

(No Model.)

3 Sheets—Sheet 1.

A. W. TOWNE.

Machine for Trimming the Edges of Boot and Shoe Heels.
No. 240,934

Patented May 3, 1881.

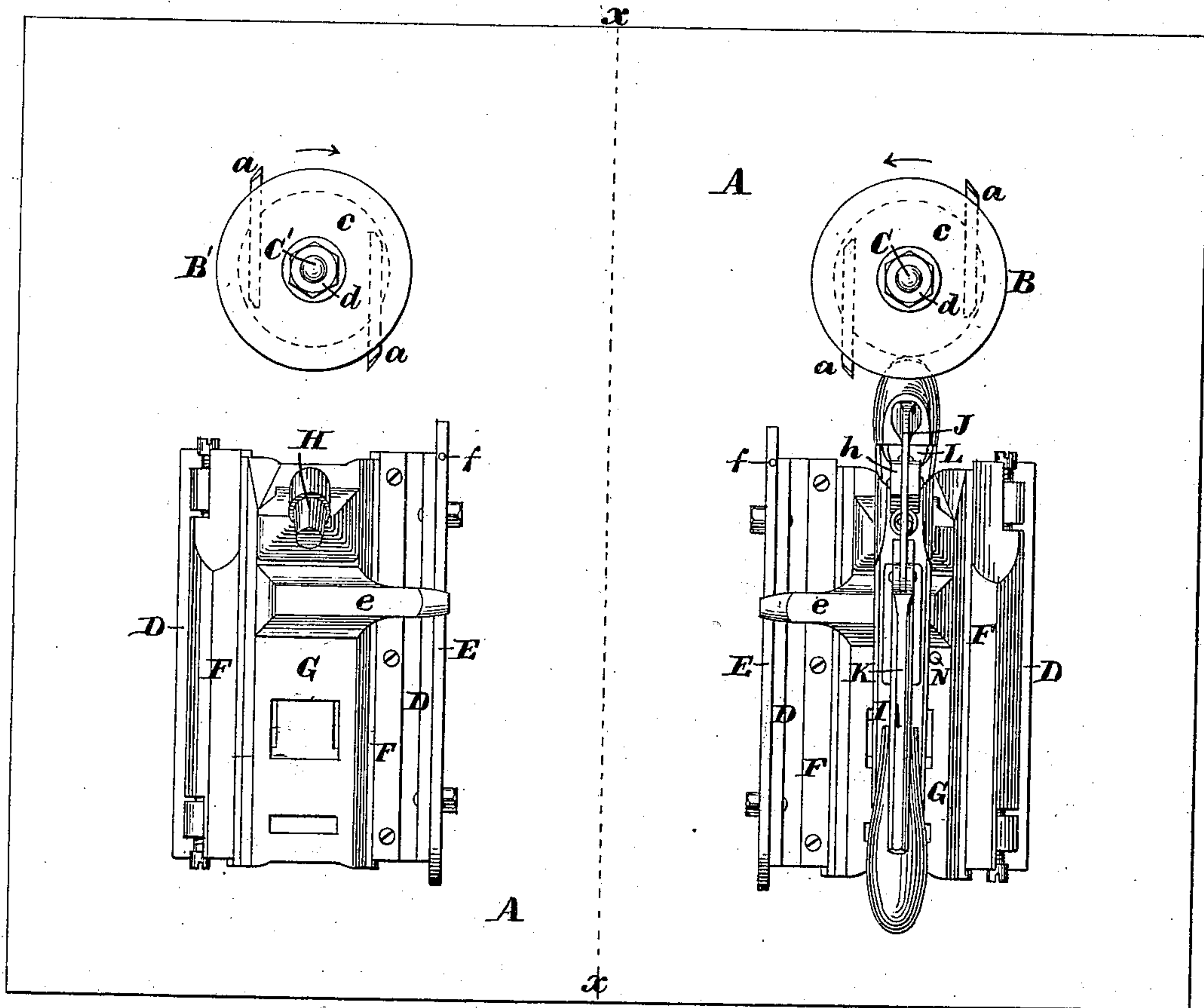


Fig. 1.

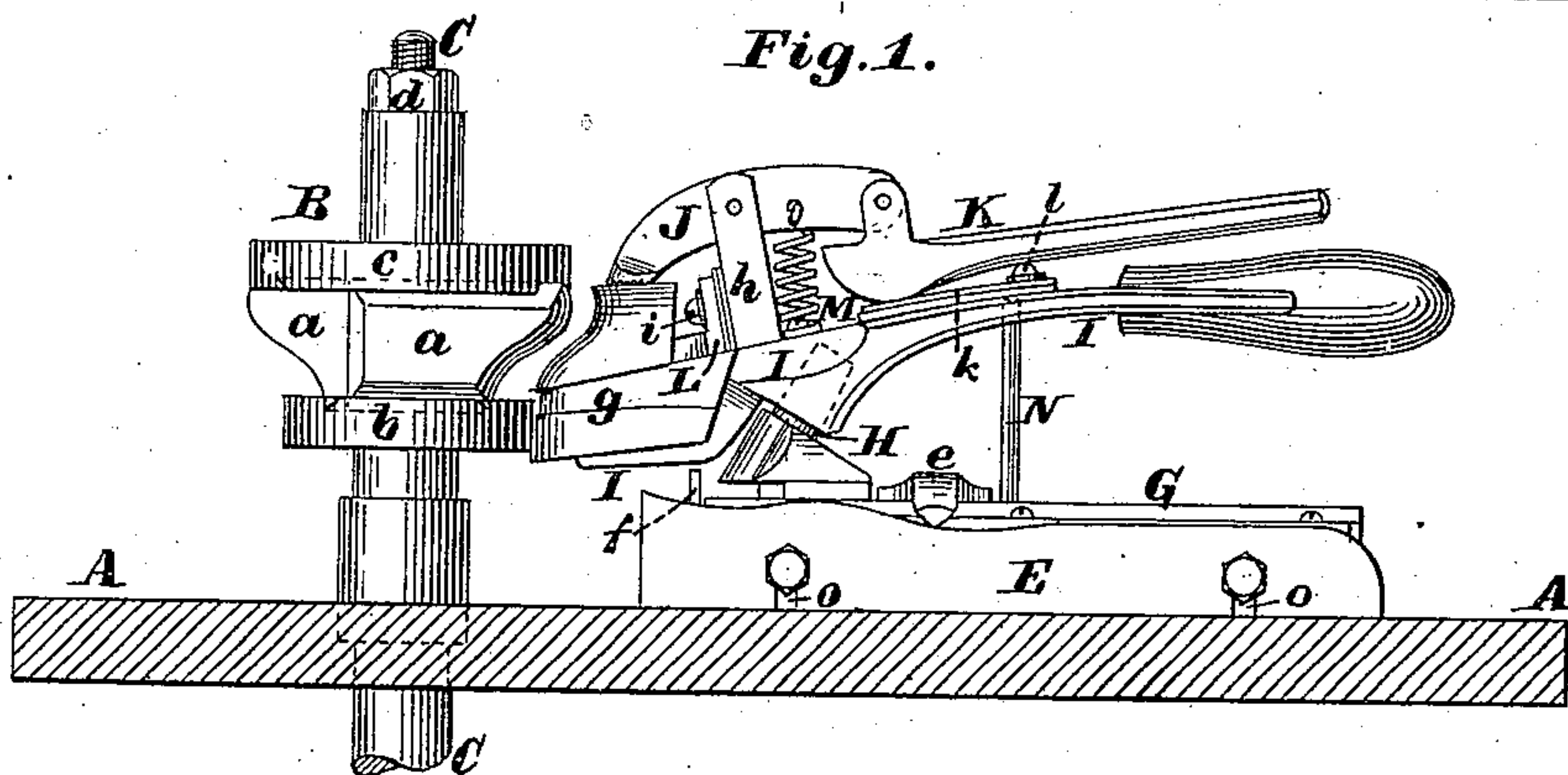


Fig. 2.

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by N. C. Lombard
Attorney.

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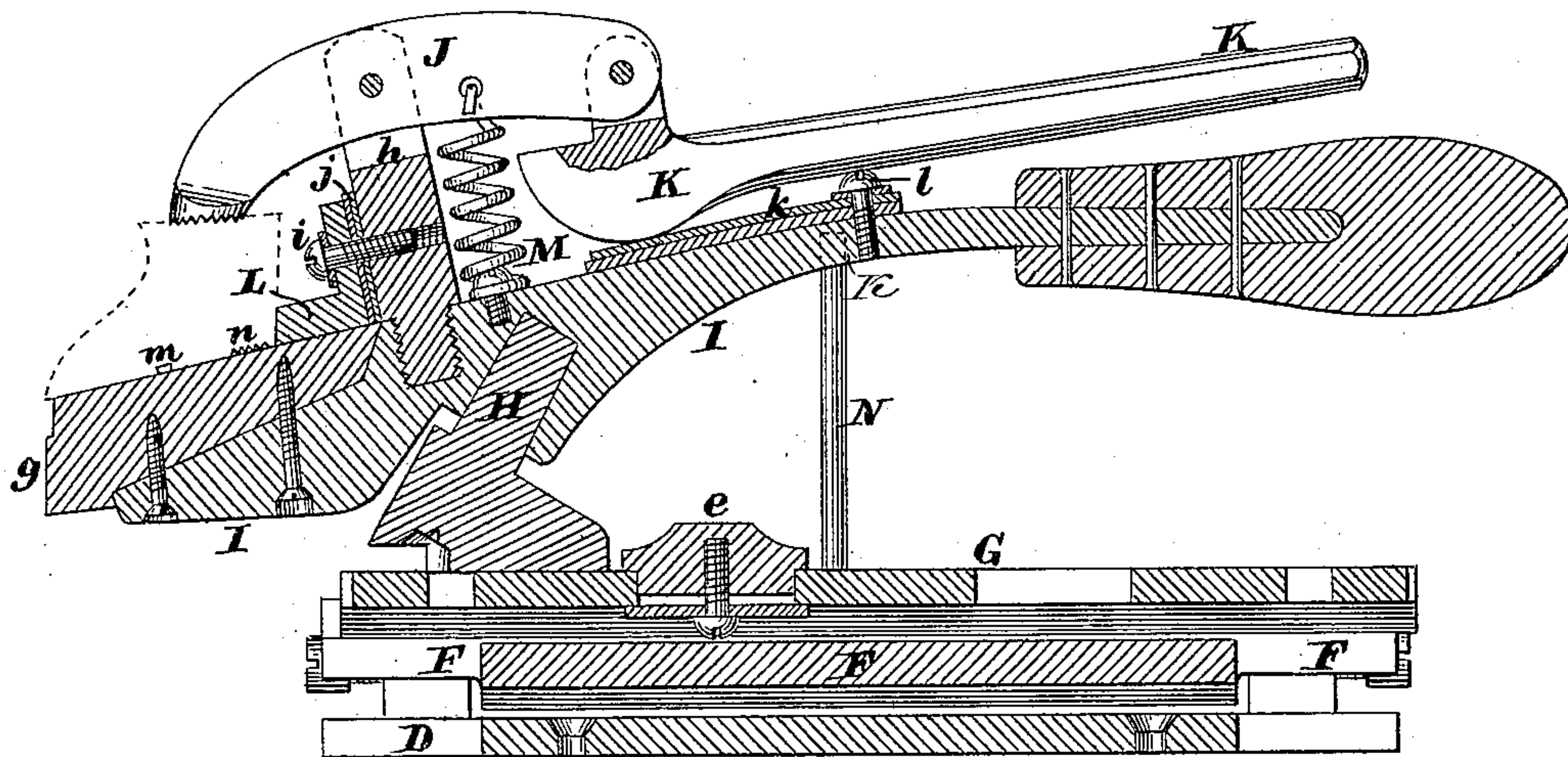


Fig. 3.

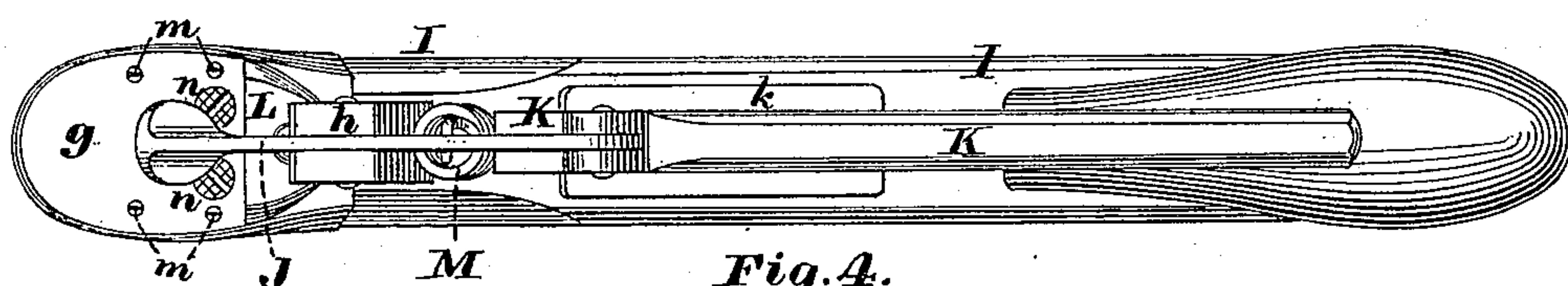


Fig. 4.

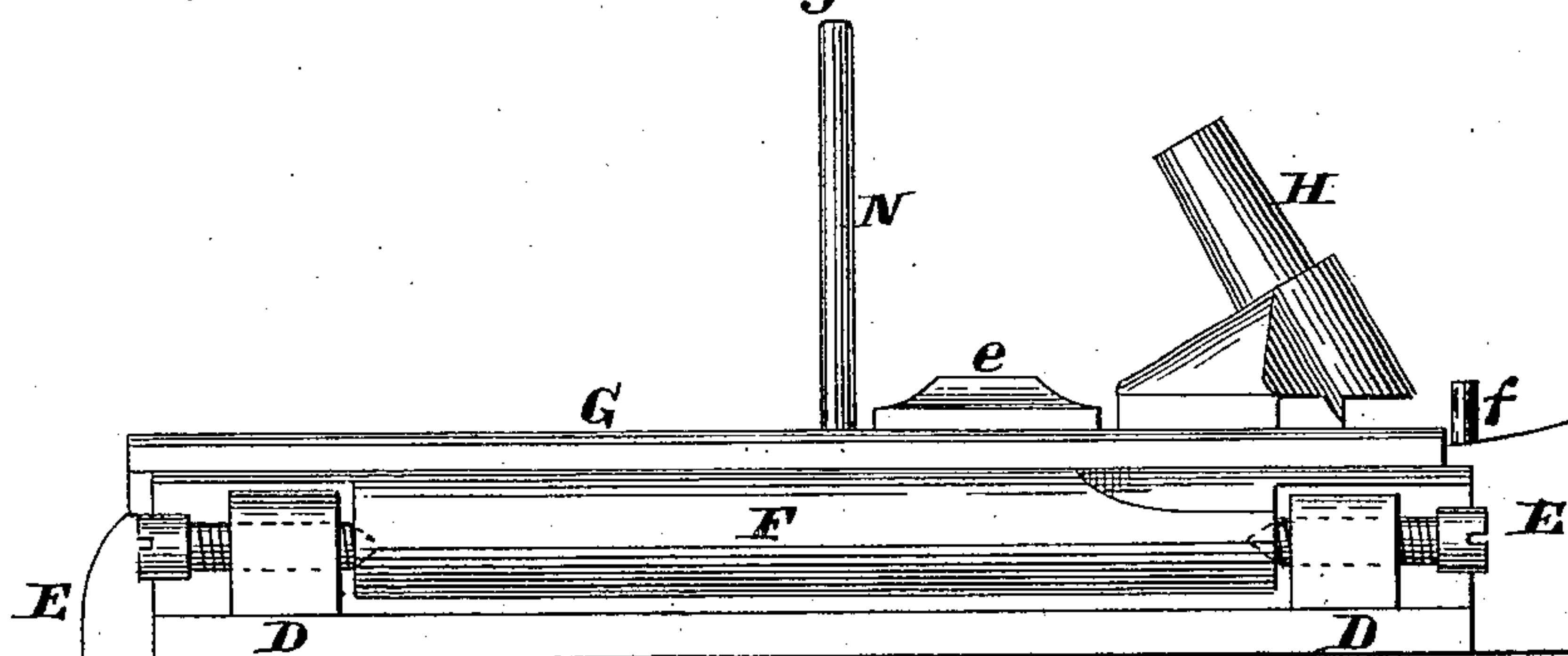


Fig. 5.

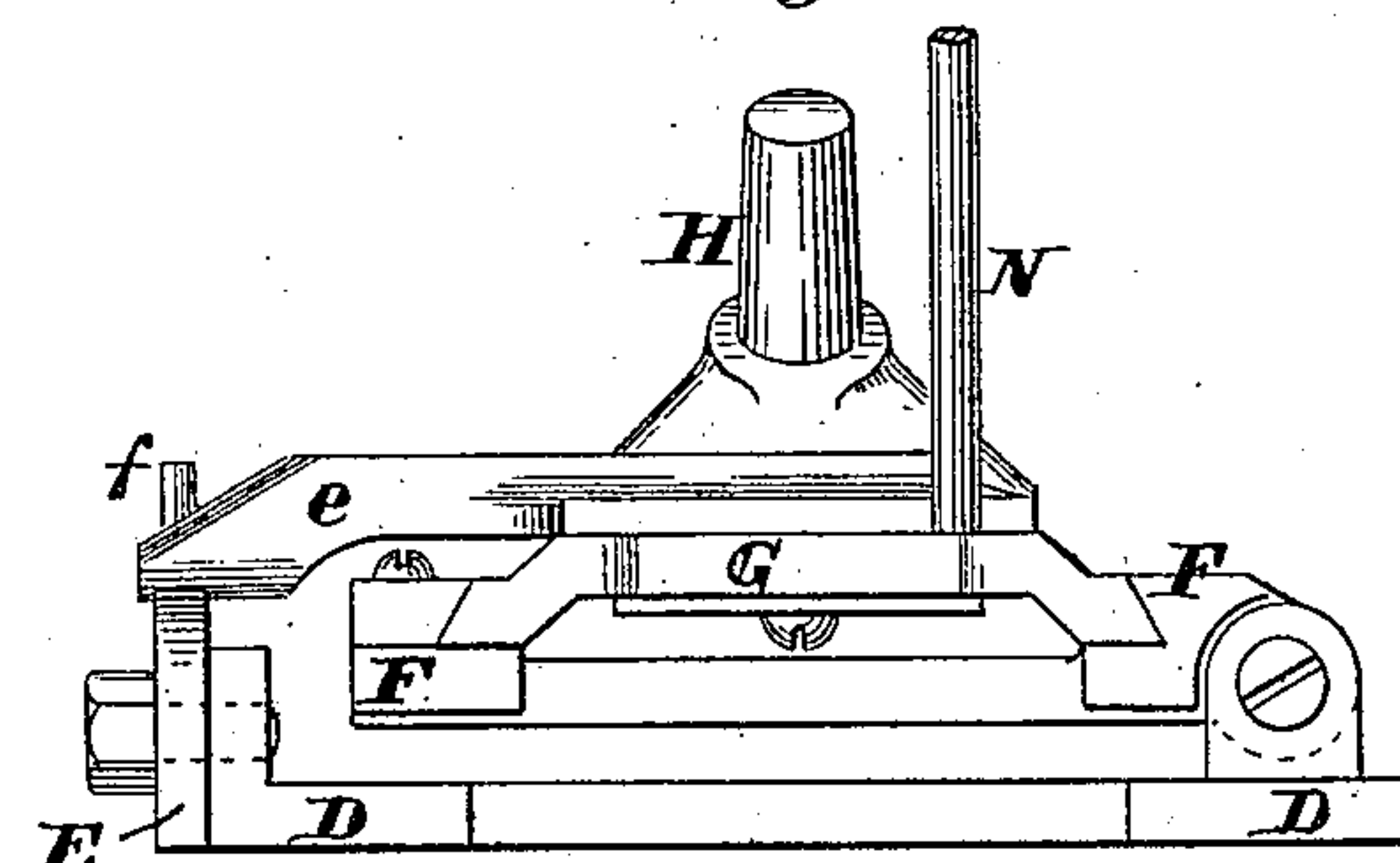


Fig. 6.

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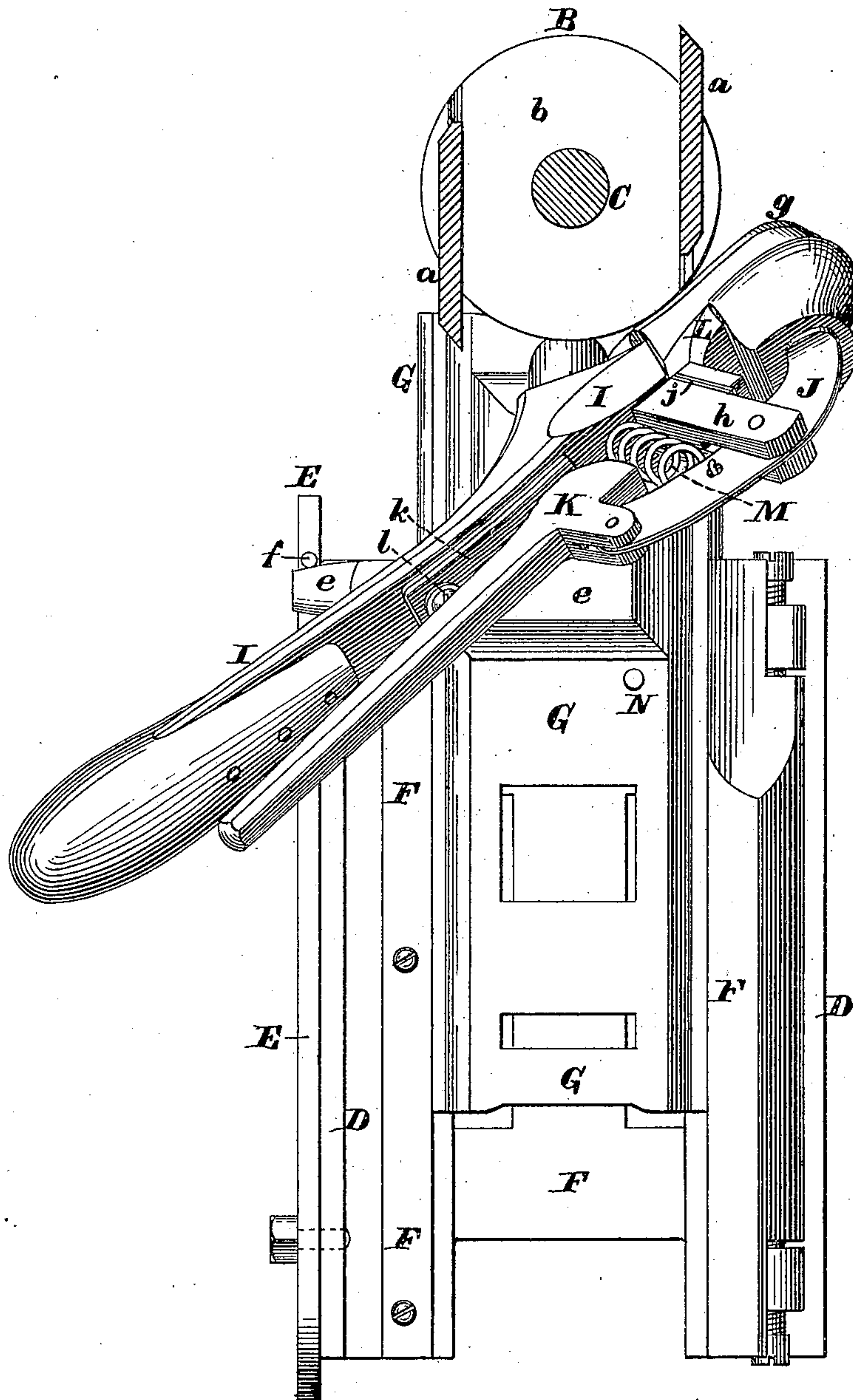


Fig. 7.

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UNITED STATES PATENT OFFICE.

ALBERT W. TOWNE, OF BOSTON, ASSIGNOR TO MELLEN BRAY, OF NEWTON,
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MACHINE FOR TRIMMING THE EDGES OF BOOT AND SHOE HEELS.

SPECIFICATION forming part of Letters Patent No. 240,934, dated May 3, 1881.

Application filed February 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALBERT W. TOWNE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Trimming the Edges of Boot and Shoe Heels, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to a machine for molding the edges of heels for boots and shoes; and it consists in a novel construction and arrangement of the heel holding and presenting mechanism, whereby the desired shape is imparted to the edge of the heel, which will be readily understood by reference to the description of the drawings and the claims to be hereinafter given.

Figure 1 is a plan of a machine embodying my invention. Fig. 2 is a vertical section on line *x x* on Fig. 1. Fig. 3 is a vertical longitudinal section through the heel holding and presenting mechanism, enlarged. Fig. 4 is a plan of the heel-holding jack removed from its carriage, also enlarged. Figs. 5 and 6 are, respectively, a side elevation and end view of the jack-carrying table and its frame; and Fig. 7 is a plan of the jack and its carriage and frame, with the jack in the proper position for commencing the operation of cutting the edge of the heel from a rough blank.

A is the table of the machine, which is supported at the desired height by suitable legs, (not shown;) and B B' are two cutter-heads mounted upon the upper ends of two vertical shafts, C C', which have their bearings on the frame-work of the machine, (not shown,) and project above the upper surface of the table A, as shown. The cutter-heads B and B' are arranged to revolve in opposite directions, as indicated by the arrows, and each carries a pair of cutters, *a a*, the cutting ends of which are molded or ground to a shape the converse of the molding to be formed upon the heel-edge, said cutters being held in position by being clamped between the collars *b* and *c* through the medium of the nut *d*.

Directly in front of each of the cutter-heads B and B' is bolted to the upper surface of the table A a skeleton-frame, D, to one edge of which is bolted or otherwise secured the plate E, the upper edge of which forms a curved cam-

surface, as shown in Fig. 2. To the opposite edge of the frame D is pivoted another frame or plate, F, in the upper surface of which are formed suitable guideways, in or on which is mounted the carriage G in such a manner that it may be moved endwise toward and from its cutter.

To the upper side of the carriage G is bolted or otherwise attached the arm *e*, which extends over and rests upon the upper edge of the cam-plate E in such a manner that as the carriage G is moved endwise toward or from the cutter-head it, with its carrying frame or plate F, will be more or less tilted toward one side by virtue of the arm *e* moving over the curved upper edge of the cam-plate E. The carriage G also has formed upon or secured to its upper side, near its inner end, the pintle or journal H, arranged in a position oblique to the axis of its cutter-head at an angle of about thirty degrees, more or less, from a perpendicular.

In the upper edge of the cam-plate E, and near its inner end, is inserted the stop-pin *f*, which limits the forward movement of the carriage G toward the cutter-head by the arm *e* coming in contact therewith.

I is the heel-supporting lever or jack, provided with an oblique socket to fit said pintle or journal H, and having attached to its inner end the wooden pattern-gage *g*, made of such a form that it shall bear against the collar *b* of the cutter-head, and by a rotation of the jack about the pintle H, with said pattern-gage in contact with said collar at all times, it shall determine the shape of the heel circumferentially, except as it is qualified by the tilting action of the cam-plate E. The lever I has set in its upper side the post *h*, to the upper end of which is pivoted the clamping-lever J, provided at its inner end with a serrated or roughened pad-like surface to rest upon the tread-surface of the heel, and having pivoted to its opposite end the cam-lever K, by means of which the pad end of the lever J may be made to press hard upon the heel-blank and clamp it between its under surface and the upper surface of the pattern-gage *g*.

L is a gage for determining the position of the heel-blank upon the lever I, which is secured in position by the screw *i*, which screws into the post *h*, the position of said gage L

being adjusted in the direction of the length of the lever I by the insertion or removal of filling-pieces *j* between it and the post *h*. The eccentric or cam shaped end of the lever K rests upon the steel plate *k*, secured at one end by the screw *l* to the lever I, with a strip of leather or other semi-elastic material, *k'*, interposed between said steel plate and the lever I, the object of which is to permit a slight yielding of the plate *k*, to allow for inequalities in the thickness of the heel-blanks. The outer end of the lever J is moved toward the lever I by the tension of the spiral spring M whenever the long arm of the lever K is moved upward to release the heel from the jack.

The upper surface of the pattern-gage block *g* has inserted therein one or more pointed or knife-shaped spurs, *m*, and the serrated or roughened surfaces *n*, as a means of preventing the heel-blank from slipping out of position during the operation of cutting the edge to shape.

The cam-plate E is adjustable vertically by means of its holding-bolts passing through slots *o o*, as shown in Fig. 2, whereby the shape of the tread-surface of the heel may be slightly varied relative to the shape of the top of the heel.

It will be observed that the carriages G G and the frames D D and F F are rights and lefts, and are so arranged on the table A and relative to each other that the cam-plates E are upon the edges of the devices that are contiguous to or toward each other, as shown in Fig. 1.

The operation of my invention is as follows: The blank from which the heel is to be formed being clamped upon the jack-lever I, said jack is placed in position on the pintle H of the right-hand carriage G, in front of the cutter-head B and the handle end of the lever I is moved to the left till the jack assumes the oblique and angular position shown in Fig. 7, when the carriage upon which it is mounted is moved endwise toward the cutter until the arm *e* strikes the stop-pin *f*, as shown in Fig. 7. The operator now moves the handle of the jack-lever gradually to the right, being careful to keep the pattern-gage bearing against the edge of the collar *b*, which causes the carriage G to be moved away from the cutter-head until the jack-lever I comes in contact with the upwardly-projecting pin N and is in the position indicated in Figs. 1 and 2. The carriage G is now moved sufficiently far away from the cutter-head to permit the removal of the jack-lever from the pintle H of said carriage; and said jack, with the partly-formed heel-blank still clamped thereon, is transferred to the pintle H of the left-hand carriage G, in front of the cutter-head B'. The handle of the jack-lever is swung to the right as far as it can be, or into a position corresponding to that shown in Fig. 7, but at the opposite angle, and the carriage is moved endwise toward the cutter-head until the arm *e* comes in contact

with the stop-pin *f*. The handle of the jack-lever I is now moved gradually to the left, with the pattern-gage *g* bearing against the collar *b*, gradually moving the carriage away from the cutter-head until the other half of the heel is shaped.

By adjusting the cam-plate E up or down or changing the shape of the curve upon its upper edge the shape of the tread-surface of the heel produced may be varied considerably—as, for instance, it may be made broader or narrower in proportion to its length and its sides may be more or less curved, as may be desired.

By the substitution of a burnishing or abrading tool having its edge molded to conform to the shape of the molded heel-edge for the cutter-heads, the same machine may be successfully used for burnishing or sandpapering heels.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a machine for trimming or shaping the edges of boot and shoe heels, the combination of a rotary cutter, the cutting-edge of which is shaped to the desired vertical curve to be given to the heel-edge, and a heel-supporting jack mounted upon a pintle or journal, the axis of which is permanently inclined to the axis of said cutter, about which pintle it may be partially revolved, moving in a plane oblique to the plane of revolution of said cutters, substantially as described.

2. The combination of a rotary cutter the cutting-edges of which are shaped to the desired vertical curve to be given to the heel-edges, a carriage located in front of said cutter and provided with an oblique or inclined pintle or journal and adapted to be moved endwise toward and from said cutter, and a heel-supporting jack provided with means of clamping the heel thereon and adapted to be partially rotated about said pintle, substantially as and for the purposes described.

3. As a means of presenting the heel-blank to the action of the cutter, the pivoted frame F, reciprocating carriage G, provided with the inclined pintle H and arm *e*, the jack-lever I, provided with the pattern-gage *g* and means of clamping the heel-blank thereon, and the cam-plate E, all arranged and adapted to operate substantially as described.

4. The combination of the jack-lever I, provided with a suitable seat for the heel-blank, the clamping-lever J, the cam-lever K, the metal plate *k*, and the semi-elastic cushion *k'*, all arranged and adapted to operate substantially as described.

Executed at Boston, Massachusetts, this 15th day of February, A. D. 1881.

ALBERT W. TOWNE.

Witnesses:

E. A. HEMMENWAY,
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