P. RICHARDS.

Making Cut Nails.

No. 100,447. Patented March 1, 1870.

Fig. 1

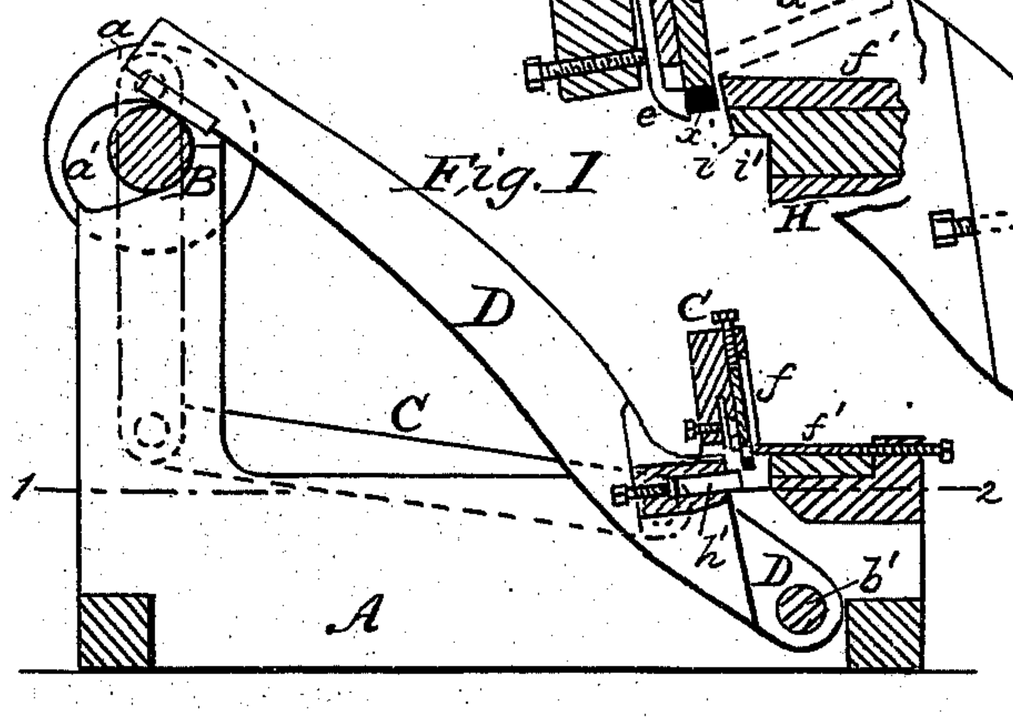


Fig. 3.

Fig. 4.

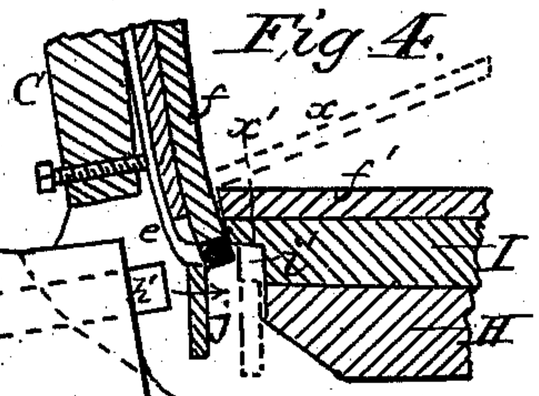


Fig. 5.

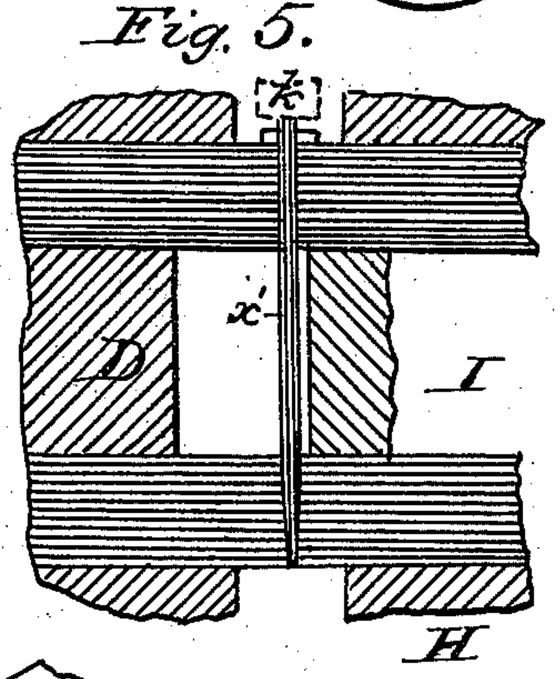


Fig. 2.

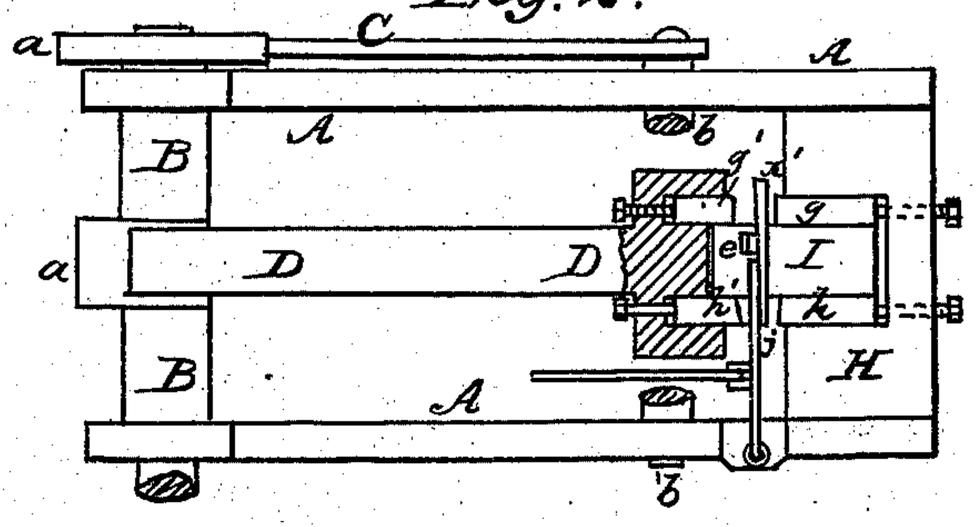


Fig. 6.

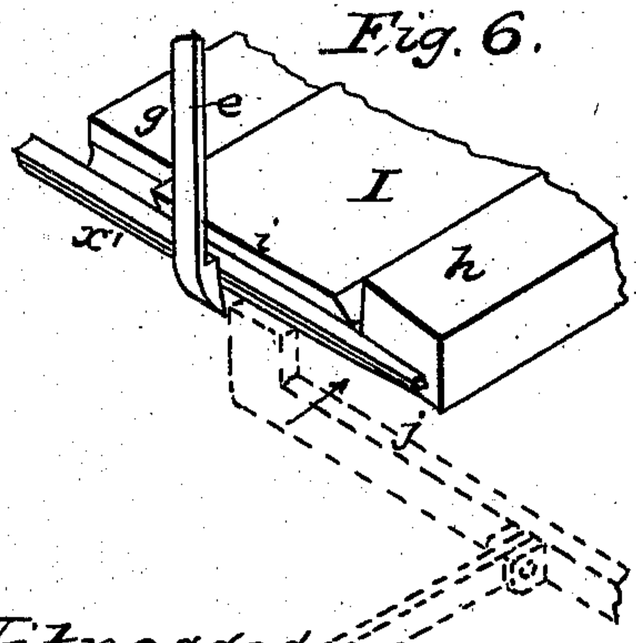
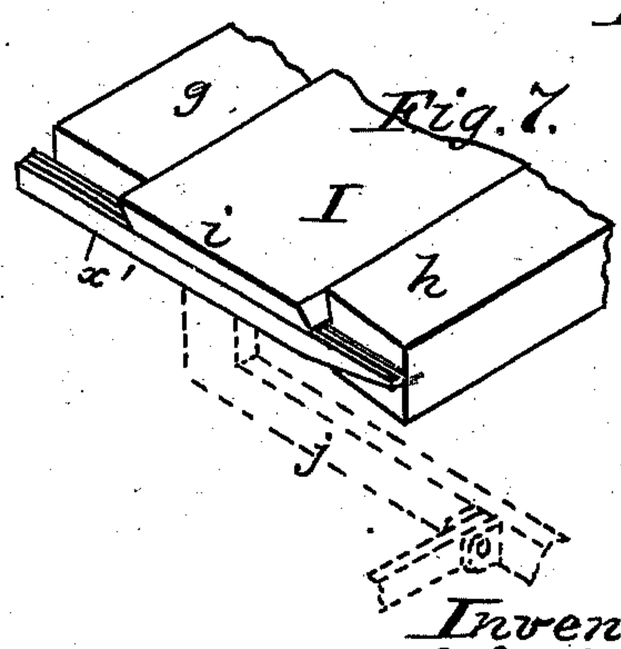


Fig. 7.



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United States Patent Office.

PHILEMON RICHARDS, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 100,447, *dated March* 1, 1870.

IMPROVEMENT IN NAIL-CUTTING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, PHILEMON RICHARDS, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Nail-Machines, of which the following is a specification.

Nature and Object of the Invention.

My invention consists of the combination in a "flat-grip" nail-machine of certain pointing-dies, with the usual griping-dies, and with devices for turning the nail-blanks, the said pointing-dies being arranged to operate simultaneously, or nearly so, with the gripers, as fully described hereafter, for the purpose of producing a pointed clinching-nail similar to the usual wrought or hammered nail.

Description of the Accompanying Drawing.

Figure 1 is a vertical sectional view of sufficient of a "flat-grip" nail-machine to illustrate my improvement;

Figure 2, a sectional plan view of the same on the line 1–2, fig. 1;

Figures 3 and 4, enlarged views of parts of fig. 1;

Figure 5, an enlarged view of part of fig. 2; and

Figures 6 and 7 perspective views of a portion of the machine, also enlarged.

General Description.

A represents the frame of the machine, and B the driving-shaft, the latter being furnished with the usual crank-wheel *a* and cam *a'* for operating the levers C and D, which are hung in the usual manner to the frame of the machine at *b* and *b'*.

The construction and operation of the cutting-off lever C is the same as in other machines of this class, it being furnished with a cutter, *f*, between which and the stationary cutter *f'* of the bed-piece the nail-plate *x* is cut into suitable blanks, and with the usual spring gauge *e*, which determines the width of the blanks, as shown in fig. 3.

In a recess of the bed-piece H, beneath the stationary cutter *f'*, are two dies, *g* and *h*, between which is a block, I, a portion of the front edge of the latter being cut away, as best observed in fig. 3, so as to form a projection or lip, *i*, which is a continuation of the beveled edge of the stationary cutter, and a recess, *i'*, beneath this lip, into which the central portion of the nail-blank is received, after having been thrust downward by the cutter *f*, and turned quarter way round, and held in the said recess by the action of the spring nipper *j*, which receives its motion from a cam on the driving-shaft, or otherwise, (see figs. 3 and 4.)

The lever D, before referred to, carries two adjustable dies, *g'* and *h'*, at points directly opposite to the adjustable dies *g* and *h* of the bed-piece, the dies *g* and *g'*, or, as they are generally termed, the "gripers," being similar to those in common use, while the dies *h* and *h'* are intended to act simultaneously with the gripers in pointing the end of the blank, their opposing ends being tapered or beveled, as shown in figs. 2 and 5.

A portion of the end of the lever D, between the dies *g'* and *h'*, is cut away in order to afford space for the free operation of the spring nipper *j* and gauge *e*.

As the heading-die *k* operates in precisely the same manner as in other nail-machines, and forms no part of my present invention, it has not been deemed necessary to illustrate it more fully than is shown by dotted lines in fig. 5.

The operation of the machine is as follows:

When the movable cutter *f* is raised, the nail-plate *x* is inserted beneath the same, resting upon the stationary cutter at about the angle shown by dotted lines in figs. 3 and 4, so that, on the descent of the movable cutter, a blank, *x'*, may be severed from the plate, the thickness of the blank being determined, as usual, by means of the adjustable gauge, *e*, (see fig. 3.) The blank, after having been thus severed, is thrust downward by the cutter to the position shown in figs. 4 and 6, or until it projects about half way over the lip *i*, the spring nipper *j* then moves forward in the direction of the arrow, in order to turn the blank quarter way round into the recess *i'*, and to hold it against the under side of said lip. The lever D now moves forward, and the blank is compressed simultaneously, or nearly so, between the griping-dies *g* and *g'* and the pointing-dies *h* and *h'*, the former performing their usual duty of griping the blank during the operation of the heading-die, while the latter taper two of the opposite sides of the blank, and thus point the same, as will be readily understood on reference to fig. 5.

The object in turning the blank, as before described, by means of the spring nipper *j*, is to enable its flat or rolled sides to be compressively operated upon by the griping and pointing dies, instead of the cut sides, the product being what is generally termed a "flat-grip" nail.

The edges of the nail are tapered on both sides toward the point in the operation of cutting the blank from the nail-plate, so that the rolled or flat sides only need be submitted to the pointing-dies, as above described, in order to reduce the nail to a sharp point, similar to that of the ordinary wrought or hammered clinching-nail.

Claim.

The griping-dies *g g'* and pointing-dies *h h'* for griping the blank at its ends only, in combination with the spring nipper *j* and lip *i*, or equivalent devices for turning over and holding the nail-blank, as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

PHILEMON RICHARDS.

Witnesses:

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LOUIS BOSWELL.