

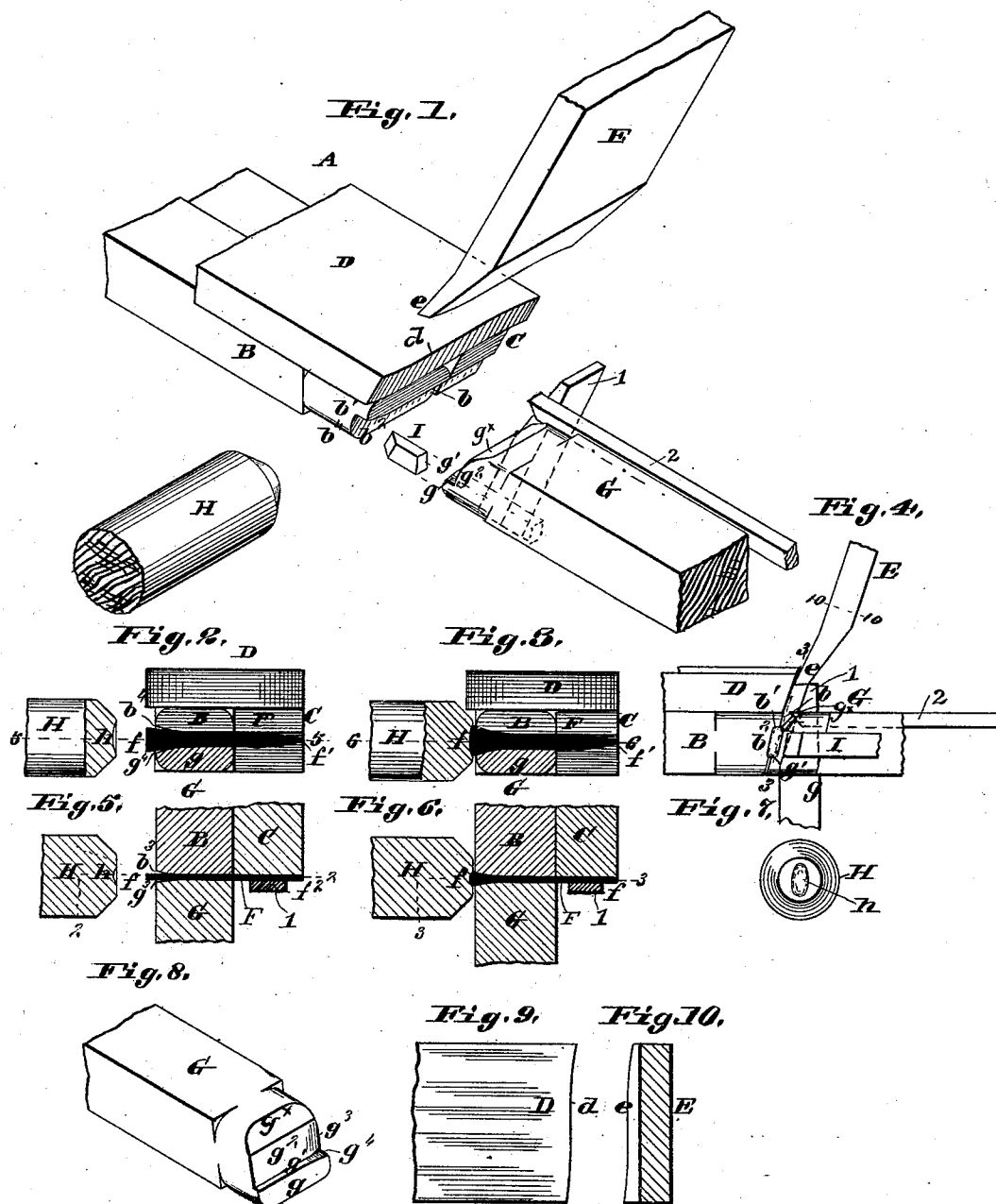
(No Model.)

O. ROBERTS.

HORSESHOE NAIL MACHINE.

No. 352,069.

Patented Nov. 2, 1886.



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UNITED STATES PATENT OFFICE.

OLIVER ROBERTS, OF BELLEVILLE, ILLINOIS.

HORSESHOE-NAIL MACHINE.

SPECIFICATION forming part of Letters Patent No. 352,069, dated November 2, 1886.

Application filed December 26, 1884. Serial No. 151,197. (No model.)

To all whom it may concern:

Be it known that I, OLIVER ROBERTS, of Belleville, in the county of St. Clair and State of Illinois, have invented a certain new and useful Improvement in Horseshoe-Nail Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 The invention is confined to the cutting and holding devices which are made to fit in an ordinary nail-machine, the machine being constructed to give sufficient movement to the moving knife and the header, for the purposes
15 hereinafter to be described.

Figure 1 is a perspective view showing the tools in their relative positions previous to cutting a blank from a nail-plate, the moving knife being in its upper position and the moving die and header in their retracted position. 20 Fig. 2 is a vertical section at 2 2, Fig. 5, showing a side view of the blank. Fig. 3 is a vertical section at 3 3, Fig. 6, showing a side view of the slug. Fig. 4 is a side view showing the slug held by the jaws after the head has been formed by the header. Fig. 5 is a horizontal section at 5 5, Fig. 2, showing an edge view of the blank. Fig. 6 is a horizontal section at 6 6, Fig. 3, showing an edge view of the slug. 30 Fig. 7 is an end view of the header. Fig. 8 is a perspective view of the end of the moving die. Fig. 9 is a top view of the bed-knife. Fig. 10 is a horizontal section of the moving knife, looking downward, and showing the curved edge of the same.

35 A is the bed-work, composed of the bed-die B, the back piece, C, and the bed-knife D. The shanks of these tools have the usual form, and they are clamped in the machine in the usual
40 manner.

E is the moving knife, whose cutting-edge e has the same curved form as the cutting-edge d of the bed-knife. The form of these edges is such as to cut the blank (the nail-plate being 45 turned, as usual, between the cuts) with a chisel-point and with a fish-tail head, the metal which is cut from the point going into the head. The blank and slug are shown at F, the head being marked f and the point f' .

50 G is the moving die. This is made with a ledge or lip, g , at the lower part of its face, the upper

side, g' , of the said ledge or lip bearing against the lower edge, f^2 , of the slug, and the face g^2 bearing against the side of the slug which is at top when the same is cut from the nail-plate. 55 The end or face of the bed-die has much the same form, having a lip, b , whose lower side, b' , bears against the upper edge of the slug when it is gripped between the jaws, and the face b^2 bearing against that side which is beneath when cut. 60

It will be understood that the blank is turned one-fourth around, so as to rest "edge up" between the dies when the heading is done. This may be accomplished by the following or any 65 other desired or preferred mechanism: 1 is a stop and guide-finger, and 2 is a chisel-pointed turner, both of which are located at the side of the moving die G and opposite the end of the back piece, C, as represented in the perspective view, Fig. 1. In operation the blank 70 is pushed forward along the bed-knife until its end reaches the stop and guide-finger 1. The moving knife E then descends, cuts off the slug, and continues to move downward, carrying with it the slug and stop and guide-finger. 75 The end of the turner 2 projects beyond the face of the stop and guide-finger only far enough to engage beneath the slug; hence when said slug comes in contact with said turner the 80 movement of its side contiguous thereto will be momentarily arrested, thereby causing the blank to turn one-fourth around and drop upon the lip g' edge up. The turning of the slug is facilitated by beveling off the upper corner of 85 the moving die G, as at g^* . The faces of the dies have the necessary bevels at b^3 and g^3 and the ledges or lips at b^4 and g^4 to impart the required form to the head of the slug when spread by the header H. The head or end of 90 the header has a rounded recess, h , giving the proper elongated bulging form to the head of the blank when finishing the slug.

Ordinarily the finished nails drop from the dies as soon as they separate; but for the purpose of rendering this certain I provide a 95 clearer, which is represented by the letter I. This clearer is fixed to the frame of the machine and occupies the position shown in Fig. 1—i. e., close to the side of the moving die G 100 and near to the head of the nail during the swaging operation. If the nail should stick

on the lip g' when the die G is retracted, its (the nail's) protruding head will come in contact with the fixed clearer I , and thereby be dislodged.

5 I prefer to make the edges of the dies convex or rounding in proximity to the header, so as to avoid the danger of the header coming in contact with the dies when swaging up the head.

10 The operation is as follows: The parts being in position shown in Fig. 1, the nail-plate is inserted between the knives, and the blank being cut off is carried down with the moving knife and turned edge up, as described. The
15 moving die then moves forward and clamps it in this position. (See Figs. 2, 4, and 5.) Then the header impinges on the head and spreads it out to the bevels g^3 and g^4 . (See Figs. 3 and 6.) As the parts move to the position shown
20 in Fig. 1, the slug is discharged. The nail-plate having been inverted and put in position, another blank is cut off.

I claim—

1. A nail-machine having two gripping-dies acting in conjunction to hold the blank for heading, and having, respectively, lips forming the bearing of the top and bottom edges of the blank. 25

2. A nail-machine having gripping-dies with lips forming top and bottom bearing for the nail-blank and bevels upon the die-faces and lips to give form to the head upon the impingement of the header. 30

3. The combination of curve-edged knives, gripping-dies with bearing-lips, substantially as described, and a clearer, all substantially as set forth. 35

OLIVER ROBERTS.

Witnesses:

SAML. KNIGHT,

GEO. H. KNIGHT.