No. 669,728

Patented Mar. 12, 1901.

J. HEAGERTY.

KNOCKDOWN CRATE.

(Application filed Dec. 19, 1900.)

(No Model.)

2 Sheets—Sheet 1.

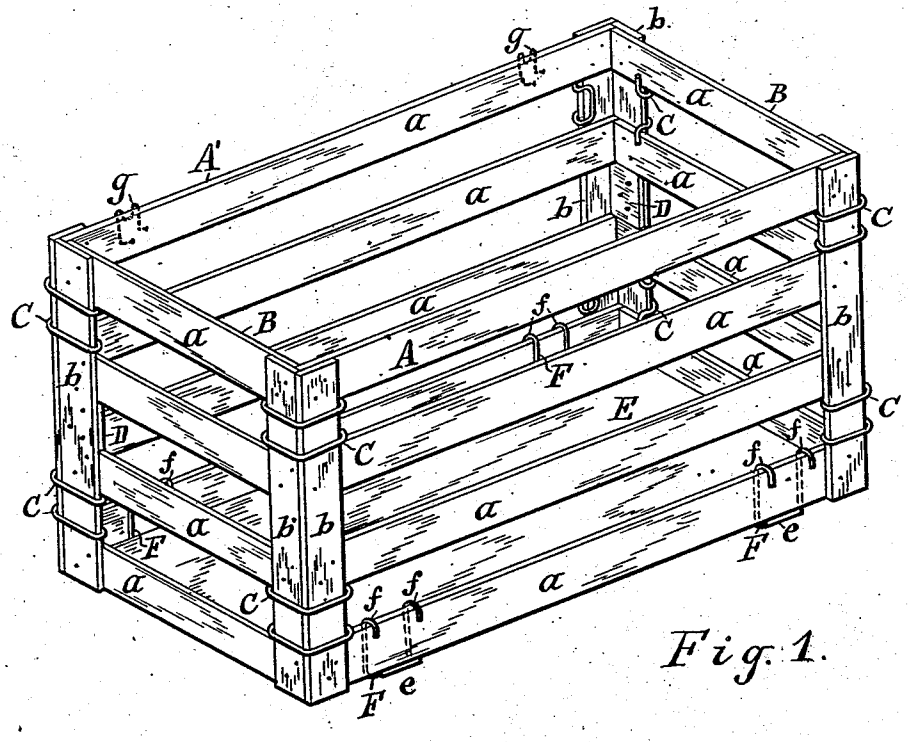

Fig. 1.

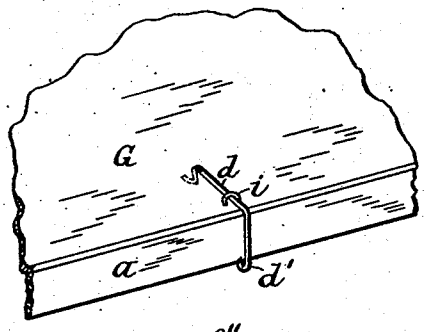

Fig. 2.

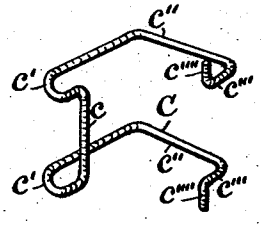

Fig. 3.

Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

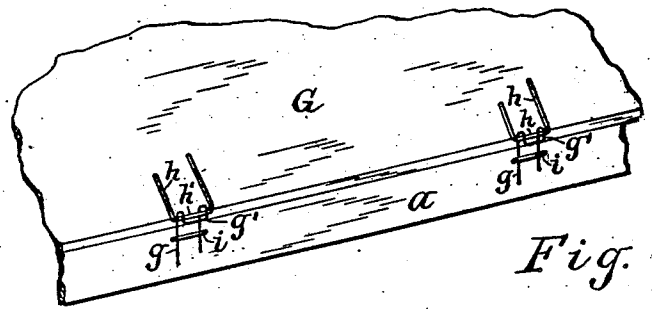
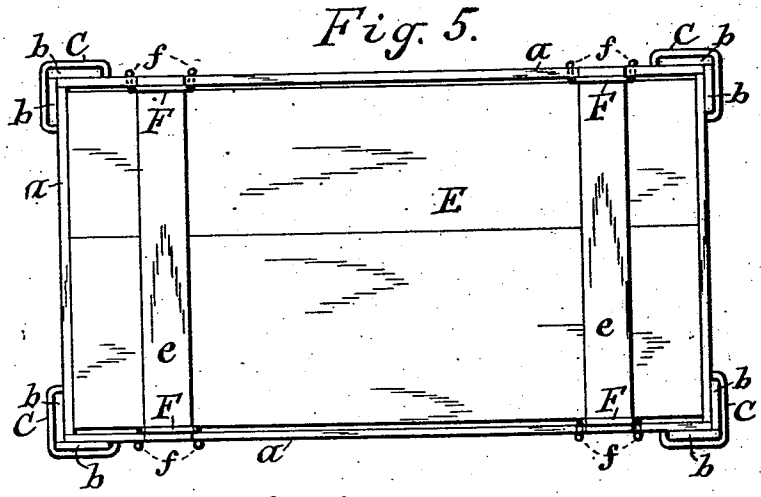


Fig. 4.

Fig. 5.



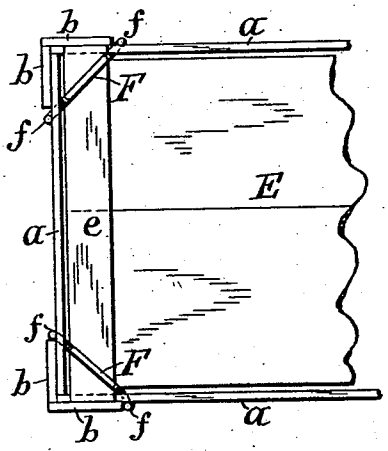


Fig. 6.

Witnesses.
A. E. Hopkins.
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Inventor.
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By Mark W. Dewey
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UNITED STATES PATENT OFFICE.

JEREMIAH HEAGERTY, OF OSWEGO, NEW YORK.

KNOCKDOWN CRATE.

SPECIFICATION forming part of Letters Patent No. 669,728, dated March 12, 1901.

Application filed December 19, 1900. Serial No. 40,376. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH HEAGERTY, of Oswego, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Knockdown Crates, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to certain improvements in knockdown crates for packing and transporting vegetables, fruits, and the like.

The object of my invention is to provide an improved knockdown crate that is light, strong, cheap, and durable and that can be easily and quickly put together or taken apart to occupy less space when empty and during transportation.

These objects are accomplished by and my invention consists in certain novel features of construction hereinafter described, but particularly in a removable resilient corner-iron, preferably formed of wire, which is adapted to hold the sides rigidly together and at right angles to each other when the crate is rectangular.

In the drawings hereto annexed and forming a part of this specification, Figure 1 is a perspective view of my invention with the cover removed. Fig. 2 is a perspective view of a fragment of the crate and crate-cover, showing the catch or fastening device thereon for holding the lid closed. Fig. 3 is a perspective view of one of the wire corner irons or clasps. Fig. 4 shows a fragment of the crate and lid with its simple wire hinges. Fig. 5 is a view of the bottom of the crate with its attaching means, and Fig. 6 shows a modification of said attaching means.

Referring specifically to the drawings, A and A' are the front and back, and B B are the ends of the crate. Each of the four sides of the crate is formed of a plurality of thin wooden horizontal slats *a*, spaced apart preferably about the width of a slat, as shown in Fig. 1 of the drawings, and secured at their ends by nails or screws to vertical or upright strips *b* on the outside. The slats *a* are so placed in relation to the strips *b* that the latter project beyond the ends of the slats *a*, and the front strips *b* lie upon the edges of the end strips *b'*. In other words, the corners are square and are matched together to form a strong rigid corner that cannot slip out of place.

At each corner the slides are held together by one or more resilient corner irons or clasps C, formed of a peculiarly-shaped iron or brass wire. In Fig. 1 two of these wire clasps are shown on each corner. An enlarged view of one of the clasps removed is shown in Fig. 3. Each clasp is formed of a single piece of wire. The wire is bent at right angles to a short vertical central portion *c*, corresponding in length to the distance between the slats *a*. It is then curved horizontally at points *c' c'*, so that the said central portion *c* will lie upon the inside of a vertical strip between the slats *a a*, and the end portions *c'' c''* pass around the corner of the crate on the outside, said end portions having each an annular shape to fit the corner. The ends *c''' c'''* of the wire are bent inward to enter between the slats on the other side of the crate, and the extremities *c'''' c''''* of the wire are bent to extend vertically in opposite directions and lie upon the inside of the horizontal slats *a a*. As the clasp is resilient and is bent so that the opposite ends are forced apart after being entered between the slats and released, the corner of the crate is securely locked together against displacement.

To still further insure against the vertical displacement of the sides of the crate at the corners, a short piece D of wood is nailed or otherwise secured to each upright of the ends on the inside between two of the slats, with one of its ends projecting outward between two of the horizontal slats of the front or rear side. These pieces being secured at each corner there is no liability whatever when a pair of corner-clasps are in position at each corner for any displacement of the parts when the crate is lifted by the ends or sides even when the crate is filled.

The bottom E is provided on its lower side at or near its ends with a pair of cleats or thin strips *e e* nailed thereto, their ends projecting beyond the sides of the bottom and lying against the lower edges of the lower horizontal slats *a a*, as shown in Figs. 1, 5, and 6.

The ends of the cleats *e e* are saddled in wire supports F, passing between the bottom and the inner sides of the lower slats, the ends *f f* of the supports being bent over to lie upon the top and outer sides of the said slats, as shown in Fig. 5. In the modification shown in Fig. 6 the cleat is secured at the end of the bottom, and the wire supports F extend diagonally across the ends of the cleat, one hooked end of the support bearing upon the slat of the front or back of the crate and the other hooked end upon the slat of the end of the crate. In order to allow the supports to pass between the slats and the bottom, the latter either should be smaller than the space between the slats or recesses should be made in the bottom board.

The cover G is secured to the top slat *a* of the back by very simple wire hinges. The hinges *g* are formed by wire staples, driven in the top slat and bent upward and having their upper ends turned over to form a hook *g'*, one leg of the staple being preferably longer than the other to insure against the splitting of the slat. The other members of the hinges are each formed of a wire *h*, bent to form a loop to engage the said hook and having their ends driven in the cover forward of the rear edge, their end portions lying upon the top side of the cover and their central portions *h'* passing under the hook *g'*. When the cover is raised and thrown back sufficiently, it may be easily detached from the hooks.

The spring catch or fastener for the front side of the lid is formed of a single piece of wire *d*, having one end passing through the cover and suitably clenched on its lower side, the other end of the wire being bent over upon the outer side of the upper slat *a* of the front and provided with a hook *d'* on its extremity to bear against the lower edge of the slat. When the lid is dropped, the hook passes over the outer side of the slat and under it automatically, and when it is desired to raise the lid the wire is pulled outward from beneath the slat.

The wire forming the hinges and catch for the cover may be of small diameter and reinforced by small wire staples *i i*, passing over and entering the lid, as indicated in the drawings, or at any other points desired.

The crate may be shaped otherwise than rectangular and more than a pair of corner-irons may be placed on a corner.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A knockdown crate, having each side formed of horizontal slats spaced apart and secured at their ends to vertical strips, and angular resilient corner-irons clasping said vertical strips at the corners of the crate and entering between the said slats, as set forth.

2. A knockdown crate having each side formed of horizontal slats spaced apart and secured at their ends to vertical strips, said strips being on the outside of said sides, and angular resilient corner-irons clasping said vertical strips at the corners of the crate and entering between the slats of two of the sides, as set forth.

3. A knockdown crate having each side formed of horizontal slats spaced apart and secured at their ends to vertical strips projecting beyond the ends of the slats and one overlapping the other at each corner to form a square and matched corner, the vertical strips being on the outer side of the slats, and resilient angular corner-irons clasping said vertical strips and entering between the slats of two of the sides, as set forth.

4. A crate having horizontal slats spaced apart on each side, a bottom inside the lower slats having cleats projecting beyond the bottom and lying against the lower edge of the said lower slats, and removable resilient wire supports for the bottom passing below the ends of the cleats and upward between the bottom and the said slats and having hooks bearing on the top edges of the lower slats, as set forth.

5. A crate having horizontal slats spaced apart on each side, a bottom inside the lower slats having cleats projecting beyond the bottom and lying against the lower edge of the said lower slats, and wire supports for the bottom passing diagonally below the ends of cleats and upward between the bottom and the said slats and having hooks bearing on the top edges of the lower slats, as set forth.

6. A knockdown crate having each side formed of horizontal slats spaced apart and secured at their ends to vertical strips, said strips being on the outside of said sides and projecting beyond the ends of the slats, angular resilient corner-irons clasping said vertical strips at the corners of the crate and entering between the slats of two of the sides, a bottom inside the lower slats having cleats projecting beyond the bottom and lying against the lower edge of the said lower slats, wire supports for the bottom passing below the ends of the cleats and upward between the bottom and the said slats and having hooks bearing on the top edges of the lower slats, a lid, hinges formed of bent staples secured to the upper rear slat, wires secured to the lid and passing rearward to the staples and bent around them, and a resilient fastening device for the front edge of the cover formed of a wire secured at one end to the top of the lid and extending forward and downward on the front side of the upper slat and provided on its free end with a hook to bear upon the lower edge of the said upper front slat, as set forth.

7. A clasp for the corner of a knockdown crate consisting of a wire having curved portions *c'*, *c'*, a distance apart and near its center, and lying in parallel planes, angular end portions substantially parallel with each

other, and ends turned inwardly and then outwardly, as and for the purpose described.

8. A resilient metal clasp for the corner of a knockdown crate consisting of a wire having a straight central portion c, curved portions c', c', lying in two parallel planes, angular portions c'', c'', inwardly-bent portions c''', c''', and outwardly-bent extremities c'''', c'''', substantially as and for the purpose described.

In testimony whereof I, JEREMIAH HEAGERTY, have hereunto signed my name.

JEREMIAH HEAGERTY. [L. S.]

Witnesses:

ED. C. SCHILLING,

WALTER SIMMONS.