(No Model.)

J. J. HERBERT.

KNOCKDOWN BOX OR CRATE.

No. 514,367. Patented Feb. 6, 1894.

Fig. 1.

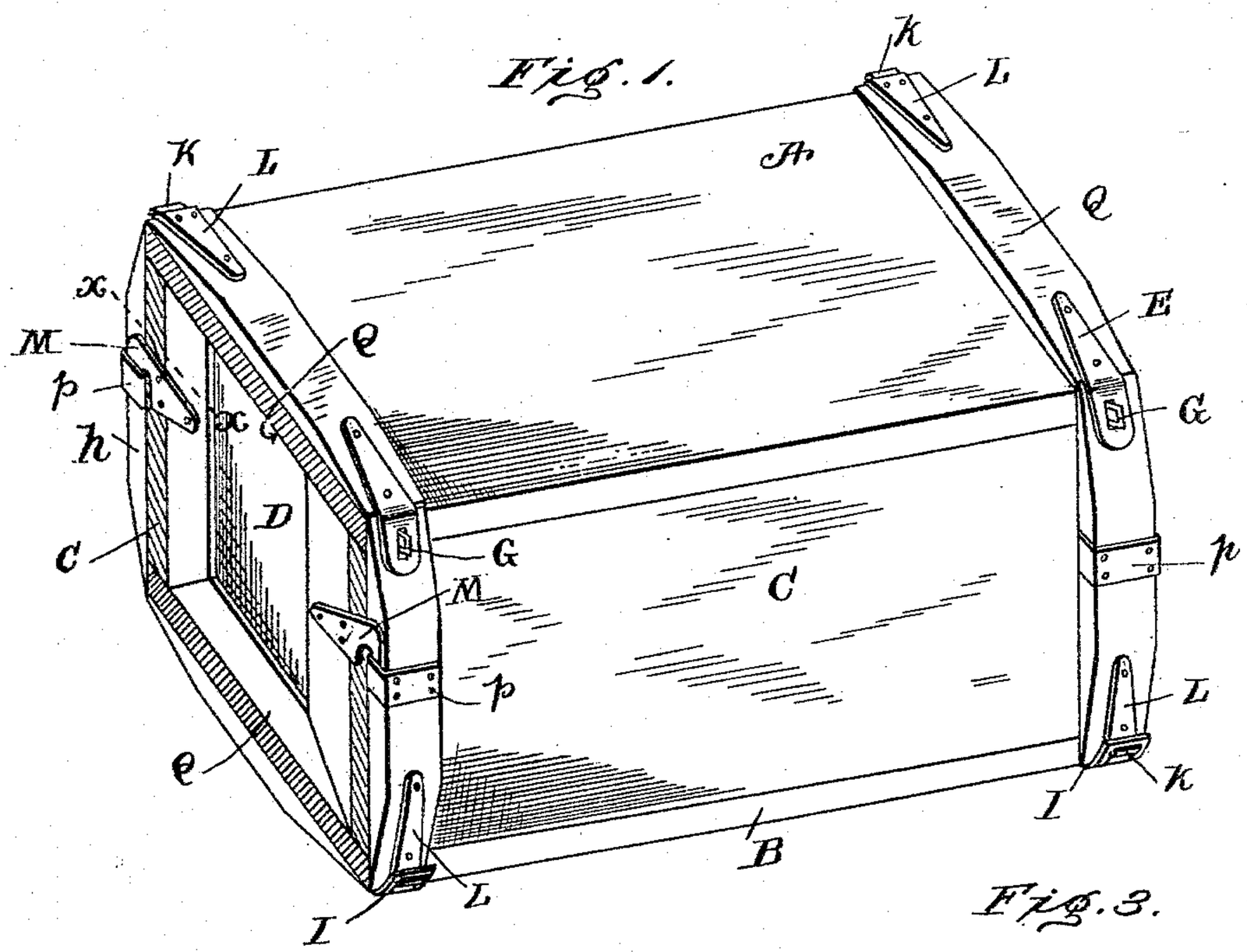
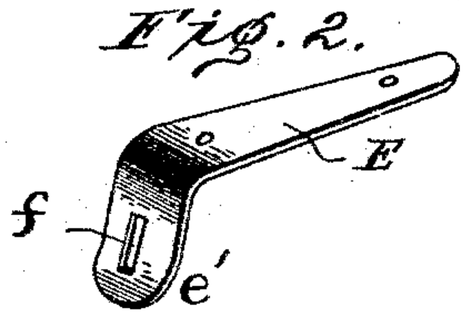


Fig. 3.

Fig. 2.



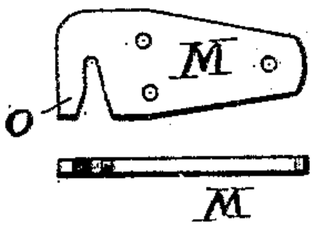


Fig. 4.

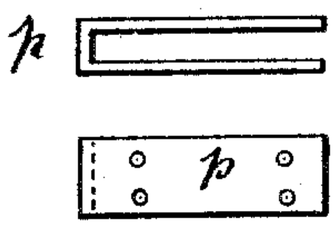


Fig. 5.

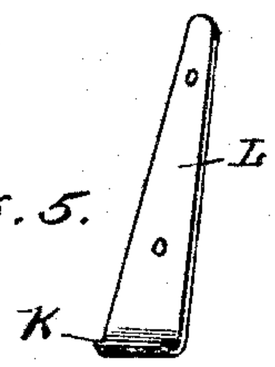


Fig. 6.

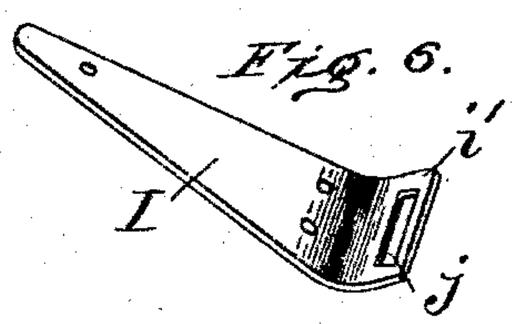
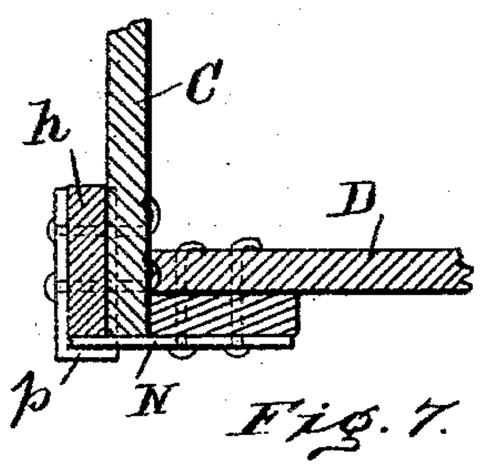


Fig. 7.



WITNESSES

C. D. Kesler.

C. E. Hunt.

INVENTOR

John J. Herbert.

By

John J. Halsted & Son Attorneys

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN J. HERBERT, OF CHATTANOOGA, TENNESSEE.

KNOCKDOWN BOX OR CRATE.

SPECIFICATION forming part of Letters Patent No. 514,367, dated February 6, 1894.

Application filed March 1, 1893. Serial No. 464,265. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. HERBERT, of Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Knockdown Boxes or Crates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to certain improvements in knock-down packing cases and crates, and to the automatic metallic fastening devices which hold the several parts of the same together.

The object of the invention is to provide an improved construction of cases and crates such that they can be readily and easily put together when they are to be used, and readily and easily taken apart again and the several pieces compactly laid together for storage, or for reshipping at low rates to points where they are again to be used.

The particular object of my invention is to provide improved fastening devices, the two parts of each and all of which shall in their shape be in some form of a hook and eye, shall be rigidly attached to their respective parts of the box or crate, and shall be simple in construction and strong and durable.

In the drawings, Figure 1. shows sufficient of a box to admit of illustrating my invention, and having my novel features applied thereto. Fig. 2. shows one of the top fasteners detached and enlarged; Fig. 3. an elevation and an edge view of one of the middle hooks; Fig. 4. a plan view and elevation of a staple employed with such middle hooks; Fig. 5. one of the bottom hooks; and Fig. 6. one of the eyes for such hooks, these top, bottom and middle fasteners jointly serving to hold the parts of the box together; and Fig. 7. a detail (enlarged) through the line *x. x.* of Fig. 1.

A. indicates the top, B. the bottom, C. the sides, and D. one of the ends of a box on which my improvements are shown. On the upper face of the top, at each corner I permanently secure an angled clasp E. the free end *e'* of which extends down far enough by and beyond the front edge of the top to have its eye *f.* adapted to receive the bow or bend of a staple G. secured in the side C. of the box. The free end *e'* by reason of its length and being made of proper thickness can readily spring out far enough to permit it to ride over the staple G. and then spring back and into engagement with the staple, thus taking a secure hold, and is held secure in position by any nail or suitable wedge passed through the eye of the staple.

On the bottom B. I secure permanently a metal plate or strip I. whose projecting end is upturned as shown at *i'*, and furnished with an eye or opening *j.* to receive an arched hook *k.* on a plate L. one of which plates is severally and permanently fastened to the sides of the box at each lower corner. The arched hooks allow the sides to be instantly connected to the bottom by first engaging the hooks in the eyes *j.* and then raising the sides from a horizontal to a vertical position shown in the drawings, thus bringing the lower edges of the sides closely and tightly against the upper face of the bottom, making a good firm joint.

M. represents a metal hook permanently secured to the end D. of the box and projecting far enough beyond the face of said end to admit of the downwardly projecting hooks *o* to engage a U shaped metallic staple *p*, the two projecting parts of which are placed on either side of the vertical cleat *h*, and securely fastened to the side C. When the sides are swung up into vertical position, the box ends D. being severally held vertically in one's hand so that the hooks M. shall be over the eyes of the staples or folded pieces *p.*, these ends are dropped or pushed down to their places, and thus these hooks not only engage and interlock with the projecting eyes or loops of pieces *p.*, but the inclined edges of these hooks serve during the pushing down, to gradually draw the box sides closer and closer to make a good joint or connection with the ends D. The box is then ready for turning down the top or cover, and for securing

the same to the side as above described by means of the angled spring clasp E. *e'*. and its staple.

The swinging top A. of the box is attached to the back of the box in a manner and by fastenings such as I and L precisely like those by which the sides are attached to the bottom of the box; these fastenings thus serving as hinges to allow the top to be swung up and down like a hinged lid. It will be seen that when the box is set up, and the top fastened on, the hooks *o* and staples *p* cannot disconnect, and these ends are thus firmly held to the sides, and the sides held in position.

Suitable cleats Q may be fixed to the top A. and to the bottom B. at their outer ends, and just above and below the cleats on the ends D. in such a manner that the top and bottom edges of the ends D. may lodge behind them and may be prevented from being pressed outward.

The strength, simplicity, efficiency and facility of setting up and taking apart such a crate or box will now be apparent. Every part of the differently described fastenings being firmly and fixedly secured, there is nothing to get out of order, or to get displaced after or before the box is set up.

It will of course be understood that the described fastenings are to be similarly applied respectively to each of the sides and ends, and to each of the two opposite edges of the top and bottom, in the manner above stated. The number of these fastenings upon a box may be as many as may be required.

My invention is applicable to packing cases, crates, coops, trunks and chests of all kinds, and for all purposes.

The special form of any of the hook and eye fastenings may be changed to suit any special or peculiar position or purpose, but in all cases, the hook and eye principle must be retained.

I claim—

1. In combination with the cleats secured to the box sides and extending cross-wise of the same, the U-shaped flat pieces clasping and secured to the opposite sides of these cleats and having their bent or retroverted ends projecting beyond the cleats to form an eye, and the fixed rigid hooks M. *o*. on the box ends adapted to engage such bends to tighten the box sides closely when the hooks are pushed down into these bends or loops, all as shown and described.

2. In combination with the cleats *h*. on the box sides and transverse to the length of the box and having their outer face inclined toward their ends, the hooks M. *o*. the loops *p*. clasped to said cleats, the fixed spring hooks E. on the box, adapted to be pushed down upon and to tighten on such inclines, and the parts L. and I, all as and for the purposes set forth.

3. The described knock-down box or crate having in combination the angled spring clasps secured to and projecting beyond the top, the staples G. on the sides to engage therewith, the pieces I. secured to the bottom and having the upturned projection *i'*. provided with an eye, the hooked plates L, the ends provided with fixed hooks M, and the sides provided with the pieces *p*. to engage such hooks when the ends are applied and pushed down, all as and for the purposes set forth.

JOHN J. HERBERT.

Witnesses:
J. L. TREECE,
R. A. MANTLEY.