July 31, 1934. E. L. HERBOLSHEIMER 1,968,295

BOTTLE CRATE

Filed April 26, 1933 2 Sheets-Sheet 1

Fig. 1

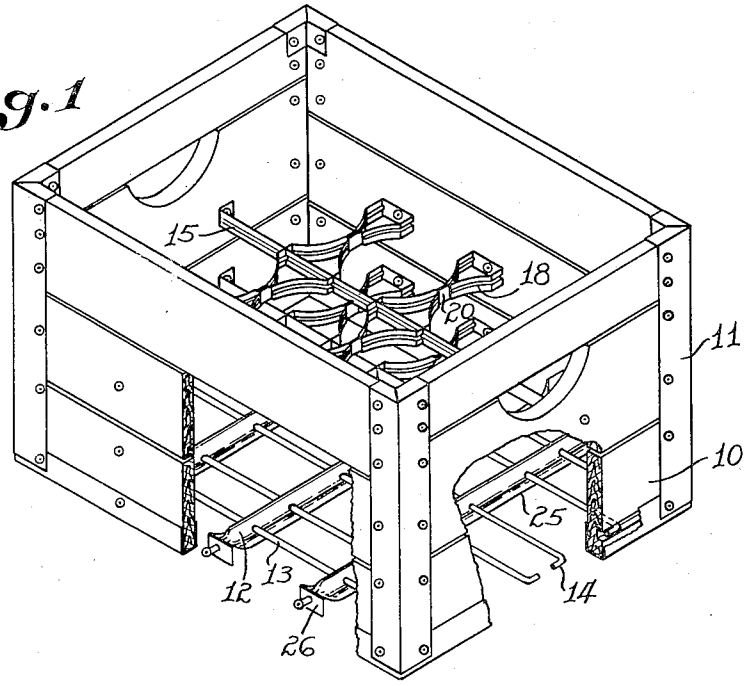
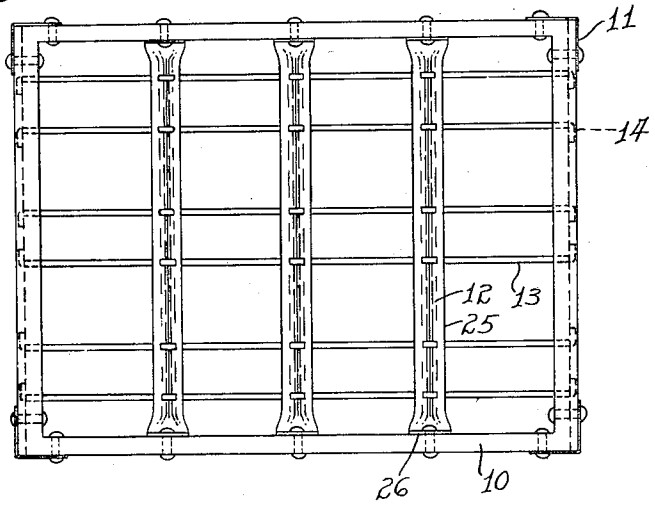


Fig. 2



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Fig.3

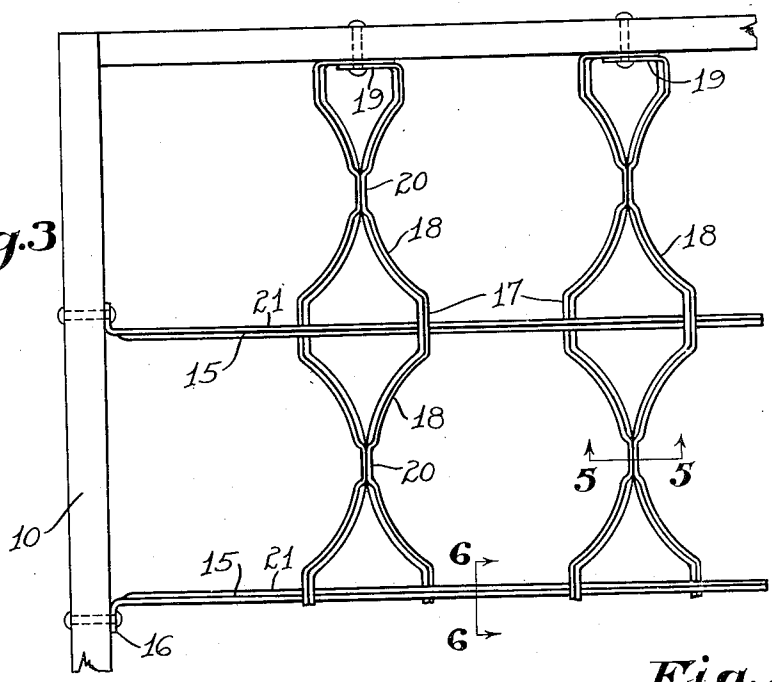


Fig.4

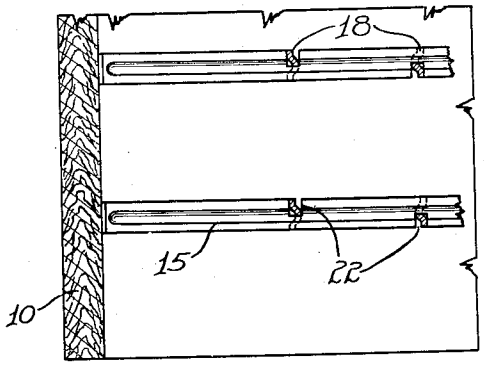


Fig.5

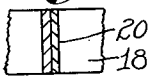


Fig.6



Fig.7

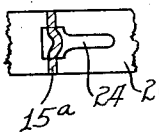
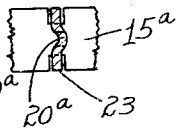


Fig.8



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UNITED STATES PATENT OFFICE

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BOTTLE CRATE

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Application April 26, 1933, Serial No. 668,090

5 Claims. (Cl. 217—19)

This invention relates to bottle crates and particularly to the arrangement of metallic bars or strips to define cells or compartments within which the bottles are individually held.

The general object of the invention is to provide a strong and durable construction for the purpose stated at a moderate cost, bearing in mind that crates of this kind are subjected to extremely hard usage.

The preferred construction of the invention and the advantages of the same will be specifically explained in connection with the accompanying drawings, in which—

Figure 1 is an isometric view of a crate constructed according to the invention, with parts broken away;

Figure 2 is a bottom plan view of the crate with the interior parts omitted;

Figure 3 is an enlarged plan view of a portion of the interior construction;

Figure 4 is a partial vertical section of the parts shown in Figure 3;

Figure 5 is an enlarged sectional detail view taken on the line 5—5 of Figure 3;

Figure 6 is an enlarged sectional detail view taken on the line 6—6 of Figure 3;

Figure 7 is a detail view of a modified form of partition joint;

Figure 8 is a view taken at right angles to Figure 7.

In its present embodiment, the invention is associated with a crate having side and end walls 10 which are provided at the corners with protective metallic angle strips 11. The bottom of the crate is of skeleton formation comprising metallic cross bars 12 anchored in the sides of the crate with longitudinally disposed wires 13 passing therethrough and having laterally turned ends 14 anchored in the ends of the crate. These wires 13 are arranged in pairs in such a manner that each bottle is directly supported by two wires.

The bars 12 are preferably formed from sheet metal, each bar consisting of a strip folded longitudinally to form a hollow rib which is traversed by the wires 13, the edges of the strip being turned outwardly to form base flanges 25. The ends 26 of the strips are turned so as to rest flat against the side walls and are secured thereto. A bottom constructed in this manner is inexpensive, yet has exceptional strength.

It is customary to design bottle crates to hold 12 bottles each, arranged in three longitudinal rows. With this end in view the interior of the crate is provided with two longitudinal bars or strips 15 which have their ends 16 turned laterally and secured to the ends of the crate. There are also three pairs of transverse strips 18 having laterally turned overlapping ends 19 secured to the sides of the crate, thus dividing the interior of the crate into 12 cells or compartments for receiving the individual bottles. Each transverse partition therefore comprises a pair of strips 17, each strip having arcuate portions 18 adapted to fit one side of the bottle. The strips 18 are flat and comparatively thin and wide so that they present a broad, flat surface in supporting relation to the side of the bottle. They are disposed so as to offer the greatest resistance to vertical impact, yet are sufficiently yieldable laterally to accommodate the usual variations in size of the bottles incident to their manufacture. Centrally of the arcuate portions 18, the strips have plane surfaces 20 which are welded together, thus further strengthening the partitions against vertical distortion or twisting. The longitudinal bars 15 and also portions of the strips 17 are longitudinally beaded, as shown at 21 in Figure 6, to offer further resistance against bending and twisting strains.

Where the strips 17 cross the longitudinal bars 15, inter-engaging notches 22 are provided in the respective members. These notches are arranged alternately in the upper and lower edges of the respective members so as to provide an interwoven effect, each of the members mutually supporting the other. The notches 22 are wide enough to permit a slight lateral play of the strips 17 as they yield in response to the pressure of bottles of slightly varying size.

In the modification shown in Figures 7 and 8, the strip 15^a is provided in its upper and lower edges with oppositely disposed notches 23, and the strip 20^a is provided with a slot 24 of such shape as to permit the strip 15^a to be inserted therethrough and turned to a vertical position, as shown.

From the foregoing description it will be seen that the invention provides an interior construction which is comparatively inexpensive and which supports the bottles with sufficient resiliency to reduce breakage to a minimum. At the same time the strips 15 and 17 offer the utmost resistance against vertical bending or twisting strains and are, therefore, not likely to become distorted through the extremely hard usage to which bottle crates are usually subjected.

While I have shown specifically one form of crate to which the invention may be applied, it

will be apparent that the invention is capable of quite general application to crates of various types and that the specific construction thereof may be considerably modified without departing from the scope of the invention as claimed.

What I claim is:—

1. In a bottle crate, the combination with vertical side and end walls, of partitions extending from one vertical wall to the opposite wall, each of said partitions comprising a pair of strips having oppositely disposed concave portions to engage the sides of the bottles, each strip of the pair having a plane surface at the center of each concave portion which is welded to the corresponding surface of the other strips, the ends of said strips being turned inwardly and overlapping each other, means rigidly securing said overlapping ends to the vertical walls of the crate, and additional partition strips intersecting the first mentioned strips at right angles, said strips at their intersections having inter-engaging notches.

2. In a bottle crate, the combination with vertical side and end walls, of partitions secured to opposite vertical walls and each comprising a pair of sheet metal strips with oppositely disposed concave faces to engage the sides of the bottles, each concave portion of one strip being secured at the center thereof in engagement with the corresponding portion of the adjacent strip from its upper to its lower edge to prevent vertical or twisting distortion thereof, and additional partition strips intersecting the first mentioned strips at right angles, said strips at their intersections having interengaging notches.

3. In a bottle crate, the combination with vertical side and end walls, of partitions secured to opposite vertical walls and each comprising a pair of sheet metal strips with oppositely disposed concave faces to engage the sides of the bottles, the ends of said strips being turned inwardly and overlapping each other, means to rigidly secure said overlapping ends to the vertical walls, each concave portion of one strip being secured at the center thereof in engagement with the corresponding portion of the adjacent strip from its upper to its lower edge to prevent vertical or twisting distortion thereof, and additional partition strips intersecting the first mentioned strips at right angles, said strips at their intersections having inter-engaging notches.

4. In a bottle crate, the combination with vertical side and end walls, of partitions secured to opposite vertical walls and comprising a pair of sheet metal strips with oppositely disposed concave faces to engage the sides of the bottles, the ends of said strips being turned inwardly and overlapping each other, means to rigidly secure said overlapping ends to the vertical walls, the strips being spaced apart between said concave portions and being alternately notched on the top and bottom, and additional partition strips intersecting said first mentioned strips at right angles, said strips being notched on the top and bottom to inter-engage the notches in said first mentioned strips.

5. In a bottle crate, the combination with vertical side and end walls, of partitions secured to opposite vertical walls and each comprising a pair of sheet metal strips with oppositely disposed concave faces to engage the sides of the bottles, the ends of said strips being turned inwardly and overlapping each other, means to rigidly secure said overlapping ends to the vertical walls, each concave portion of one strip being secured at the center thereof in engagement with the corresponding portion of the adjacent strip from its upper to its lower edge to prevent vertical or twisting distortion thereof, the strips being spaced apart between said concave portions and being alternately notched on the top and bottom, and additional partition strips intersecting said first mentioned strips at right angles, said strips being notched on the top and bottom to inter-engage the notches in said first mentioned strips.

EMIL L. HERBOLSHEIMER.