

(No Model.)

3 Sheets—Sheet 1.

R. D. WOODFORD & G. C. RAYMOND.
SHAPING MACHINE.

No. 445,617.

Patented Feb. 3, 1891.

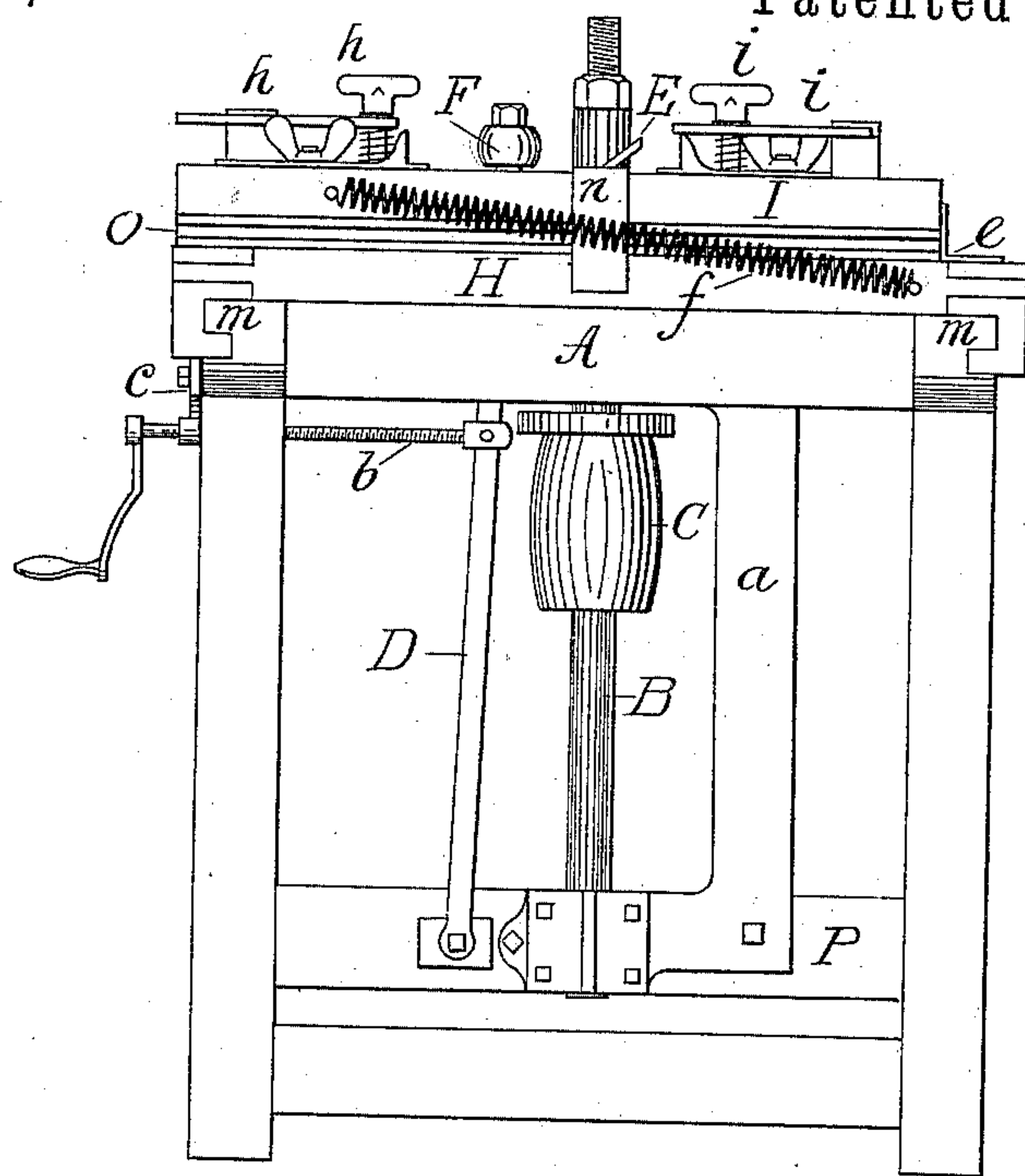


Fig. 1.

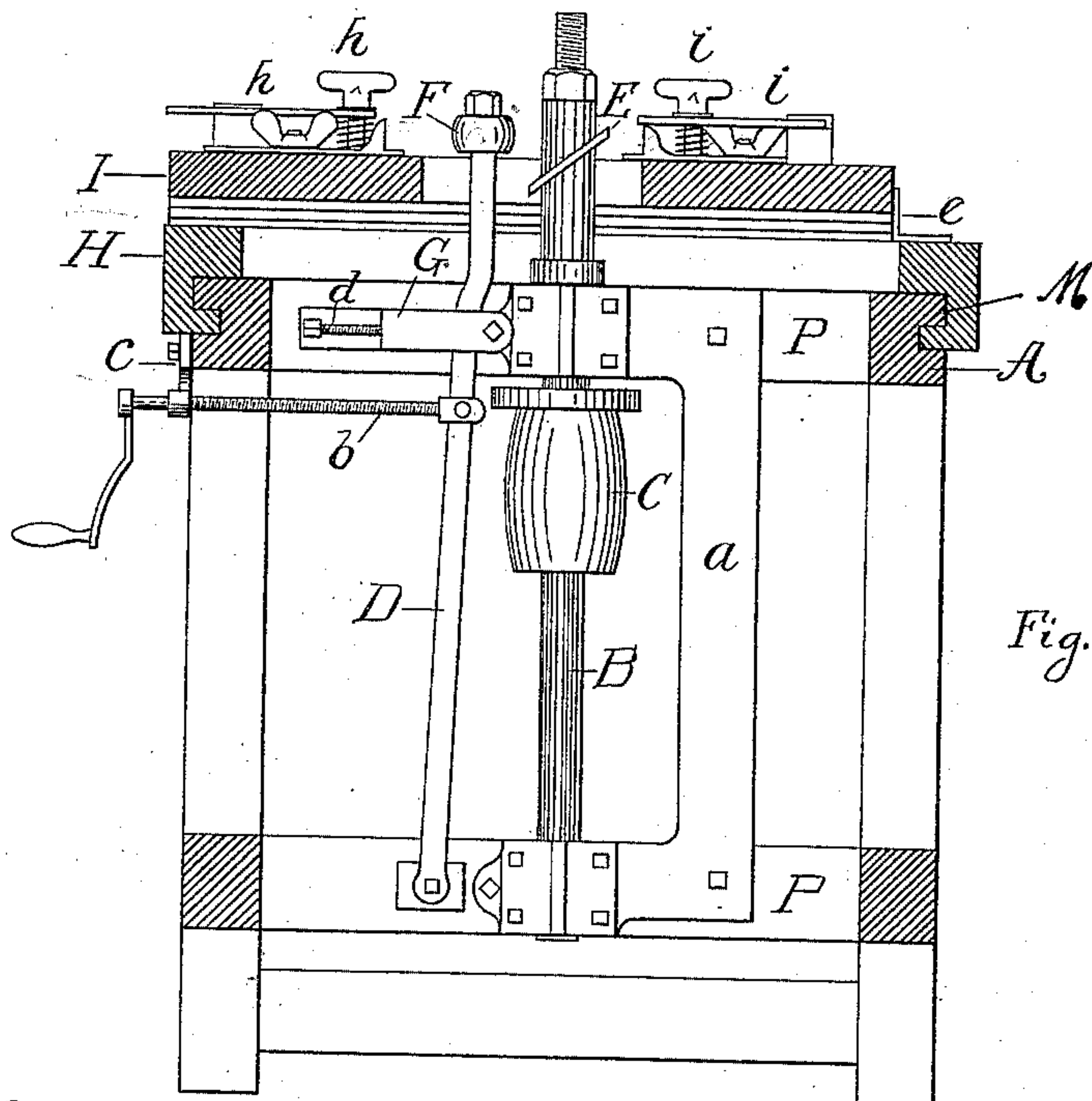


Fig. 2.

Witnesses.

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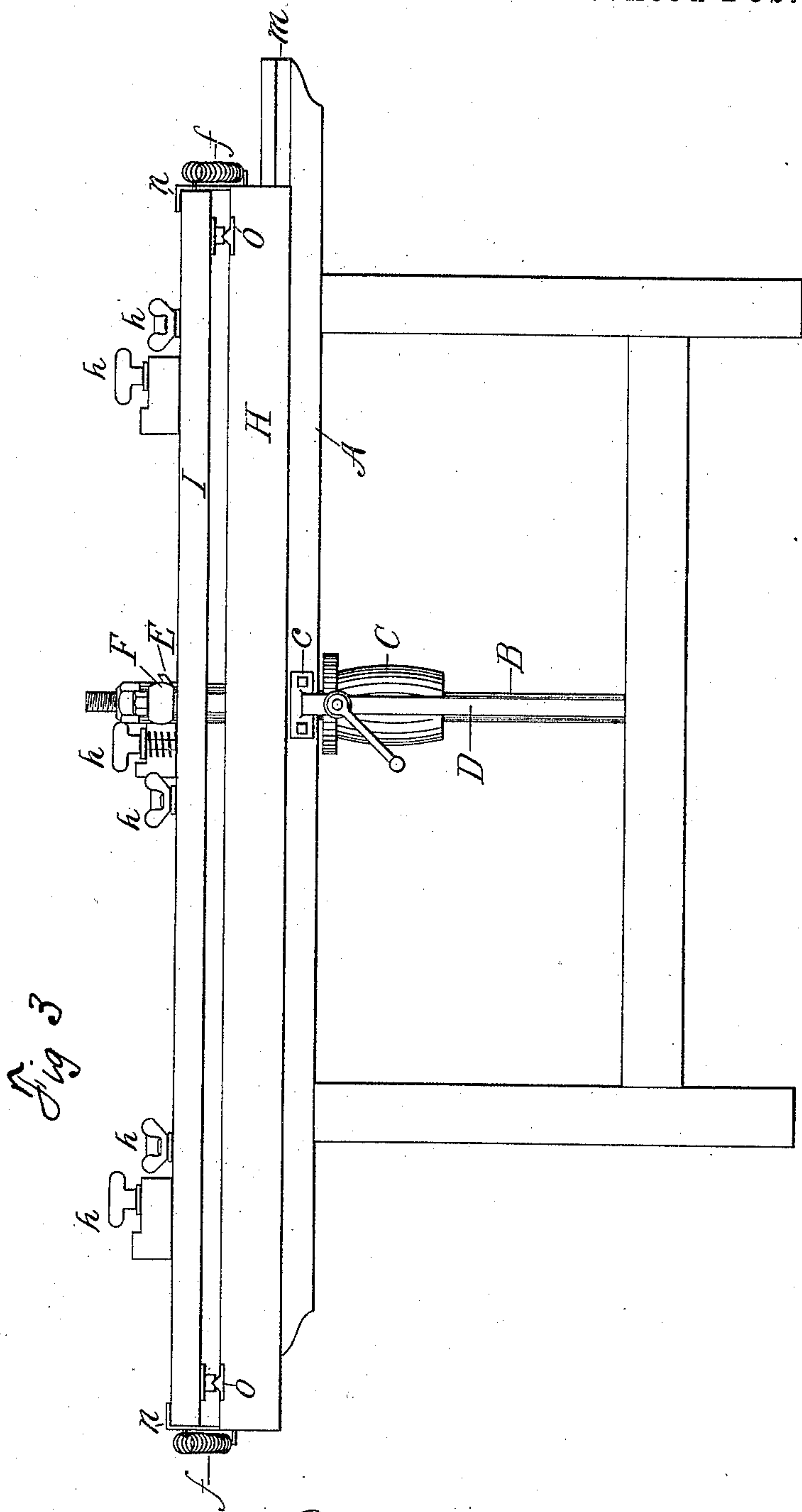
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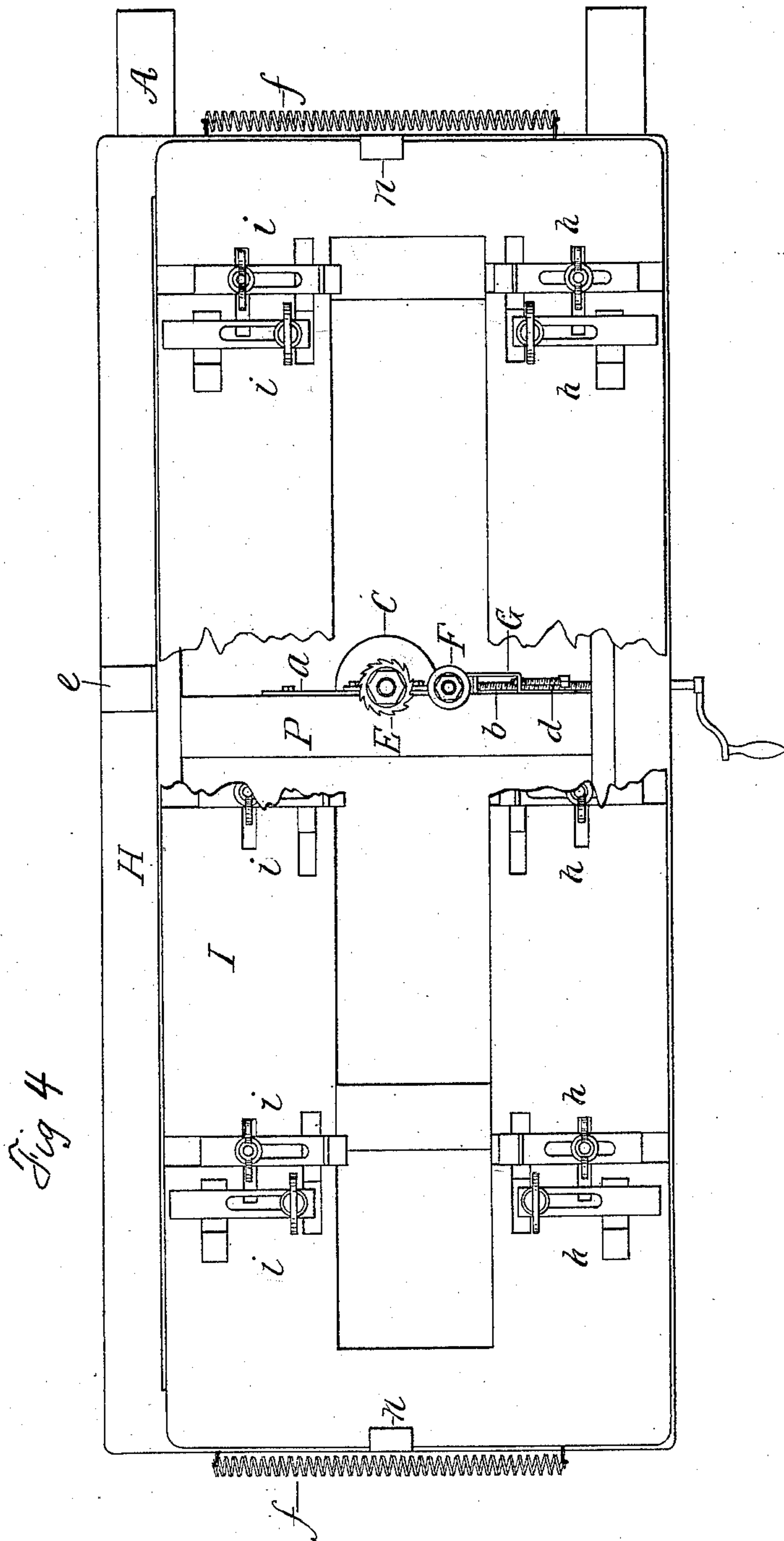
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UNITED STATES PATENT OFFICE.

ROMANTA D. WOODFORD AND GEORGE C. RAYMOND, OF BINGHAMTON,
NEW YORK.

SHAPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 445,617, dated February 3, 1891.

Application filed June 11, 1890. Serial No. 355,037. (No model.)

To all whom it may concern:

Be it known that we, ROMANTA D. WOODFORD and GEORGE C. RAYMOND, of Binghamton, in the county of Broome, in the State of New York, have invented new and useful Improvements in Shaping-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to shapers by which moldings and other irregular forms are cut from wood according to a prescribed pattern, and to that class in which the pattern or form is secured upon a transversely-sliding table, which is mounted upon a longitudinally-sliding table mounted upon the bed of the machine and provided with means for securing the pattern to the transverse table, and with means to automatically regulate the movement of the traversing table according to the contour of the pattern.

Our object is to produce a shaper by which to reproduce in wood duplicates of a form or pattern, of wood or metal, in which the wood and pattern are secured upon a traversing table which is adapted to automatically follow in its movements the contour of the pattern simultaneously with the longitudinal feed.

Our invention consists in the novel combination of elements hereinafter described, and which is specifically set forth in the claim hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is an end elevation; Fig. 2, a vertical transverse section; Fig. 3, a side elevation; and Fig. 4 is a top plan thereof.

Like letters of reference indicate corresponding parts wherever they occur.

A is a bed mounted upon legs or standards connected by cross-beams P, and the double-armed bracket *a* is secured to these cross-beams, and the arms upon *a* form upon their extremities part of the journal-bearings for the vertical shaft B, upon which is the drive-pulley C, and E is the cutter mounted removably on the upper end of the shaft above the table. The cutter is rotated by belting over the pulley C in any ordinary manner. A vertical bar D is pivotally connected to the

lower beam P and extends above the table, where a roller F is mounted upon its upper end, and *b* is a hand-screw having a swivel connection to a yoke pivotally mounted upon the bar D, and thence extending outward through a threaded bracket C, which hangs down from the bed A.

Upon the upper arm of the bracket *a* we secure a yoke G, fitting around the bar D, and in its outer end adapted to receive the set-screw *d*, the inner end of which bears against the bar to hold it steady in the position at which it is set by the hand-screw *b*.

H is a sliding table mounted upon parallel ways M, extending longitudinally over the top of the bed or along its edges, as shown.

I is a traversing frame mounted upon transverse parallel ways O across the top of the table H, a stop *e* on the table operating to control and limit the travel of this frame, and *ff* are springs which normally hold the frame against the stop, and the tension thereby produced forces the contour of the pattern close up against the wheel F, and which are connected at one end to the frame and at the other to the table. Also, the guides *n*, secured upon the ends of the table and hooking over the sides of the frame, operate to hold the frame in place upon its ways O.

Upon the frame we mount suitable clamping devices *h*, designed to receive and hold the outer edge of the pattern or form, the clamps being adjustable in toward or out from the longitudinal center of the frame by means of the slots and set-screws shown. Upon the opposite side of the frame we mount other suitable clamps *i* to hold one edge of the wood which is being cut, which clamps are also adjustable, so as to receive wide or other thin pieces and hold them in proper relation to the cutter.

In the drawings the cutter is shown as mounted diagonally upon the shaft, which gives it a shearing cut. It is operated as follows: The pattern is secured in the clamps *h*, and the bar D is set with the roller F in contact with the edge of the pattern. The strip of wood to be cut is then secured in the clamp *i* so that its edge is in contact with the cutter. Then power is applied and the longitudinal movement of the table H carries

the pattern and wood along simultaneously, the roller traveling on the edge of the pattern, and in following the contour it at one time will force the frame I and the wood over
5 to the left, Figs. 1 and 2, and then when the roller enters a concavity in the edge of the pattern the springs will throw the frame over to the right, and thus the piece of wood will be cut so that its edge is an exact counter-
10 part and duplicate of the pattern.

It will be seen that the springs will always hold the edge of the pattern up against the roller, and the feed is always regulated by the longitudinal movement of the table H.

15 Having thus described our invention, what we claim as our invention, and desire to secure by Letters Patent, is—

The combination, with the bed supported

on standards and provided with longitudinal ways, of a table mounted and movable longitudinally upon the ways, transverse ways upon the table, a frame mounted and movable upon them transversely to the table, springs connecting the frame and table, a central cutter and means to rotate it, clamps
25 on one side of the frame to hold the pattern, clamps on the opposite side to hold the work, and a guide-roller following the contour of the pattern, as set forth.

In witness whereof we have hereunto set
our hands this 4th day of June, 1890.

ROMANTA D. WOODFORD.

GEORGE C. RAYMOND.

In presence of—

T. R. MORGAN,

H. T. ROBBINS.