(No Model.)

# O. P. RETNOUR.

## BOX CLAMP OR FASTENING.

No. 260,608. Patented July 4, 1882.

Fig. 1.

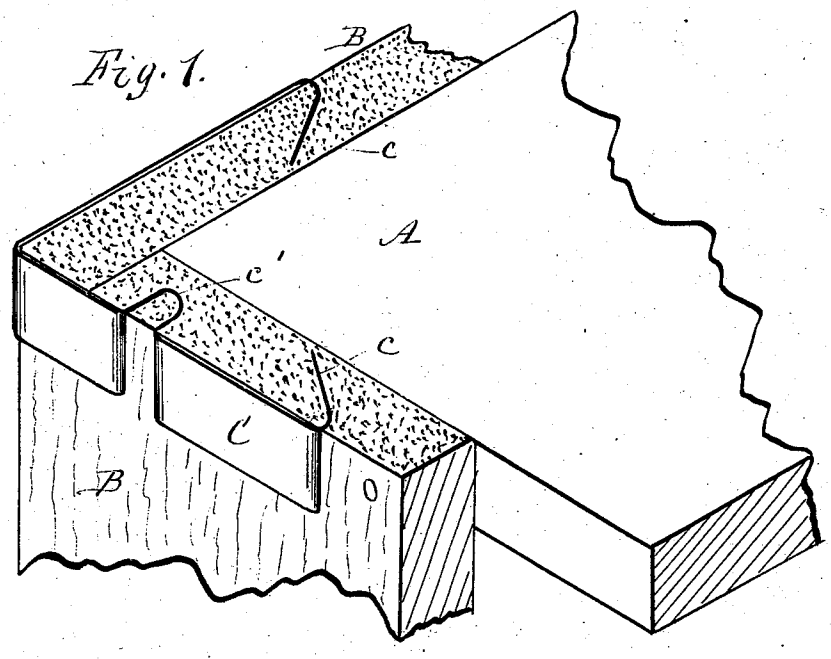



Fig. 2.

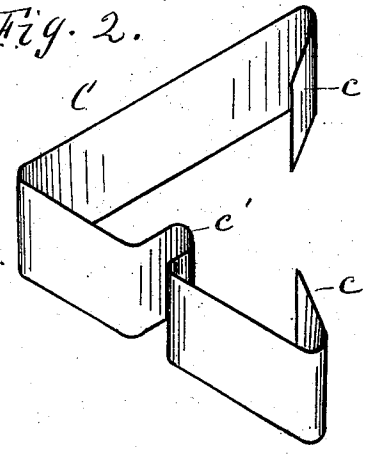
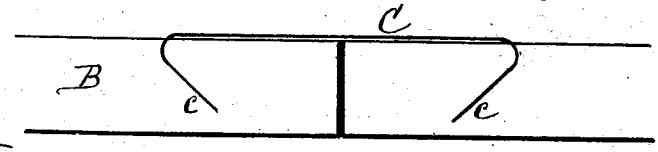



Fig. 3.




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# UNITED STATES PATENT OFFICE.

OLIVER P. RETNOUR, OF ROCHESTER, NEW YORK, ASSIGNOR TO THOMAS H. GROVES, OF SAME PLACE.

## BOX CLAMP OR FASTENING.

SPECIFICATION forming part of Letters Patent No. 260,608, dated July 4, 1882.

Application filed March 27, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER P. RETNOUR, of Rochester, Monroe county, New York, have invented a certain new and useful Improvement in Box-Clamps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of one corner of a packing-box, showing my improvement applied thereto. Fig. 2 is a perspective view of the clamp. Fig. 3 is a modification.

Ordinary packing-boxes consist of two end boards, to which the side, top, and bottom boards are nailed, the ends of the latter projecting over the edges of the end boards and resting flush with the outer surfaces. As the parts are simply held by nails, they are very liable to get loose, especially in heavy-laden boxes. It has been common to strap them with iron nailed around the corners, but this is expensive and requires considerable labor.

To remedy the difficulty, my invention consists of a clamp made of very thin and stiff strap metal provided with bent hooks or claws, which is driven edgewise into the projecting ends of the wood, and follows the grain of the wood, as hereinafter more fully described.

In the drawings, A indicates one of the end boards of the box, and B B are the side boards, which are nailed to the end board in the ordinary way, the grain of the side boards in this case running up and down, and being cut square off and exposed at the top.

C is the clamp or fastening device. It is made of very thin strap or band steel or other suitable metal. It is cut off in proper lengths, and the ends are bent or turned in proper shape to form hooks or claws *c c*. In Figs. 1 and 2 the clamp is shown of right-angled form and adapted to fit the corner of a box. In Fig. 3 it is made in a straight length with the hooks or claws at its ends, and is adapted to fit the straight side of the box and inclose a split or check in the wood. It is a necessary condition that in whatever form the clamp is bent the claws, as well as the main body of the device, shall present a vertical edge to the wood, and the whole width shall be in vertical line, so that it can be easily driven into the wood. Where it is used as a corner-clamp, as in Figs. 1 and 2, one or more intermediate hooks or bends, *c'*, are made near the corner, standing inward.

In use the hooks or claws *c c c'* are placed on top of the ends of the side boards, resting on the end of the grain of the wood, the body of the clamp resting outside of the boards, and the clamp is then driven down into the wood by a hammer or other suitable instrument. The claws or hooks only are embedded in the wood forming the holders, the body of the clamp resting outside and forming the supporter. No nails or other fastening devices are necessary to secure the clamp after it is driven in place.

It will be noticed that the edges of the hooks or claws are placed on top of the grain of the wood, and when driven in they follow the grain endwise. The hooks can therefore be placed across the thickness of the wood and be driven in place without trouble, which could not be the case if placed on the side of the grain, as they would in that case cross the grain. It is requisite, in this invention, that the metal shall be very hard and stiff, to resist driving; that it shall be very thin, to cut its way into the wood; and, as before stated, that all the parts shall be true, vertically, so as to follow its way in. These features distinguish it from ordinary strapping devices, as they enable the clamp to be at once driven into the wood and be self-retaining, while common straps have to be bent around the box at the time of applying and be nailed in place. When once in place the clamp binds the wood and prevents any spreading.

When the clamp is made in right-angled form to fit the corner of a box, a special advantage results from the use of the intermediate hook or bend, *c'*. In starting the clamp into the wood this hook is first started in by a slight blow of a hammer. This secures the central part of the clamp to the wood, so that it will not spring off in the subsequent driving of the outer ends of the clamp, and it keeps the body of the clamp close up to the sides of the wood.

Having thus described my invention, I do

not claim stiff angle-irons driven into slots formed for them, as shown in the patent to Duryea, September 11, 1860; but

I claim—

A box-clamp of thin strap or sheet metal, having end hooks or claws, and one or more intermediate hooks or claws near the center for starting the central portion of the clamp into the wood and holding it in place while being driven, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

OLIVER P. RETNOUR.

Witnesses:
R. F. OSGOOD,
H. E. SHAFFER.