Sept. 23, 1958 D. R. SWINGLE 2,853,202

WIRE CARRYING CASE FOR GLASS BOTTLES

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FIG. 1.

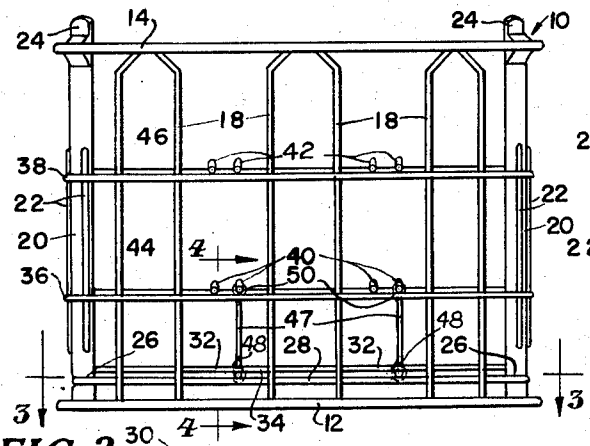


FIG. 2.

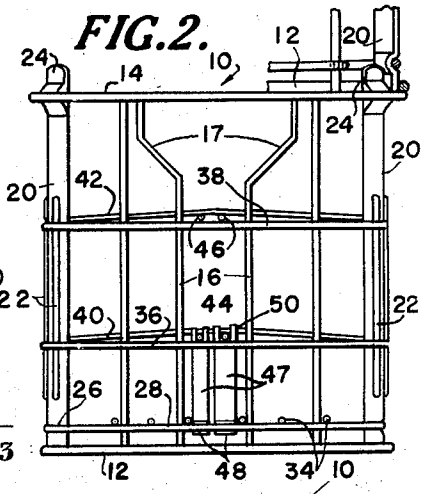


FIG. 3.

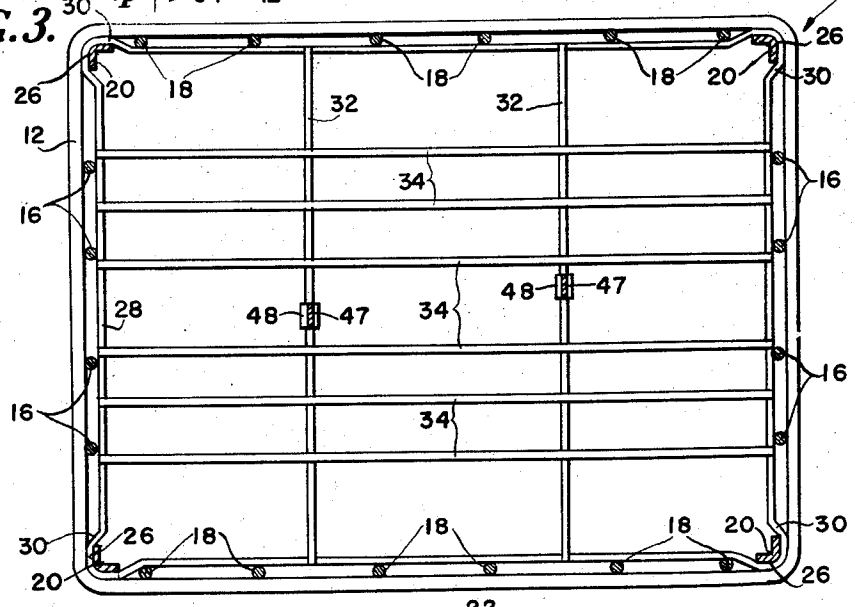


FIG. 4.

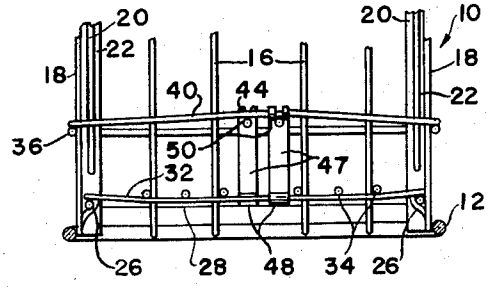
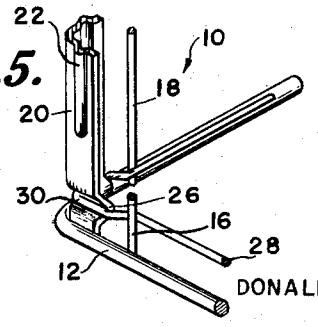


FIG. 5.



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FIG. 6.

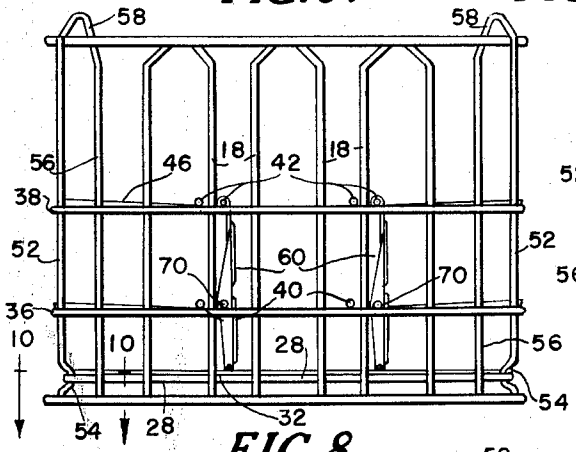


FIG. 7.

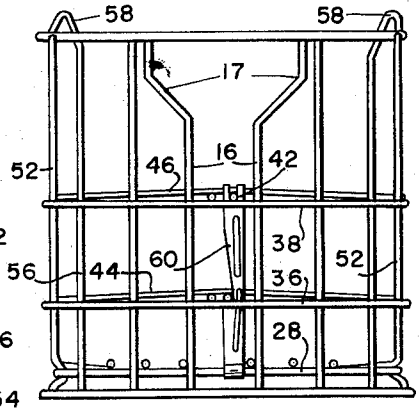


FIG. 8.

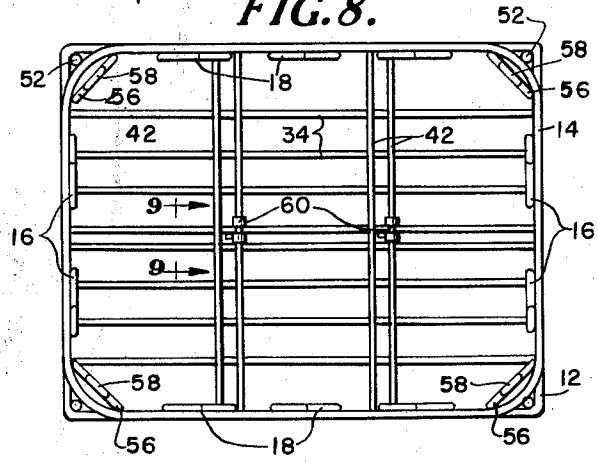


FIG. 9.

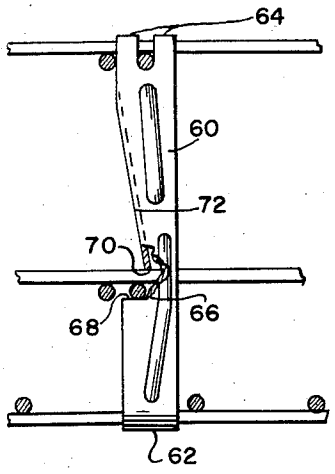


FIG. 10.

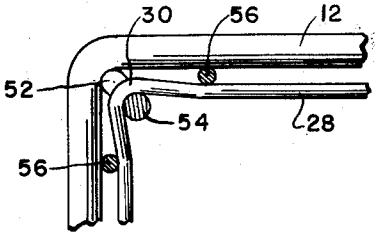
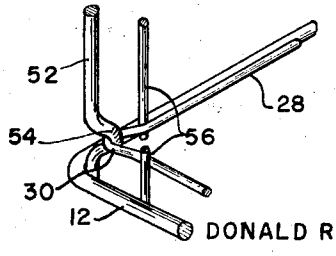


FIG. 11.



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WIRE CARRYING CASE FOR GLASS BOTTLES

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Application November 27, 1956, Serial No. 624,666

7 Claims. (Cl. 220—19)

This invention relates to wire carrying cases and more particularly to a wire carrying case of the type adapted to carry glass milk bottles and the like.

One of the great deficiencies of the cases presently in use for carrying milk bottles and the like is that the bottom construction is such as to cause damage to the bottles when they are transported. Heretofore, the bottom construction in such cases has been relatively rigid so that when the cases are transported with filled bottles disposed therein, the severe jarring and shocks incident to vehicular transportation has on some occasions resulted in damage to the bottles and hence also the loss of the contents thereof.

Accordingly, it is an object of the present invention to provide a wire carrying case of the type described having an improved bottom construction providing a marked resilience which absorbs the shocks transmitted to the bottles incident to transportation thereof and, hence, substantially overcomes the disadvantages noted above.

Another object of the present invention is the provision of an improved means for mounting a bottom wire grid in a wire carrying case of the type described which affords corner support for the bottom, but permits the remaining edge portions of the bottom to flex in a substantially unsupported manner.

Still another object of the present invention is the provision of improved bracing means arranged to interconnect the central portion of a wire grid bottom and the wire grid portions of a wire carrying case.

Still another object of the invention is the provision of a wire carrying case of the type described which is simple in construction, efficient in operation and economical to manufacture.

These and other objects will become more apparent during the course of the following detailed description and appended claims.

The invention can best be understood with reference to the accompanying drawings wherein an illustrative embodiment is shown.

In the drawings:

Figure 1 is a side elevational view of a wire carrying case embodying the principles of the present invention;

Figure 2 is an end view of the case shown in Figure 1 showing a portion of a like case in stacked relation thereon;

Figure 3 is a cross-sectional view taken along the line 3—3 of Figure 1;

Figure 4 is a cross-sectional view taken along the line 4—4 of Figure 1;

Figure 5 is a fragmentary perspective view of a detail of construction of the bottom of the case;

Figure 6 is a view similar to Figure 1 showing a modified carrying case embodying the principles of the present invention;

Figure 7 is an end view of the case shown in Figure 6;

Figure 8 is a top plan view of the case shown in Figure 6;

Figure 9 is a cross-sectional view taken along the line 9—9 of Figure 8;

Figure 10 is a fragmentary cross-sectional view taken along the line 10—10 of Figure 6; and

Figure 11 is a view similar to Figure 5 showing a structural detail of the modified case shown in Figure 6.

Referring now more particularly to the drawings, there is shown in Figures 1–5, one form of a carrying case, generally indicated at **10**, embodying the principles of the present invention. As shown, the carrying case **10** includes a bottom perimeter frame wire **12** of substantially rectangular shape in plan. The bottom perimeter frame wire preferably is of circular cross section; however, it will be understood that angular cross sectional configurations may be employed, if desired. Disposed in vertically spaced relation with respect to the bottom perimeter frame wire is a substantially rectangular top perimeter frame wire **14** which has transverse and longitudinal dimensions substantially equal to those of the bottom perimeter frame wire **12**.

Each end of the top and bottom perimeter frame wires is maintained in spaced relation by means of a pair of end hairpin wires **16** rigidly secured to the interior surfaces of the top and bottom perimeter frame wires respectively, as by welding or the like. As best shown in Figure 2, the upper ends of each pair of hairpin wires **16** are provided with opposed bent portions **17** which form access openings permitting the operator to grasp the central portion of the top perimeter frame wire ends with his hands so as to carry the case **10**. The sides of the perimeter frame wires **12** and **14** are maintained in spaced relation by a series of horizontally spaced side hairpin wires **18** suitably secured at their ends, as by welding or the like, to the interior surfaces of the top and bottom perimeter frame wires respectively.

Mounted in each corner of the case and extending between the interior surfaces of each pair of corresponding corners of the top and bottom perimeter frame wires is a corner member **20** which preferably is fabricated of sheet metal so as to have a substantially L-shaped cross sectional configuration. In order to add strength to the corner members, elongated reinforcing ribs or projections **22** may be formed therein in a manner well known in the art. Each corner member **20** includes an upper end portion **24** which extends above the top perimeter frame wire in a position to be disposed within the corresponding corner of the bottom perimeter frame wire of a like case when the latter is mounted in stacked relation thereon, as indicated in Figure 2. The four upwardly projecting end portions of the corner members thus constitute stacking elements which prevent excessive lateral displacement of a like case when placed in stacked relation above the case **10**.

Formed in each corner member **20**, in a position spaced above the bottom perimeter frame wire a distance substantially equal to the distance the end portions **24** extend above the top perimeter frame wire, is an inwardly extending U-shaped portion **26**. A substantially rectangular bottom perimeter wire **28** having transverse and longitudinal dimensions less than those of the bottom perimeter frame wire is mounted within the bottom of the case inside the side and end hairpin wires with the corners thereof disposed within the U-shaped portions **26** and supported solely thereby. As best shown in Figures 3 and 5, the corners of the perimeter wire **28** may be bent outwardly, as indicated at **30**, so as to seat within the U-shaped portions **26**.

Mounted on the bottom perimeter wire **28** is a bottle supporting wire grid including a series of spaced wires **32** parallel with the ends of the case and a plurality of spaced cross wires **34** disposed substantially perpendicular

to the parallel wires 32 and rigidly secured to the upper surfaces thereof, as by welding or the like.

Secured to the exterior surface of the corner members and hairpin wires 16 and 18, as by welding or the like, are intermediate and upper perimeter wires 36 and 38 respectively. The perimeter wires 36 and 38 support wire grids which include spaced adjacent pairs of parallel wires 40 and 42 respectively, secured to the perimeter wires and spaced above the bottom parallel wires 32 and a pair of closely spaced cross wires 44 and 46 respectively, secured to the perimeter wires and parallel wires and extending centrally across the case. It will be understood that the arrangement of the wire grids of the perimeter wires 36 and 38 form vertical bottle receiving partitions in the case and may be suitably modified to accommodate bottles of various size.

Extending between the intermediate grid and the wire grid of the bottom is a bracing means in the form of a pair of metal straps 47. Each strap includes a lower end 48 bent around a parallel wire 32 of the bottom and a bifurcated upper end 50 bent around a parallel wire 40 of the intermediate wire grid on opposite sides of a cross wire 44 thereof.

Referring now to Figures 6–11, there is shown a wire carrying case 10 embodying the principles of the present invention having a modified corner construction and a different type of bracing means between the wire grids thereof. As best shown in Figures 10 and 11, each sheet metal corner member 20 previously described may be replaced by a single corner wire 52 secured at its lower end to the interior surface of the bottom perimeter frame wire corner and at its upper end to the exterior surface of the corresponding corner of the top perimeter frame wire. Each corner wire 52 includes an inwardly extending U-shaped portion 54 formed in the lower portion thereof at a position spaced just above the bottom perimeter frame wire. As before, the U-shaped portions 54 cooperate to receive the corners of the bottom perimeter wire and afford the sole support therefor.

The stacking elements in this embodiment are provided by corner hairpin wires 56 which have their upper bent end portions 58 extending above the top perimeter frame wire so as to be disposed within the bottom perimeter frame wire of a like case stacked thereon.

As best shown in Figure 9, the modified bracing means comprises a pair of metal straps 60, each of which includes a lower end 62 bent around a parallel wire 32 of the bottom wire grid and a bifurcated upper end 64 bent around a parallel wire 42 of the upper wire grid on opposite sides of a cross wire 46 thereof. Extending inwardly from one vertical edge of each strap is a horizontal cut 66 which forms opposed horizontal edge portions 68 and 70. The upper downwardly facing edge portion 70 is bent along a diagonal line 72 substantially perpendicular to the lower upwardly facing edge portion 68 and is arranged to overlie and engage a parallel wire 40 of the intermediate grid. The lower upwardly facing edge portion overlies and engages a cross wire 44 of the intermediate grid.

It can thus be seen that there has been provided a wire carrying case having a bottom construction suspended at its corners and braced at its central portion so as to provide marked resilience which serves as a cushion for the bottles and helps prevent breakage thereof during transportation. By supporting the bottom solely from the corner members of the carrying case and the bracing means at the central portion thereof, the desirable resilience is provided by a construction which is simple to fabricate and thus highly economical.

It thus will be seen that the objects of this invention have been fully and effectively accomplished. It will be realized, however, that the foregoing specific embodiment has been shown and described only for the purpose of illustrating the principles of this invention and is subject to extensive change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.

I claim:

1. A wire carrying case comprising a bottom perimeter frame wire of substantially rectangular shape in plan, a substantially rectangular top perimeter frame wire having transverse and longitudinal dimensions substantially equal to those of said bottom perimeter frame wire, a plurality of spaced vertical wires extending between the ends and sides of said perimeter frame wires and mounting the same in vertically spaced relation, a vertical member extending between each corner of said bottom perimeter frame wire and the corresponding corner of said top perimeter wire, each of said vertical members having an inwardly extending substantially U-shaped portion formed therein in a position spaced above its connection with said bottom perimeter frame wire, a substantially rectangular bottom perimeter wire having transvere and longitudinal dimensions less than those of said bottom perimeter frame wire, said bottom perimeter wire having its corners disposed in the U-shaped portions of said vertical members and being supported solely thereby, means forming an article-supporting bottom in the case secured to said bottom perimeter wire, stacking elements extending above the corners of said top perimeter frame wire in a position to be disposed inwardly of the corners of the bottom perimeter frame wire and below the bottom of a like case when the latter is mounted in stacked relation thereon so as to retain said like case in stacked relation, and horizontal wires secured to said vertical wires forming partitions within the case above said bottom.

2. A wire carrying case as defined in claim 1 wherein each of said vertical members comprises a single corner wire.

3. A wire carrying case as defined in claim 2 wherein each of said stacking elements comprises the upper bent end portion of a hairpin wire, the legs of which extend downwardly and are secured to said bottom perimeter frame wire on opposite sides of the associated corner wire.

4. A wire carrying case as defined in claim 1 wherein each of said vertical members comprises a metal corner strip of substantially angular cross-section.

5. A wire carrying case as defined in claim 4 wherein each of said stacking elements includes the upper end portion of the associated corner strip.

6. In a carrying of the type described; a lower horizontal wire grid forming an article-supporting bottom for the case; vertically spaced intermediate and upper horizontal wire grids forming vertical partitions in the case above said bottom, said wire grids including parallel wires and cross wires extending substantially perpendicular thereto; and vertical bracing means interconnecting said wire grids, said bracing means comprising an elongated substantially flat metal strap having a lower end bent around a parallel wire of said lower grid, an upper end bifurcated and bent around a parallel wire of said upper grid on opposite sides of a cross wire thereof, and an intermediate portion having a horizontal cut extending from a vertical edge thereof partially therethough so as to form opposed horizontal edge portions, one of said edge portions being bent substantially perpendicular to the other and disposed in engagement with a parallel wire of said intermediate grid, the other of said edge portions being disposed in engagement with a cross wire of said intermediate grid.

7. A wire carrying case comprising a bottom perimeter frame wire of substantially rectangular shape in plan, a substantially rectangular top perimeter frame wire having transverse and longitudinal dimensions substantially equal to those of said bottom perimeter frame wire, a plurality of spaced vertical members extending between the ends and sides of said perimeter frame wires for mounting the same in vertically spaced relation, a substantially rectan-

gular bottom perimeter wire having transverse and longitudinal dimensions less than those of said bottom perimeter frame wire, said bottom perimeter wire having its corners secured to the vertical members adjacent the corners of the case and being supported solely thereby, a wire grid forming an article-supporting bottom in the case peripherally secured to said bottom perimeter wire only, stacking elements extending above the corners of said top perimeter frame wire in a position to be disposed inwardly of the corners of the bottom perimeter frame wire and below the bottom of a like case when the latter is mounted in stacked relation thereon so as to retain said like case in stacked relation, horizontal wires secured to said vertical members forming partitions within the case above said bottom, and vertically extending brace means in the central portion of the case only connecting

the partition forming wires with the bottom forming wire grid of the case.

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