bottles, side members on the upper spacer and extending downwardly therefrom, inwardly folded flanges on the lower edges of the side members, upwardly extending flanges on the sides of the bottom engaging the inwardly folding flanges on the side members, the upper edge of said flanges on the sides of the bottom being turned outwardly and downwardly and engaged between the side members and the flanges on the lower edges thereof to provide interengagement of the flanges on the sides and bottom, said bottom member being in the same plane as the lower edges of the side members, end portions on the side members and extending inwardly therefrom with the terminal edges overlying the adjacent edges of the end members, end flanges on the upper spacer and extending downwardly therefrom, said end flanges overlying the upper edges of the end members, said end members having spaced slots along the overlying edges of the end flanges and end portions, tangs on the end portions and end flanges extending through the slots in the end members and folded over to secure the end portions and end flanges to the end members, and a bail engaging the upper spacer for supporting the bottle carrier.

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