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BOTTLE CARRIER AND COMBINATION THEREOF WITH BOTTLE CRATE

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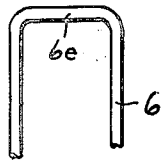


FIG. 2

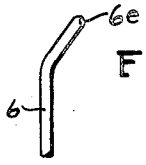


FIG. 3

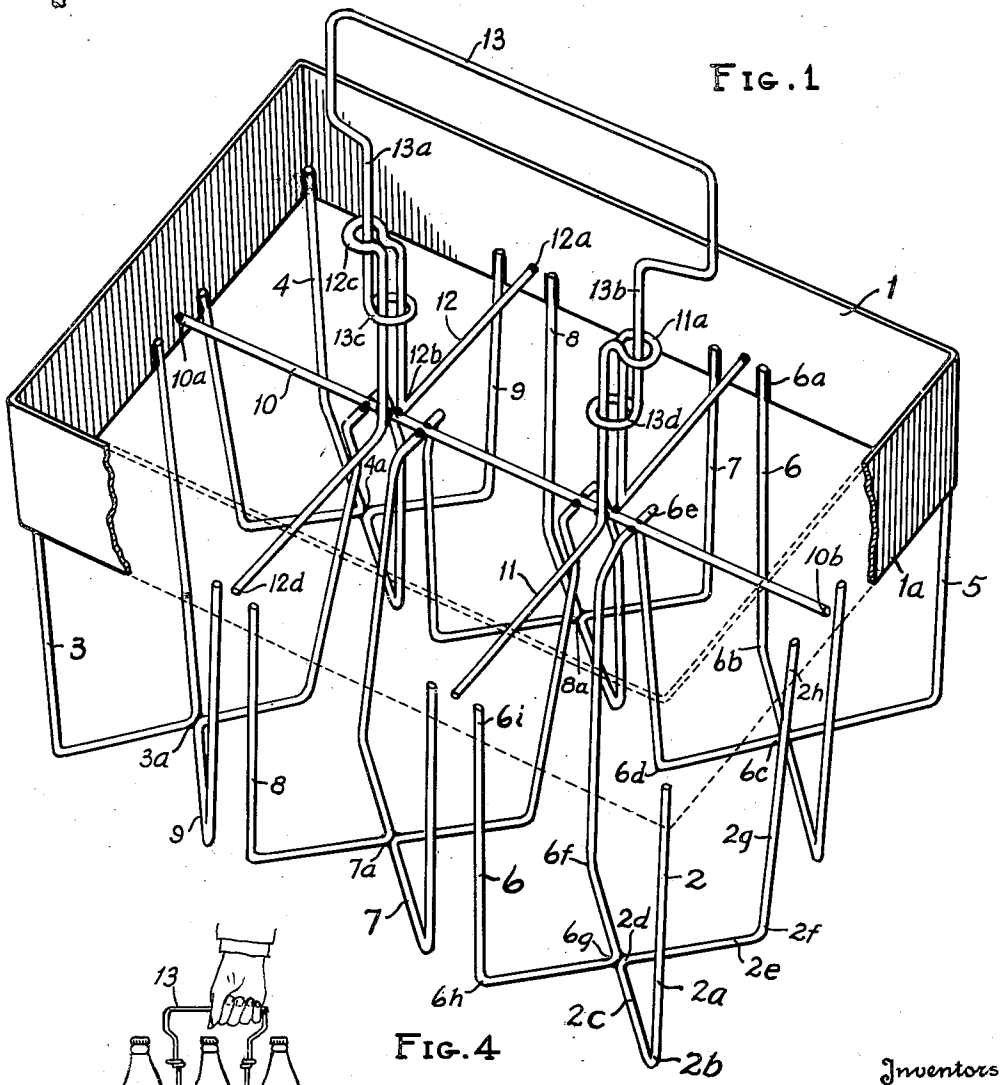


FIG. 1

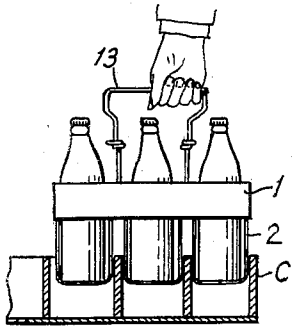


FIG. 4

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BOTTLE CARRIER AND COMBINATION THEREOF WITH BOTTLE CRATE

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10 Claims. (Cl. 217—19)

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This invention relates to bottle carriers and, more particularly, to carriers of the type now generally used for merchandising soft drinks and like beverages, and also to the combination of a standard bottle crate and carrier.

Among the objects of the invention are, (1) to provide a carrier which is rigid, strong, durable and capable of repeated use, (2) to provide a carrier which, while forming well defined compartments for each bottle, will at the same time fit within a standard bottle case or crate, (3) to provide a merchandising carrier which by reason of object (2), supra, can be filled with bottles and assembled in a standard case at the bottling plant so that the filled bottles in sets of six or other number, are ready for dispensing at retail merely by depositing the combined case, carriers fitting therein and bottles, where they are accessible to purchasers, (4) to provide a combination of standard bottle crate and carrier which will effect a substantial saving of time and handling expense now required in the merchandising of beverages, (5) to provide a carrier which is readily and easily formed of sheet metal and wire, which is neat and attractive in appearance, which may be stacked when filled and which, because of the small area of rack touching the bottle, lessens the chance of scuffing of the labels on the bottles, (6) to provide a bottle rack or carrier in which the bottles can be filled by existing machinery, or by hand, while the bottles are in the carrier, thus eliminating the need for a bottler to handle the carrier, (7) to provide a carrier or rack which fits snugly in and grips the partitions of the standard bottle case but which is usable with special cases, (8) to provide a carrier in which wires form tapered guides positively guiding each bottle into its well, (9) to provide a carrier which when used in conjunction with a standard case gives increased protection to the bottles against breakage, (10) to provide a carrier for use with a standard bottle case and which when so used, will enable the case to be carried in the accepted or usual way by placing the thumb in the hole in the end of the case and grasping a bottle with the rest of the hand and (11) to provide a bottle carrier of the type aforesaid in which the wire portions forming the bottom lie in a single plane with no crossing or overlapping wires.

Other objects and advantages will be obvious after a study of the following description in connection with the accompanying drawing wherein.

Figure 1 is a perspective view of a preferred form of the invention with a portion of the rectangular frame broken away to more clearly show the wire construction, and with the handle partly raised from its collapsed position,

Figure 2 is a detail view showing the shape of a portion of one of the wire elements forming a component part of our carrier,

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Figure 3 is an end view of the detail structure shown in Figure 2, and

Figure 4 is a sectional elevation on a reduced scale showing how the carrier fits within a standard partitioned bottle case.

Although we have shown a carrier adapted to accommodate six bottles, it will be appreciated that this is by way of illustration only and that a carrier for more or less than six bottles may be provided without departing from the principles or spirit of the invention.

Reference numeral 1 identifies a rectangular frame of any suitable material but preferably of sheet metal having its edges in spaced parallel planes and its side and end walls substantially perpendicular to such planes. In the carrier shown there are a total of eight wire elements forming the carrier proper. Four of these elements forming a first set, are of one identical shape and the remaining four forming a second set, are of another identical shape. Thus the four elements of the first set are identified by the numerals 2, 3, 4 and 5, respectively, while the four elements of the second set are identified by the numerals 6, 7, 8, and 9.

Element 2 has one end rigidly attached within one corner of frame 1, as by welding. The element has a portion extending downwardly and a little inwardly in a plane at 45° to the planes of the adjacent end and side walls as indicated at 2*a*. At 2*b* the element is bent at substantially 90° to portion 2*c* lying in the aforesaid plane. At 2*d*, the element is bent at about 90° to form a second horizontal portion 2*e* which is bent upwardly at 2*f* to form a second substantially vertical portion 2*g* of the same length as portion 2*a* and having its end secured to the end 1*a* of frame 1 at a point a little less than half the length of the end from the corner at 2. The other elements 3, 4 and 5 may be identical in shape with element 2 and are secured to frame 1 in a position and manner obvious from inspection of the drawing so that it is unnecessary to describe them in detail. Suffice it to say that all of the horizontal portions such as 2*c* and 2*e*, lie in a common plane, which plane is parallel to the plane of the top and bottom edges of frame 1.

The second set of elements 6, 7, 8 and 9 are all alike so that it will be necessary to describe one of them only. Thus element 6 has one end rigidly united to the inside of the frame at 6*a* and extends substantially vertically downwardly to point 6*b* where it is bent at right angles in the common plane of all bottom portions to apex 6*c*. At 6*c* the wire is bent at about 90° in the aforesaid plane to point 6*d* where it is again bent upwardly to a short horizontal section 6*e* lying between the planes of the top and bottom edges of frame 1. The shape of this portion of the wire is best shown at Figures 2 and 3 where it will be

noted that the portion is an inverted U shape as seen in end elevation and bent laterally as seen in side elevation in Figure 3.

From section 6e, the portion 6 extends downwardly to 6f where it is again bent at substantially 90° in the plane of the bottom, to apex 6g thence at about 90° and still in said plane to point 6h, thence upwardly again, where its other end is secured, at 6i, as by welding, to the inside of frame 1. The apices of elements 2 and 5 are rigidly attached, as by welding, to the respective apices 6g and 6c of element 6; and it will be noted that two of the vertical portions of element 6 cooperate with the corresponding portions of element 5, to form a well or receptacle for a bottle. The bottom of this well or receptacle is formed by the four horizontal portions meeting at 6c. It will be noted that there are no crossed or overlapping wire portions in the bottom. Since the wires and frame are inherently resilient, the vertical portions which extend slightly inwardly and downwardly, may snugly grip the sides of the bottle while, at the same time, the bottle may be easily withdrawn.

In a similar manner, the remaining two vertical portions of element 6 cooperate with the corresponding portions of element 2 to form a well or compartment for a second bottle.

As previously stated, elements 6, 7, 8 and 9 are duplicates, and, in assembly, elements 7 and 9 are simply reversed with respect to elements 6 and 8. The two central bottle compartments are formed by corresponding pairs of vertical portions of elements 7 and 8, having the apices of their horizontal bottom portions welded at 7a and 8a. The two bottle compartments at the other end are formed, one, by the vertical portions of element 3 in cooperation with two corresponding portions of element 9, and the other by the vertical portions of element 4 and the two remaining vertical portions of element 9. The bottoms of two compartments are formed as previously described with welded apices at 3a and 4a.

For convenient carrying of the carrier or rack, a straight section of wire 10 is welded at its ends 10a and 10b to the inside walls of the ends of frame 1 and also to the center straight portions such as 6e, of elements 6, 7, 8 and 9, as clearly indicated upon the drawing. Wire section 10 thus acts as a brace to keep the two central vertical portions of elements 6, 7, 8 and 9 against excessive lateral displacement or bending.

The handle supports 11 and 12 are provided and since they are duplicates, a description of one will suffice. One end of support 12 is welded at 12a to the inner side of frame 1 between the adjacent verticals of elements 8 and 9. The support then extends in a straight substantially horizontally pass to 12b where it is welded to section 10. From 12b the support is bent upwardly in a straight vertical pass and then laterally to form a horizontal loop 12c, then downwardly in a second vertical pass to section 10 where it is again welded to such element. From this point the support extends in a second horizontal pass to the other side of frame 1 where it will be welded thereto at 12d. The other handle support 11 is a duplicate of the one just described and is united to frame 1 and section 10 with its loop 11a extending in the opposite direction from that of 12c.

Handle 13 is bent in any convenient form, such as the one illustrated, and has vertical terminal portions 13a and 13b extending through loops 12c and 11a, respectively, and terminating in loops 13c and 13d. Loop 13c surrounds the two vertical portions of support 12, while loop 13d surrounds the corresponding portions of support 11. By this construction handle 13 may be slid vertically from a position in which its carrying part is below the plane of the top of frame 1, to a fully extended carrying position as shown in Figure 4, wherein the loops are in engagement. Thus, in carrying the device, forces are transmitted directly from the section 10 and the central portions of each of the elements 6, 7, 8 and 9 to handle whereby a direct supporting force is provided for each bottle and any tendency of the carrier to warp or twist is eliminated.

It will be noted from Figure 1 that the spaced vertical central portions of elements 6, 7, 8 and 9 define a central vertical channel or passageway extending longitudinally of the carrier. Likewise the spaced adjacent vertical portions of elements 6 and 7, on the one hand, and 8 and 9 on the other hand, define two vertical channels or passageways extending transversely of the carrier. Thus, our carrier is adapted to fit within a standard bottle case C, as shown at Figure 4. The spacing of the vertical wire portions is substantially equal to the thickness of the partitions of the case so that they may yieldingly lightly grip the partitions between them while providing for easy withdrawal of a carrier as shown. As illustrated, the carrier or rack holds six bottles so that four carriers will be used to each standard case of twenty-four bottles.

In use, it is contemplated that the four carriers and their empty sterilized bottles, will be placed in the case and that the bottles will be filled and capped while they are thus positioned. The cases and their contents are then delivered to the retailer without further treatment. The retailer may simply locate the cases where they are accessible to customers, without removing the carriers. When a customer desires to purchase six bottles, he simply lifts a carrier out of its case and takes the entire unit home. When the carrier and its empty bottles are returned by the customer, the carrier is simply placed in a crate. The empty bottles may be washed, sterilized and filled without removing them from the carrier and without removing the carrier from its case.

We have thus provided a bottle carrier which is light, strong, inexpensive and long lasting and which, due to its construction greatly reduces the cost of handling and retailing of bottled beverages. While we have shown a preferred form of the invention as now known to us, various modifications and changes of shape and relations of the component parts will be readily devised by those skilled in the art, after a study of the present disclosure. Hence it is our intention and desire to reserve all such changes as fall within the scope of the subjoined claims.

In the claims, the terms "vertical" and "horizontal" are used, for convenience and clearness of expression, and refer to the positions of the corresponding parts when the carrier or rack is being carried by its handle or as shown upon the drawing. Also, the term "group" as used in the claims, means the four wires collectively forming the well or compartment for a bottle. Thus, for example, the two vertical portions of element 2 together with the two vertical portions of element 6, collectively form a group.

Having now fully disclosed our invention, what we claim and desire to secure by Letters Patent is:

1. In a bottle carrier, a rectangular metallic frame having normally vertical side and end

walls, and a plurality of wire elements having their ends secured to the walls of said frame in spaced relation thereabout and depending therefrom, a pair of said elements having vertical portions cooperating to define a bottle well, each said element having horizontal angularly related bottom portions forming an apex, the apices of said pair of elements being secured together to form a bottom in which all said horizontal portions are coplanar.

2. In a bottle carrier, a rectangular metallic frame having normally vertical walls, a plurality of wire elements depending from said frame, each element having both ends attached in horizontally spaced relation to said frame, each said element having two consecutive angularly related horizontal bottom portions forming an apex, the apices of two said elements being united in coplanar relation to form a support on which a bottle may rest.

3. A bottle carrier as recited in claim 2, the two vertical portions of one said element lying along the adjacent edges of a parallelepiped and the two vertical portions of the other element lying along the two remaining adjacent edges of said parallelepiped, whereby to define between them a bottle compartment.

4. In a bottle carrier, a rectangular frame having its edges lying in vertically spaced parallel planes and its walls substantially normal to said planes, means forming with said frame a series of bottle compartments separated by mutually normal vertical channels, said means comprising a plurality of wire elements secured to and depending from the walls of said frame, said wires having vertical depending portions terminating in coplanar horizontal portions, the horizontal portions of a pair of elements extending radially inwardly to a point and secured together at said point to form a bottom for each said compartment.

5. In a bottle carrier, a rectangular metallic frame of sheet metal having its edges in spaced parallel planes and its end and side walls at right angles to said planes, a plurality of wire elements each having one end secured to said frame adjacent a respective corner thereof, each said element extending downwardly from said frame, then bent inwardly in a third plane parallel with said planes at 45° to the planes of the walls forming the respective corners to an apex, then substantially at right angles in said third plane, then upwardly at right angles, with its other end secured to the adjacent end wall at a point remote from said corner, and bent wire elements connecting said apices with the side walls of said frame and having vertical portions and horizontal bottom portions forming with said first-named elements a series of spaced bottle compartments.

6. In a carrier for beverage bottles, a rectangular metallic frame having vertical side and end walls with their top and bottom edges lying in first and second vertically spaced horizontal planes, a plurality of first wire elements, each first element having one end secured to said frame within a respective corner thereof, thence extending downwardly in a first pass to a third plane parallel with said first plane, thence inwardly in said third plane at 45° to the planes of the adjacent end and side walls of said frame to form a first bottom portion, thence still in said third plane, at 90° to said first bottom portion, to form a second bottom portion, said two bottom portions joining at an apex, thence upwardly in a second pass terminating in an end secured to the adjacent end wall of said frame centrally thereof, and a plurality of second wire elements, one of said second elements having one end secured to a side wall of said frame, then extending downwardly in a third pass to said third plane, thence inwardly to the apex of the adjacent one of said first elements to form a third bottom portion, thence at 90° still in said third plane to form a fourth bottom portion, said third and fourth bottom portions joining at an apex, thence upwardly in a fourth pass to a point between said first and second planes, said apices being joined together whereby said bottom portions are united in said third plane, all said vertical and bottom portions cooperating to form a compartment within which a bottle may be snugly fitted, and means connecting the top of said fourth pass to said frame.

7. A carrier as recited in claim 6, a respective pair of said first elements having their apices joined to the apices of a single one of said second elements to form a pair of bottle compartments at each end of said frame, and two said second elements having their apices joined to form two central bottle compartments.

8. A carrier as recited in claim 7, said vertical portions forming adjacent compartments being laterally spaced to define mutually normal intersecting channels below said frame.

9. The combination with a bottle crate having a separate compartment for each bottle, all said compartments having walls formed by mutually normal intersecting partitions, of a removable carrier for a plurality of bottles positioned therein, said carrier having vertical sets of wires, each set defining a well for a respective bottle, the wires of each set being connected at their lower ends by horizontal portions forming a base for a bottle supported therein and snugly fitting within a corresponding compartment of said crate, the wires of adjacent sets being spaced and releasably gripping the partitions of said crate therebetween when said carrier is positioned with each of its said sets of wires fitting within a respective compartment of said crate.

10. The combination with a bottle crate having mutually normal spaced side and end walls and intervening spaced partitions forming with said walls a plurality of individual bottle compartments, of a removable bottle carrier comprising a plurality of substantially vertical groups of wires, the wires of each group being connected at their lower ends by horizontal portions forming an individual bottle support and snugly fitting within a respective compartment, means connecting adjacent wires of adjacent groups at their tops only in laterally spaced relation to receive and releasably grip between them the partitions of said crate when said carrier is positioned with each said group of wires fitting within a respective compartment.

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