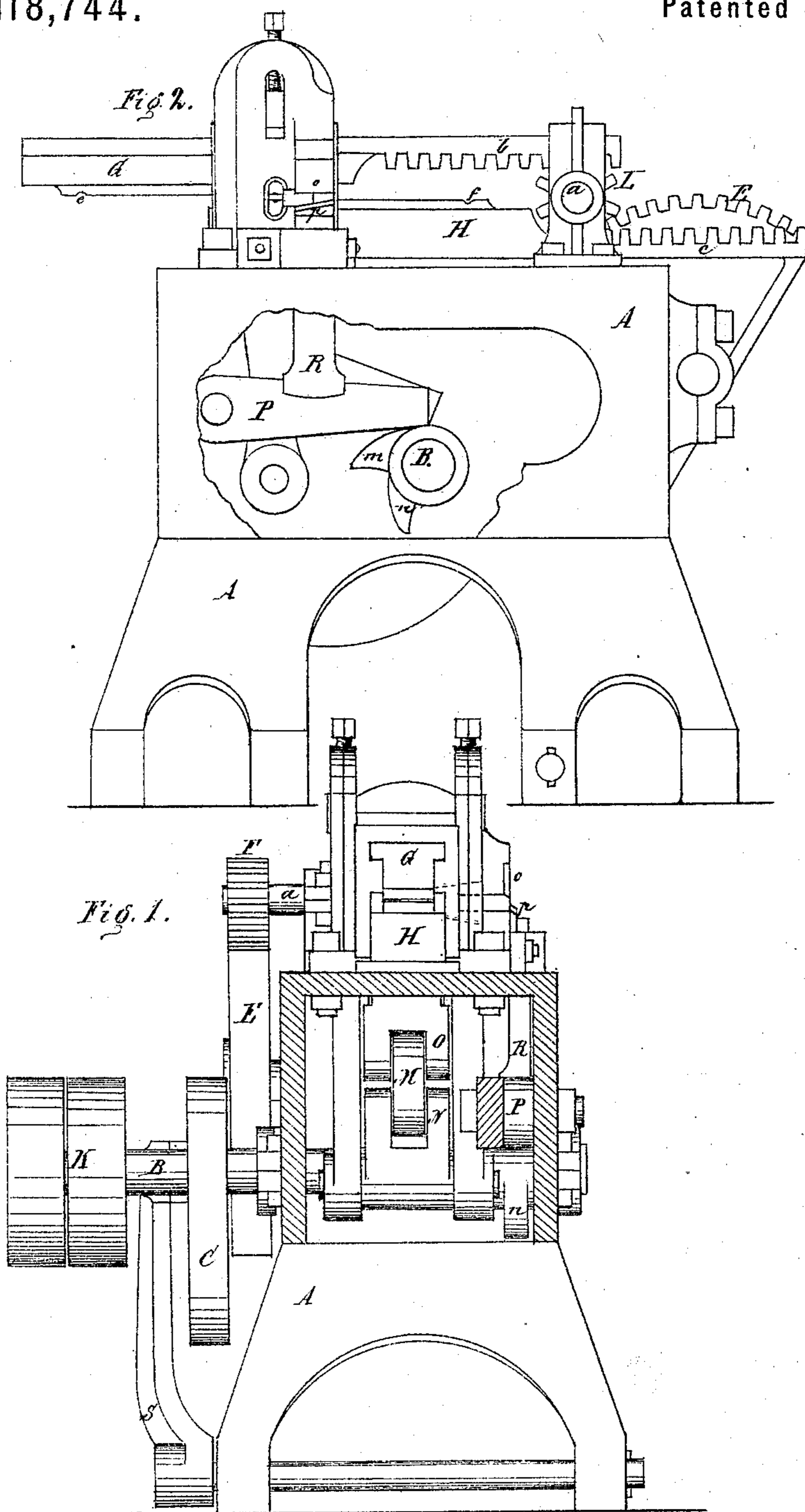


HENRY REESE.

Improvement in Nail Machines.

No. 118,744.

Patented Sep. 5. 1871.



Witnesses:

H. J. Smith
E. A. Reed

Inventor:

Henry Reese.

PER

Wm B

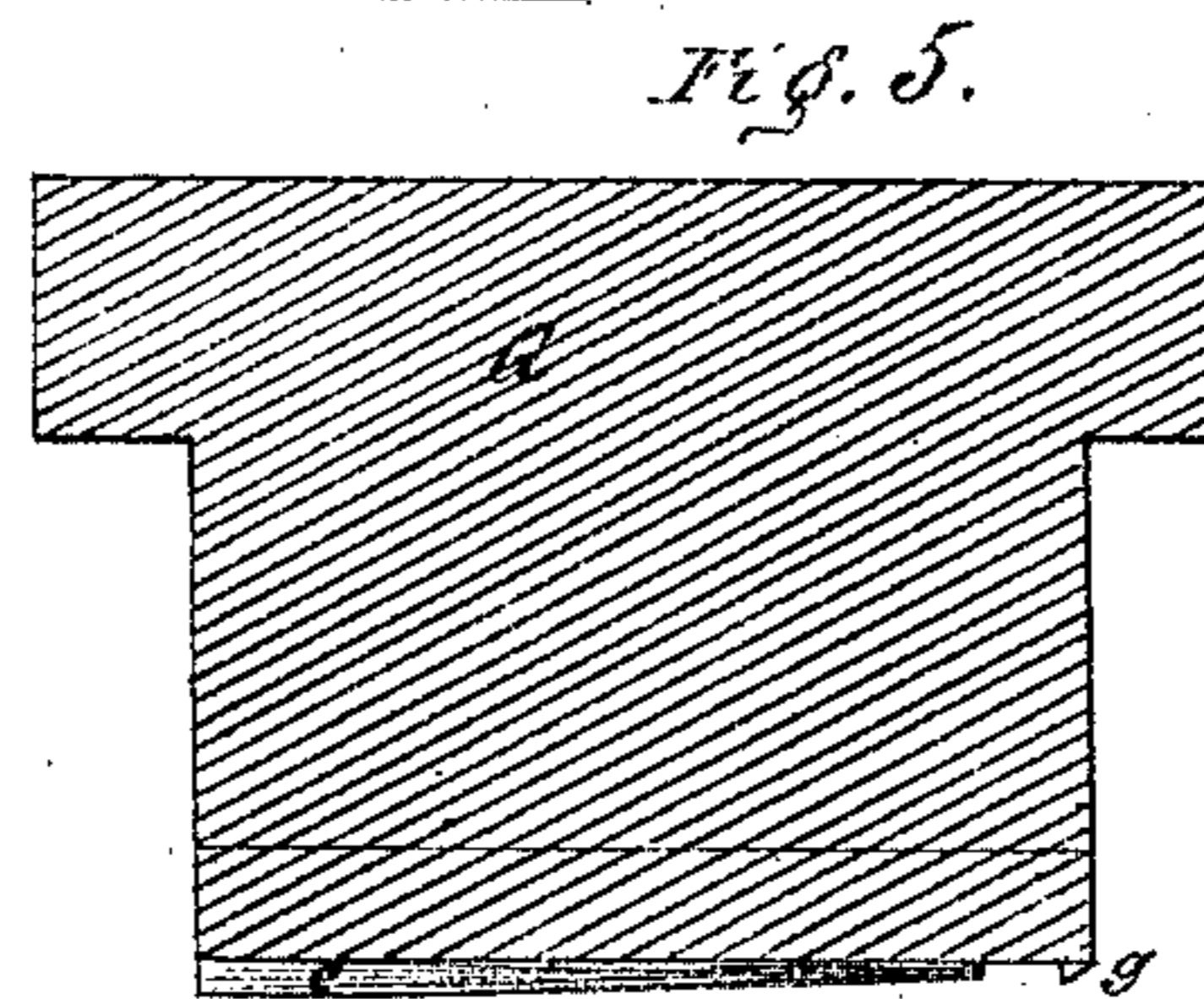
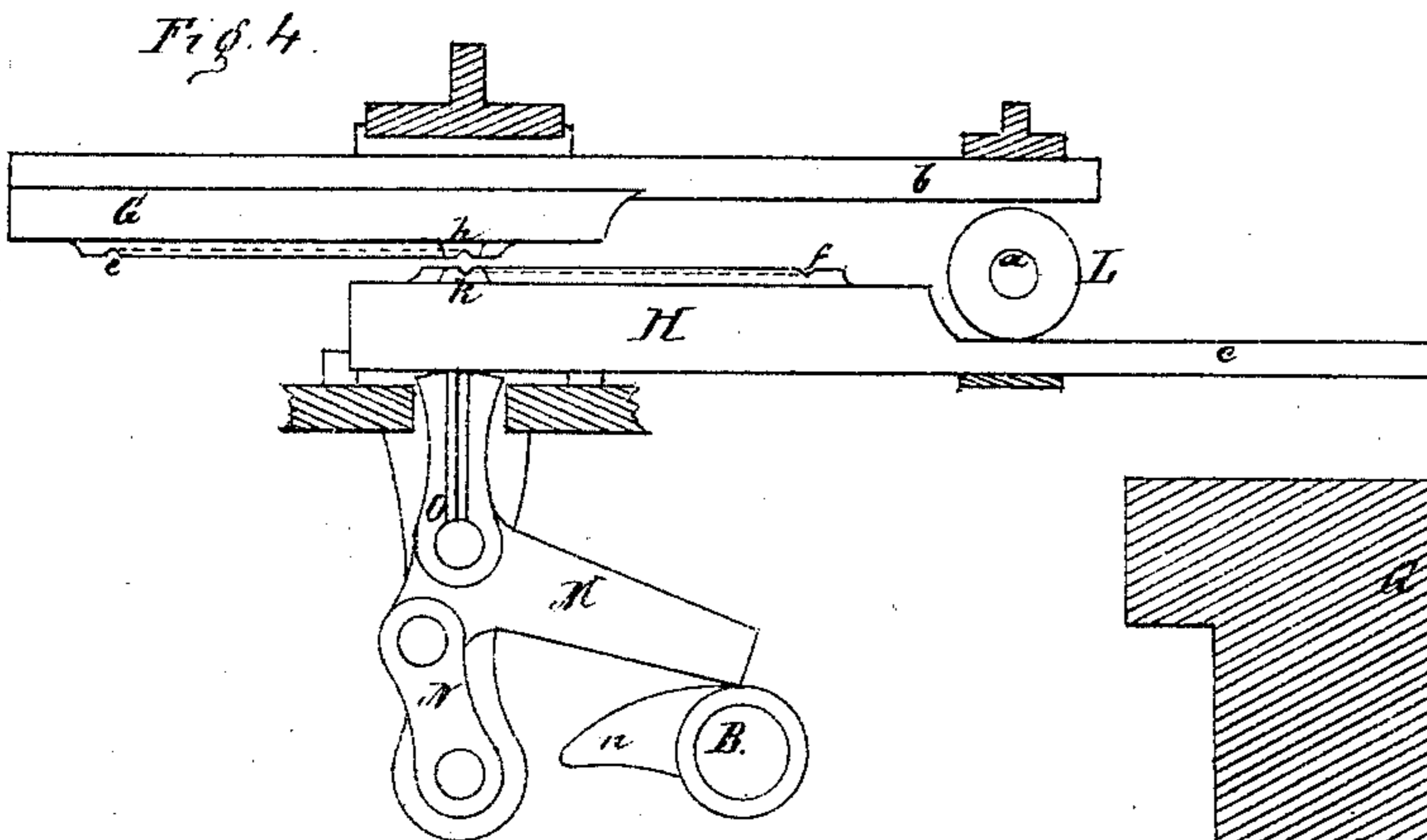
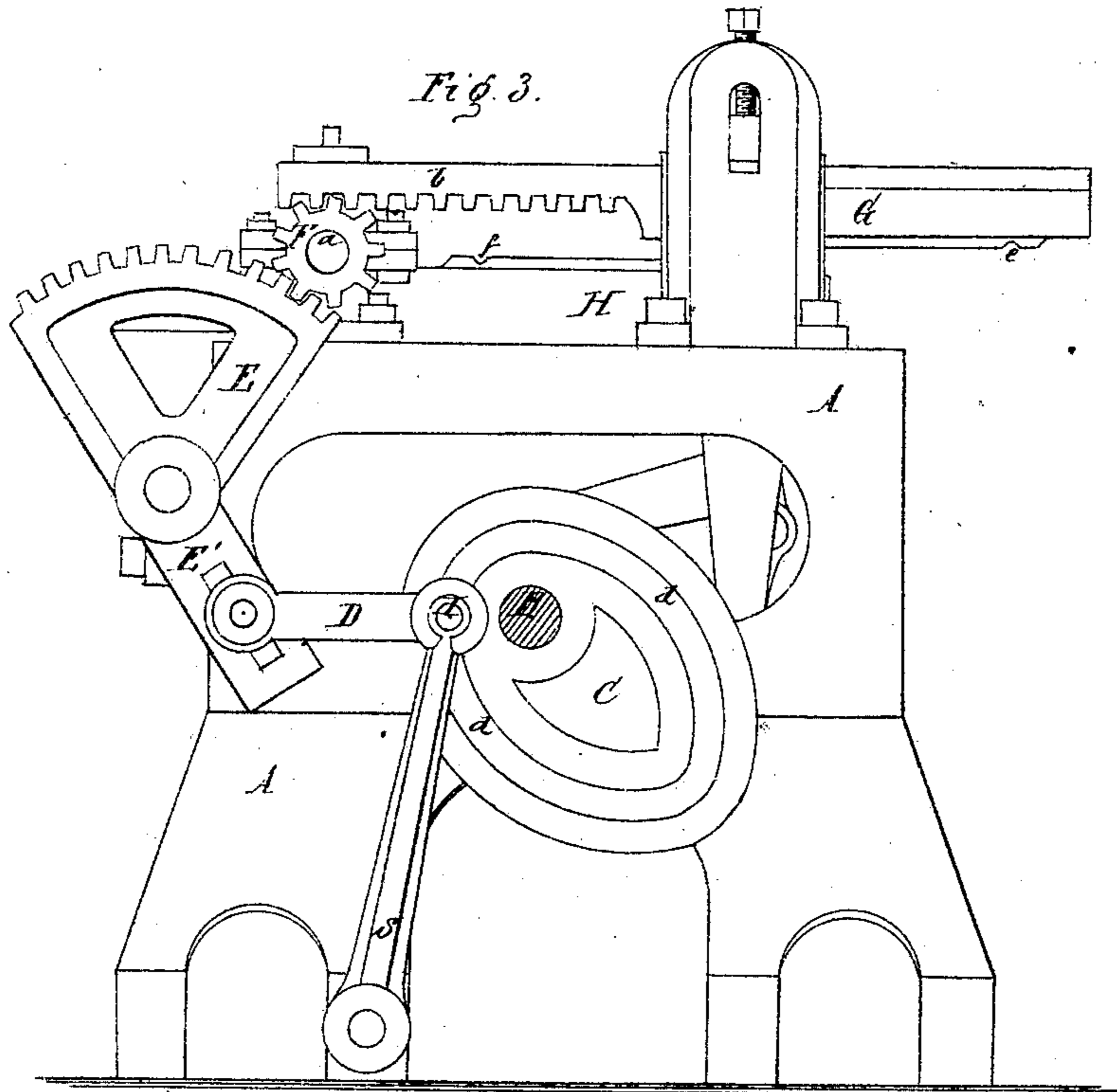
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UNITED STATES PATENT OFFICE.

HENRY REESE, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN NAIL-MACHINES.

Specification forming part of Letters Patent No. 118,744, dated September 5, 1871.

To all whom it may concern:

Be it known that I, HENRY REESE, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and Improved Nail-Machine; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is an end elevation with part of the frame removed. Figs. 2 and 3 are elevations of opposite sides. Fig. 4 includes details showing the operation of the roller-bars and toggle arrangements, and Fig. 5 is a transverse section of the upper slide bar.

This invention relates to the manufacture of horseshoe or other wrought nails by the process of rolling the ends of a heated cylindrical rod between opposite and exactly similar faces moving with the same velocity in contrary directions, said faces being inclined so as to gradually approach each other as the rolling progresses, and being so shaped that the cylindrical rod may be rolled and drawn into a pointed blank, round in cross-section, and said blank then being pressed into the proper shape between dies operated by a toggle or other equivalent arrangement.

Referring to the drawing, A is the frame-work of the machine; B, the operating-shaft mounted crosswise of the frame-work; C, an elliptic plate fixed upon the shaft B, and having a cam-groove, *d*, in one side; D, a connecting-bar, from one end of which a pin, I, extends into the groove *d*, said pin being kept in the said groove by means of a lever, S, pivoted at its lower end to the frame A and jointed at its upper end upon the pin I. At its other end the bar D is jointed to the stem E' of a cogged sector, E, which is pivoted to the outside of the frame A. F is a pinion fixed on one end of a shaft, *a*, and engaging with the sector E. At the other end of the shaft *a* is another pinion, L, which engages with two racks, *b c*, one above and the other below it, which racks extend from adjacent ends of slide-bars G H, which occupy guides in the frame-work. Both bars reciprocate lengthwise, and the lower one is arranged so as to have a slight vertical play in addition to its other motion. The upper bar has a cutting-edge, *g*, running lengthwise of its under side, and the lower bar a similar cutting-edge running lengthwise of its upper side, both edges

being at the front corners of the bars. A groove, *e*, runs crosswise through the upper edge *g*, and a similar groove, *f*, through the lower edge, both near adjacent ends of the bars G H. The bar G is constructed with a transverse offset along its lower side and between the groove *e* and the end of the bar, which offset forms a concave shoulder, *g'*, Fig. 5, in the same lines with one side of the groove *e*. The bar H is similarly constructed. The bars G H are also provided with transverse dies *h k*.

Motion being imparted to the shaft B through the belt-pulley K, the plate C rotates, and, through the medium of the groove *d*, pin I, bar D, sector E, shaft *a*, pinions F L, and racks *b c*, causes the bars G H to move simultaneously in opposite directions until the grooves *e f* come into the same vertical plane, together forming a cylindrical opening, the cutting-edges *g* nearly touching each other, in which opening is placed the heated end of the rod whence the nail is to be cut, said rod being inserted as far as desired. The movement of the slide-bars G H is now reversed by the continued rotation of the plate C in the same direction, and the portion of the rod between the slide-bars is, while rotating on its axis, gradually rolled and drawn out to the length desired. The cutting-edges *g* penetrate the rod, making a groove around it, and thus keeping it from being drawn in between the slide-bars further than desired. The operating faces of the bars G H gradually approach each other as the grooves *e f* recede from each other, so that by the time these bars are in the position shown in the figures the rod has been drawn out into the proper size for a nail. When the dies *h k* are opposite each other, with the conical nail-blank between them, the lifter *m*, Fig. 4, puts in operation the toggle-levers M N, whereof the former connects the lever N with a block, O, which slides vertically in the frame-work, having triangular grooves in its sides, in which fit projecting ribs cast on the inside of the frame-work. The block O abuts at its upper end against the bottom of the bar H and lifts the latter, thus producing a powerful pressure upon the nail-blank and forcing it into the grooves of the dies *h k*, where it receives the proper shape. By this time the lifter *m* has cleared the lever M, and the block O and bar H consequently drop by their own weight and that of the lever M to their former position, releasing the rod with

the finished nail on its end, which is then withdrawn and slipped between the shears *o p*, which are supported on the frame-work, the lower jaw *p* being secured to the top of a movable block, *R*, Fig. 2, which is stepped in a lever, *P*, that is raised by the lifter *n* just after the dropping of the block *O*. The jaw *p* thus raised severs the nail, which falls through a channel in the frames, not here shown, into a receptacle below.

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

1. The reciprocating slide-bars *G H*, provided with racks *b c*, and combined with the shaft *a*,

pinions *F L*, sector *E*, bar *D*, cam-groove *d*, plate *C*, and shaft *B*, as specified.

2. The bars *G H*, provided, respectively, with the nail-dies *h k*, in combination with the block *O*, toggle-levers *M N*, lifter *m*, and shaft *B*, as shown and described.

3. The combination, with reciprocating bars *H* and *G*, of fixed jaw *O*, movable jaw *p*, block *R*, lever *P*, and the lifter *n* on shaft *B*, all arranged to operate with rolling mechanism, as described.

HENRY REESE.

Witnesses:

JNO. REESE, Jr.,

THOMAS L. REESE.