

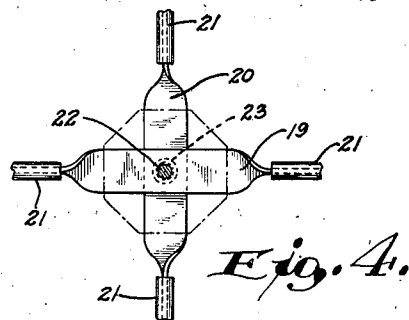
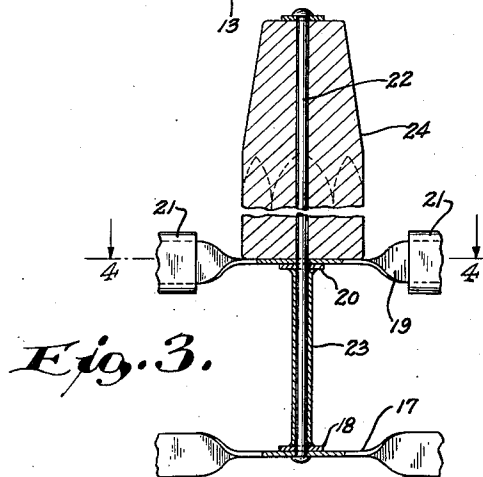
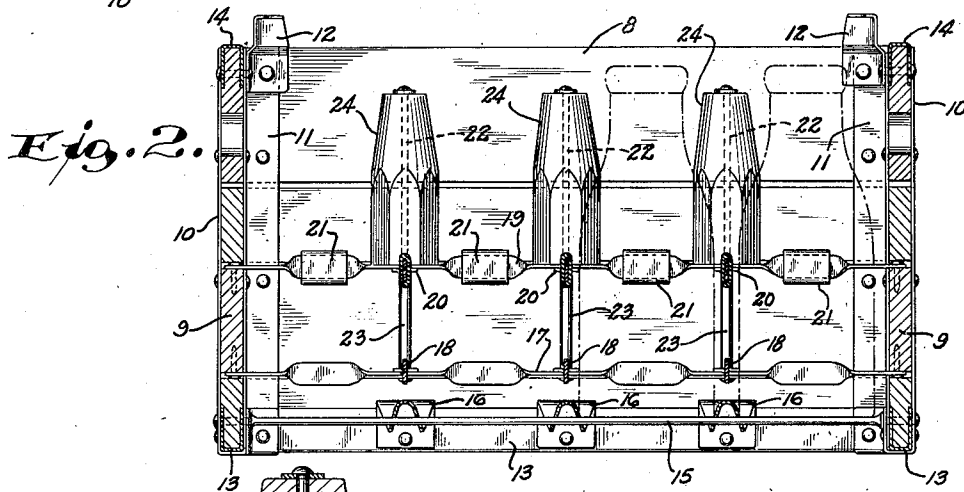
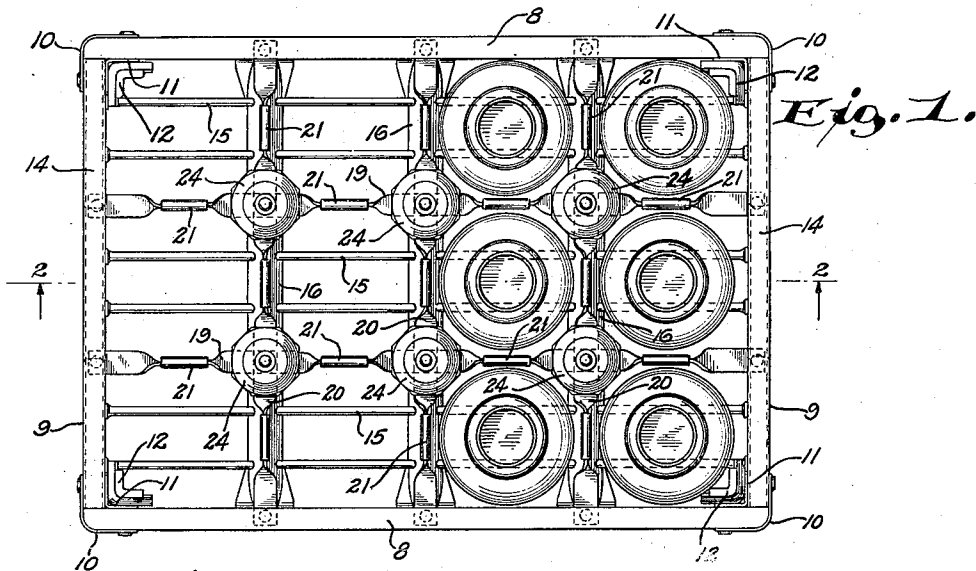
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BOTTLE CRATE

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BOTTLE CRATE

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This invention relates to improvements in bottle crates, and more particularly to bottle crates having vertical guard and guide posts at the compartment corners.

Some types of bottle crates, particularly designed for milk bottles, have heretofore been provided with spaced vertical wooden posts at the corners of the various compartments within the crate. Associated with the posts were round wire partition rods which passed through the posts, with the lower ends of the posts terminating at the bottom of the crate. While post equipped bottle crates of this type to some extent served the avowed purposes of facilitating rapid entry into and removal of bottles from the crate pockets or compartments, as well as protecting the bottles in their entry into the crate, such structures are far from satisfactory. In these prior structures the round partition rods extend freely through the full length posts, with the result that the partition rods are not fixed at the compartment corners and are therefore free to flex to a considerable extent, with the result that bottles within the crate compartments may bump one another or may bump against the wire rods with consequent bottle breakage. With the utilization of full length posts in said prior structures, if the posts are to be of value in protecting the bottles, they must be sufficiently large so that the bottles will contact the posts rather than the metallic partition rods. When this is the arrangement, the crate compartments are in fact too cramped, and difficulty in inserting and removing bottles will be encountered.

The present invention aims at the provision of a post equipped bottle crate of a construction wherein all of the advantages sought to be attained by the previous types of crates above mentioned result, with the elimination of the above enumerated disadvantages; the advantageous structure resulting from rigid partition strips anchored and secured at their intersections and supporting preferably nonmetallic vertical guard and guide posts whose lower ends terminate at the uppermost partition strips.

A specific object of the present invention is to provide a post equipped bottle crate having flat partition strips which are extremely rigid and which are bent to provide relatively wide surfaces for the protection of bottles within the crate and supporting surfaces for the short guard and guide posts.

A further object of the invention is to provide a post equipped bottle crate having, among other things, flat partition strips which are susceptible

of anchorage at their intersections and so formed, between intersections, as to permit the intermediate portions to carry resilient pads without any undue sacrifice in the width of the compartments.

A further object of the invention is to provide an improved form of bottle crate having guard and guide posts whose lower ends terminate at the partition strips and hence do not restrict or diminish the size of the bottle compartments, said arrangement providing for protection of the bottles while in the crate, as well as protecting and facilitating rapid entrance and removal of the bottles relative to the crate compartments.

A further object of the invention is to provide a post equipped bottle crate wherein the upper ends of the posts are tapered, and sets of the posts act as funnels or guides in facilitating the entrance of a bottle into the correct compartment of the crate.

A further object of the invention is to provide a bottle crate which gives material protection to bottles in the crate and which does not in any manner restrict or hinder rapid and expeditious insertion and removal of the bottles from the crate compartments.

A further object of the invention is to provide a post equipped bottle crate which is of very simple construction, which is inexpensive to manufacture, which is strong and durable, and which is well adapted for the purposes set forth.

With the above and other objects in view, the invention consists of the improved post equipped bottle crate, and its parts and combinations as set forth in the claims and all equivalents thereof.

In the accompanying drawing in which the same reference characters indicate the same parts in the various views:

Fig. 1 is a plan view of the improved bottle crate showing a number of bottles lodged within the crate compartments;

Fig. 2 is a longitudinal vertical sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is an enlarged, fragmentary, vertical, detailed sectional view through a post and the associated partition strips; and

Fig. 4 is a fragmentary detailed sectional view taken on line 4—4 of Fig. 3.

Referring now more particularly to the drawing, it will appear that the improved bottle crate is of rectangular formation and includes a pair of spaced apart side walls 8 joined at their ends by a pair of spaced end walls 9. Each wall is composed of a plurality of superimposed wooden

strips, with the strips of each wall being slightly spaced apart relative to one another for the accommodation of the ends of partition strips, as will hereinafter appear.

The corner portions of the crate are reinforced by vertical angled metallic exteriorly applied corner strips 10 and similar interiorly applied corner strips 11. Within the upper corner portions of the crate are upwardly extending stacking cleats 12. All of the lower edges of the crate walls are reinforced by metallic channels 13, while the upper edges of the end walls are similarly reinforced by metallic channels 14.

The bottom of the crate is formed by a plurality of longitudinally extended spaced apart rods 15, and said rods have their extremities extended through the lower portions of the end walls 9 and through the channels 13, with heads being provided on the rods adjacent the surface portions of the channels. Retaining strips 16 traverse the bottom forming rods 15, with the rods passing through apertures in said strips. The extremities of the strips 16 are downwardly flanged and are riveted to the channels 13 on the lower edges of the side walls.

The interior of the crate is divided into a plurality of compartments or pockets of substantial depth, all of said pockets being of uniform size. For this purpose there are a plurality of lower longitudinal partition strips 17 and a transverse series of similar lower partition strips 18. Spacedly above the partition strips 17 and vertically aligned therewith, are a series of upper longitudinal partition strips 19. Said latter partition strips are traversed by a series of cross partition strips 20 which are vertically aligned with the transverse strips 18 therebelow. All of the partition strips 17, 18, 19, 20 are formed of metal and have portions thereof alternately bent into vertical and horizontal planes. The portions of the partition strips which are bent into vertical planes are positioned so as to be at intermediate side portions of the compartments or pockets which they define, while the portions of the strips which are in horizontal planes are arranged so as to come at the corners of the pockets or intersections of the longitudinal or transverse strips, with said latter portions contacting one another for rigid securement. The various ends of the partition strips terminate in horizontal planes and are lodged between sections or slats of the walls and are secured by nails or rivets, as shown. The vertically disposed portions of the upper partition strips 19 and 20 are surrounded by rubber pads or cushions 21 which afford protection for bottles in the various compartments.

The flattened or horizontally turned portions of the lower sets of partition strips 17 and 18 are secured together at the various points of intersection by elongated vertical rods 22. These rods are headed at their upper and lower extremities. Said rods furthermore pass through the various partition strips 19 and 20 at their points of intersection. The extent of each rod between the upper partition strips and the lower partition strips is surrounded by a sleeve 23 having a head or flange at its upper end. If desired the sleeve may be dispensed with and the rod adjacent the upper and lower partitions is headed or flanged. The upper ends of the rods 22 terminate a short distance below the upper edge of the crate, as best shown in Fig. 2.

It will be noted, particularly from Figs. 3 and 4, that at the intersection of a pair of upper partition strips 19 and 20, a flat seat is provided with

the contacting portions of said strips being rigidly joined and anchored by the rod 20 passing therethrough. Each seat so provided forms a support for the lower flat end portion of a non-metallic guide and guard post 24. The lower part of each of said posts is preferably of octagonal formation, providing a plurality of flat face portions, while each post, above said octagonal portion is in the form of a frustum of a cone. Each rod 22 extends centrally through a post 24 and serves to rigidly anchor the post in position relative to the intersection of a pair of partition strips 19 and 20. It is of course within the contemplation of the invention that the posts 24 may be secured onto their respective rods 22 by any desirable or convenient means, and it is obvious that the upper extent of the rods may be screw threaded if desired and the posts centrally engaged by the screw threaded portions of the rods. The guide and guard posts are preferably formed of wood, but may also be formed of rubber, composition, or other suitable material, either non-metallic or metallic.

It will be evident that the construction described provides for a plurality of compartments within the lower portion of the crate. The walls of said compartments are defined by the various partition strips, and by virtue of the vertically turned sections of the partition strips, the compartments or pockets are of maximum dimensions and do not cramp or bind bottles disposed within the compartments. The arrangement further permits the utilization of the pads or bumpers 21 which resiliently protect bottles in the pockets. The partition walls are relatively rigid and non-flexible by virtue of the fact that the partition strips are secured together at their points of intersection with transversely disposed strips.

The relatively short lengthened guard and guide posts 24 are particularly effective and efficient in the matter of guarding and guiding bottles in their entrance into the crate compartments, and they furthermore serve to effectively guard the bottles while in the compartments and to maintain the bottles in position against accidental displacement and jarring.

In dairies, in actual practice, it is the custom to load crates of the character under consideration with bottles, and such loading is accomplished as rapidly as possible. The loader may handle a plurality of bottles at one time and merely directs the same toward proper compartments of the crate and allows the same to fall into position. In this manner of loading the posts 24 are particularly effective and efficient as they serve to guide the bottles into the proper crate compartments. Due to the construction of the posts and due to the fact that they may have tapered upper ends and flattened side portions, the bottles are allowed to contact with the posts, and the posts cause the same to slide into the pockets without damaging effect on the bottles. The foregoing remarks are equally true with respect to removal of the bottles from the crate. During transportation of the crates if the same are subjected to severe handling and bumping, the posts prevent undesirable displacement of the bottles.

From the foregoing description it will be seen that the improved post equipped bottle crate is of simple and novel construction, and is well adapted for the purposes set forth.

What is claimed as the invention is:

1. In a crate, sets of partition strips secured

therewithin dividing the interior of the crate into compartments, some of the partition strips being elevated and crossing other partition strips, non-metallic posts seated on and extending only upwardly from the various points of juncture of the uppermost crossed partition strips, and means extending axially of and through the posts for tying a pair of crossed partition strips together at their intersection and for mounting and securing a post thereon.

2. In a crate, sets of crossing, relatively flat partition strips secured therewithin dividing the interior of the crate into compartments, two sets of said strips being in planes alined with but above the other sets of partition strips, each partition strip being bent to present alternate horizontal and vertical wide face portions, the crossed portions of the strips being the horizontally disposed faces thereof, posts mounted on and extending only upwardly from the crossed portions of the uppermost strips, and means extending axially of and through the posts for securing the crossed

portions of lower strips to the crossed portions of strips thereabove and for anchoring the posts to the latter strips.

3. In a crate, sets of crossing, relatively flat, metallic partition strips secured therewithin and dividing the interior of the crate into compartments, two sets of said strips being in planes alined with but above the other sets of partition strips, each partition strip being bent to present alternate horizontal and vertical wide face portions, resilient cushions mounted on the vertical face portions of said strips, the crossed portions of the strips being the horizontally disposed faces thereof, upwardly tapered non-metallic posts mounted on and extending only upwardly from the crossed portions of the uppermost strips, and means extending axially of and through the posts for securing the crossed portions of lower strips to the crossed portions of strips thereabove and for anchoring the posts to the latter strips.

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