

A. L. FOREMAN.
BOTTLE CRATE.
APPLICATION FILED MAR. 8, 1907.

915,581.

Patented Mar. 16, 1909.
2 SHEETS—SHEET 1.

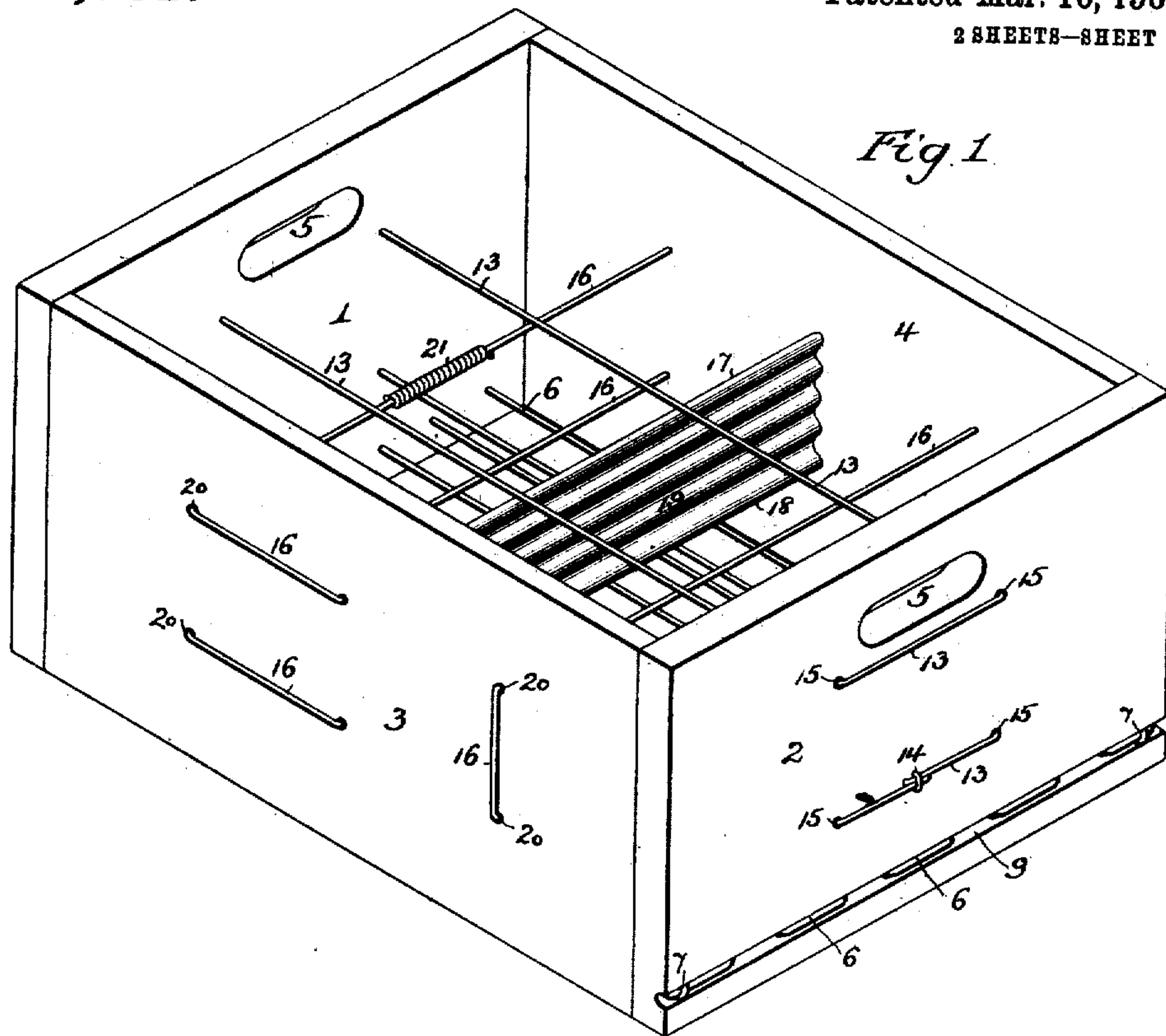
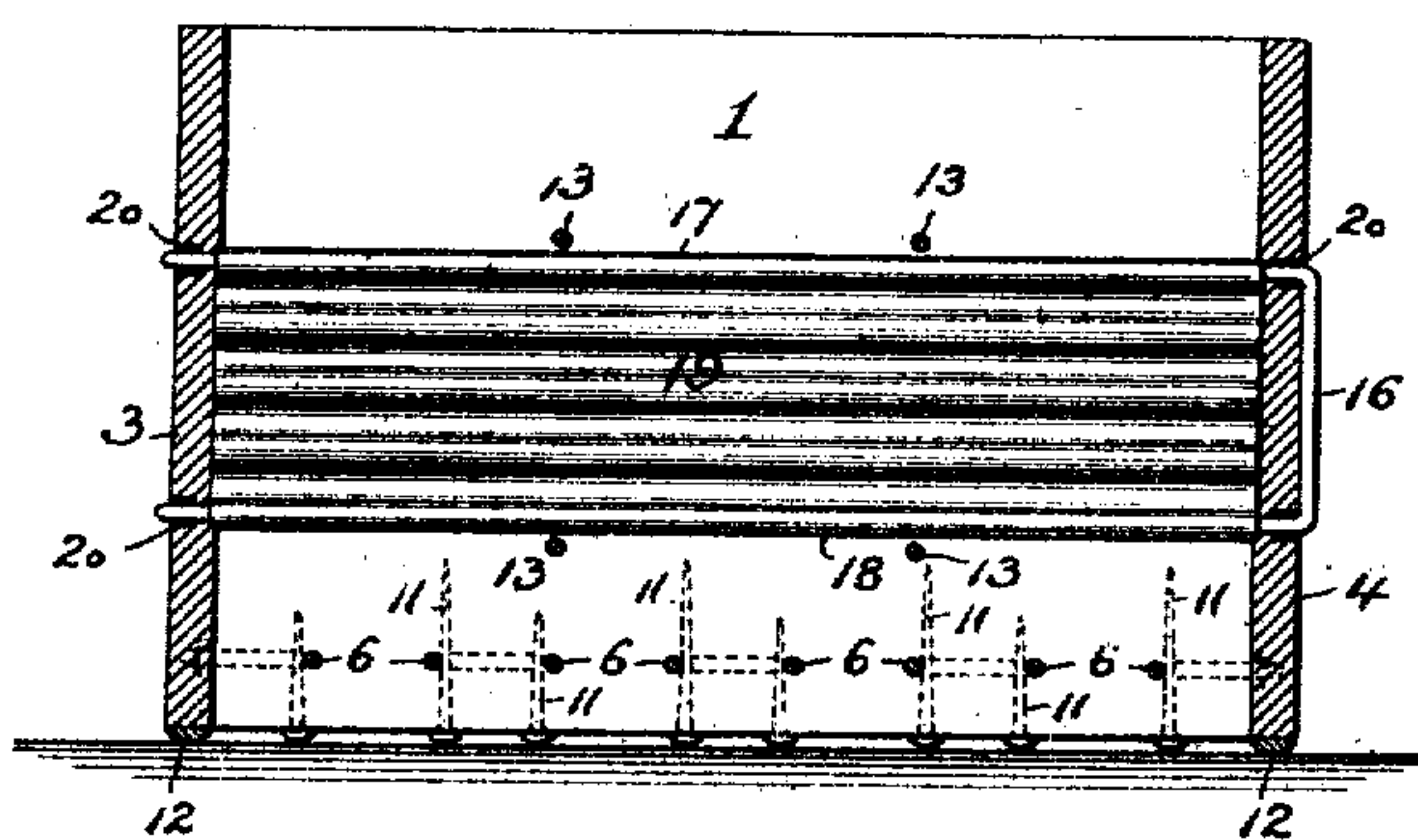


Fig. 2.



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Smith & Casper

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Fig. 3.

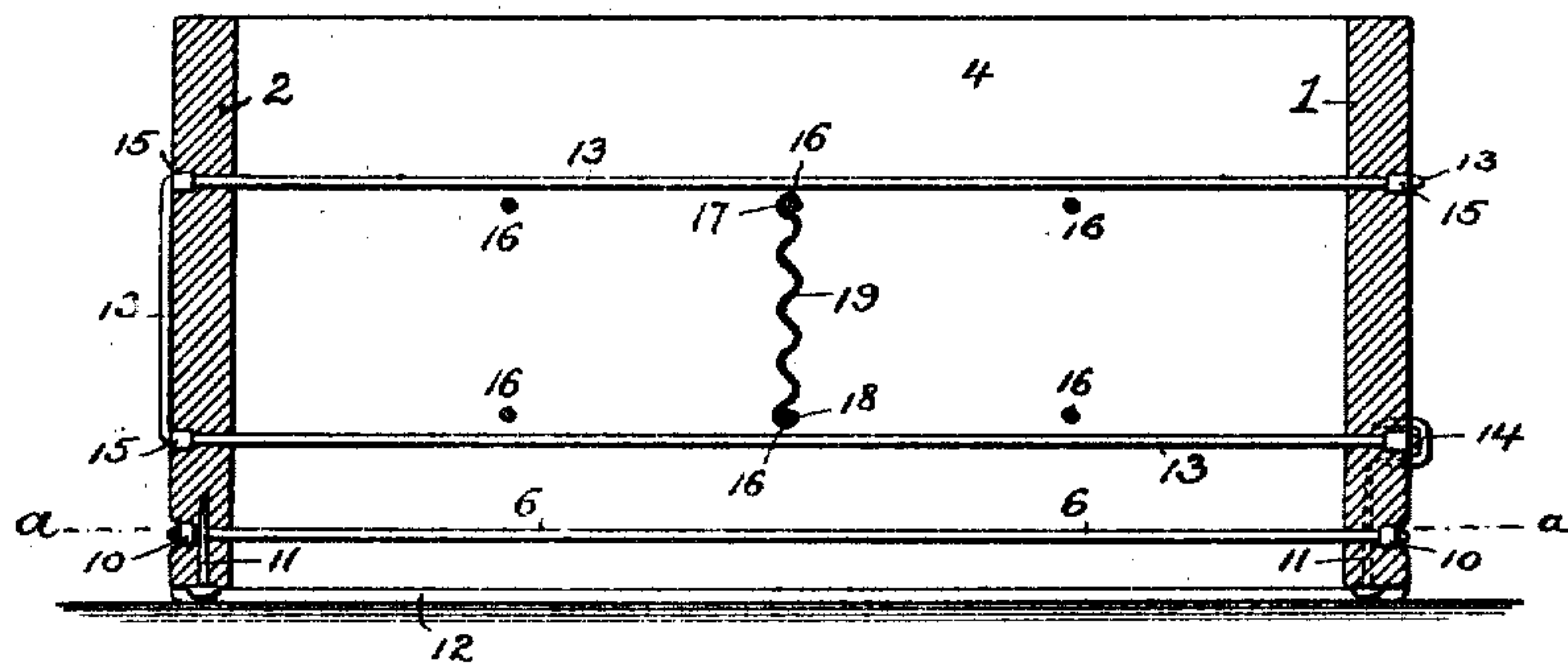
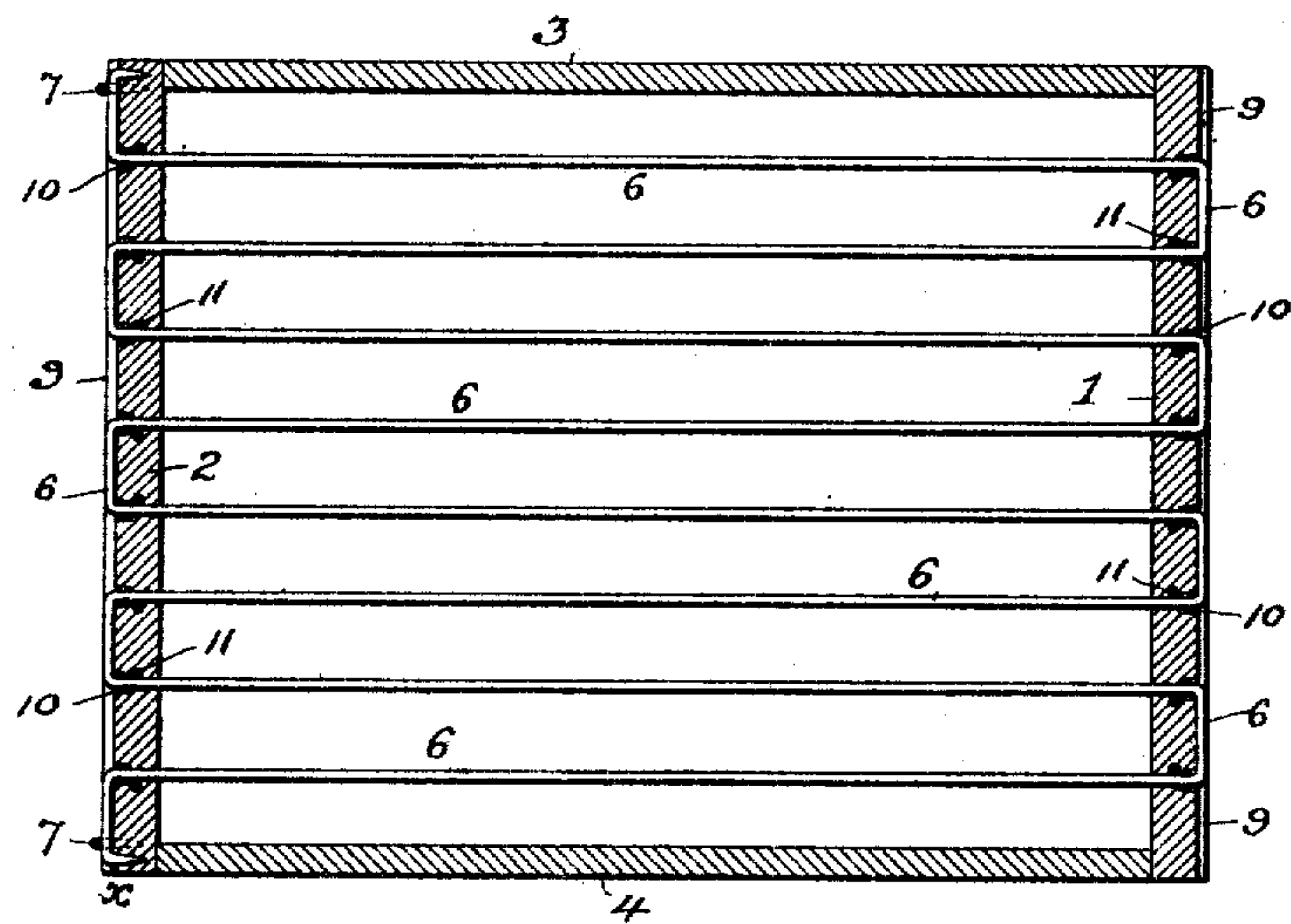


Fig. 4.



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UNITED STATES PATENT OFFICE.

AMOS L. FOREMAN, OF PHILADELPHIA, PENNSYLVANIA.

BOTTLE-CRATE.

No. 915,591. Specification of Letters Patent. Patented March 16, 1909.

Application filed March 8, 1907. Serial No. 361,270.

To all whom it may concern:

Be it known that I, AMOS L. FOREMAN, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Bottle-Crates, of which the following is a specification.

My invention relates to that class of bottle-carrying trays or boxes which have the bottom and cross partitions formed of wire, the object of my invention being to provide a tray or box of this type which, while superior in many respects to previous boxes of the type with which I am familiar, can be more readily and cheaply manufactured.

In the accompanying drawings: Figure 1 is a perspective view of a bottle carrying tray or box (hereinafter, for convenience, termed a box) made in accordance with my invention; Fig. 2 is a transverse section of the same; Fig. 3 is a longitudinal section, and Fig. 4 is a sectional plan view on the line *a-a*, Fig. 3.

The box is composed of opposite ends 1 and 2, and opposite sides 3 and 4 which will usually be composed of wood, although some of the features of my invention are applicable to boxes composed of sheet metal. The sides 3 and 4 of the box fit between the ends 1 and 2 of the same for a purpose hereinafter set forth, and the opposite ends of the box are provided with the usual hand holes 5 to facilitate the carrying of the same.

The bottom of the box and the cross partitions formed therein to provide a separate compartment for each bottle are composed of wire, laced back and forth between the ends or sides of the box and maintained under constant tension in order that smaller wires may be available for the purpose, as against the much larger wires required when mere bulk is relied upon to resist the strain.

The bottom of the box is composed of a single wire 6, which, starting at one corner of the box, say at the corner *x*, is suitably secured at that point, this result being attained in the present instance by driving the pointed end of the wire into the end of the box, as shown in Fig. 4, and additionally securing the same to the end of the box by means of a staple 7 inclosing the wire, as also shown in said figure. The wire is then laced back and forth through properly located openings in the opposite ends of the box and is secured at its opposite end in like manner to the starting end, those portions of the wire which extend from opening to opening

at each end of the box being, by preference, contained in a groove 9, formed in said ends of the box, as shown in Figs. 1, 3 and 4.

In order to prevent the cutting or abrasion of the wood by the bend of the wire at the outer end of each of the openings formed in the ends of the box, said openings are reinforced or armored at those points by means of eyelets or ferrules 10, driven into the openings before the application of the wire thereto, and, as a further precaution in this direction and to provide additional support for the wire in each opening, nails 11 are driven into the end of the box from the bottom of the same so as to contact with the wire where it passes through the opening, these nails, as shown in Figs. 2 and 3, being of different lengths in order to distribute the strain over a larger area of the end of the box than if they were all of the same length, while at the same time lessening the extent of mutilation of the wood which would be caused if all of the nails were as long as the longer nails which I have shown. Either the nails alone or the ferrules alone may be employed, although the use of both is preferable.

The heads of the nails project below the bottom of the box ends and serve, in connection with metal shoes 12 applied to the bottom of the sides of the box, as a means of protecting the sides and ends of the box from wear such as would otherwise be caused when the box was moved about over a floor or other support, especially if the latter was composed of brick, stone or cement.

The longitudinal partitions in the box are formed by a wire 13 which is laced back and forth through openings in the ends of the box and has its ends secured to the latter in any desired manner, this result being attained, in the box shown in the drawing, by overlapping the ends of the wire, driving their bent ends into the wood of the box and securing the overlapping ends by means of a staple 14, as shown in Figs. 1 and 3. Metal eyelets 15 are provided at the outer ends of the openings which receive the wire 13 for the same purpose as the ferrules 10.

The wires 6 and 13 are interlaced with the ends of the box and properly secured to the latter before the insertion between said ends of the sides 3 and 4 of the box, the forcing apart of the ends of the box for the insertion of the sides thereby imparting to the wires 6 and 13 the required degree of tension, which

is maintained after the sides of the box have been secured in place.

The wire 16 constituting the cross partitions of the box is interlaced with openings 5 in the sides of the box after the box frame has been completed, and the central runs of this wire are carried respectively through the top and bottom loops 17 and 18 of a central cross brace or strut 19, interposed between the sides of the box and serving to brace and stiffen the latter at a point intermediate of the ends of the same. In order to impart to the brace 19 the desired rigidity without undue increase in its weight it is 15 composed of a strip of corrugated sheet metal, the corrugations having the further advantage of compelling a bottle inserted into a compartment on either side of the partition to assume and retain a vertical 20 position and preventing the bottom of the bottle from catching upon the loop 18 at the base of the partition, thereby inclining the bottle so that its mouth will not be properly presented to its respective nozzle of the filling machine. 25

The openings for the reception of the wire 16 are provided with eyelets 20 and the ends of said wire may be secured in any appropriate way, preferably by twisting them 30 together, as shown at 21 in Fig. 1, as this method of connection provides for the imparting of the desired degree of tension to the wire.

Because of the lightness of the wire which 35 I use and the simplicity of its application to the box, the cost of the latter can be materially reduced as compared with a box in which single wires are used for each element of the bottom or partition structures of the 40 box, the latter necessarily having to be much heavier than the wire I use and the application and securing of them to the sides and ends of the box also involving greater expense, furthermore, the wires, constituting 45 the bottom and cross partitions of my improved box are less liable to injury from blows which they receive than heavier and less resilient wires would be, any of the tensioned wires constituting an element of the 50 bottom or partition in my improved box being free to yield when subjected to pressure but having a constant tendency to re-

turn to its normal position as soon as the pressure is removed.

I claim:—

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1. A bottle carrying box having a wire extending back and forth through openings in opposite ends of the box frame, and maintained under tension to constitute an open 60 bottom for the box by the sides of the box introduced and secured between the said ends, the latter having nails driven therein and contacting with the wire at the openings.

2. A bottle-carrying box having a wire 65 laced back and forth through opposite members of the box frame and maintained under tension to constitute an open bottom for the box, and nails driven into said box members and contacting with the wire, said nails 70 being of different lengths.

3. A bottle-carrying box having a wire laced back and forth between opposite members of the box frame and maintained under tension to form an open bottom for the box, 75 and nails driven into the box members and contacting with the wire, said nails having heads projecting below the bottom of said members.

4. A bottle-carrying box having a wire 80 laced back and forth through openings in opposite members of the box frame and maintained under tension to constitute an open bottom for the box, nails driven into said box members and contacting with the 85 wire, said nails having heads projecting below the bottom of said members, and metallic shoes applied to the bottom of the other members of the box frame.

5. A bottle-carrying box having a parti- 90 tion structure with wires passing from side to side of the box, and a horizontally corrugated transverse brace or strut interposed between the sides of the box and having its opposite ends looped around upper and lower 95 wires of the partition structure.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

AMOS L. FOREMAN.

Witnesses:

HAMILTON D. TURNER,
KATE A. BEADLE.