

A. L. FOREMAN.
BOTTLE CRATE.

APPLICATION FILED MAR. 30, 1920.

1,368,221.

Patented Feb. 8, 1921.

4 SHEETS—SHEET 1.

Fig. 1.

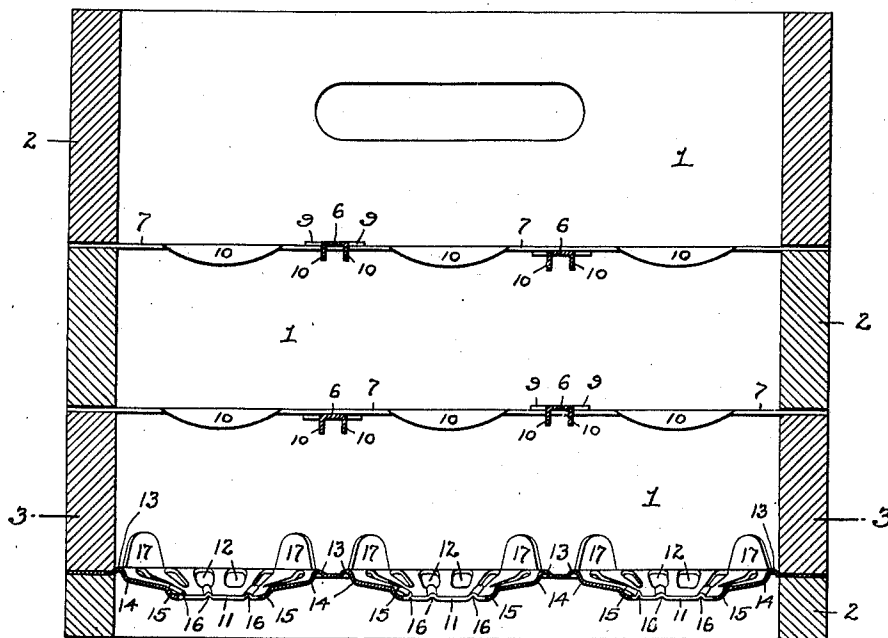
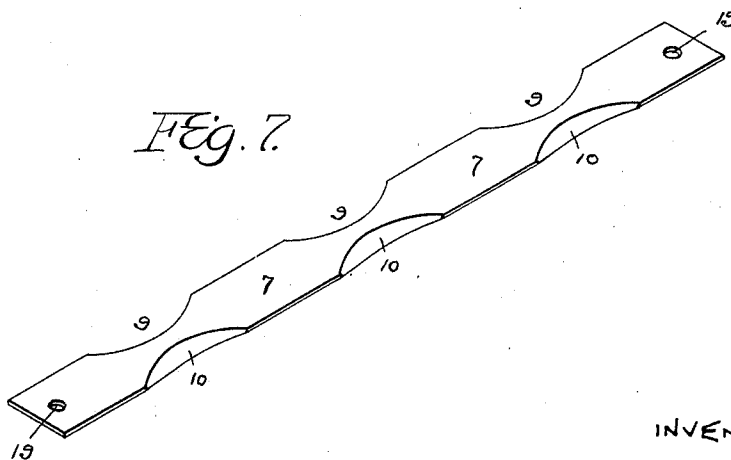


Fig. 7.



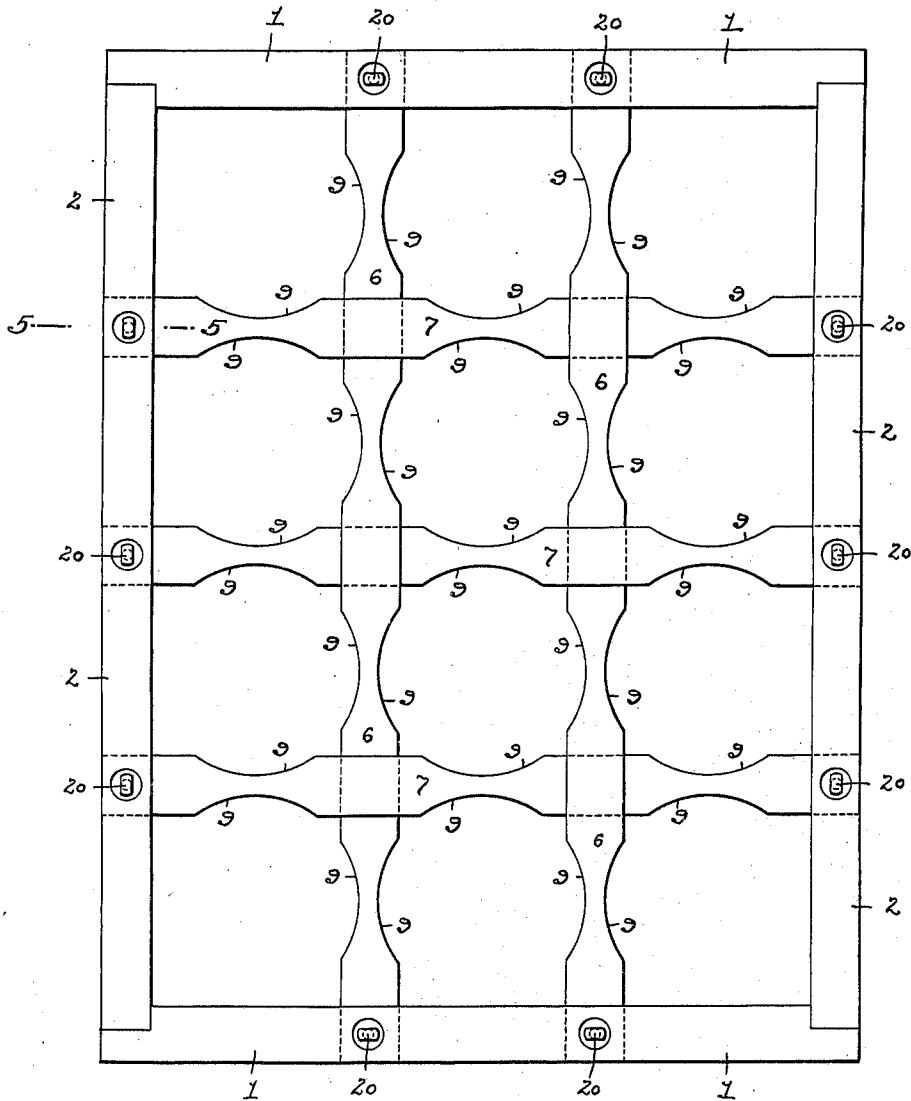
INVENTOR
AMOS L. FOREMAN
BY HIS ATTORNEY
Harry Smith

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4 SHEETS—SHEET 2.

Fig. 2.



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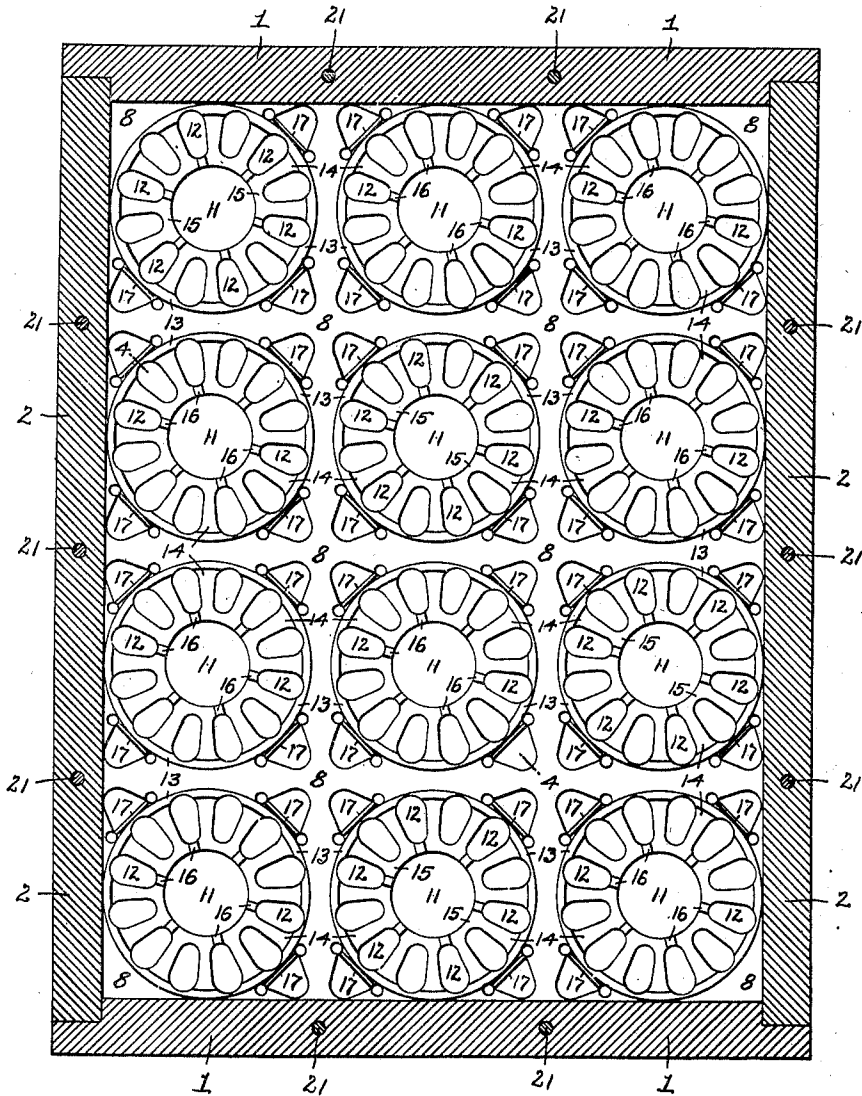
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4 SHEETS—SHEET 3.

Fig. 3.



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4 SHEETS—SHEET 4.

Fig. 4.

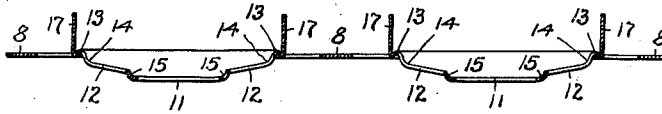


Fig. 6.

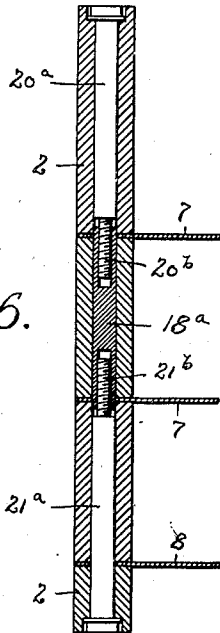
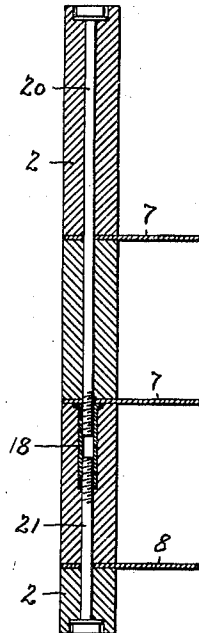


Fig. 5.



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UNITED STATES PATENT OFFICE.

AMOS L. FOREMAN, OF YORK, PENNSYLVANIA, ASSIGNOR TO MILK DEALERS CRATE CORPORATION, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

BOTTLE-CRATE.

1,368,221.

Specification of Letters Patent.

Patented Feb. 8, 1921.

Application filed March 30, 1920. Serial No. 369,841.

To all whom it may concern:

Be it known that I, AMOS L. FOREMAN, a citizen of the United States, residing in York, Pennsylvania, have invented certain

Improvements in Bottle-Crates, of which the following is a specification.

My invention relates to bottle carrying crates, the object of my invention being to construct a crate of this type in such a way that bottles in it will be firmly yet resiliently supported whether mouth up or inverted, and the crate will be of strong and rigid structure capable of being quickly and readily assembled during manufacture and as easily taken down in the event that the removal of a worn or defective portion becomes necessary. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a bottle carrying crate constructed in accordance with my invention;

Fig. 2 is a top or plan view of the same illustrating, particularly, certain bottle separating and supporting partition strips;

Fig. 3 is a sectional plan view on the line 3—3, Fig. 1, illustrating, particularly, the bottle supporting base plate of the crate;

Fig. 4 is a diagonal vertical sectional view of said base plate on the line 4—4, Fig. 3;

Fig. 5 is a vertical sectional view on the line 5—5, Fig. 2, illustrating the manner in which certain sectional elements of which the crate walls are constructed are retained in proper position;

Fig. 6 is a view similar to Fig. 5 but illustrating a modified form of construction, and

Fig. 7 is a perspective view of one of the bottle separating and supporting partition strips.

A crate constructed in accordance with my invention comprises, primarily, end walls 1, side walls 2, one or more series of longitudinal bottle separating and supporting partition strips 6 with which are interwoven corresponding series of similar transverse partition strips 7, and a base plate 8 in which are formed pockets for the reception of the bottles.

The end and side walls of the crate each consist of a set of vertically separable sections and the ends of the partition strips 6

and 7 project between adjacent sections of the respective walls, as shown in Figs. 1, 2, 5 and 6, and are anchored in such position in a manner to be later described. The same means which serve to anchor the partition strips also serve to maintain the sections of the walls in proper vertical relation one to another.

Each partition strip is provided, in each edge, with a series of segmental notches or recesses 9, as shown in Figs. 2 and 6. These recesses are so positioned and proportioned that each bottle, where it passes through a partition strip strata, receives substantially circular support. Additional support is furnished by providing at each notch or recess a slightly resilient depending segmental flange or finger 10. These fingers serve to provide a resilient lateral support for each bottle in a crate and consequently tend to prevent breakage of bottles due to sudden lateral movement of the crate.

The base plate 8 of the crate comprises a sheet of suitable material of such size as to project between the bottom section of each wall of the crate and the next adjoining sections above and be retained therebetween by the same means that hold the wall sections and partition strips in place.

This base plate 8 is so perforated and shaped that it has formed in it pockets for the reception of each bottle in the crate, whether the bottle is inserted mouth up or inverted. Each pocket comprises a central opening 11, a series of radial openings 12, a circular bead 13, a circular seat 14, a smaller circular seat 15, a series of radial beads 16, and a plurality of upstanding resilient fingers 17.

The various openings are for the purpose of lessening the weight of the base plate, providing ventilation and permitting washing and sterilizing of inverted bottles while they are in the crate. Each circular seat 14 is adapted to receive and support the bottom of a bottle when the same is inserted mouth up and the circular bead 13 which surrounds said seat serves to impart to it a degree of resiliency that will prevent breakage of the bottle should the same be dropped into the crate with too great force. Similarly, each smaller circular seat 15 receives and supports a bottle when the same is inserted in the crate in inverted position. This seat is vertically resilient as

a result of the surrounding bead 13. The radial beads 16 serve to support the mouth of an inverted bottle clear of the base of the seat 15 so as to permit drainage during washing of the bottles. The resilient fingers 17 provide yielding lateral support to the bottom of a mouth up bottle and serve to prevent accidental displacement of the same should it be dislodged from its seat as a result of violent or careless handling of the crate.

The before referred to means for retaining the sections of the walls in proper position, together with the partition strips and base plate will now be described with especial reference to the showing in Figs. 5 and 6, referring first to Fig. 5. Non-rotatably secured to one of the central sections of each wall of the crate are a series of internally threaded sleeves 18 so positioned as to be in vertical alinement with openings 19 (Fig. 7) in the end portions of the partition strips 6 and 7 and with corresponding openings in the base plate 8. Each of these sleeves receives the threaded ends of a pair of bolts 20 and 21, the bolt 20 passing downwardly from the top of the crate, passing through each wall section and partition strip end located above the sleeve and being retained thereby. Similarly, the bolt 21 passes upwardly through each wall section below the sleeve, and is retained by the latter, also passing through the base plate 8 and through any partition strip end below the sleeve, if such there should be. This construction not only insures a firm and strong crate but also provides for quick and easy assembling of the same and likewise permits removal of any part of the crate without dismantling the entire crate. An alternate form, shown in Fig. 6, comprises a uniting or tying device consisting of bolts 20^a and 21^a having reduced inner ends 20^b and 21^b engaged by sockets in the ends of a coupling 18^a. The entire device is of the same diameter from end to end and the separating strip ends are shown as engaged by the coupling instead of by either of the bolts.

I claim:

1. A bottle crate comprising walls, bottle separating partitions and a bottle supporting base, said base consisting of a plate of sheet metal in which are formed bottle receiving pockets.
2. A bottle crate comprising walls, bottle separating partitions, and a bottle supporting base, said base consisting of a plate of sheet metal in which are formed vertically resilient bottle receiving pockets.
3. A bottle crate comprising walls, bottle separating partitions, and a bottle supporting base, said base consisting of a plate of sheet metal in which are formed individually vertically resilient bottle receiving pockets.

4. A bottle crate comprising walls, bottle separating partitions and a bottle supporting base, said base consisting of a plate of sheet metal in which are formed bottle receiving pockets and from which project upstanding fingers adapted to engage the sides of the bottles.

5. A bottle crate comprising walls, bottle separating partitions, and a bottle supporting base, said base consisting of a plate of sheet metal in which are formed vertically resilient bottle receiving pockets and from which project upstanding laterally resilient fingers adapted to engage the sides of the bottles.

6. A bottle crate comprising walls, bottle separating partitions, and a bottle supporting base, said base consisting of a plate of sheet metal in which are formed concentric bottle receiving pockets of different diameters.

7. A bottle crate comprising walls, bottle separating partitions, and a bottle supporting base, said base consisting of a plate of sheet metal in which are formed concentric vertically resilient bottle receiving pockets of different diameters.

8. A bottle crate having walls comprising a plurality of vertically separable sections, said sections being secured together by pairs of vertically alined bolts, one bolt of each pair passing downwardly from the top of the wall and the other bolt of each pair passing upwardly from the bottom of the wall.

9. A bottle crate having walls comprising a plurality of vertically separable sections, said sections being secured together by pairs of vertically alined bolts, one bolt of each pair passing downwardly from the top of the wall and the other bolt of each pair passing upwardly from the bottom of the wall, said pairs of bolts being embedded in the walls.

10. A bottle crate having walls comprising a plurality of vertically separable sections, said sections being secured together by pairs of vertically alined bolts, one bolt of each pair passing downwardly from the top of the wall and the other bolt of each pair passing upwardly from the bottom of the wall, the inner ends of each pair of bolts being engaged by a common nut.

11. A bottle crate having walls comprising a plurality of vertically separable sections, said sections being secured together by pairs of vertically alined bolts, one bolt of each pair passing downwardly from the top of the wall and the other bolt of each pair passing upwardly from the bottom of the wall, the inner ends of each pair of bolts being engaged by a common nut, said pairs of bolts and nuts being embedded in the wall.

12. A bottle crate having walls compris-

ing a plurality of vertically separable sections, and bottle separating strips the ends of which project between adjoining wall sections, said wall sections and separating strips being retained in position by means of pairs of vertically alined bolts passing through said wall sections and separating strip ends, one bolt of each pair passing downwardly from the top of the wall and the other bolt of said pair passing upwardly from the bottom of the wall.

13. A bottle crate having walls comprising a plurality of vertically separable sections, and bottle separating strips the ends of which project between adjoining wall sections, said wall sections and separating strips being retained in position by means of pairs of vertically alined bolts passing through said wall sections, and separating strip ends, one bolt of each pair passing downwardly from the top of the wall and the other bolt of said pair passing upwardly from the bottom of the wall, the inner ends of each pair of bolts being engaged by a common nut.

14. A bottle crate having walls comprising a plurality of vertically separable sections, bottle separating strips the ends of which project between adjoining wall sections, and a bottle supporting base the edges of which project between the bottom wall sections and the next sections above, said wall sections, separating strips and base being retained in position by means of pairs of vertically alined bolts passing through said wall sections, separating strip ends and base, one bolt of each pair passing down-

wardly from the top of the wall and the other bolt of said pair passing upwardly from the bottom of the wall.

15. A bottle crate having walls comprising a plurality of vertically separable sections, bottle separating strips the ends of which project between adjoining wall sections, and a bottle supporting base, the edges of which project between the bottom wall sections and the next sections above, said wall sections, separating strips and base being retained in position by means of pairs of vertically alined bolts passing through said wall sections, separating strip ends and base, one bolt of each pair passing downwardly from the top of the wall and the other bolt of said pair passing upwardly from the bottom of the wall, the inner ends of each pair of bolts being engaged by a common nut.

16. A bottle crate having walls comprising a plurality of vertically separable sections, bottle separating strips the ends of which project between adjoining wall sections, and a bottle supporting base, the edges of which project between the bottom wall sections and the next sections above, said wall sections, separating strips and base being retained in position by means of uniting devices each comprising a pair of bolts and a central coupling, said devices engaging with said wall sections, separating strips and base.

In testimony whereof I have signed my name to this specification.

AMOS L. FOREMAN.