July 12, 1949. H. G. SUITER 2,475,924

BOTTLE CARRIER

Filed July 27, 1945 3 Sheets-Sheet 1

Fig. 1.

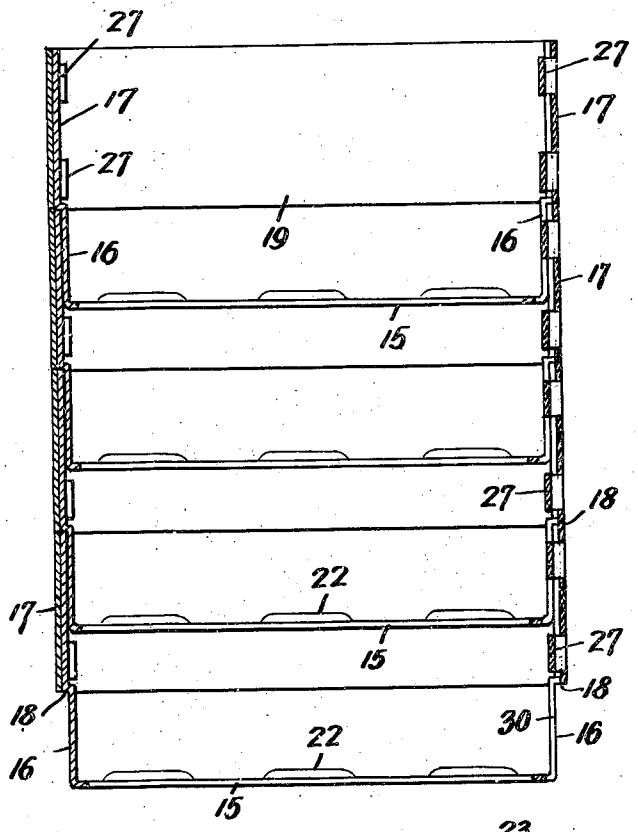
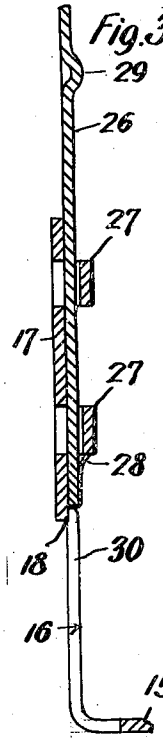


Fig. 3.



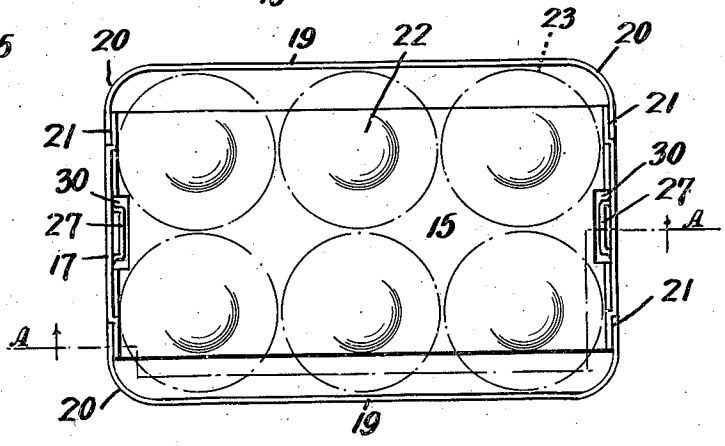


Fig. 2.

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BOTTLE CARRIER

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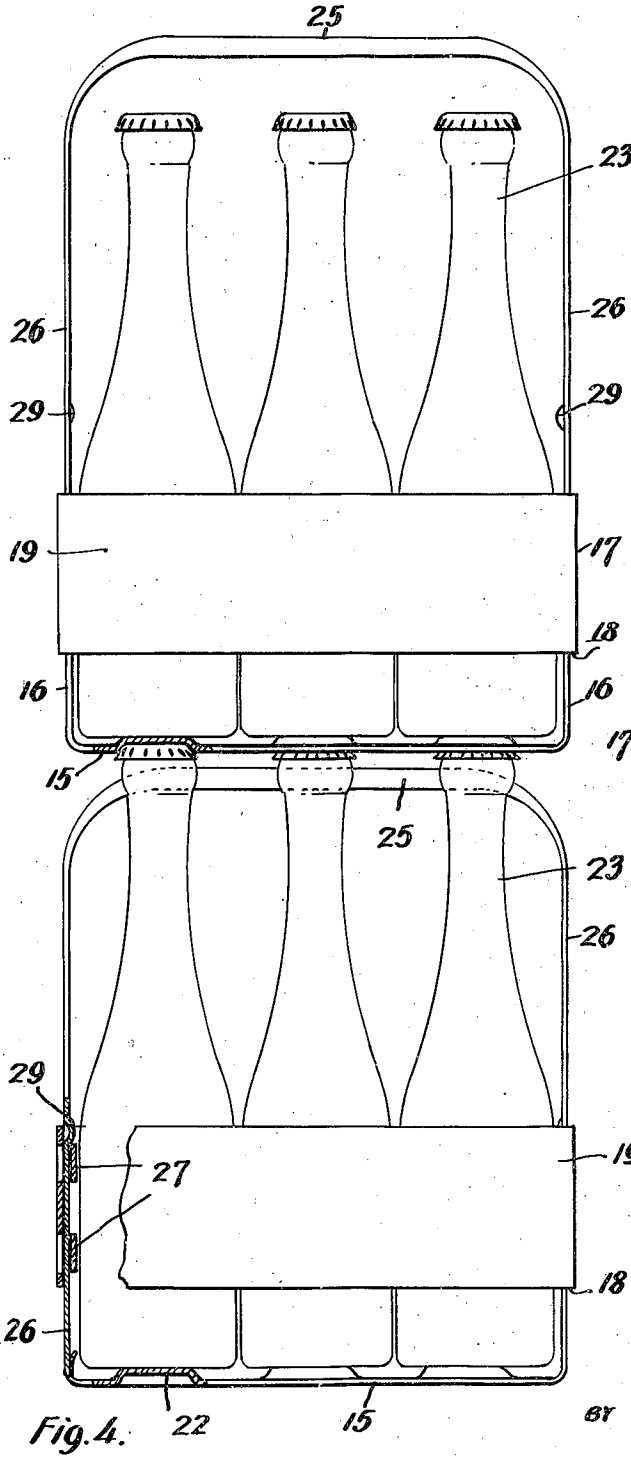


Fig. 4.

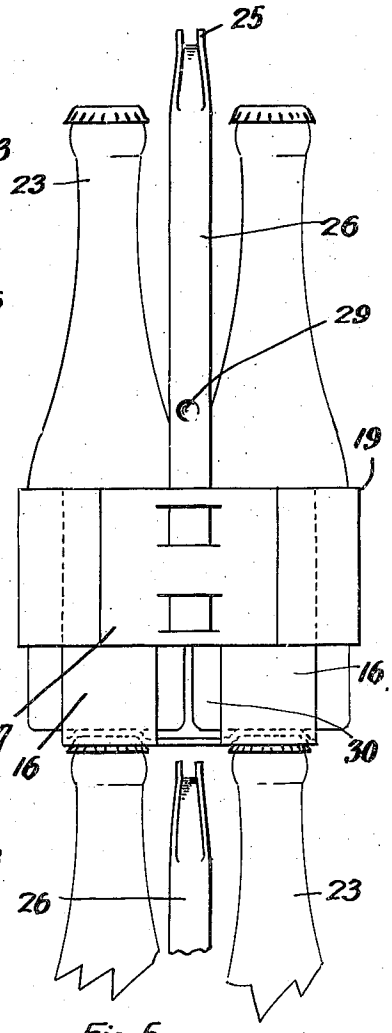


Fig. 5.

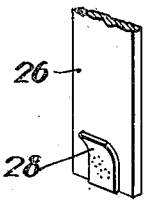


Fig. 6.

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BOTTLE CARRIER

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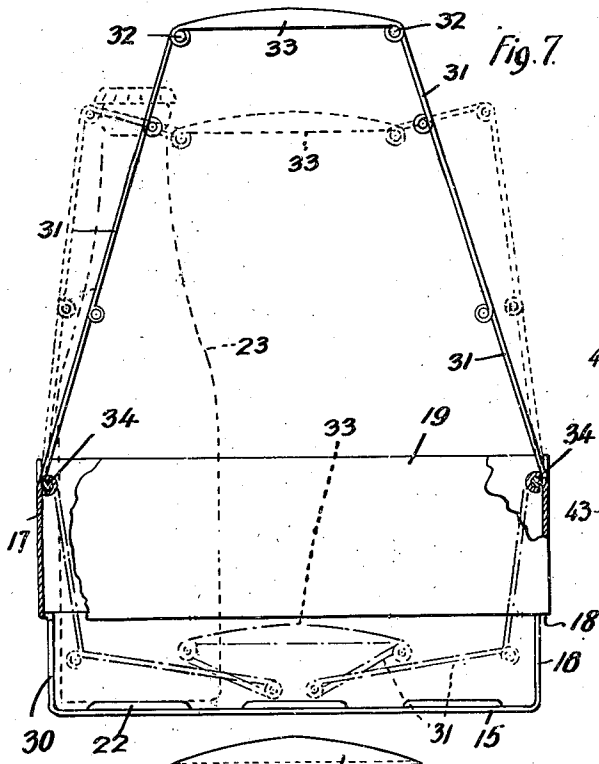


Fig. 7.

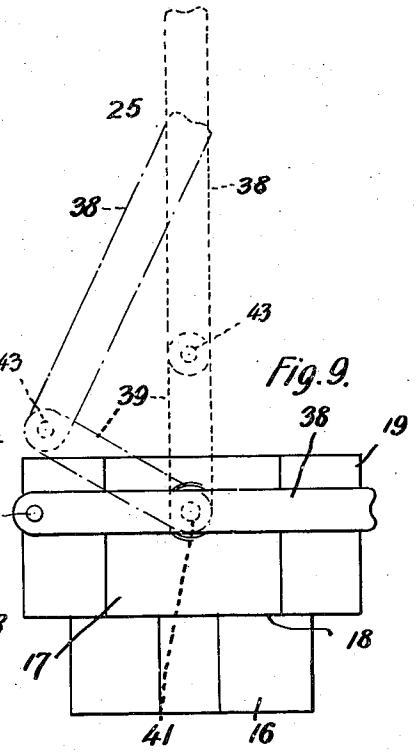


Fig. 9.

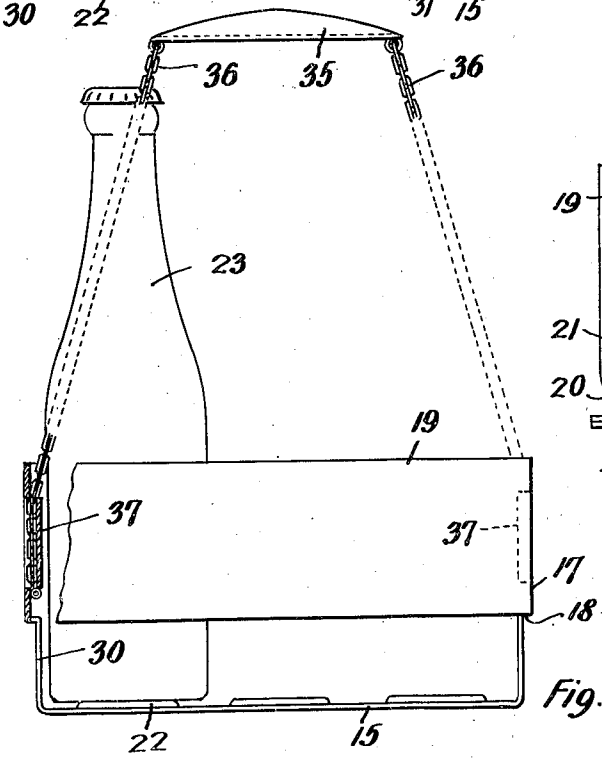


Fig. 8.

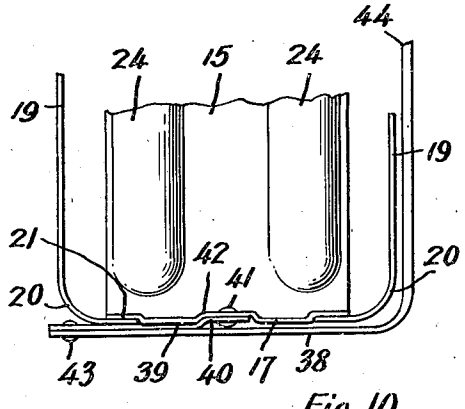


Fig. 10.

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UNITED STATES PATENT OFFICE

2,475,924

BOTTLE CARRIER

Harold G. Suiter, Baltimore, Md.

Application July 27, 1945, Serial No. 607,327

10 Claims. (Cl. 224—48)

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This invention has particular reference to a small, light and inexpensive carrier for beverage bottles, usually six in number, now popular with the consumer as well as the bottler and retailer, in the first instance because of convenience in carrying the purchase from store to home, and in the latter instances because of the manner in which the carrier has promoted a larger unit of sale. Because of its popularity, it is in large demand, with the liklihood of this demand increasing, and with large shipments of empty carriers from the makers thereof to relatively distant bottlers, the matter of close nesting to reduce carton size and increase the number that can be accommodated in trucks or cars, assumes outstanding importance and the structures are designed to meet such requirements.

More specifically, the tray of this invention is directed to a bottle or can carrier for the accommodation of a predetermined number of such articles in compact upright position; the invention residing in the construction of the trays in such manner as to permit the latter to be interfitted or nested one within another when empty to economize shipping as well as storage space for the trays when the latter are not in use.

An object of the invention is to provide a tray for the purposes and of the character set forth, of light weight and simple construction, and so arranged as to permit of compact nesting of the trays when being shipped or when not in use, without interference with the handle structures, and yet which may be quickly and easily made ready for use to provide a durable, rigid and conveniently handled carrier.

A further object is to so construct the trays that they may be filled with bottles, cans or other articles which they are designed to accommodate, and stacked one on top of the other, having handles so constructed and associated with the trays as to offer no obstruction to the stacking arrangement.

A further object is to so construct the trays and to associate the handles therewith that the stacks of filled trays may be arranged side by side in smooth contact with one another, thus economizing storage space and yet permitting the stacks to be removed, in whole or in part, without disturbing the remaining stacks.

A further object of the invention is to so construct the trays that when filled with bottles they may be positioned one on top of another in stacks and in such manner that the superimposed trays and bottles will cooperate to stabilize the stack.

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A further object of the invention is to so connect the handles with the trays that the latter may be nested one within the other without interference from the handle.

With the foregoing objects in view, together with others which will appear as the description proceeds, the invention consists of the novel construction, combination and arrangement of parts, all as will be described more fully hereinafter, illustrated in the drawing, and particularly pointed out in the claims.

In the drawing—

Fig. 1 is a longitudinal sectional view taken through a stack of interfitted or nested bottle carriers constructed in accordance with the invention, the view being taken substantially upon line A—A of Fig. 2,

Fig. 2 is a top plan view of the structure shown in Fig. 1,

Fig. 3 is a fragmentary sectional view taken through one end of a bottle carrier embodying the invention and illustrating the manner in which a handle may be connected therewith,

Fig. 4 is a side elevation, parts in section, showing a pair of bottle carriers embodying the invention, filled with bottles, and stacked one upon the other,

Fig. 5 is an end view of a portion of the device shown in Fig. 4,

Fig. 6 is a detailed fragmentary view illustrating a means for securing a detachable handle to the tray,

Fig. 7 is a side elevation of a bottle carrier of this invention and illustrating a modified form of handle construction,

Fig. 8 is a similar view of a further modification of handle,

Fig. 9 is an end view of a still further modified form of handle construction, and

Fig. 10 is a fragmentary top plan view of the device shown in Fig. 9.

The bottle carrier of the present invention is of the type which involves generally a tray, including a bottom, ends and sides, and a handle, the tray being usually of such size as to accommodate six, eight or possibly ten bottles in upright position and closely associated or fitted in upstanding position within the tray so as to be stabilized therein and readily conveyed by the handle attached to the tray. The tray here disclosed is for the accommodation of six bottles arranged closely together in parallel rows of three each, but it will be understood that the tray may be made to receive a greater or lesser number of bottles as requirements may demand. The

tray may be constructed of any desired material and may be of any preferred size, the material here contemplated being of relatively thin and light metal. The tray includes a flat bottom 15 having upstanding lower wall portions 16 at its ends to provide end walls preferably at right angles to said bottom. Surmounting the end wall 16 are upper wall portions 17, an abrupt outwardly extending shoulder 18 resulting at the juncture of the lower with the upper wall portions. This shoulder is in breadth approximately the thickness of the end wall element. The upper and lower end walls are thus disposed in parallel planes spaced apart a distance equal to the breadth of the shoulders 18, the lower wall portion 16 being inset with respect to the upper portions 17.

The sides of the tray comprise bands 19 extending throughout the length of the tray, and the ends of these bands are inwardly curved or bent as at 20 and are secured, such as by welding, within recesses in the side edges of the upper end portions 17 provided by insetting said edges as at 21. The side walls are spaced apart such distance as to accommodate between them the bottles in upstanding position, and a distance somewhat greater than the breadth of the bottom 15. The portions 21 are inset a distance substantially equal to the thickness of the end portions 17 as well as the bands 19, so that when the bands are properly interfitted with and secured to the ends a substantially smooth, even and unobstructed outer surface for the ends of the tray is provided.

The tray bottom 15 is provided with upstanding bosses 22 so positioned as to underlie and to support the bottles indicated at 23. These bosses are pressed inwardly of the bottom as shown, in order to provide recesses in the bottom of each tray as shown more particularly in Fig. 4. These bosses may be individual, that is, one for each bottle, or they may be elongated and longitudinally disposed bosses 24 extending throughout substantially the length of the bottom as indicated more particularly in Fig. 10.

When thus constructed, the empty trays may be stacked or nested one within the other as shown more particularly in Fig. 1. The lower end wall portions 16, being offset inwardly from the upper wall portions, will interfit snugly within or between the upper end wall portions of the next underlying tray; the shoulders 18 limiting the inward movement of the trays one within another. By constructing the tray ends in the manner thus described, and assembling the side bands 19 as set forth, smooth and unobstructed outer surfaces for the trays are provided, permitting of close stacking or abutment of nested trays together in cartons or in storage space.

Carrying elements or handle members for the trays thus constructed may take several different forms. In that form of the invention disclosed by Figs. 1 to 7 inclusive, the handles are detachable from the trays so as to facilitate storage and packing in the above manner, and may be readily attached to the trays when the latter are to be put to service. The handle is preferably of one piece metal construction of bail type, or substantially inverted U-shape as shown more particularly in Figs. 4 and 5. The hand grip is represented at 25, while the arms 26 are spaced apart a distance substantially equal to the distance between the inner faces of the upper wall portions 17 of the tray. These arms 26 extend through loops or guides 27 pressed inwardly from the upper wall portions 17 a distance only sufficient to slidably accommodate the arms, allowing space for clearance of stops 28. The guides 27 are preferably arranged in pairs vertically aligned at each end of the tray and disposed centrally thereof. Each arm is provided near its lower end and upon its inner face with a spring prong or latching member 28 which normally extends inwardly such distance as to engage with the lowermost of the guides 27 to hold the handle against accidental detachment therefrom. When it is desired to remove the handle, however, the spring prong or stop 28 may be pressed inwardly in order to clear the guides 27 in such removal.

With the handle attached in the manner described, bottles may be placed within the tray and readily transported or carried by grasping the handle 25. In instances where it is desired to stack filled trays one upon the other, as for instance in cold storage or for display purposes, the handles may be slid downwardly a distance sufficient to dispose the hand grip 25 below the horizontal plane of the upper ends of the bottles, thus permitting a filled tray to be superimposed upon and supported by the bottle tops of an underlying tray. The upwardly projecting bosses 22 in the tray bottoms receive and snugly accommodate the tops of the bottles in the next underlying tray, thus assuring stabilization of the stacked trays. The arms 26 are provided with inwardly projecting bosses 29 which engage with the upper edge of the uppermost guide 27 to limit the downward sliding movement of the arms. These bosses or stops will be so positioned upon the arms 26 as to prevent the lower ends of the arms projecting below the horizontal plane of the bottom 15.

The lower wall portions 16 are so formed as to permit free sliding movement of the arms of the handle. These portions may be recessed or grooved for this purpose, or the said wall portions may be cut away to provide slots as at 30 of sufficient width to accommodate the arms, as well as the inwardly projecting handle securing or attaching elements when the trays are nested together. By offsetting the end wall portions in the manner described, and providing the depression or slot 30, it is obvious that the handle members 26 when in lowered position will lie within the plane of the end walls 16 and will offer no obstruction to compact stacking. It will be observed, particularly with reference to Fig. 2 of the drawing, that the guides 27 are positioned in approximately the longitudinal center of the tray.

In the modification disclosed by Fig. 7, the handle element is permanently attached to the tray and is of such construction that when the tray is empty it may be readily folded within the tray so as to permit nesting of the trays one within another and without detaching the handle. The arms of the handle element comprise several sections 31 hingedly connected end to end so as to be foldable upon one another. The upper sections of these arms are hingedly connected as at 32 to the ends of the hand grip 33, while the lowermost of the arm sections are hinged as at 34 to the inner surfaces of the upper end wall sections 17 and in the longitudinal center of the tray. By constructing the arms of hingedly connected sections in the manner stated, the hand grip portion 33 may be lowered to a position to permit of stacking filled trays one upon another as represented by the dotted lines in Fig. 7, while for nesting empty trays one within another, the hand grip and its hingedly connected arm sec-

tions will assume the position shown by dot and dash lines in the same figure.

Fig. 8 shows a further modification, wherein the hand grip **35** is secured to the ends of flexible elements such as chain, wire or rope **36**. These flexible elements are sufficiently long to permit the hand grip extending a proper distance above the level of the bottle tops, and it will be understood that the hand grip and the flexible sections therefor may drop down into the tray to permit nesting of the latter. It will be observed that in this form of the invention, as in the others heretofore described, that the lower ends of the chains or flexible elements **36** are connected to the inner faces of the upper end wall portions **17**, and in the longitudinal center of the tray. In the present instance, these chains may pass downwardly through inwardly projecting guide members **37** forming a part of the upper end wall section. The lower end walls **16** in this case are slotted so as to accommodate the elements **37** when the trays are in nested position.

Figs. 9 and 10 show a still further modification of the invention, wherein the handle is permanently attached to the tray and in such manner as to permit stacking of the trays in nested relationship. In this form of the invention the handle takes the general shape of the handle shown in Figs. 4 and 5, except that the arms are made in hingedly connected sections **38** and **39**. The section **39** has its lower end offset as at **40** and pivoted, as by a rivet **41** within a recess **42** stamped or pressed inwardly in the upper end portion **17** and in the longitudinal center of the tray. The outer end of the arm portion **39** is hingedly connected as at **43** to the lower end of the upper arm portion **38**. The arm portions **38—39** are so proportioned with respect to each other that when swung to collapsed position upon their pivots as shown by full lines in Figs. 9 and 10, the bail will lie snugly against the outer surface of the end portion of the tray without projecting such distance therefrom as would materially interfere with compact storage. Moreover, the proportioning of the arm sections is such that the hand grip or handle portion **44** lies snugly against and parallel with the tray side when the handle is collapsed. When the tray of this form of the invention is filled with bottles and it is desired to stack the filled trays one upon another, the handles may take either the position shown in full lines in Figs. 9 and 10 or may assume the position shown by dot and dash line in Fig. 9. When in bottle carrying position, the handle will be fully extended as shown by dotted position in Fig. 9.

It will be understood that the guides **27** in Figs. 1 and 2 of the drawings, and the handle attaching means in all other forms of the invention are located substantially in the longitudinal center of the tray and project inwardly from the upper end wall portions into a space of approximately curvilinear isosceles triangle form created by the end wall portion and the curved sides of the adjacent bottles.

From the foregoing, it will be readily apparent that bottle trays so constructed may be compactly nested and packed for shipment or storage so as to greatly economize shipping or storing space as well as to lend the trays to ready and easy handling in considerable numbers. In that form of the invention where a separable handle is employed, the handles, of course, will be packed separately, and may be easily and quickly assembled with their respective trays when it is desired to put the latter to use. The shape and construction of the several trays and the association of the handles therewith permits of filled trays being readily stacked one upon another for either cold storage or display purposes and in such manner that the trays and the bottles associated therewith contribute to a stabilization of the stack. In those forms of the invention wherein the handles are permanently attached to their respective trays, the construction of the handle and its association with the tray is such as to permit of ready collapsing of the handle in order that the trays may be interfitted or nested without interference from such handles.

While the foregoing is a description of what appear to be the preferred embodiment of the invention, it will be understood that changes in the form, construction and arrangement of parts may be resorted to without departing from the spirit of the invention as defined by the claims.

Having thus explained the nature of the invention and described an operative manner of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the forms of its use, what is claimed is:

1. A carrier comprising a tray having upper and lower portions, the lower portion offset inwardly of the upper portion, said portions parallel with each other, handle attaching elements projecting inwardly from the inner faces of the upper portion, and said lower portion having channels aligned with said handle attaching elements on the upper portion to receive said elements when the tray is nested with another tray of like construction.

2. A carrier comprising a tray including a bottom and end walls so constructed as to permit nesting engagement with another carrier of identical construction, handle attaching elements projecting inwardly from the upper portions of said end walls, and the lower portions of said end walls having channels to slidably receive the handle attaching elements of a tray nested therein.

3. A carrier comprising a tray including a bottom and end walls so constructed as to nest one within another of identical construction, handle attaching elements projecting inwardly from the upper portions of the end walls of said tray, and the lower portions of said tray having recesses therein aligned with said handle attaching elements.

4. A carrier comprising a tray including a bottom and end walls, said end walls having upper and lower portions, the said lower portions offset inwardly of said upper portions, handle attaching elements projecting inwardly from the inner faces of the upper wall portions, and said lower wall portions having slots therein aligned with the handle attaching elements of the said upper portions.

5. A carrier comprising a tray including a bottom and end walls, said end walls having upper and lower portions, said lower portions offset inwardly of said upper portions, handle attaching elements projecting inwardly from the inner faces of said upper wall portions, said lower wall portions having recesses aligned with the said handle attaching elements of said upper portions, and said handle attaching elements and recesses disposed in substantially the longitudinal center of said tray.

6. A carrier comprising a tray including a bottom and end walls, said end walls having upper

and lower portions, said lower portions offset inwardly of said upper portions, handle retaining loops projecting inwardly from the said upper end wall portions, said lower end wall portions having recesses therein aligned with said loops, a handle, arms projecting from said handle and adapted to slidably engage in said loops, and means for holding said arms secure in said loops.

7. A carrier comprising a tray including a bottom and end walls, said end walls having upper and lower portions, said lower portions offset inwardly of said upper portions, loops projecting inwardly from the inner faces of said upper wall portions, said lower wall portions having recesses aligned with said loops, a handle, arms projecting from said handle and slidably engaged in said loops and said recesses, and means for holding said arms against detachment from said loops.

8. A carrier comprising a tray including a bottom and end walls, said end walls having upper and lower portions, said lower portions offset inwardly of said upper portions, loops projecting inwardly from the inner faces of said upper end wall portions, said lower end wall portions having recesses aligned with said loops, a handle, arms projecting from said handle and slidably engaged in said loops and receivable within said recesses, latching means for holding said arms against outward movement within said loops, and stops on said arms to limit the inward sliding movement of said arms.

9. A carrier comprising a tray including a bottom and end walls, said end walls having upper and lower portions, said lower portions offset inwardly of said upper portions, loops projecting inwardly from the inner faces of said upper end wall portions, a handle, arms projecting from said handle and adapted to slidably interfit within said loops, and stops on said arms engageable with said loops to limit the sliding movement of said arms within said loops.

10. A carrier comprising a tray including a bottom and end walls, said end walls having upper and lower portions, said lower portions offset inwardly of said upper portions, loops projecting inwardly from the inner faces of said upper end wall portions, a handle, arms projecting from said handle and adapted to slidably engage within said loops, means on said arms to cooperate with said loops to limit the sliding movement of said arms in both directions, and said lower end wall portions having recesses therein to slidably receive said arms.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
491,865	Wynn	Feb. 14, 1893
774,552	Bennett	Nov. 8, 1904
1,341,869	Watson	June 1, 1920
1,344,716	Powell	June 29, 1920
2,029,746	Tufts et al.	Feb. 4, 1936
2,287,312	Kader	June 23, 1942
2,329,656	Sedgwick	Sept. 14, 1943