

Making Cut Nails,

Fig. 1. Patented May 26, 1863.

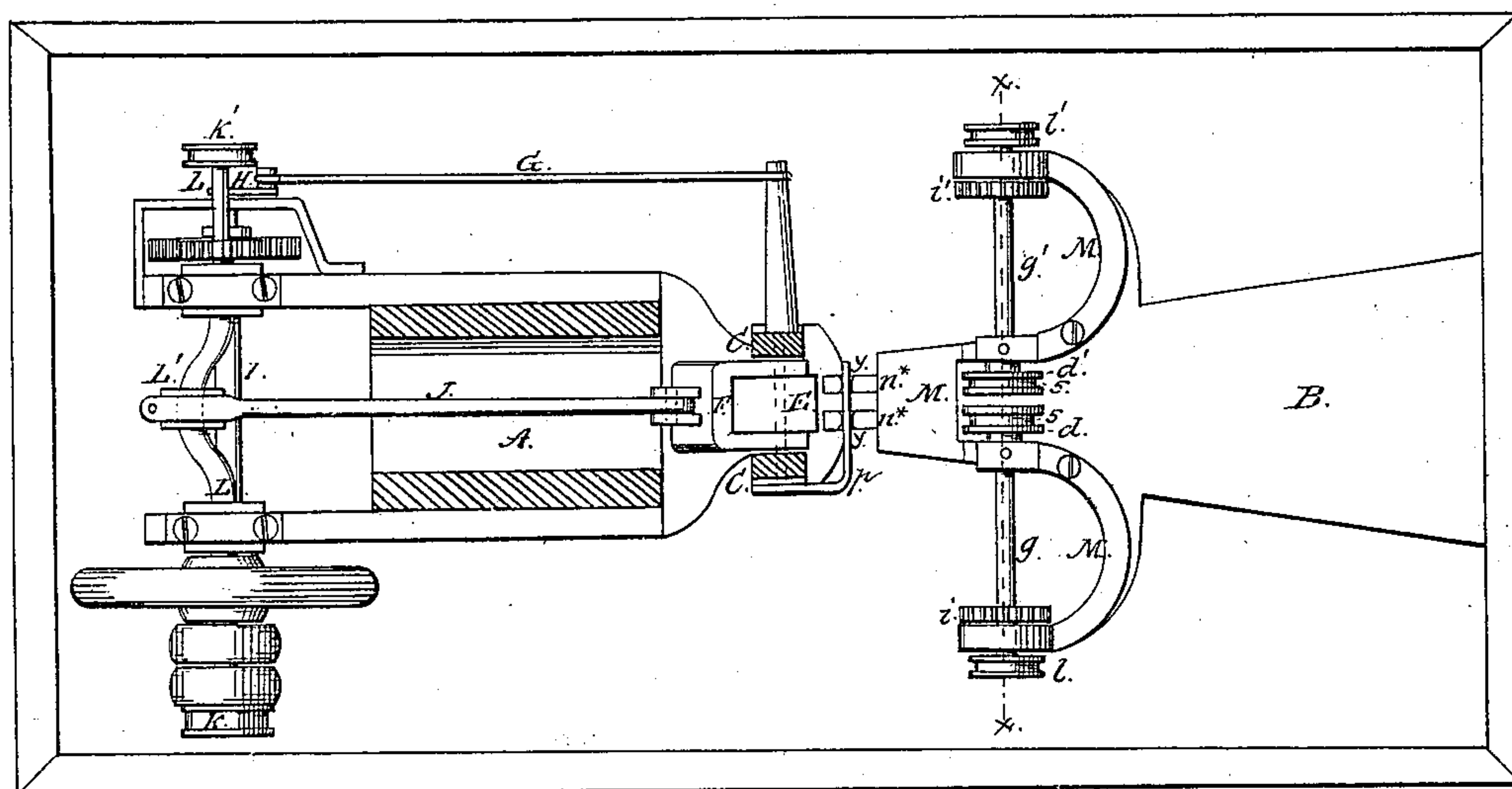


Fig. 4.

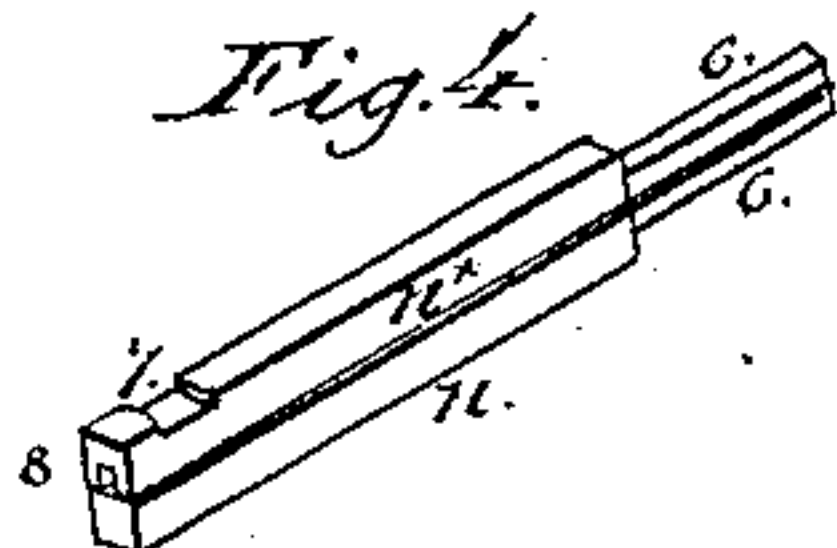


Fig. 2.

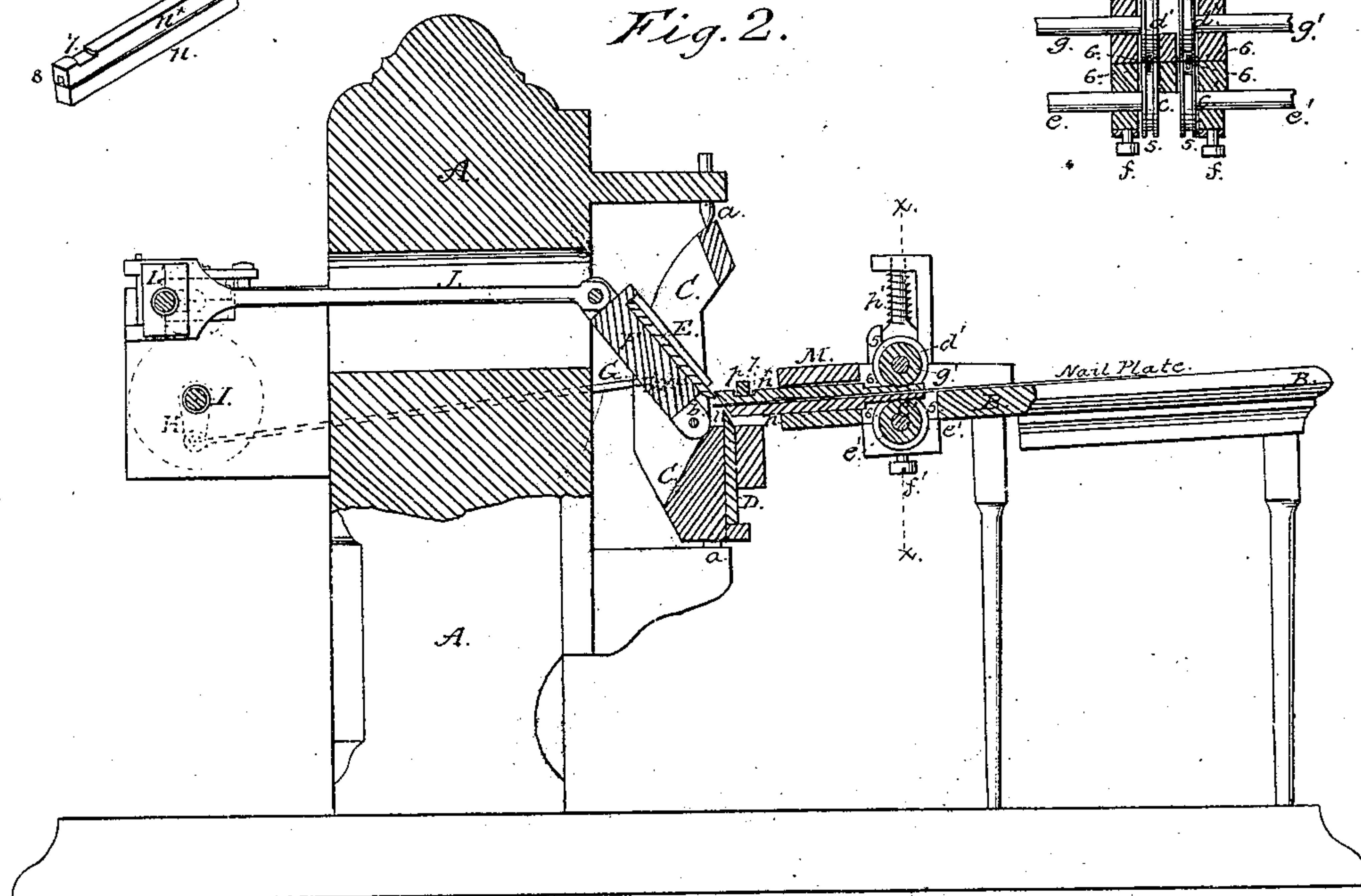
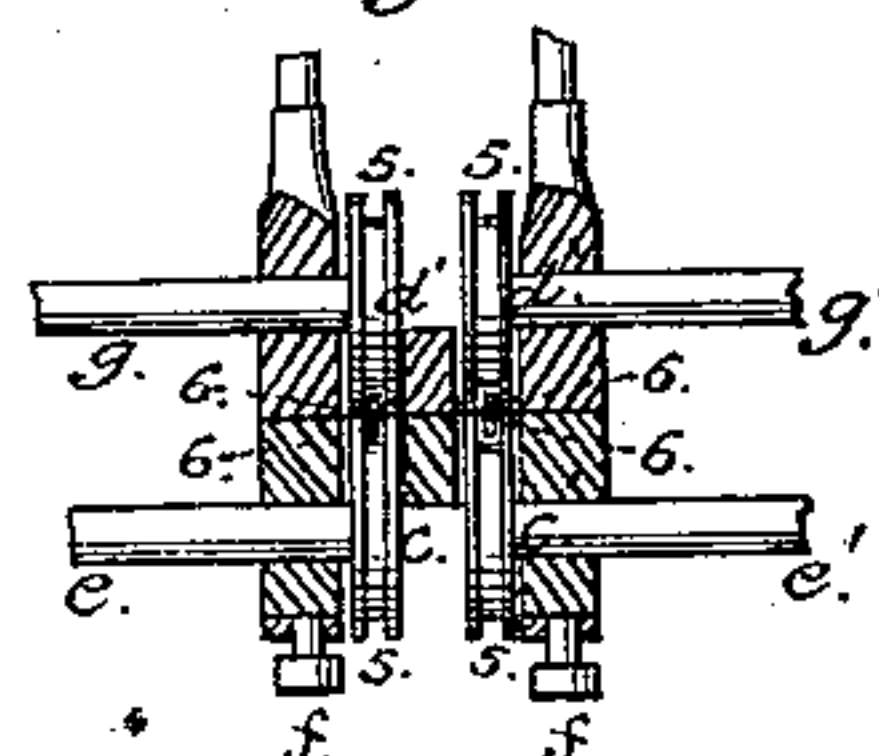


Fig. 3:



Witnesses;

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UNITED STATES PATENT OFFICE.

WILLIAM H. FIELD, OF TAUNTON, MASSACHUSETTS.

IMPROVEMENT IN NAIL-MACHINES.

Specification forming part of Letters Patent No. 38,665, dated May 26, 1863.

To all whom it may concern:

Be it known that I, WILLIAM H. FIELD, of Taunton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Cut-Nail Machines; 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, forming part of this specification, in which—

Figure 1 is a plan, partly in section, of a machine with my improvements. Fig. 2 is a central longitudinal vertical section of the same. Fig. 3 is a transverse vertical section of the feeding apparatus in the plane indicated by the line *x x* in Figs. 1 and 2. Fig. 4 represents perspective views of one pair of guide-bars, which are arranged between the feed-rolls and cutters.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in certain improvements in the feeding mechanism of machines for cutting shoe or other nails from cold plates, whereby the plates are enabled to be cut without waste, the front end of one plate being made to feed the last end of the preceding one.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the fixed standard which supports the cutting machinery, and B the table which supports the feeding mechanism. The cutting machinery resembles some which is in common use, and therefore needs no more description than is necessary to enable the operation of the improved feeding mechanism to be understood.

C is the cutter-frame, arranged to oscillate horizontally about vertical centers *a a*.

D is the lower cutter, firmly secured in the lower part of the frame C.

E is the upper cutter, secured in a stock, F, attached at its lower extremity by pivots *b* to the frame C in such manner as to permit it to swing in vertical planes. The horizontal oscillating movement of the frame C is produced by its being connected by a rod, G, with a crank, H, on a horizontal shaft, I, and is varied to regulate the taper of the nails by making the wrist of the said crank adjustable nearer to or farther from the shaft. The vertical oscillating movement of the stock F is

produced by its being connected at its upper end by a rod, J, with a crank, L', on a shaft, L, which rotates at twice the velocity of the shaft I.

c d and *c' d'* are two pairs of feed-rolls for feeding the plates to the cutters, each pair feeding one plate or train of plates, to enable the cutters to cut two nails at a time, one from each plate. The lower rolls, *c c'*, are carried by shafts *e e'*, arranged in half-boxes below the table B, and set-screws *f f'* are applied to the said half-boxes to enable the said rolls to be adjusted to bring the upper parts of their peripheries just above the upper surface of the table, which is slotted to allow the said rolls to work through it. The upper rolls are carried by shafts *g g'*, arranged in half-boxes above the said table, and springs *h h'* are applied to these half-boxes to enable the rollers to adjust themselves to variations in the thickness of the nail-plates and keep them pressed thereon sufficiently to insure the feed. The upper and lower shafts are geared together by gears *i i'*, and the driving power is applied by means of bands running round pulleys *k k'* on the shaft L and pulleys *l l'* on the feed-roll shafts, the said pulleys being grooved to prevent the bands from slipping off at the time when the cutting takes place, when the feed-rollers are stopped by the action of the cutters, and the bands on the plates slip around the said pulleys. The feed-rollers have grooves 5 5 in their peripheries, the object of which will be presently explained, and at the sides of the grooves their peripheries are roughened to enable them to take hold of the plates and feed them forward without slipping. Between each pair of feed-rolls and the cutters there is arranged a pair of sliding guide-bars, *n n**, the object of which is to guide the nail-plates from the rolls to the cutters and enable any number of plates to be fed consecutively to the cutters by each pair of feed-rollers without passing each other, thereby causing the latter end of one plate to be pushed forward by the front end of one which succeeds it, and enabling the whole of each plate to be cut up without leaving any waste, and making the feed and cutting operations perfectly continuous. The lower bar, *n*, is fitted to slide easily in a groove in the top of the table B, and the upper one, *n**, in a groove in the bottom of the plate M, which is bolted to

the said table to carry the bearings of the upper feed-roll shafts. These bars are somewhat wider than the nail-plates. The lower ones, *n n*, have their upper surfaces flat, and the upper ones, *n* n**, have longitudinal guiding-grooves 8 (see Fig. 4) in their under surfaces, of a width equal to the width of the nail-plates and of a depth equal to the thickness of the nail-plates, and the upper ones, but not the lower ones, have to be changed for cutting nails from plates of different thicknesses. The upper surfaces of the lower ones stand slightly above the upper surface of the table or even with the tops of the peripheries of the lower feed-rolls. The said bars have tongues 6 6 at their rear ends, fitting easily to the grooves 5 5 in the feed-rolls, and extending back beyond the centers of the said rolls to form continuations of the said bars between the rolls, and thereby prevent the ends of the consecutive plates from passing each other as the advanced ones are leaving the rolls, and insuring the feeding out of the last end of the advanced plates by the forward end of the following ones. The upper guide bars, *n* n**, have transverse notches 7 7 in their upper sides, near their front end, for the reception of the edge of a transverse bar, *p*, which is firmly secured to the cutter-frame C, and which consequently

has the same horizontal oscillating motion, by which it is caused to produce a slight movement of the guide-bars back and forth and always keep them in contact with the face of the upper cutter and on the top of the lower cutter close to the edge thereof. The lower guide-bars, *n n*, are kept in contact with the lower cutters partly by the friction of the nail-plates upon them, and partly by the friction of the upper bars; and as the upper guide-bars come upon the top of and the lower ones against the face of the lower cutter the last ends of the plates are prevented from dropping out between the feeding mechanism and the cutters, and enabled to be cut entirely up.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the grooved feed-rolls *c d c' d'* and the sliding guide-bars *n n**, to operate substantially as and for the purpose herein specified.

2. Combining the sliding guide bars with the cutters by means of the bar *p*, attached to the oscillating cutter-frame, substantially as and for the purpose herein set forth.

WILLIAM H. FIELD.

Witnesses:

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