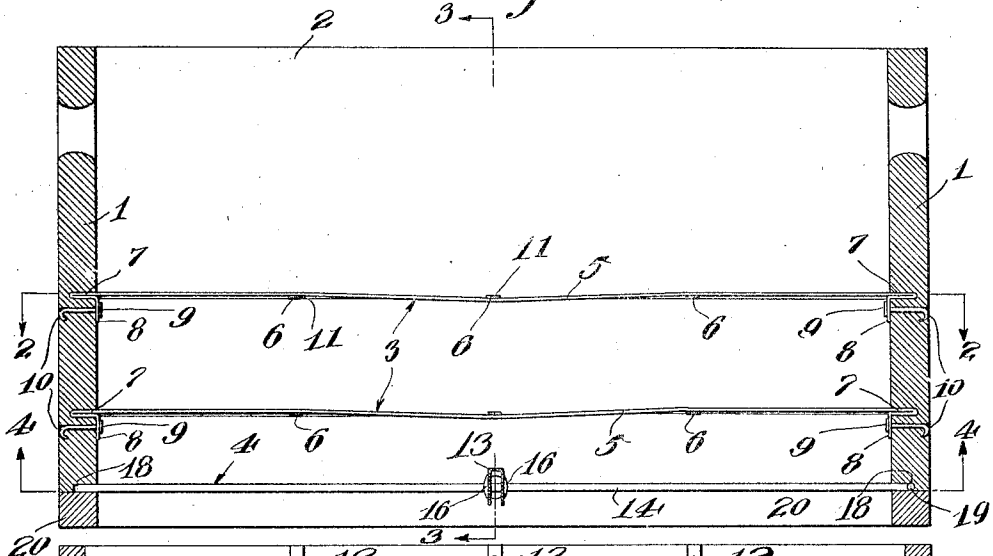
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R. G. TREEN

BOTTLE CRATE

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Fig. 1.



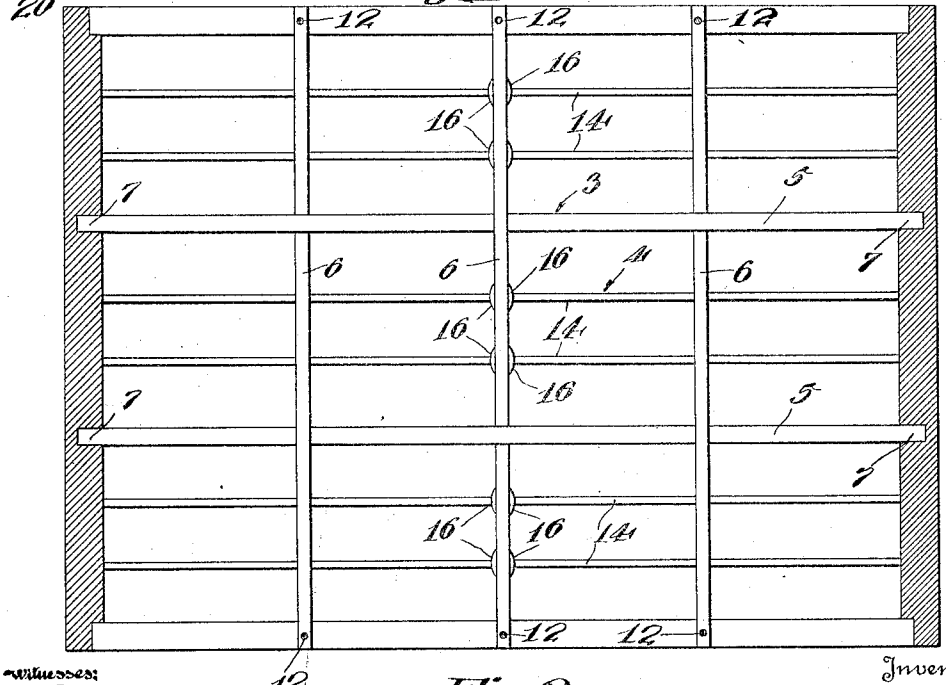


Fig. 2.

Witnesses:
Virgil L. Mayes
George A. Gruss

Inventor
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By Joshua R. H. Potts
His Attorney

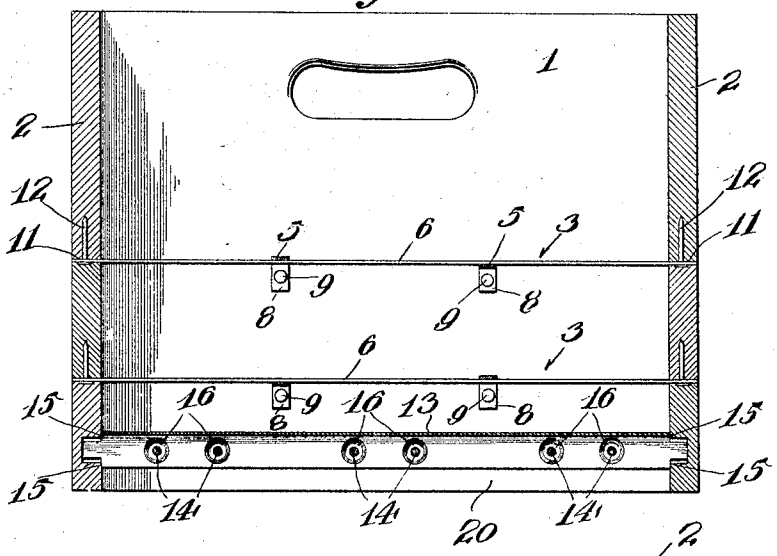
Nov. 24, 1925. 1,562,477

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BOTTLE CRATE

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*Fig. 3.*



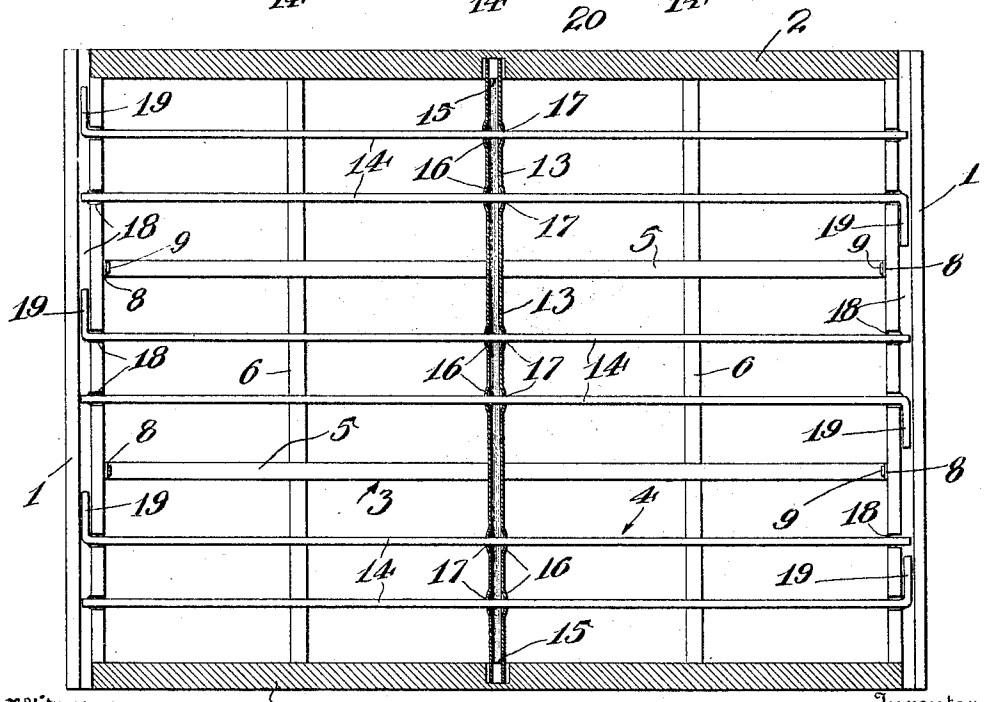




*Fig. 4.*

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Patented Nov. 24, 1925. 1,562,477

# UNITED STATES PATENT OFFICE.

RALPH G. TREEN, OF PHILADELPHIA, PENNSYLVANIA.

## BOTTLE CRATE.

Application filed September 30, 1924. Serial No. 740,713.

*To all whom it may concern:*

Be it known that I, RALPH G. TREEN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Bottle Crates, of which the following is a specification.

My invention relates to bottle crates and its objects are to provide a crate of simple and strong construction, which may be manufactured at low cost.

These objects, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings, in which

Figure 1 is a central section through a bottle crate constructed in accordance with my invention,

Figure 2 a section on line 2—2 of Figure 1,

Figure 3 a section on line 3—3 of Figure 1, and

Figure 4 a section on line 4—4 of Figure 1.

Referring to the drawings, 1 indicates the end walls, 2 sectional side walls, 3 bottle separating frames secured to the walls, and 4 a bottle supporting frame secured to the walls beneath the bottle separating frames.

Each of the bottle separating frames 3 consists of longitudinal bars 5 secured to the end walls and transverse bars 6 passing alternately over and under the longitudinal bars and secured to sections of the side walls. These bars are preferably metallic strips. The longitudinal bars 5 have their ends bent to form a fold 7 and a lug 8 at right angles to the fold. The folded ends are embedded in the end walls 1 and the lugs are secured to the inner side thereof by nails 9 which have their ends 10 clinched to prevent the nail from being pulled out. The transverse bars have their ends fitting within aligned grooves 11 in the lower edges of the opposite sections of the side walls and secured within the grooves by nails 12 passing upwardly therethrough into the sections.

The bottle supporting frame consists of a transverse channel 13 having its ends embedded in the side wall and longitudinal rods 14 passing through the channel and having their ends embedded in the end walls. The ends of the transverse channel are cut to provide shoulders 15 which abut the inner side walls and the legs of the channel are provided with bulged parts 16 having openings 17 through which the longitudinal rods 14 pass. These bulged parts reinforce the legs of the channel around the openings 17. The ends of the longitudinal rods are fitted within the grooves 18 in the lower edge of the end walls, one end 19 of each rod being hook shape and the other end plain. The rods are preferably arranged in the grooves with the hook ends alternating with the plain ends. These ends are secured within the grooves by strips 20 secured to the lower edge of the end walls. The hook ends 19, being fitted within grooves 18, reinforce the box against diagonal strain.

In use, the bottles, which are usually carelessly placed in the crates, accidentally strike the bottle supporting frame 3. The strain produced in this frame by the bottles is resisted longitudinally by the nails 9 and 12 and laterally by the folded ends 7 of the longitudinal bars and the ends of the transverse bars fitted within grooves 11. When the bottles strike the bottle supporting frame 4, the strain produced is usually vertical and is resisted by the strips 20 and the transverse channel 13. The bulged parts 16 around the openings 17 prevent the channel from being distorted by rods 14 as they are strained by the bottles. The hook ends 19 of the longitudinal rods reinforce the crate against diagonal strain and the shoulders 15 abutting the inner sides of the side walls reinforce the lowermost sections of the side walls against inward strain which is usually greatest on these lower sections because they are subjected to impacts as they are roughly placed on a floor, platform or other object.

It will be seen that the bottle crate above described may be easily manufactured at low cost and will withstand strains under severe conditions.

While I have described my invention as taking a particular form, it will be understood that the various parts may be changed without departing from the spirit thereof, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention,

what I claim as new and desire to secure by Letters Patent is:—

1. A bottle crate including side and end walls; a bottle supporting frame secured to the walls, and a bottle separating frame consisting of bars having parts bent upon themselves and embedded in the walls and having extremities forming lugs extending from the bars and secured to the inner side of the walls.

2. A bottle crate including side and end walls; a bottle supporting frame secured to the walls, and a bottle separating frame consisting of bars having parts bent upon themselves and embedded in the walls and having extremities forming lugs extending from the bar, and nails passing through the lugs and the walls and having their ends clinched.

3. A bottle crate including side walls; end walls secured thereto and having grooves in their lower edges; a bottle separating frame secured to the walls; a bottle supporting frame secured to the walls and consisting of a transverse channel having aligned openings and its ends embedded in the side walls, and longitudinal bars passing through the aligned openings and having their ends fitted in the grooves, each longitudinal bar being provided with a hook end, and means for securing the ends of the longitudinal bars within the grooves.

4. A bottle crate including side walls; end walls secured thereto and having grooves in their lower edges; a bottle separating frame secured to the walls; a bottle supporting frame secured to the walls and consisting of a transverse channel having its ends embedded in the side walls and provided with aligned bulged parts having openings therein, and transverse rods passing through the openings and having their ends fitted in the grooves, and means for securing the ends within the grooves.

5. A bottle crate including side walls; end walls secured thereto and having grooves in their lower edges; a bottle separating frame secured to the walls; a bottle supporting frame secured to the walls and consisting of a transverse channel having shouldered ends embedded in the side walls with the shoulders abutting the inner sides thereof and provided with aligned openings, and transverse bars passing through the openings and having their ends fitted in the grooves, and means for securing the ends within the grooves.

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

RALPH G. TREEN.