Jan. 18, 1949. F. C. McKINLEY 2,459,333

COMBINED SHIPPING AND DISPLAY CASE FOR BOTTLES

Filed Dec. 29, 1945 3 Sheets-Sheet 1

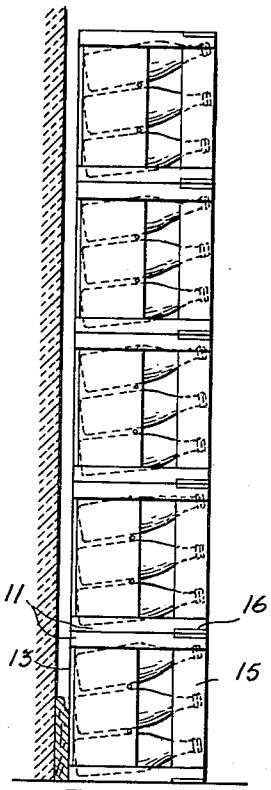


Fig. 1

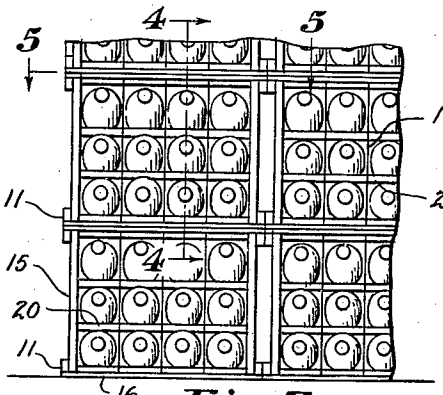


Fig. 2

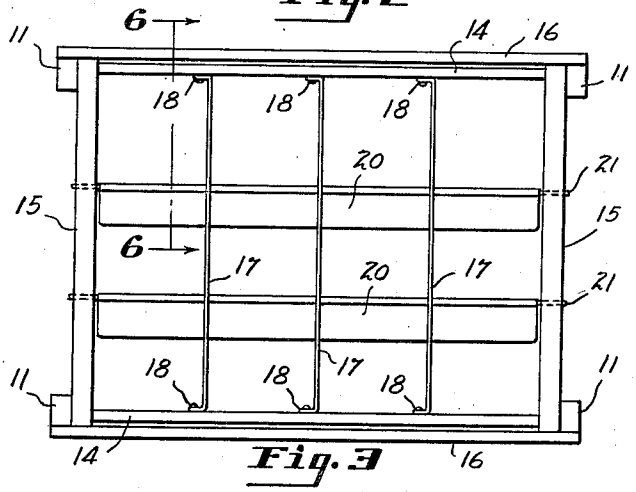


Fig. 3

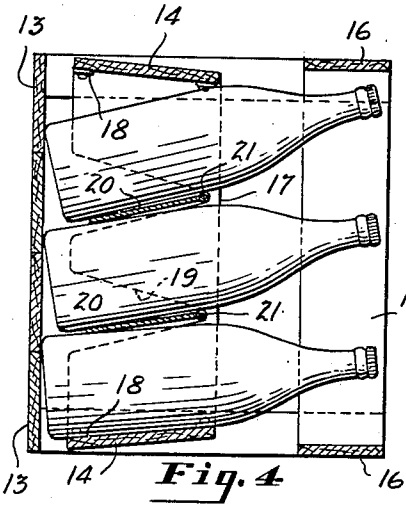


Fig. 4

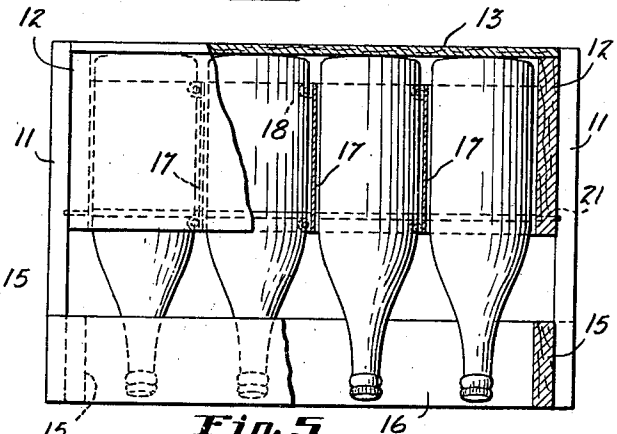


Fig. 5

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3 Sheets-Sheet 2

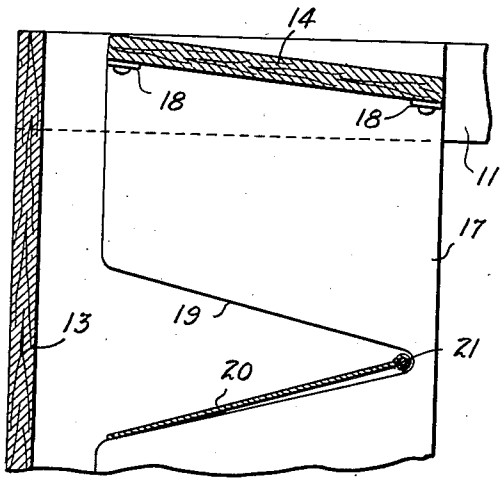


Fig. 6

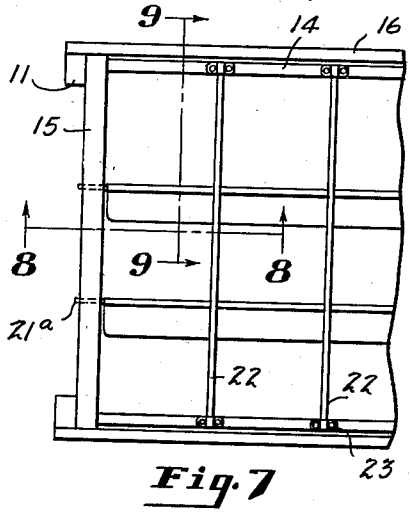


Fig. 7

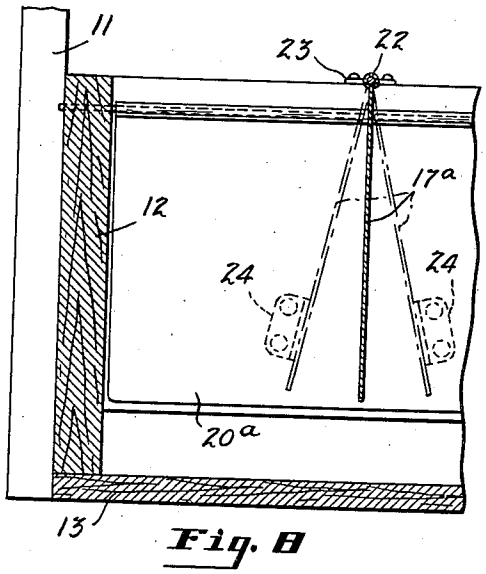


Fig. 8

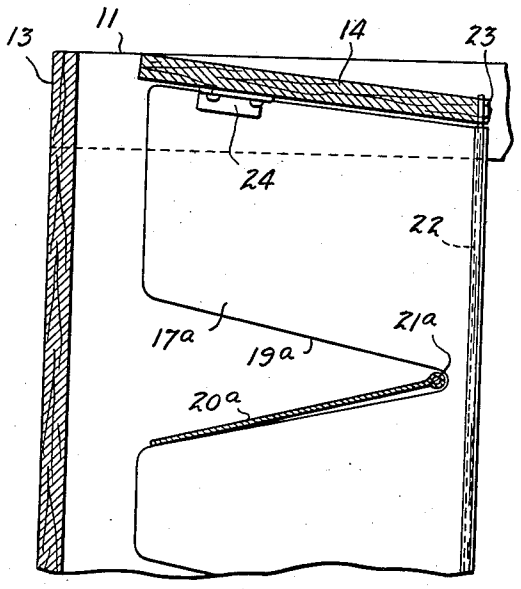


Fig. 9

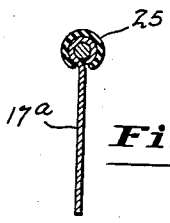


Fig. 10

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COMBINED SHIPPING AND DISPLAY CASE FOR BOTTLES

Filed Dec. 29, 1945 3 Sheets-Sheet 3

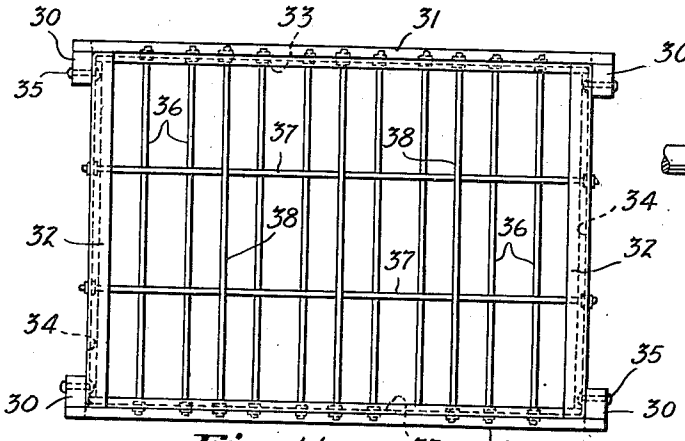


Fig. 11

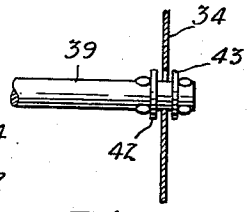


Fig. 14

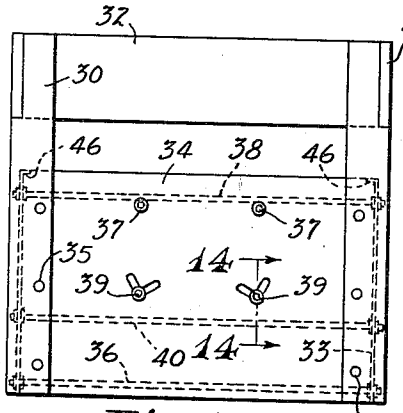


Fig. 12

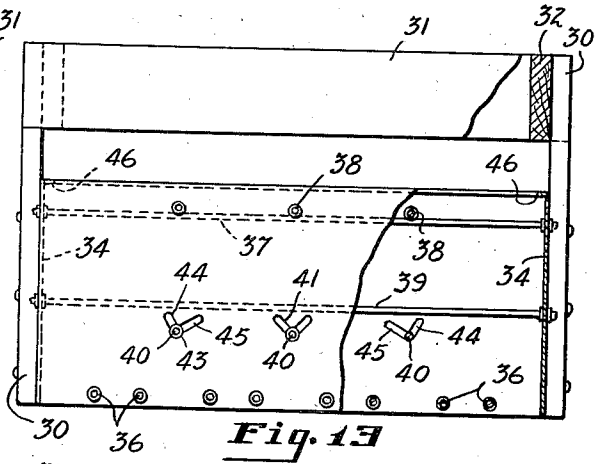


Fig. 13

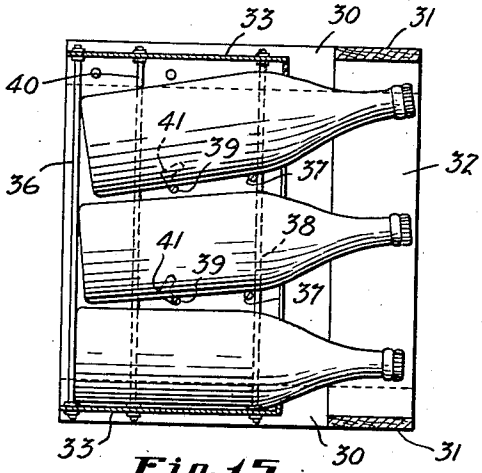


Fig. 15

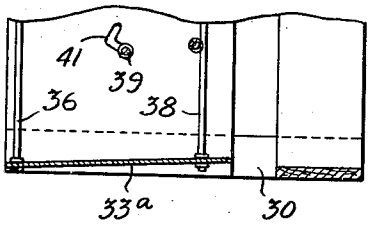


Fig. 16

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Patented Jan. 18, 1949

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UNITED STATES PATENT OFFICE

2,459,333

COMBINED SHIPPING AND DISPLAY CASE FOR BOTTLES

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Application December 29, 1945, Serial No. 637,914

14 Claims. (Cl. 217—19)

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This invention relates to bottle cases and particularly to a combined shipping and display case for beverage bottles.

Large quantities of bottled beverages are sold in retail grocery and other stores and such beverages are delivered to the stores in bottle cases which are also utilized in returning the bottles to the beverage manufacturer or bottler.

The handling of bottled beverages in retail stores is a difficult problem because of the large amount of floor space taken up by the bottle cases from which the bottled beverages are taken and to which empty bottles are returned.

The bottle cases heretofore used when piled one upon another afford visibility and accessibility only to the bottles in the cases at the the top of the pile.

An important object of the present invention is to provide a bottle case that can be so stacked as to afford visibility and accessibility to all of the bottles of all of the cases so that the handling and rehandling of cases necessary to get at cases between the top and the bottom of the stack will be eliminated, thereby effecting a very great saving in labor.

In order to avoid the difficulties above mentioned, sloping racks have sometimes been provided to receive the bottle cases and support them at an inclination such that bottles are prevented from falling out.

The present invention has for an object to save the expense of such racks and to provide a means of displaying the bottles in the cases which will require not more than one-half the floor space required for such racks.

Specific objects of the invention are to provide bottle cases that can be piled on their sides in vertical stacks with the bottles so supported that they are all visible and accessible and so positioned that there is no danger of their falling out of the case, and to provide cases of substantially standard size in which the bottle compartments are so constructed that the bottles will tilt by gravity to an inclined position when the cases are stood upon a side.

With the above and other objects in view, the invention may be said to comprise the bottle case as illustrated in the accompanying drawings, hereinafter described and particularly set forth in the appended claims, together with such variations and modifications thereof as will be apparent to one skilled in the art to which the invention pertains.

Reference should be had to the accompanying drawings forming a part of this specification, in which:

Figure 1 is a side elevation showing the stack of bottle cases embodying the invention;

Fig. 2 is a fragmentary front elevation of a portion of the stack shown in Fig. 1;

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Fig. 3 is a front elevation on an enlarged scale of an empty bottle case standing on its side;

Fig. 4 is a section taken on the line indicated at 4—4 in Fig. 2;

Fig. 5 is a horizontal section on an enlarged scale taken on the line indicated at 5—5 in Fig. 2;

Fig. 6 is a section taken on the line indicated at 6—6 in Fig. 3;

Fig. 7 is a fragmentary front elevation of an empty bottle case of modified construction standing on its side;

Fig. 8 is a section taken on the line indicated at 8—8 in Fig. 7;

Fig. 9 is a section taken on the line indicated at 9—9 in Fig. 7;

Fig. 10 is a fragmentary section through a top edge of a pivoted partition member;

Fig. 11 is a top plan view of a bottle case embodying a further modification of the invention;

Fig. 12 is an end elevation of the bottle case shown in Fig. 11;

Fig. 13 is a side elevation of the bottle case shown in Fig. 11;

Fig. 14 is a fragmentary section taken on the line indicated at 14—14 in Fig. 12;

Fig. 15 is a transverse vertical section showing the positions assumed by the bottles when the case is resting on a side, and

Fig. 16 is a fragmentary sectional view showing a slightly modified side wall construction.

The body of the beverage case of the present invention is provided with corner posts 11 to the inner sides of which are attached lower end boards 12, to the lower edges of which the bottom boards 13 are nailed. Lower side boards 14 are interposed between the inner faces of the end boards 12 and are preferably spaced a short distance above the bottom boards 13. The bottom side boards 14 are preferably positioned at a slight inclination with their upper edges offset inwardly with respect to their lower edges, as shown in Fig. 4.

To the upper ends of the posts 11 are attached upper end and side wall boards 15 and 16 which are preferably spaced above the lower end and side wall boards 12 and 14, the height of the case being slightly greater than the height of the bottles for which the case is designed, so that the cases may be stacked one upon the other in shipping. The bottom side boards 14 are connected by transverse partitions 17 that are parallel to the end walls of the case and that are spaced apart to provide transverse compartments each adapted to receive a row of bottles. The transverse portions 17 may be rigidly secured to the side boards 14 by any suitable means. As herein shown the partitions 17 have nailing flanges 18 which are attached to the inner faces of the

boards 14, the partitions 17 being preferably formed of thin material such as sheet metal.

Each of the partitions 17 has a plurality of V-shaped notches 19 which flare downwardly and which extend from near the top edge of the partition members to the bottom edge thereof. The V slots 19 of the transverse partition members 17 are alined in a plurality of longitudinal rows and provide spaces to receive longitudinal partition members 20 which extend from one end of the case to the other, the partition members 20 being carried by pivot rods 21 which are journaled in the end boards 12 adjacent the upper edges thereof. The partition members 20 which are preferably metal plates are attached at their upper edges to the pivot rods 21 which are located in the upper ends of the slots 19 and the pivotal movements of the partition members 20 are limited by the alined edges of the slots 19.

The inclined side boards 14 will permit the bottles that are positioned alongside each side wall to tilt about a top edge of the side board to the inclined position shown in Figs. 1 and 4 when the case is stood on one of its sides. The upper edge of the side board 14 is above the centers of gravity of the bottles so that when the case is turned upon its side the bottles tend to move by gravity in the inclined position. The top edges of the partition members 20 are at near the same level as the upper edges of the boards 14 and provide fulcrums for bottles above the lowermost row about which the bottles may tilt. The rods 21 alone would serve as bottle positioning members and as fulcrums for the bottles, but it is preferred to separate the bottles by means of the partition plates 20 which protect the bottles against damage by impact one against another. Only a small angular tilting movement of the bottles is required to retain the bottles in the cases standing on their sides and it is preferred to so limit the tilting movement that when the cases are restored to upright position the bottles will also return to upright position.

If desired the transverse partitions as well as the longitudinal partitions may be hinged to swing about axes extending along their upper edges so that the bottles may tilt by gravity when the cases are stood on end as well as when they are stood upon a side.

As shown in Figs. 7, 8 and 9, transverse partition members 17*a* are provided with slots 19*a* to receive pivoted longitudinal partition members 20*a* as in the modification first described, but instead of being rigidly attached to the side bars 14, the partition plates 17*a* are pivoted by means of rods 22 attached to their upper edges and journaled in bearings 23 mounted upon the top edges of the side boards 14. Angle stops 24 are attached to the inner faces of the side boards 14 to limit the angular movements of the partition plates 17*a*. The top edges of partition plates 17*a* provide fulcrums about which the bottles will tilt by gravity when the bottle case is stood on end.

It has been found to be advantageous to provide a rubber covering for the top edges of the partition members which will frictionally resist sliding of the bottles and prevent spilling of bottles from the case if the case should be tilted toward the open side while stacking the cases or while removing cases from a stack. As shown in Fig. 10 a covering strip of rubber 25 may be secured by suitable means to the beaded top edge of a pivoted partition member such as the member 17*a*.

In the modifications above described pivoted partition members have been employed which

have stationary upper edges which provide fulcrums about which the bottles may tilt when the case is stood upon its side, the partition plates serving to hold adjacent bottles out of contact when in tilted position. Figs. 11 to 15 show a bottle case in which the spaces for receiving bottles are defined by longitudinal and transverse bars that are positioned at the proper height above the bottom of the case to provide fulcrums about which the bottles may tilt, additional movably mounted bars serving to prevent contact between the bottles.

The bottle case shown in Figs. 11 to 15 has corner posts 30 and side and end rails 31 and 32 connecting the posts at the top. The posts 30 and rails 31 and 32 may be of wood and provide a frame for sheet metal side and end walls 33 and 34 that are attached by suitable means such as rivets 35 to the posts 30. The side and end walls 33 and 34 which may be formed from a single piece of sheet metal are preferably of a height such that their upper edges are spaced a short distance below the rails 31 and 32 so that the rails 31 and 32 can be conveniently gripped in handling the cases. The bottom of the case comprises a series of transverse rods 36 attached at their ends to the side walls 33, the rods 36 being preferably arranged in pairs so positioned that each pair of rods provides support for a transverse row of bottles in the case.

Spaces for longitudinal rows of bottles in the case are defined by longitudinal bars 37 parallel to the side walls 33 and attached at their ends to the end walls 34 adjacent the top edges thereof. Spaces for transverse rows of bottles are defined by transverse bars 38 attached at their ends to the side walls 33. The bars 37 and 38 are spaced above the bottom of the case a distance greater than the height of the center of gravity of the bottles when filled or when empty so that the bars 37 and 38 may serve as fulcrums about which the bottles will tilt by gravity when the case is stood on a side or on an end, the width and length of the bottom of the container being sufficient to permit the desired tilting movement of the bottles. It will usually be more convenient to stand the cases on a side as shown in Fig. 15, in which case the pairs of bottom rods 36 centrally disposed with respect to the transverse rows of bottles will serve as guides for the bottoms of the bottles to maintain the bottles in each row in vertical alinement.

In order to prevent damage to bottles when the cases are carelessly handled in stacking them on their sides or ends, it is desirable that means be provided to limit the tilting movements of the bottles and prevent impact of bottle against bottle when a case is turned upon its side or end. The movement limiting means may be in the form of longitudinal and transverse bars 39 and 40, that are mounted one beneath each of the bars 37 and 38. The bars 39 and 40 are so mounted that they may have a limited movement bodily transverse to their length when the case is tilted and so that they will return by gravity to a position directly beneath the upper fixed fulcrum bars when the case is returned to upright position. As shown in Figs. 13, 14 and 15, the ends of the bars 39 and 40 are mounted in V-shaped slots 41 in the side and end walls. The bars 39 and 40 have inner and outer washers 42 and 43 which restrain longitudinal movements of the bars but which are spaced sufficiently to permit free movement of the bars in the slots. The slots 41 are disposed with their apices directly beneath

the bars 37 and 38 and with the legs 44 and 45 of the slots diverging upwardly.

As shown in Fig. 15 the bottom bottle of each vertical row may rest flat against a side wall when the case is stood upon its side, in which case the walls of the case are preferably provided with short flanges 46 to retain the lowermost bottle. Also the legs 44 and 45 of the slots 41 may be of different lengths to hold the tilted bottles at slightly different inclinations.

As shown in Figs. 11 to 15, the side and end walls are vertically disposed, but these walls may be inwardly inclined as in modifications previously described to permit the lowermost bottles to assume inclined positions. In Fig. 16 of the drawings a sheet metal side wall 33a is shown inclined slightly with respect to the posts 30 so that the bottles adjacent the wall will assume an inclined position when the case is stood upon a side.

It is to be understood that variations and modifications of the specific devices herein shown and described for purposes of illustration, may be made without departing from the spirit of the invention.

What I claim is:

1. A bottle case having an open top and a side upon which it may be stood, bottle positioning members within the case spaced from the bottom and sides and defining spaces to receive rows of bottles, said members forming fulcrums about which bottles may tilt by gravity to inclined positions when the case is stood upon its side, and spacers interposed between rows of bottles below said fulcrum members, said spacers being mounted for lateral movement with the bottles toward said side wall.

2. An open top bottle case having an open top and a side wall upon which the case may be stood, and partition members forming parallel rows of bottle compartments extending from one side of the case to the other, the partition members interposed between the bottles of each row being hinged to swing about their upper edge portions to permit said bottles to tilt by gravity to inclined positions when the case is stood on said side wall.

3. An open top bottle case having parallel side walls and transverse partitions connecting said side walls to provide compartments for rows of bottles, plates hinged at their upper edges and forming transverse partitions for separating individual bottles in each of said rows, the upper edges of said plates forming fulcrums with which portions of the bottles above their centers of gravity are engageable to cause said plates and bottles to tilt by gravity to inclined positions when said case is stood upon one side thereof.

4. A bottle case of rectangular form having one set of partitions extending parallel to its end walls and another set of partitions parallel to its side walls, said partitions providing compartments for individual bottles, the partitions of one set having their top edges above the top edges of the partitions of the other set and being provided with slots to receive the partitions of the other set, the partitions of one of said sets being hinged to swing about their upper edges.

5. A bottle case of rectangular form having a set of partitions parallel with its side walls and another set of partitions parallel with its end walls, said partitions dividing said case into individual bottle compartments, the partitions of one set having downwardly flaring slots extending from adjacent the top thereof to their lower edges, the partitions of the other set being mounted in said slots and hinged to swing about axes extending along their upper edges.

6. A bottle case of rectangular form having a set of partitions parallel with its side walls and another set of partitions parallel with its end walls, said partitions dividing said case into individual bottle compartments, the partitions of one set having downwardly flaring slots extending from adjacent the top thereof to their lower edges, the partitions of the other set being mounted in said slots, the partitions of both sets being hinged to swing about axes extending along their upper edges.

7. A bottle case of rectangular form having a set of partitions parallel with its side walls and another set of partitions parallel with its end walls, said partitions dividing said case into individual bottle compartments, the partitions of one set having downwardly flaring slots extending from adjacent the top thereof to their lower edges, the partitions of the other set being mounted in said slots, the partitions of both sets being hinged to swing about axes extending along their upper edges, and means for limiting the swinging movements of each of said partition members.

8. A bottle case having side and end walls, upper bottle positioning bars attached to the end walls and parallel to the side walls, and lower bottle positioning bars beneath and parallel to the upper bars, said lower bars being mounted for limited transverse movements, said upper bars forming fulcrums about which bottles may tilt when the case is stood on a side and said lower bars serving to limit the tilting movements of the bottles and to hold the bottles out of contact with one another.

9. A bottle case having side and end walls, upper bottle positioning bars attached to the end walls and parallel to the side walls, V slots in the end walls beneath the ends of said upper bars, the apices of the slots being beneath said upper bars and the legs of the slots inclined upwardly, and lower bottle positioning bars having ends slidable in said slots.

10. A bottle case having side and end walls, upper bottle positioning bars attached to the end walls and parallel to the side walls, other upper bottle positioning bars attached to the side walls and crossing the first mentioned bars, and a lower positioning bar beneath each of said upper positioning bars, each lower bar being mounted for limited movement transverse to its length, said upper bars forming fulcrums about which bottles may tilt and said lower bars limiting the tilting movements of the bottles.

11. A bottle case having side and end walls, upper bottle positioning bars attached to the end walls and parallel to the side walls, V slots in the end walls beneath the ends of said upper bars, the apices of the slots being beneath said upper bars and the legs of the slots inclined upwardly, and lower bottle positioning bars having ends slidable in said slots, the legs of each of said slots being of unequal length to allow the bottles to tilt farther in one direction than in the other.

12. A bottle case having side and end walls and a bottom formed of spaced transverse bars attached to the side walls, upper bottle positioning bars attached at their ends to the end walls and disposed parallel to the side walls, and lower bottle positioning bars disposed one beneath each of said upper bars and each mounted for limited movement transverse to its length, said upper bars providing fulcrums about which bottles may tilt by gravity when the case is stood upon a side, said lower bars limiting the tilting movements of the

bottles and said bottom bars being positioned to provide guides for the bottoms of the bottles when tilted.

13. A bottle case having side and end walls, upper bottle positioning bars arranged in crossing relation and defining spaces to receive bottles, said bars being attached at their ends to the side and end walls, V slots in said walls, disposed one directly beneath each of said upper bars, the apices of each slot being directly beneath one of the upper bars and the legs thereof being inclined upwardly, and lower bottle positioning bars having ends slidable in said slots, said lower bars being positioned one beneath each of said upper bars, said upper bars providing fulcrums about which bottles may tilt and said lower bars serving to limit the tilting movements of the bottles.

14. A bottle case having an open top and side walls upon which it may be stood, laterally spaced longitudinally extending positioning members between the side walls and defining spaces to receive longitudinal rows of bottles spaced inwardly from said side walls, said members being positioned for engagement with the bottles above their centers of gravity and providing fulcrums about which

said bottles may tilt when the case is stood upon either of its sides, and longitudinal spacing members interposed between the rows of bottles below said fulcrum members to prevent contact between bottles of adjacent rows, said spacing members being movable with the bottles toward either side wall.

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