Feb. 17, 1948. A. TAURMAN 2,436,236

BOTTLE CRATE

Filed Aug. 23, 1945 2 Sheets-Sheet 1

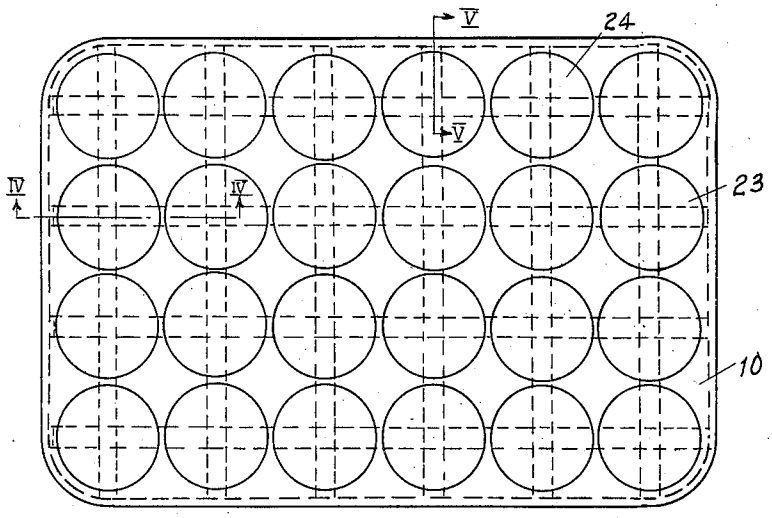


Fig 1

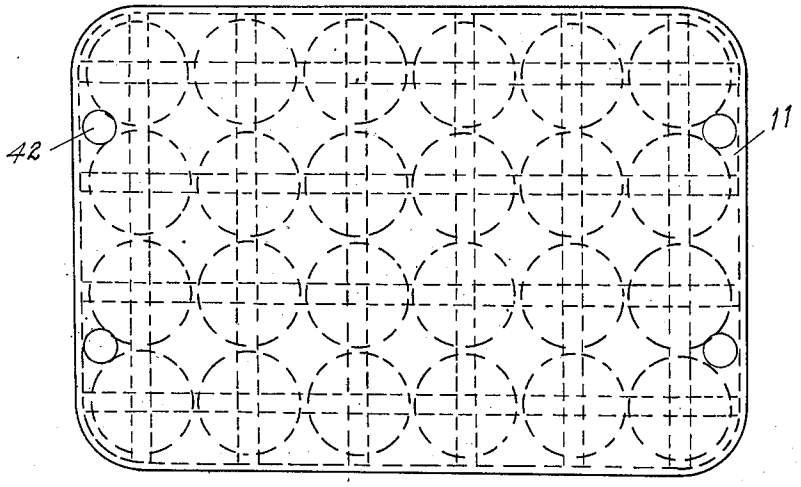


Fig 2

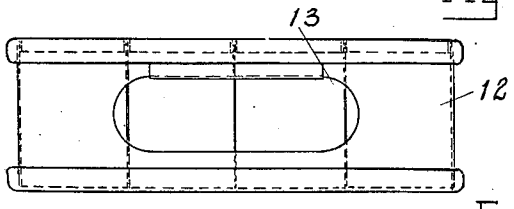


Fig 3

A. TAURMAN
INVENTOR.

BY Henry L. Jennings
ATTORNEY

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BOTTLE CRATE

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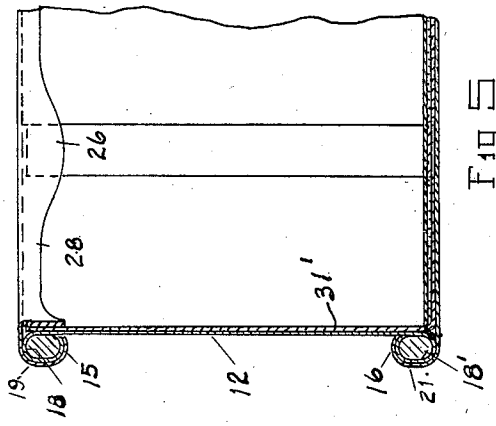


Fig 5

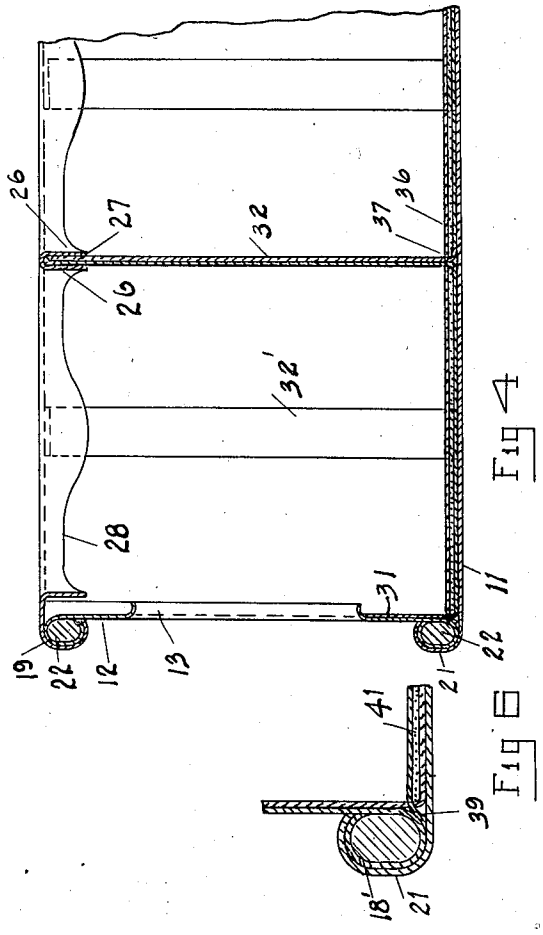


Fig 6

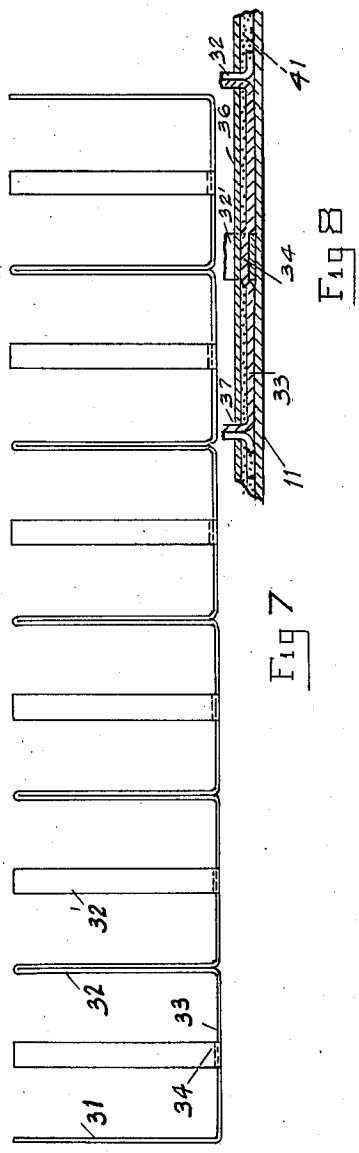


Fig 8

Fig 7

A. TAURMAN
INVENTOR.

BY Henry L. Jennings
ATTORNEY

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UNITED STATES PATENT OFFICE

2,436,236

BOTTLE CRATE

Alphonso Taurman, Birmingham, Ala.

Application August 23, 1945, Serial No. 612,162

8 Claims. (Cl. 220—21)

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This invention relates to a bottle crate of the type generally employed in the sale and distribution of carbonated, non-alcoholic beverages and has for an object the provision of an article of the character designated which shall be simple of construction, easily manufactured, of extremely light weight, and yet one which shall have the requisite strength to withstand rough handling thereby having a long period of usefulness.

A further object of my invention is to provide a metal bottle crate embodying a top having bottle receiving openings therein with downturned flanges, the openings being closely adjacent, together with separators for the bottles comprised of continuous metal straps bent to form a plurality of U-bends with the bottoms of the U-bends extending diametrically across the openings at the bottom of the crate, the upwardly extending sides of the separators being joined to the top between the flanges of adjacent openings, and the bottoms of the U-bends being joined to the bottom of the crate.

A still further object of my invention is to provide a metal bottle crate having a top and bottom joined to sides and ends by means of cooperating flanges turned over to provide a continuous bead extending around the crate at the upper and lower edges thereof.

These and other features of my invention which will become apparent from a consideration of this specification are illustrated in the accompanying drawings, forming a part hereof, in which

Fig. 1 is a top plan view of the crate;

Fig. 2 is a bottom plan view;

Fig. 3 is an end elevational view;

Fig. 4 is a sectional view taken along the line IV—IV of Fig. 1;

Fig. 5 is a sectional view taken along the line V—V of Fig. 1;

Fig. 6 is an enlarged detail sectional view showing the means for joining the sides and bottles;

Fig. 7 is an elevational view of the separators removed from the crate; and

Fig. 8 is a detail sectional view showing the construction of the crate at the intersections of the separators.

Referring now to the drawings for a better understanding of my invention, my improved crate embodies a top 10, a bottom 11, and integral sides and ends 12. Suitable openings 13 are provided in the ends with the edges turned over as shown in Fig. 4 so that the crate may be handled without injury to the hands. The top and bottom are joined to the sheet forming the sides and ends as shown in Figs. 4, 5 and 6 providing flanges

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15 and 16 on the top and bottom which are rolled or formed over outturned flanges 18 and 18' on the sheet forming the sides and ends to form continuous beads 19 and 21 at the upper and lower edges of the crate respectively. This construction not only joins the sheets firmly together, but provides a strong reinforcement for the crate. A wire or rod 22 may be provided in each of the beads around which the flanges may be rolled to provide additional reinforcement.

The top 10, as shown in Fig. 1, is provided with a plurality of longitudinally and transversely extending rows of openings 23 and 24 for the reception of bottles. In order to provide greater strength for the top, the openings are preferably made round, as shown, but it is understood that my invention is not limited to a top having round openings. The sides of each of the openings are flanged inwardly to provide downturned flanges 26 which cooperate to form narrow recesses 27 where the adjacent flanges are closest. In order to provide for easier cleaning, and also to reduce weight, the flanges may be cut away as shown at 28 between the narrow recesses.

In order to maintain the bottles separate in the crate and to add strength and reinforcement thereto, I provide separators comprising continuous metal straps each bent to provide a plurality of U-bends spanning the bottle receiving openings, each of the U-bends having upwardly extending side portions 31 and 32 and horizontally extending bottom portions 33. The upwardly extending side portions, intermediate the ends of each of the straps, are doubled, as shown in Fig. 7, and extend upwardly into the recesses 27 between adjacent downturned flanges 26, and are joined to the top by spot welding or other means, through the flanges. The horizontally extending bottom portions 33 are joined by welding, or other means, to the bottom of the crate 11. At the ends, the upwardly extending portions 31 are joined to the ends of the crate, as shown in Fig. 4, being cut away below the openings or hand holds 13.

As may be seen from a consideration of Figs. 7 and 8, the separators formed as just described extend longitudinally of the crate, diametrically across each of the openings and along each row of openings, and also extend transversely of the crate diametrically across each of the openings. At the intersections of the horizontally extending bottom portions 33 of the U-bends, they are bent upwardly at the intersecting points, as shown at 34 so that at this portion of the bottom each pro-

jects above the plane of the upper surface of the intersecting U-bend. This is important in providing means for joining the separators to the bottom as hereinafter described. As shown in Figs. 4 and 5, the upwardly extending portions of the transverse U-bends are designated by the numerals 31' and 32' and the portions 31' are joined to the sides of the crate as shown in Fig. 5.

In order to provide a smooth inner surface upon which the bottles may rest and also to provide for easier cleaning, I place a false bottom 36 in the crate having narrow openings 37 therein through which the upwardly extending portions of the longitudinal and transverse separators extend with a relatively close fit. The false bottom 37 is turned downwardly at the ends and sides as shown at 39 in Fig. 6 to project under the bead 21, thereby holding the false bottom firmly in place.

Between the false bottom 36 and the bottom 11 of the crate, I interpose a sound deadening, moisture and water repellant packing sheet 41. This sheet prevents water from entering beneath the false bottom and makes the crate extremely easy to clean. The sheet of material 41 is provided with openings at the intersections of the separators whereby the upwardly bent portions 34 of the transversely extending U-bends are brought into contact with the false bottom 36. Accordingly, at this point, there is a metal to metal contact between the false bottom, the intersecting U-bends of the separators and the bottom 11. The false bottom, the intersecting separators, and the bottom may be joined together at the intersections by spot welding, or other means. A plurality of drainage or cleanout openings 42 are provided in the bottom of the crate.

From the foregoing, it will be seen that I have devised an improved bottle crate made of metal with the top and bottom of the crate joined together by strong supports at diametrically opposed sides of each of the openings. It will also be seen that by the improved method shown of joining the top and bottom to the sides and ends, I have provided a reinforced construction which will withstand extremely rough handling.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications, without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are specifically set forth in the appended claims.

What I claim is:

1. A bottle crate comprising a sheet metal top having downwardly flanged openings therein for the reception of bottles, a metal bottom spaced from the top, and bottle separators comprising continuous metal straps each bent to provide a plurality of U-shapes, each U-shape forming a separator, said separators being secured to the top between adjacent downturned flanges and extending downwardly from the top and joined to the bottom.

2. A bottle crate comprising a metal top having downwardly flanged openings therein for the reception of bottles, a metal bottom spaced from the top, bottle separators comprising continuous metal straps each bent to provide a plurality of U shapes each U shape forming a separator with the vertically extending sides doubled and joined to the top between adjacent downturned flanges, and with the bottoms of the U bends joined to the bottom of the crate.

3. A crate as defined in claim 2 in which there are provided intersecting separators extending longitudinally and transversely of the crate with the separators joined to each other and the lower separator joined to the bottom of the crate at their intersections.

4. A bottle crate comprising a metal top having downwardly flanged openings therein for the reception of bottles, a metal bottom spaced from the top, bottle separators comprising continuous metal straps each bent in a plurality of U shapes each U shape forming a separator with the vertically extending sides doubled and joined to the top between adjacent downturned flanges, and a false metal bottom having openings therein through which the vertically extending sides of the separators project and means connecting the bottom bends of the separators to the bottom of the crate and to the false bottom.

5. A bottle crate comprising a metal top having downwardly flanged openings therein for the reception of bottles, a metal bottom spaced from the top, bottle separators comprising continuous metal straps each bent to provide a plurality of U-shapes, each U-shape forming a separator with the vertically extending sides doubled and joined to the top between adjacent downturned flanges, a false metal bottom having openings therein through which the vertically extending sides of the separators project means connecting the bottom bends of the separators to the false bottom and the bottom of the crate, and a sound deadening moisture and water repellant material interposed between the bottom and the false bottom.

6. A bottle crate comprising a metal top having a plurality of rows of longitudinally and transversely extending openings therein to receive bottles, downturned flanges surrounding the openings, bottle separators comprising continuous metal straps each bent to provide a plurality of U-bends extending longitudinally of the crate and diametrically across each of the openings with the upwardly extending sides of the U-bends doubled and joined to the top between adjacent downturned flanges, each of said U-bends forming a separator, other continuous metal straps bent to provide a plurality of U-bends extending transversely of the crate and diametrically across each of the openings and intersecting the first mentioned U-bends centrally of each opening, the upwardly extending sides of said last mentioned U-bends being doubled and joined to the top between the downturned flanges of adjacent openings, and metal bottom, and means connecting said straps to each other and to the bottom at their intersections.

7. A bottle crate comprising a metal top having a plurality of rows of longitudinally and transversely extending openings therein to receive bottles, downturned flanges surrounding the openings, bottle separators comprising continuous metal straps each bent to provide a plurality of U-bends extending longitudinally of the crate and diametrically across each of the openings with the upwardly extending sides doubled and joined to the top between adjacent downturned flanges, each of said U-bends forming a separator, other continuous metal straps bent to provide U-bends extending transversely of the crate and diametrically across each of the openings and intersecting the first mentioned U-bends centrally of each opening, the upwardly extending sides of said last mentioned U-bends being doubled and joined to the top between the downturned flanges

of adjacent openings, a metal bottom, a false bottom covering the bottoms of the U-bends and having openings therein through which the upwardly extending sides project, means connecting the bottom, the false bottom and the straps at the intersections of the latter, and a sound deadening, moisture and water repellant material interposed between the bottom and the false bottom.

8. A bottle crate comprising a metal top having downwardly flanged openings therein for the reception of bottles, a metal bottom spaced from the top, bottle separators comprising metal straps secured to the top between adjacent downturned flanges and extending downwardly and joined to the bottom, sides and ends for the crate, and flanges on the sides and ends joined to similar flanges on the top and bottom by rolling the said flanges together to form a bead at top and bottom, the said beads lying wholly between the planes defined by the surfaces of the top and bottom.

ALPHONSO TAURMAN.

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