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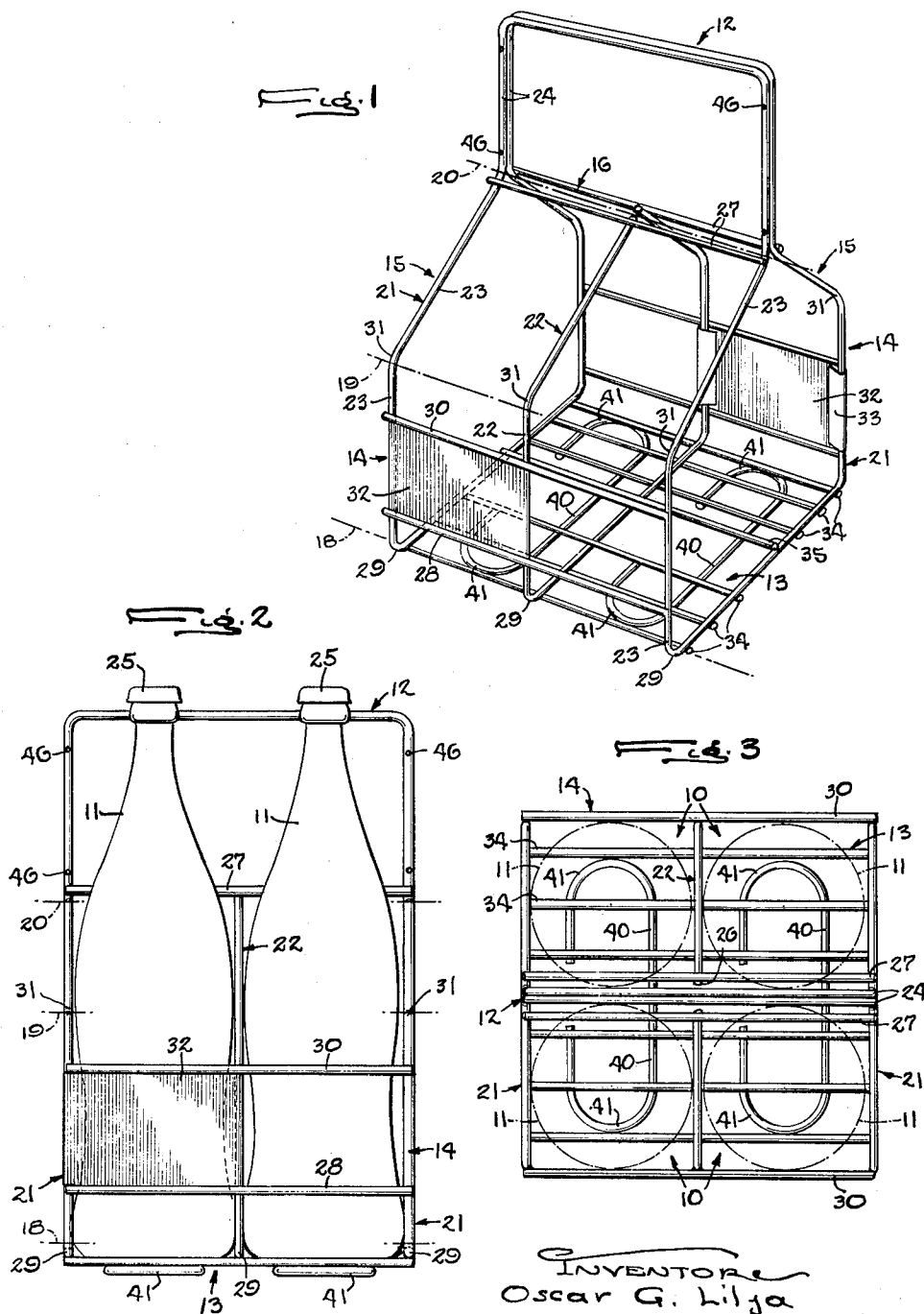
O. G. LILJA

2,981,440

WIRE BOTTLE CARRIER

Filed June 23, 1958

4 Sheets-Sheet 1



INVENTOR
Oscar G. Lilja
By Carlson, Peterson, Gustafson & Wolfe
ATTORNEYS

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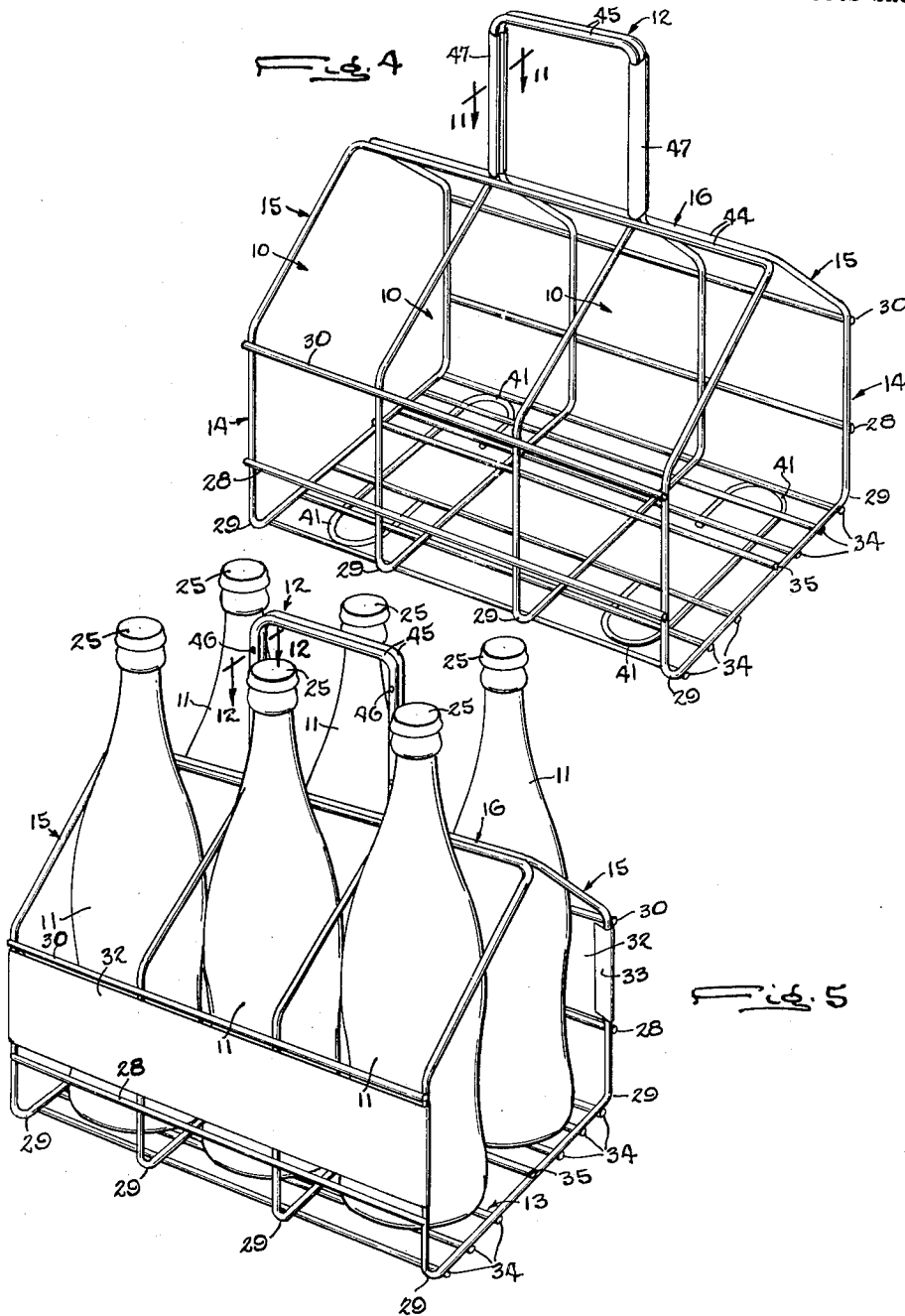
O. G. LILJA

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INVENTOR
Oscar G. Lilja

By Carlson, Pitzner, Husted & Wolfe
ATTORNEYS

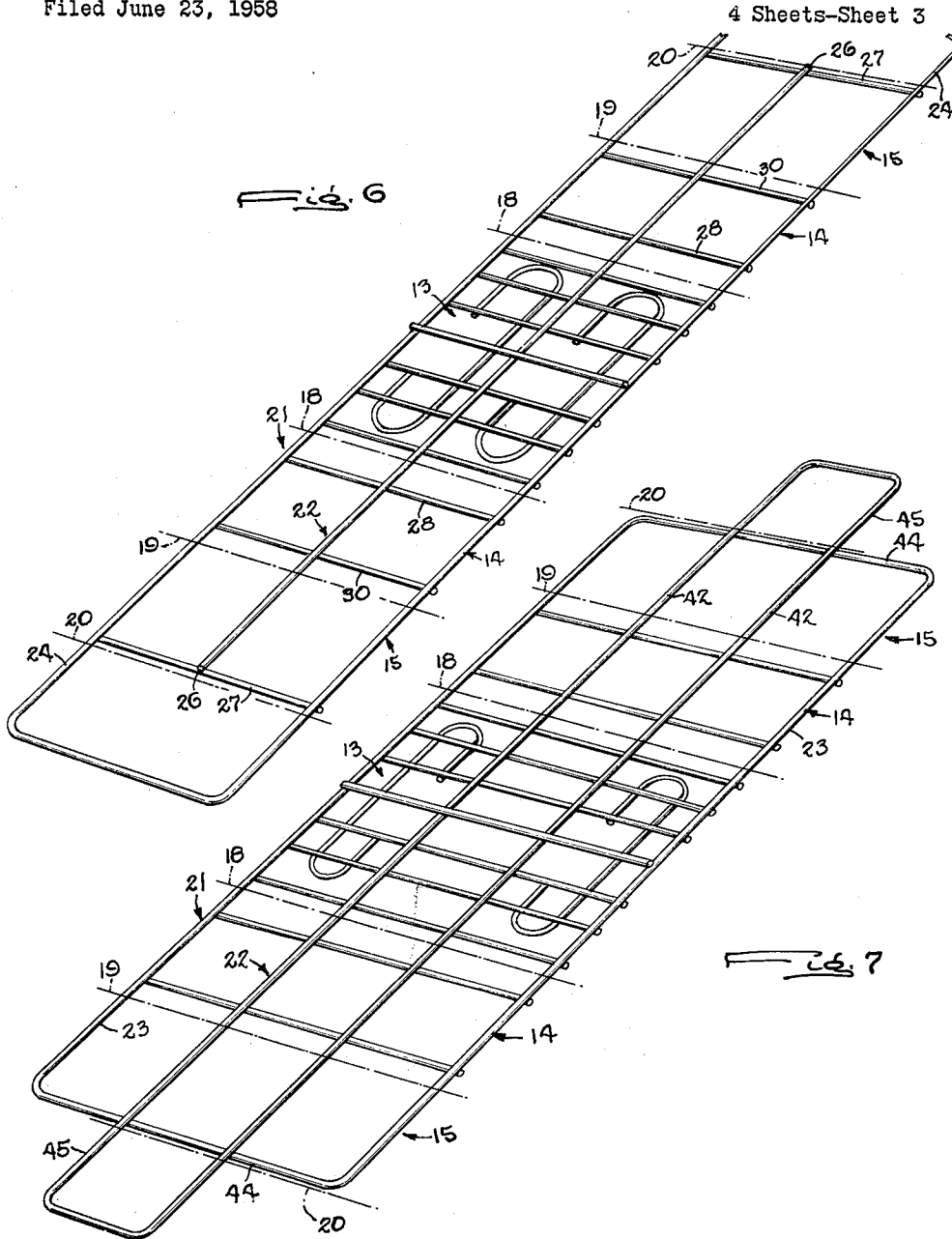
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Oscar G. Lilja

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ATTORNEYS

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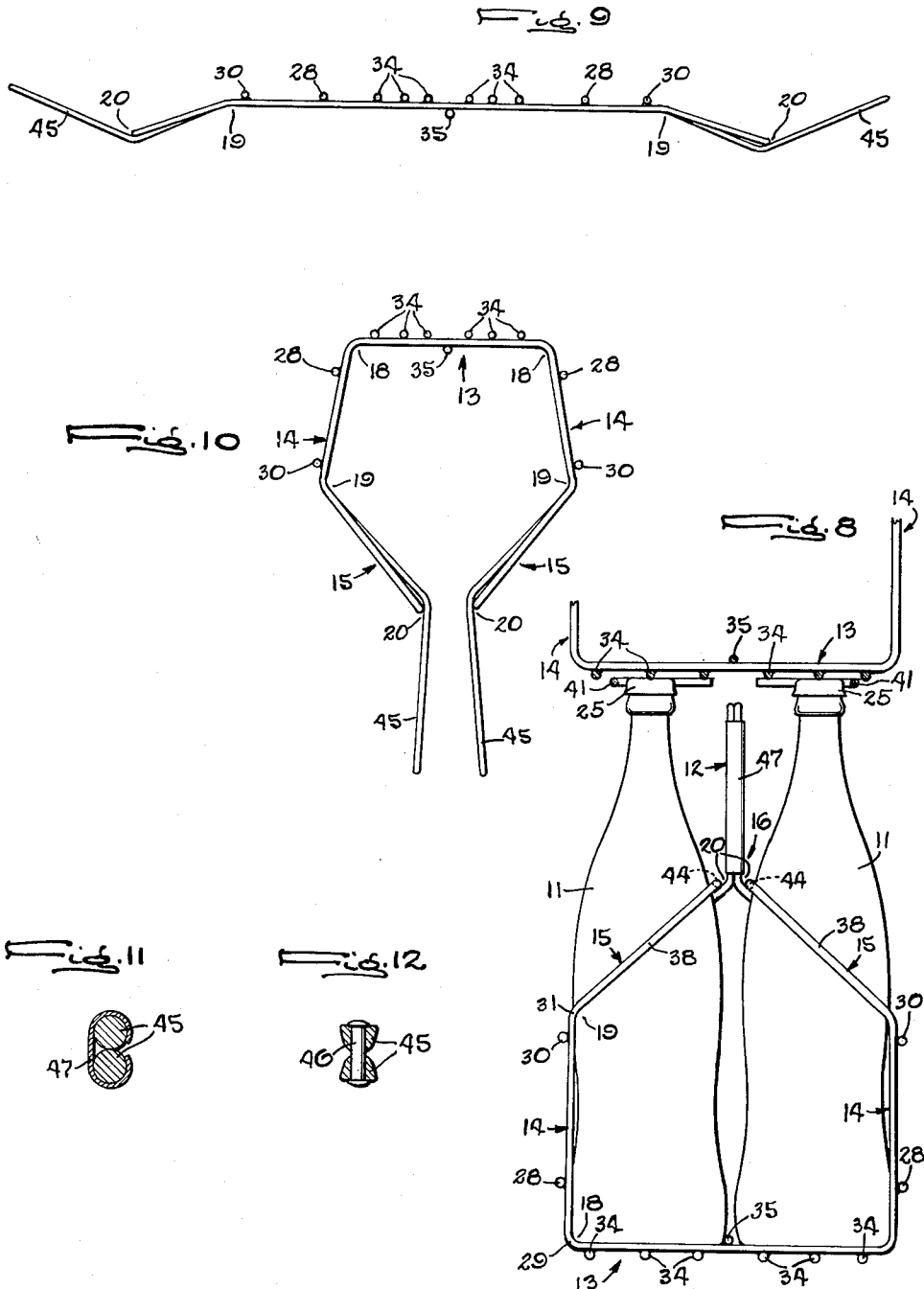
O. G. LILJA

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WIRE BOTTLE CARRIER

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4 Sheets-Sheet 4



INVENTOR

Oscar G. Lilja

By Carlson, Pitzner, Hubbard & Wolfe
ATTORNEY

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2,981,440

WIRE BOTTLE CARRIER

Oscar G. Lilja, Rockford, Ill., assignor to Commercial Wire Products Company, Rockford, Ill., a corporation of Illinois

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12 Claims. (Cl. 220—117)

This invention relates to a carrier for beverage bottles and the like, and more particularly to a bottle carrier having upright sides and ends and a gabled top converging upwardly and partitioned to define two rows of upwardly opening individual bottle compartments separated by an inverted U-shaped handle.

The general object is to provide a bottle carrier of the above character which is made entirely of wire and which, as compared to prior constructions, is simpler and more rigid in construction, less expensive to manufacture, easier to keep clean, maintains the bottles separated more effectually and is less susceptible to bending in severe service use with large size beverage bottles.

Another object of the invention is to make a carrier of the above character from two wire frame members which are first joined into a flat assembly and then, by simply bending upwardly along spaced parallel lines, are shaped to form the bottom, the upright sides of two rows of bottle compartments, a gable top with the individual compartment openings therein, and a handle upstanding from the peak of said top.

A further object of the invention is to minimize the cost of manufacturing a carrier of the above character by applying a protective coating to the frame assembly before the bending thereof.

Still another object is to provide for convenient stacking of the carriers through the use of a novel means for interlocking the bottom of one carrier with the tops of the bottles in an underlying carrier.

The invention also resides in the novel manner of utilizing the wires of the frame members to hold the bottles out of side to side contact at all times and against falling out of the carrier.

A more specific object is to utilize the wires of the frame members to form on the bottle carrier a double wire handle through which the loaded carrier may be supported comfortably in spite of its substantial weight.

Other objects and advantages of the present invention will become apparent from the following description taken in connection with the accompanying drawings in which:

Figure 1 is a perspective view of a wire bottle carrier embodying the novel features of the present invention.

Fig. 2 is a side view.

Fig. 3 is a plan view.

Fig. 4 is a perspective view of a six-bottle carrier.

Fig. 5 is like Fig. 4 showing a modified construction of the handle.

Figs. 6 and 7 are perspective views of the carrier before bending thereof.

Fig. 8 is an end view of the six-bottle carrier supporting a second carrier.

Figs. 9 and 10 are end views of the carrier frame showing different steps in the bending thereof to form the carrier.

Figs. 11 and 12 are sections taken respectively along the lines 11—11 and 12—12 of Figs. 4 and 5.

The improved carrier is fabricated entirely from pieces of wire and provides two parallel rows of individual

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compartments for receiving and enclosing the bottom portions of bottles 11 and maintaining the latter separated from each other while being shipped from place to place or being carried about by means of a handle 12 disposed between the two rows of bottles. There are four bottle compartments in the form shown in Figs. 1, 2, 3 and 6 and six compartments in the form shown in Figs. 4, 5 and 7.

Generally stated, the carrier comprises a flat rectangular bottom 13, side walls 14 somewhat less than half the height of the bottles to be carried and upstanding from opposite edges of the bottom, top walls 15 inclined upwardly from the side walls to an apex 16 from which the handle 12 projects upwardly in a plane including the center line of the bottom. The gabled top thus formed provides openings on opposite sides of the handle into which the bottles of the two rows may be inserted and seated against the bottom with the axes of the bottles of each row and the corresponding bottles of the two rows spaced apart equal distances as shown in Fig. 3.

In accordance with the present invention, the bottom, the side walls, the gabled top, and the handle are all formed from a single rigid frame structure first formed flat as shown in Figs. 6 and 7 and then bent upwardly along parallel transverse lines 18 and 19 to define the intersecting edges of the bottom and the side walls 14 and the gabled top and finally reversely along lines 20 to bring the end portions of the frame alongside each other and form the double wire handle. In both of the forms illustrated, the flat frame structure comprises an elongated rectangular frame member 21 of a width equal to the overall length of the rows of bottle compartments and an intermediate frame member 22 extending along the center of the first frame and spaced from the sides 23 thereof distances equal to the width of the end bottle compartments in each of the two rows.

In the four bottle carrier (Figs. 1, 3, 6) the two parts of the inverted U-shaped handle 12 are formed by the end portions 24 of the main frame 21 whose length, for this reason, is equal to the combined width of the bottom 13, the height of the two side walls 14, the width of the two top walls 15, and the depth of the handle. The latter projects upwardly above the peak of the gabled top to a point (see Fig. 2) just below the tops 25 of the bottles to be carried when the latter are resting on the bottom 13. When only four compartments are required, the intermediate frame member 22 comprises a single length of wire whose ends 26 terminate short of the handle portions 24 and are welded to crosswires 27 which lie on the outside of the handle in the final assembly and define the peak 16 of the gabled top. Thus, in the flat frame (Fig. 6), the intermediate wire 22 lies in the plane of the rectangular frame and in the final carrier takes the same shape as the open end walls of the carrier which are defined by the side pieces 23 of the main frame 21.

The side walls 14 are completed by a crosswire 28 spanning and welded to the wires 22 and 23 a short distance above the bottom bends 29 and a parallel crosswire 30 similarly secured to the frame wires just below the bends 31 at the upper edges of the side walls. By locating the crosswires on the underside of the flat frame 21 (Fig. 6), they become located on the outside of the carrier and thus may be utilized to protect a label or advertising matter on the outwardly facing surface of a plate 32 spanning the uprights of the side walls and secured to the latter as by curling the plate ends around these parts as indicated at 33 (Fig. 1).

The bottles are supported within the individual compartments in shallow recesses formed in the bottom 13 formed by sets of three crosswires 34 spaced apart across and spanning the bottom elements of the frame members 21 and 22 on opposite sides of the center

plane of the carrier. These wires are welded to the undersides of the frame members and the outer wire of the set is spaced inwardly a short distance from the bends 29 and the side walls 14. Being on top of the crosswires 34, the frame elements 22 and 23 define two sides of shallow square recesses in which the bottom of the bottle becomes seated and thus centered in its compartment. The outer edge of this recess is defined by the crosswires 28 and 30 while the inner wall is formed by a crosswire 35 spanning and welded to the tops of the frame elements 21 and 22 and lying in the plane of the handle 12. The wire 35 thus constitutes a shallow partition (see Fig. 8) engageable with the bottoms of the bottles in the different rows to assist in holding the sides of the latter out of contact during handling of the carrier. This partition also assists in preventing outward tipping of the top portions of the bottles and, in performing this function, coats with upper crosswire 30 which is disposed well above the bottom of the bottle and nearly at the level of the center of gravity of the bottle when full.

It will be observed that the ends walls of the carrier are left open over the full width of the carrier in order to permit the final shaping of the carrier by a simple bending of the flat frame along the parallel lines 18, 19 and 20. In spite of the openings which thus remain in the carrier at the ends of the rows of bottles, tipping of the latter and escape thereof by sliding of the bottom out of these openings is prevented effectually by engagement of the frame elements 21 with the bottle bottom as shown in Fig. 2 and by properly inclining and locating the parts of the frame elements 22 and 23 which define the sides of the top opening of each terminal compartment in the row. Preferably, these latter elements slope upwardly from the bends 31 at an angle of about forty-five degrees and as shown in Fig. 8 cross the center plane of the row of bottles at points 38 spaced well above the center of gravity of the filled bottle so as to prevent outward tipping of the latter at any of the angles at which the carrier becomes disposed in normal service use.

The bottles of the two rows are held positively out of contact with each other by the crosswires 27 which are spaced a short distance apart and above the bottom 13 a distance such as to engage all of the bottles in each row at points slightly above the maximum diameter of the bottles (see Fig. 8). These wires coacting with the wires 30 of the side walls positively prevent inward tipping of the bottle tops.

Means is provided on the underside of the carrier bottom to interlock with the tops 25 of the bottles of a supporting carrier to align several carriers vertically and permit convenient stacking of the carriers for the purpose of storage or display. Herein, this means is also formed from a piece 40 of wire welded to the flat frame assembly before bending to shape the final carrier. Herein, opposite end portions of the wire 40 are bent at radii slightly larger than the bottle tops 25 to form U's 41 opening toward each other and centered on the axes of the four bottles by welding the wires in proper positions to the crosswires 34 of the carrier bottom. Thus, when one carrier is stacked on another in approximate vertical alinement therewith, the tops 25 of the bottles in the supporting carrier will be received in the recesses defined by the loops 41 thus becoming interlocked with the supported carrier so as to hold the latter centered accurately and against lateral displacement.

To form a six bottle carrier, it is only necessary to change the shape of the intermediate frame member 22 as shown in Fig. 7. Instead of employing a single piece of wire, the latter is made as a rectangle narrower than the main frame 21 by the widths of the terminal bottle compartments of the rows. The sides 42 of the intermediate rectangle are spaced apart a distance equal to the desired width of the bottle compartments and in

this instance are welded at 43 to the tops of the ends 44 of the main frame 21. The latter and the intermediate frame is so formed that the intermediate portions of the side pieces of both frames lie in a common plane. This permits the crosswires 34 to be welded to the side elements 23 and 42 of both frames thus contributing to the rigidity of the carrier as a whole while forming bottom recesses for receiving and centering all six of the bottles to be carried.

The width of the intermediate rectangular frame member is the same as the spacing of the side pieces 42 from the sides 23 of the main frame so that the width of the intermediate bottle compartments is the same as that of the terminal compartments of each row. To reduce material costs, the double wire handle 12 may be formed by the end portions 45 of the intermediate or narrower frame member instead of the ends of the larger frame as in the four bottle carrier. The latter frame is thus made shorter so that its ends 44 terminate at the peak 16 of the gabled top and engage the adjacent sides of the bottles in different rows to maintain the same separated as shown in Figs. 5 and 8.

With the carriers constructed as above described, all of the wires forming the frame members 21 and 22 and the crosswires may be of minimum size while imparting sufficient overall rigidity to the carrier to enable it to carry large quart-size bottles without danger of the parts becoming bent or otherwise damaged in service. The use of small size wire, preferably No. 8 gage, is made possible by doubling the thickness of the handle 12 by laying the two U's side to side thus widening the gripping portion of the handle. The handle portions are fastened securely together after bending the carrier into its final shape, such fastening being accomplished for example by rivets 46 extending through aligned holes in the U's as shown in Figs. 1, 5 and 12. As an alternative, a sheet metal strap 47 may be employed with its ends 48 curled around the handle wires as shown in Figs. 4, 8 and 11. These methods of fastening are preferred to welding since they avoid discoloring of the electroplating or other protective finish on the carrier frame.

To substantially reduce the cost of manufacturing the improved carrier, advantage is taken of the fact that all parts of the carrier with the exception of the handle fasteners 46 or 47 are initially joined together in a rigid flat frame structure to which a protective or non-corrosive coating may be applied, the coating being of a character such as to remain unbroken after the bending of the frame to form the final carrier. Accordingly, after formation of the frame members 21 and 22 and joining of the same to the crosswires 28, 29, 34 and 35 by spot welding, the resulting flat framework is electroplated or otherwise treated to cover the entire surfaces of the wires with a coating of metal such as bright zinc which is sufficiently ductile to withstand the bending required to form the final carrier. By suspending the flat frames side by side in the plating tank, the protecting coating may be formed on a mass production basis and at a low unit cost.

After application of the finish coating, the flat frame is placed in a suitable fixture (not shown) and bent along the lines 19 and 20 to the preliminary shape shown in Fig. 9. That is to say, the gabled top portions are bent downwardly out of the plane of the bottom and side wall parts, the handle or end portions of the intermediate frame being bent upwardly substantially to the angle existing in the final assembly. Then, in another set of dies, the side wall parts of the frame structure are bent around the axes 18 substantially through right angles to bring the handle portions close together as shown in Fig. 10. The final step is to swing the handle U's against each other and secure the same together by applying the fasteners 46 or 47.

With this unique method, the flat frame structure may be formed and the protective finish applied in one location

on a mass production basis while the bending operation to complete the carrier may be performed in a remote location. In this way, the unit cost of carriers to be used in different parts of the country may be reduced to a minimum.

I claim as my invention:

1. A carrier composed of wire for carrying a plurality of bottles arranged in two parallel rows, said carrier comprising, in combination, an elongated frame member comprising a rectangular wire frame having bends lying along parallel lines spaced along and extending transversely of the member to define a flat rectangular base, parallel side walls upstanding along opposite edges of the base, and top walls converging upwardly to an apex spaced above the base whereby to form a gabled top, the ends of said base, side, and top walls forming open walls at the ends of said base, a second wire frame member conforming to the shape of said end walls and said gabled top and nested in the bent frame to define a partition disposed midway between said end walls and cooperating with each of the latter to form two bottle compartments of equal size opening upwardly through said gabled top and disposed on opposite sides of said apex, a handle comprising opposite end portions of one of said frame members extending upwardly beyond the peak of said gable top to form two inverted U's lying alongside of each other and in the plane of said apex, and means securing said handle portions together.

2. A wire bottle carrier as defined in claim 1 in which said rectangular base includes a plurality of parallel crosswires secured to and bridging said frame members on the underside thereof, and each of said side walls includes a pair of vertically spaced crosswires secured to and spanning said frame members on the outer side thereof.

3. A wire bottle carrier as defined by claim 1 in which a rectangular one of said frame members includes parallel crosswires defining the peak of said gabled top and disposed on opposite sides of the plane of said handle.

4. A wire bottle carrier as defined in claim 1 in which said second frame member comprises a length of wire having ends terminating substantially at the peak of said gabled top and said U-shaped handle portions constitute the end portions of said rectangular frame.

5. A wire bottle carrier as defined in claim 1 in which said second frame member comprises a closed rectangular wire frame member longer and narrower than said first frame and projecting above the peak of said gabled top to form said handle portions, said second frame member having a width substantially equal to said compartments and forming two intermediate compartments and itself cooperating with said end walls to form two additional bottle compartments opening upwardly through said gabled top and disposed at the ends of said rows.

6. A wire bottle carrier as defined in claim 1 in which said second frame member comprises a closed rectangular wire frame narrower than said first frame member and having a width substantially equal to said compartments and itself forming two intermediate bottle compartments opening upwardly through said gabled top.

7. A wire bottle carrier as defined in claim 1 including vertically spaced parallel cross wires spanning the sides of said end walls and defining the outer sides of the openings of said bottle compartments.

8. A wire bottle carrier as defined by claim 1 in which said base includes a plurality of sets of laterally spaced

crosswires spanning said frame members and secured to the underside thereof and cooperating with said frame members to form two rows of recesses for receiving the bottoms of bottles disposed in said compartments.

9. A wire bottle carrier as defined by claim 8 including a crosswire bridging said frame members and secured to the latter on the upper side thereof substantially in a vertical plane including the carrier handle.

10. A wire bottle carrier as defined by claim 8 including a plurality of wires spanning and secured to said crosswires on the under side thereof and defining downwardly opening recesses each aligned vertically with the axis of one of said compartments and adapted to interfit with the top of a bottle in an underlying similar carrier.

11. A carrier composed of wire for carrying a plurality of bottles arranged in two parallel rows, said carrier comprising, in combination, an elongated wire frame member comprising a rectangular wire frame having bends lying along parallel lines spaced along and extending transversely of the member to define a flat rectangular base, parallel side walls upstanding along opposite edges of the base, and top walls converging upwardly to an apex spaced above the base whereby to form a gabled top, the ends of said base, side walls and top walls defining open end walls, a second wire frame member conforming to the shape of said end walls and nested in the frame between said end walls and cooperating therewith to form bottle compartments of equal size opening upwardly through said gabled top and disposed on opposite sides of said apex, a transverse wire extending across the top of said base in the plane of said apex and cooperating therewith to maintain the rows of bottles separated from each other, and a handle comprising the two opposite end portions of one of said frame members extending upwardly from said apex and lying alongside of each other, and means securing said handle portions together.

12. A carrier composed of wire for carrying a plurality of bottles and comprising, in combination, an elongated wire frame member comprising a rectangular wire frame having bends lying along parallel lines spaced along and extending transversely of the member to define a flat rectangular base, parallel side walls upstanding along opposite edges of the base, and top walls converging upwardly to an apex spaced above the base whereby to form a gabled top, the ends of said base, side walls and top walls defining open walls above the ends of said base, a second elongated wire frame member conforming to the shape of said walls and nested in the first frame to define partitions disposed between said end walls and cooperating with each of the latter to form bottle compartments of equal size opening upwardly through said gabled top and disposed on opposite sides of said apex, and a handle comprising opposite end portions of one of said frame members extending upwardly beyond the peak of said gable top to form two inverted U's lying alongside of each other and in the plane of said apex, and means securing said handle portions together.

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