





# UNITED STATES PATENT OFFICE.

HOWARD H. HIGHAM, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF  
ONE-HALF TO SELDEN TWITCHELL, OF SAME PLACE.

## CRATE FOR DEMIJOHNS OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 675,385, dated June 4, 1901.

Application filed April 10, 1901. Serial No 55,133. (No model.)

*To all whom it may concern:*

Be it known that I, HOWARD H. HIGHAM, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Crates for Demijohns or the Like, of which the following is a specification.

My invention has relation to that class of boxes or cases designated as crates for demijohns and similar vessels.

The principal object of my invention is to provide a crate or box adapted for the reception and holding for transporting and handling of a demijohn or similar vessel with resilient devices which form not only corner-posts to strengthen the crate or box, but also provide required resiliency for protecting the demijohn or similar vessel mounted in the crate against the strain to which it is subjected in carriage therein, and thus preventing breakage thereof, while at the same time so arranged as to permit, when required, of the ready withdrawal of the demijohn or similar vessel from the crate or box.

In many instances it is desirable to dispense with loose packings—such as excelsior, hay, or the like—in the crating of demijohns and similar vessels, and various means have been provided for such purposes, among which are spring-buffers provided in the interior of the crate or box, which while having some merit have been found objectionable because of the multiplicity of parts and of the labor involved in assembling such parts for the said purposes.

According to my invention the provision of the resilient corner pieces or devices not only serves to strengthen the crate or box, but also provides required resiliency for the demijohn or similar vessel, and, further, due to the simplicity of the devices, minimizing initial cost of the crate or box and liability of its being impaired or rendered useless by disarrangement of parts.

My invention, stated in general terms, consists of a crate or box for demijohns and similar vessels constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and characteristic features of

my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a top or plan view of a crate or box, showing in dotted lines the demijohn or similar vessel in position therein and the said crate or box embodying main features of my invention. Fig. 2 is a vertical central sectional view on the line  $x x$  of Fig. 1 and also showing in elevation the demijohn or similar vessel mounted in the crate or box. Fig. 3 is a side elevational view of one of the resilient corner pieces or devices adapted to be positioned in the crate so as to be brought into engagement with the exterior wall of the demijohn or like vessel for holding the same in position therein; and Fig. 4 is a similar view, enlarged, of the resilient rest or support mounted in the bottom of the crate or box, embodying one of the features of my said invention for supporting the bottom of a demijohn, bottle, or similar vessel.

Referring to the drawings, A is a crate or box which consists of a series of corner pieces or devices  $a$  of a character to be hereinafter described and with a series of parallel transverse strips  $a'$  and a solid or slitted bottom  $a^2$ , which together constitute, as illustrated, the square-shape crate or box A.

B is a demijohn or similar vessel adapted to be mounted and safely held in the crate or box. In preferably each of the four corners of the crate or box and resting upon the bottom  $a^2$  thereof are disposed rests or supports  $c$ , extending therefrom in the direction of the center of the bottom. These rests or supports  $c$  are each provided with fingers or teeth  $c'$  and with a body  $c^3$ , which may be beveled if the same is to fit into one of the respective corners of the crate or box, as illustrated, while if the rest or support  $c$  is to be located in the bottom of the crate or box intermediate of the respective corners the body of the rest or support  $c$  will be provided with a square end instead of a beveled end, so that said rest or support  $c$  may be suitably secured to a lower end or side strip of the crate or box or the bottom thereof. The upper finger or tooth of each rest or support  $c$  is preferably slightly inclined, as at  $c^4$ , from the body portion to



the free end thereof, and upon which upper finger or tooth of each of these rests or supports in position the bottom of the demijohn or similar vessel rests while in position in the crate or box. It may, however, be here remarked that in some instances where the weight of the demijohn or other vessel is such as to weigh downward the upper finger to the extent of bringing the same substantially into contact with the lower finger the two together will maintain the weight of the vessel and support the same in the crate or box against breaking, due to the resilient character of the fingers or teeth of each rest or support *c*.

The series of devices or pieces *a*, forming the vertical corners of the crate or box, are each provided with a slit or opening *a*<sup>3</sup>, extending downward from the top to some distance from the bottom, forming a base body portion *a*<sup>4</sup>, and with a slit *a*<sup>5</sup>, extending upward some distance from the bottom to the top and having at or near the top a solid head *a*<sup>6</sup> with an inclined edge *a*<sup>7</sup>, terminating in a beveled upper edge *a*<sup>8</sup>, so that when the respective corner devices or pieces *a* are in position the demijohn may be readily secured to place, and by the provision of the slits or openings in the said corner pieces or devices two leaf-springs *a*<sup>9</sup> and *a*<sup>10</sup> are provided for protecting the demijohn or other vessel in the crate or box both at the upper and lower portion, so that intermediate portions of the demijohn or vessel will practically be free from contact with the corner-pieces of the crate or box—for example, as illustrated in Fig. 2—and thus the main portion of the body of the vessel will be free from the strain or action of the springs, and the devices or pieces so positioned in connection with the lower portion of the demijohn and the upper portion adjacent to the curvature leading to the neck of the demijohn being in contact with said corner-pieces will prevent breaking of the demijohn or vessel by any undue tilting or other movement of the crate supporting the demijohn in position, either in handling or in transportation. The resilient pieces *a*, furthermore, being arranged as explained, will yield by reason of their double resiliency or inverse spring action to any pressure brought to bear to release the demijohn from the crate as well as any energy put forth to insert the demijohn into the crate. The degree of resiliency required to maintain the demijohn or similar vessel in a safe condition within the crate or box may be increased or decreased accordingly as the slots or openings

are lengthened or shortened in each corner-piece of the device, whereby a reliable, safe, inexpensive, or convenient crate or box for a demijohn or similar vessel is provided and also one in which the demijohn cannot only be readily inserted into the crate or box, but also readily removed therefrom.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A crate or box provided with a closed bottom and a series of corner-uprights projecting upward therefrom, each upright consisting of a solid bar to which the transverse strips of the crate or box are secured, and two oppositely-arranged leaf-springs projecting inward from the solid bar and formed integral therewith by first slitting the bar downward from its top to a point near its bottom and then slitting the portion thus separated upward from the bottom of the portion to a point below the top of the bar.

2. A crate or box provided with a closed bottom and a series of spring rests or supports arranged in said bottom, each rest or support comprising a body portion and a series of fingers or teeth formed integral with said body portion and projecting inwardly therefrom above the bottom of and toward the center of the crate or box.

3. A crate or box provided with a closed bottom and a series of spring rests or supports arranged at the corners of said bottom, each rest or support comprising a body portion and a series of fingers or teeth formed integral with said body portion and projecting inwardly therefrom above the bottom and toward the center of the crate or box, in combination with a series of uprights forming the corners of the crate, each upright consisting of a solid bar extending upward from the body portion of each spring-rest and to which the transverse strips of the crate are secured and two oppositely-arranged leaf-springs projecting inward from the solid bar and formed integral therewith by first slitting the bar downward from its top to a point near its bottom and in then slitting the portion thus separated from the bottom of the portion to a point below the top of the bar.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

HOWARD H. HUGHAM.

Witnesses:

J. WALTER DOUGLASS,  
THOMAS M. SMITH.