(No Model.)

# J. BENEDICT.

## FURNITURE CLAMP.

No. 462,888. Patented Nov. 10, 1891.

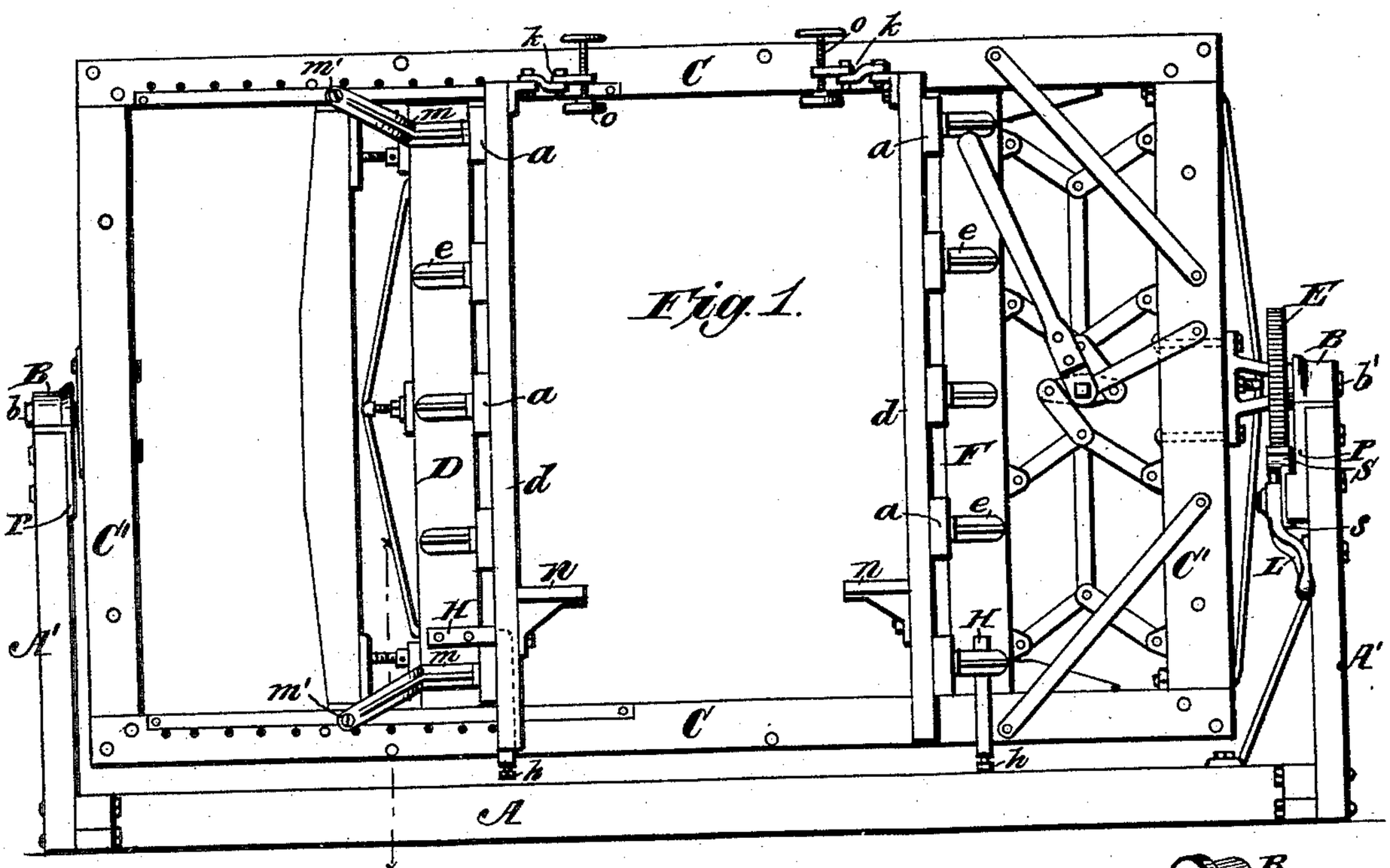

Fig. 1.

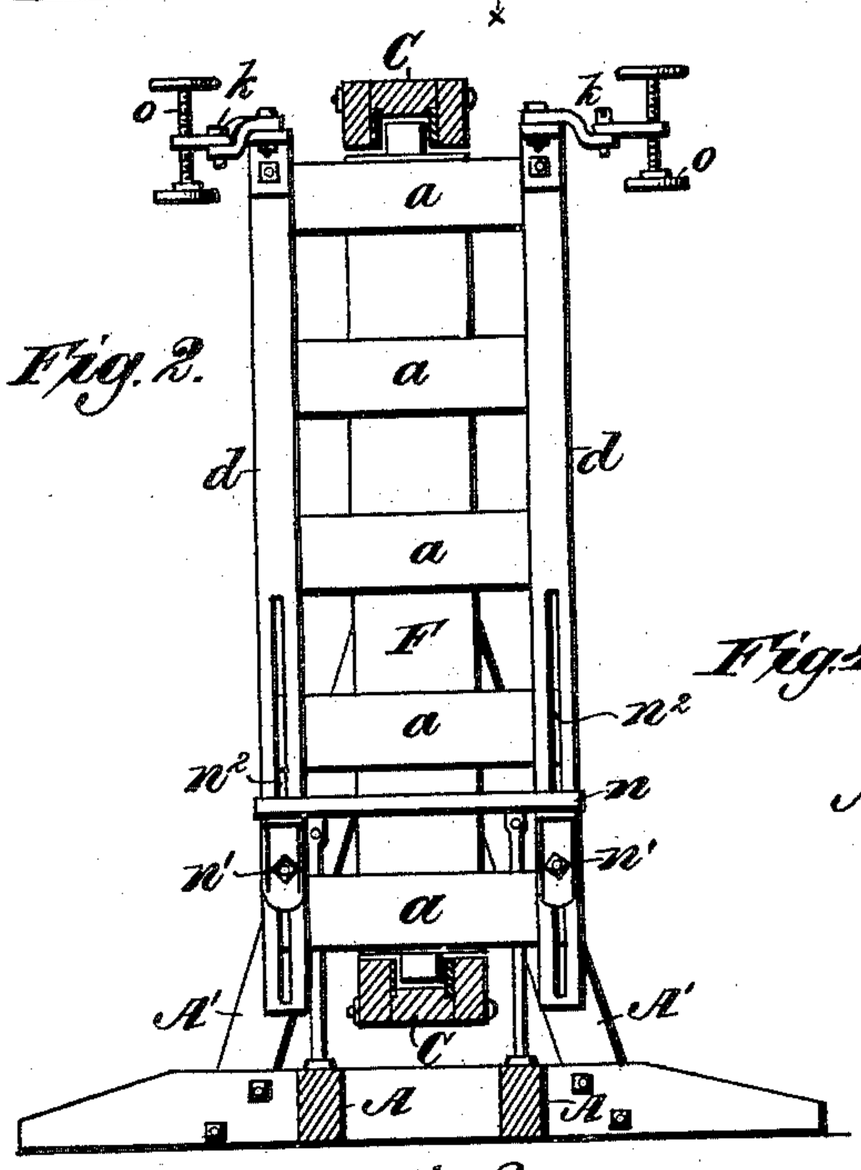

Fig. 2.

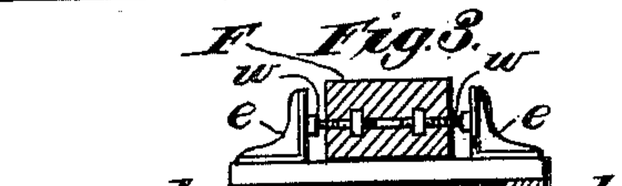

Fig. 3.

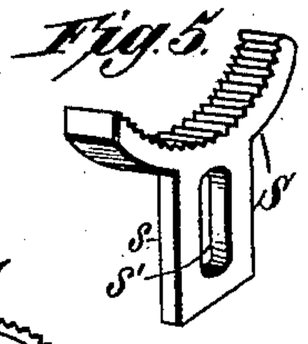

Fig. 5.

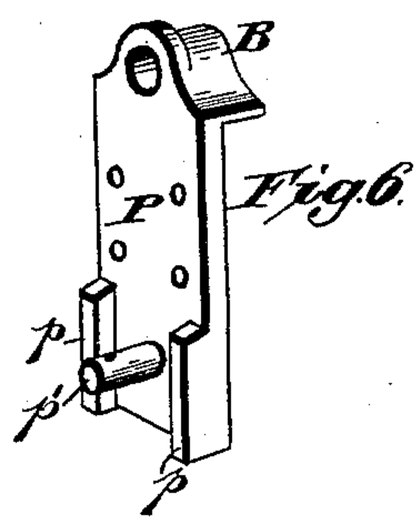

Fig. 6.

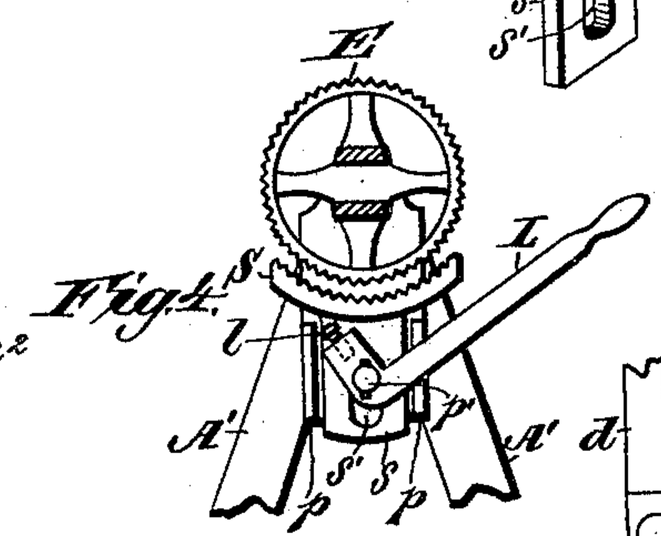

Fig. 4.

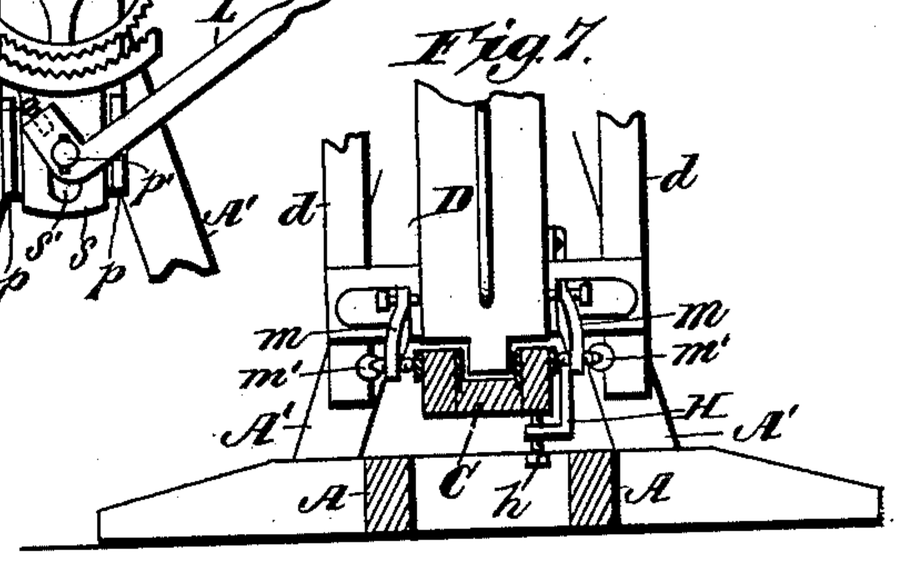

Fig. 7.

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# UNITED STATES PATENT OFFICE.

JACOB BENEDICT, OF GRAND RAPIDS, MICHIGAN.

## FURNITURE-CLAMP.

SPECIFICATION forming part of Letters Patent No. 462,888, dated November 10, 1891.

Application filed December 6, 1890. Serial No. 373,806. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB BENEDICT, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Furniture-Clamps, of which the following is a specification.

My invention relates to improvements in clamps for use in the construction of furniture and similar articles; and its particular object is to hold an article of furniture firmly clamped while the same is being put together and at the same time permit it to be revolved so that any part may be accessible to the workman. This object I accomplish by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a side plan view of my invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 shows in detail the means for squaring the clamping-frames. Fig. 4 is an end view from the inside of the brake-wheel and attached parts; Fig. 5, a detail of the brake-shoe, Fig. 6 of the plate carrying the wheel and shoe, and Fig. 7 a cross-section of the lower part of the machine through line $x\ x$ of Fig. 1.

Similar letters refer to similar parts in the different views.

A A is the base resting upon the floor, consisting of the longitudinal rails shown in Fig. 1 and in cross-section in Figs. 2 and 7 and the cross-pieces shown in the two latter figures. At each end of this base-frame are erected braces A′ A′, each pair of which carries at its top a bearing-box B B for the journals $b\ b'$. These journals are rigidly attached to and thus support upon the braces and allow to revolve thereon the revolving frame composed of the top and bottom rails C C and uprights C′ C′. These rails are constructed, as shown in Figs. 2 and 7, of three pieces glued or bolted together, having a slot or channel in which the ends of the sliding parts may travel. Within this frame and sliding therein are the follower F, with its actuating mechanism, and the back-piece D, suitably trussed and supported and adjustable within the frame to and from the follower. The general construction and operation of this part of my device is substantially like my Patent No. 427,035, dated May 6, 1890, upon which this is an improvement and is therefore not more particularly described.

Attached to the journal $b'$, so as to revolve with it, is the brake-wheel E. The journal-box B at this end of the machine is cast integral with a plate P, as shown in Fig. 6, extending down the inside of the braces A′ A′. This plate has flanges $p\ p$ and a pin $p'$, as shown in Fig. 6, the pin forming a journal-fulcrum for the brake-lever, and the flanges forming guides for the brake-shoe S when the parts are assembled, as in Fig. 4. This shoe is made in the form illustrated in Fig. 5, with the downwardly-projecting flange $s$, having slot $s'$, through which slot the pin $p'$ is passed, and the shoe may thus be raised or lowered within the guides $p\ p$. The exterior surface of the wheel E and the adjacent bearing-surface of the shoe S may, if desired, be correspondingly roughened or toothed, so as more perfectly to lock together, though the friction between smooth surfaces will usually be sufficient.

The brake-lever L is a bent lever fulcrumed upon the pin $p'$ as a journal, and as is evident from Fig. 4 operates to force the shoe into close contact with the wheel, thus holding the wheel and shaft, and consequently the entire revolving frame, in any desired position. For the purpose of adjustment and taking up any wear there may be I insert the set-screw $l$ at that part of the lever which bears against the shoe.

Attached transversely to the inner sides of the back piece and follower, respectively, are the cross-bars $a\ a$, having at their ends uprights $d\ d$. These together form the clamping-frame which seizes and holds the article being worked upon. It is of great importance that this be maintained square, and to do this and to adjust to compensate for the shrinking or swelling of the wood I support the cross-bars $a\ a$ by braces $e\ e$, rigidly attached thereto and resting against the heads $w\ w$ of the bolts in the sides of the back piece and follower, as shown in Fig. 3. These bolts are screw-threaded and turn in nuts let into the wood, as shown, so that a turn of the bolt will throw the clamping-frame one way or the other, as may be required. For further securing the same purpose the back piece or

follower (the former as shown) has on each side at top and bottom bent braces *m m*, constructed in the form shown, and having at their ends set-screws *m' m'*, which bear against the sides of the top and bottom rails, and therefore permit a slight rocking adjustment of the back piece if it becomes at all loose and prevent it from twisting.

To the back piece and to the follower I attach hooks H H, extending down and turning under the bottom rail and adjusted by set-screws *h h*. These prevent the bottom rail from springing away and the set-screws allow for shrinking and swelling.

To maintain and clamp the work in position vertically I provide the vertically-adjustable supports *n n*, held in position by the set-bolts *n' n'* passing through and adjustable in slots $n^2$ $n^2$ in the uprights *d*. Near the top of the uprights I attach the swinging clamping-screws *o o*, each operated by the attached hand-wheel and having at its lower end a bearing-block. These screws swing on a double joint *k k*, so that they will move in any direction and reach and clamp down any part of the top of the piece of furniture.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

1. In a revolving clamp, the combination of the supporting-frame and the revolving clamping-frame, the latter containing the follower moving therein, and its actuating mechanism for clamping the work, and the back piece carried by and adjustable in the revolving clamping-frame for holding the work against the pressure exerted by the follower, substantially as described.

2. In a revolving clamp, the combination of the supporting-frame, the revolving clamping-frame containing the clamping mechanism, the brake-wheel, the shoe, and means for forcing the shoe into contact with the brake-wheel and thus holding the revolving frame in any position, substantially as described.

3. In a revolving clamp, the combination of the supporting-frame, the revolving clamping-frame containing the clamping mechanism, the brake-wheel, the shoe, the plate having guides for the shoe and a fulcrum-bearing for the lever, and the lever for raising the shoe, substantially as described.

4. In a revolving clamp, the combination of the supporting-frame, the revolving clamping-frame containing the clamping mechanism, the brake-wheel, the shoe, and the brake-lever for raising the shoe, the lever having inserted therein an adjustable set-screw to bear against the shoe, substantially as described.

5. In a revolving clamp, the combination of the supporting-frame, the revolving clamping-frame containing the clamping mechanism, the brake-wheel, the shoe, each with correspondingly roughened or toothed surfaces for locking together, and means for forcing the shoe into contact with the brake-wheel and thus holding the revolving frame in any position, substantially as described.

6. In a revolving clamp, the combination of the supporting-frame and the revolving clamping-frame, the latter containing the follower moving therein, and its actuating mechanism for clamping the work, and the back piece adjustable therein for holding the work against the pressure exerted by the follower, and the vertically-adjustable supports *n n* for holding the bottom of the work, substantially as described.

7. In a revolving clamp, the combination of the supporting-frame and the revolving clamping-frame, the latter containing the follower moving therein, and its actuating mechanism for clamping the work, and the back piece, adjustable therein for holding the work against the pressure exerted by the follower, the vertically-adjustable supports *n n* for holding the bottom of the work, and the swinging screw-clamps for holding down the top, substantially as described.

8. In a revolving clamp, the combination of the supporting-frame and the revolving clamping-frame, the latter having the follower moving within it, and the back piece adjustable therein, with the hook H extending beneath the bottom rail, and the set-screw for adjusting it, substantially as described.

9. In a revolving clamp, the combination of the supporting-frame and the revolving clamping-frame, the latter having the follower moving within it, and the back piece adjustable therein, with the braces *m m*, and their set-screws for adjusting and holding the back piece, substantially as described.

10. In a revolving clamp, the combination of the supporting-frame and the revolving clamping-frame, the latter having the follower moving within it and the back piece adjustable therein, with the cross-bars *a a*, and the braces *e e*, attached to such cross-bars and adjusted by the set-bolts *w w*, substantially as described.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

JACOB BENEDICT. [L. S.]

Witnesses:
ARTHUR C. DENISON,
HARRY R. VAN WAGNER.