

(No Model.)

A. PHELPS.
KNOCKDOWN CRATE.

No. 564,713.

Patented July 28, 1896.

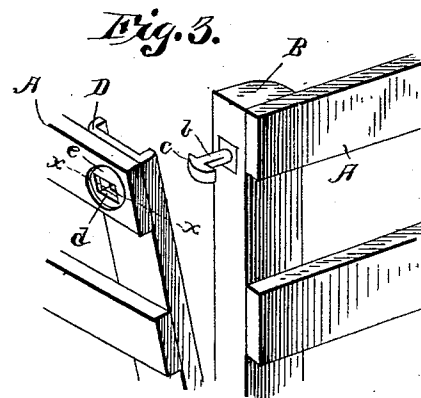
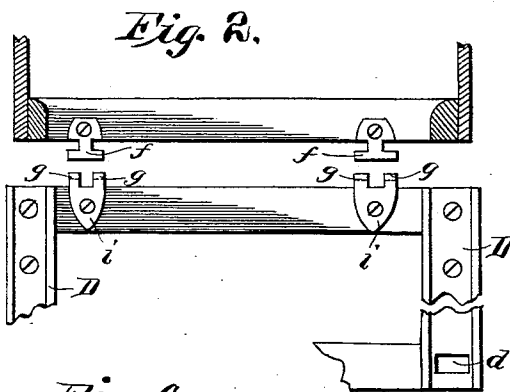
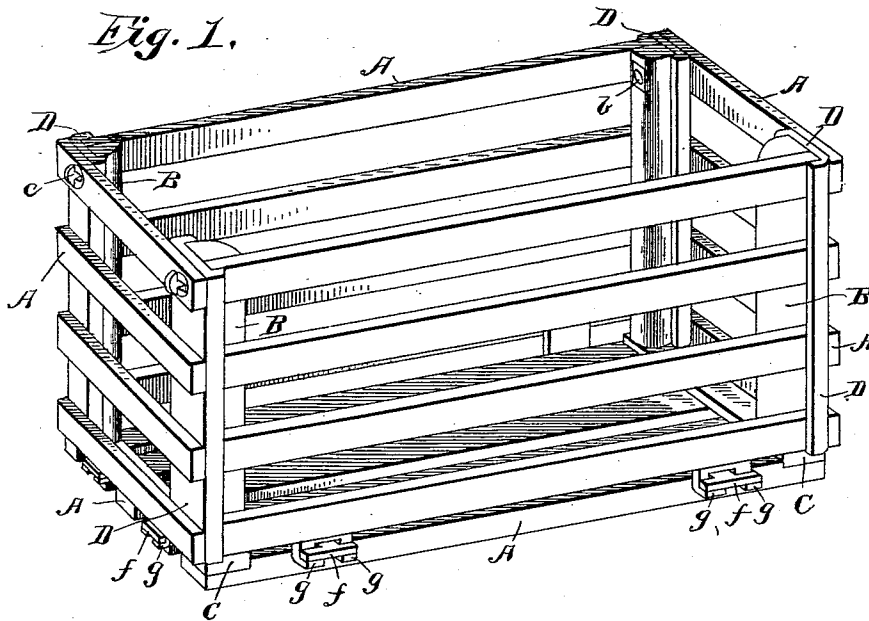


Fig. 6.

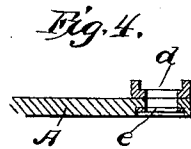
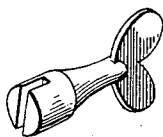
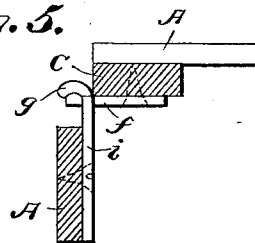


Fig. 5.



WITNESSES

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KNOCKDOWN CRATE.

SPECIFICATION forming part of Letters Patent No. 564,713, dated July 28, 1896.

Application filed May 16, 1895. Serial No. 549,530. (No model.)

To all whom it may concern:

Be it known that I, ADELBERT PHELPS, a citizen of the United States, residing at Solon, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Knockdown Crates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to that class of articles known as "knockdown crates," and has for its object to simplify and improve the construction of such devices by providing a more secure and convenient means of attaching and locking the different sections together; and it consists in the several details of construction and arrangement of parts hereinafter fully described, and more particularly pointed out in the claim.

Referring to the accompanying drawings, Figure 1 is a perspective view of a crate embodying my improvements. Fig. 2 is a plan view of the separable hinges for connecting the lower edges of the sides and ends of the bottom of the crate. Fig. 3 shows the locking device for securing the upper edges of the sides and ends together. Fig. 4 is a sectional view of Fig. 3 on the line *x x*. Fig. 5 is a side view of the separable hinges, and Fig. 6 is a perspective view of a key adapted to operate the locking devices of the crate.

Similar letters of reference indicate corresponding parts in the several figures of the drawings.

A represents the slats on the sides, ends, and bottom of the crate. The two sides of the crate are each formed of a series of slats which are secured to anchor-posts B. Each of these posts is provided near its upper end with a projecting pin *b*, which is suitably secured in the post, but is free to be turned therein. Each of these pins is provided at its projecting end with a flattened or elongated head *c*.

The bottom of the crate is formed of a series of slats A, which are secured to cross-pieces C, upon which the posts B of the side

sections rest when the sides and the bottom are secured together. At each end and side of the bottom of the crate there are projecting T-shaped plates *f*, which are suitably secured to the slats A or the cross-pieces C of the bottom. As shown in the drawings, two of these plates *f* are secured at each edge of the bottom, but it is obvious that more or less of them may be used as desired in increasing or decreasing the strength of a crate.

The ends of the crate are formed of a series of slats secured to double-flanged metal plates D. The upper ends of these plates are provided with an elongated opening *d*, which opening is also extended through the upper slat A of the end section of the crate, and a metal scutcheon *e* is sunk beneath the surface of the slat within the outer opening to form a bearing for the head *c* of the pin, which rests in the countersink and is substantially flush with the surface of the slat.

On the lower slats of each of the side and end sections of the crate there are secured plates *i*, provided with two projecting hooks *g*, which fit over the heads of the T-shaped plates *f*, and thereby form a series of separable hinges to connect the lower edges of the side and end sections of the crate to the bottom. It is obvious that the flanged plates D may be used with the side sections and the angle-posts B with the end sections of the crate, and I therefore reserve the right to use them in either position.

In setting up or placing the different sections of the crate together the sides are first hinged to the bottom by laying the two pieces down on the same plane with the bottom and then fixing the hooks *g* over the heads of the plates *f*, and then the sides are raised to a vertical position, with the posts B resting on the cross-pieces C. The end sections of the crate are then hinged to the bottom in the same manner that the side pieces were, and are brought to a vertical position, the heads *c* of the pins being turned to the proper position to enable them to pass through the elongated opening *d* in the plate D, when they will be embraced by the scutcheons *e*, let into a recess around the outer openings of the slats, as shown in Figs. 3 and 4, and when the heads *c* of the pins are turned across the

opening on the scutcheon the sides and ends will be locked firmly together with the post B and ends of the side slats A, seated within the flanged metal plates D, thereby holding the sides and ends in a rigid vertical position. As a means for conveniently turning the heads *c* of the pins after they have passed through the opening, I use a key such as is shown in Fig. 5, or some equivalent device.

- 10 In taking the crate down it is only necessary to turn the pins *b*, so that their heads *c* can be withdrawn through the openings, when the ends and sides may be dropped down on a plane with the bottom and unhinged. When
15 the different sections are separated from each other, the ends and bottom can be laid flat one upon the other and secured together, and thereby greatly reduce the expense of shipment.
20 These crates, as illustrated in the drawings, may be used for shipping potatoes, cabbage, onions, and other vegetables, and, with proper packing appliances placed within the crate, they may be used for shipping eggs, berries,
25 and such other articles as require greater care to prevent breakage or bruising.

Having thus fully described my invention,

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

A knockdown slatted crate having a series of T-shaped plates secured to its bottom at its sides and ends, a series of double hooks secured to the lower edges of the side and end pieces to engage the T-shaped plates and form separable hinges, the end pieces having scutcheons sunk beneath the surface of the upper slats and double-flanged plates secured to the slats, elongated openings through the plates, slats and scutcheons, locking-pins rotatably secured in the posts of the side pieces, said pins having elongated heads to pass through the openings in the said plates, slats and scutcheons and to be substantially flush with the outer surface of the slats, said pins being adapted to be turned across the opening on the scutcheon with a key to lock the side and end pieces together, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ADELBERT PHELPS.

Witnesses:

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F. J. PECK.