2 Sheets—Sheet 1.

S. S. MORTIMER & J. R. ROBINSON.

MACHINE FOR FINISHING HORSESHOE NAILS.

No. 189,769. Patented April 17, 1877.

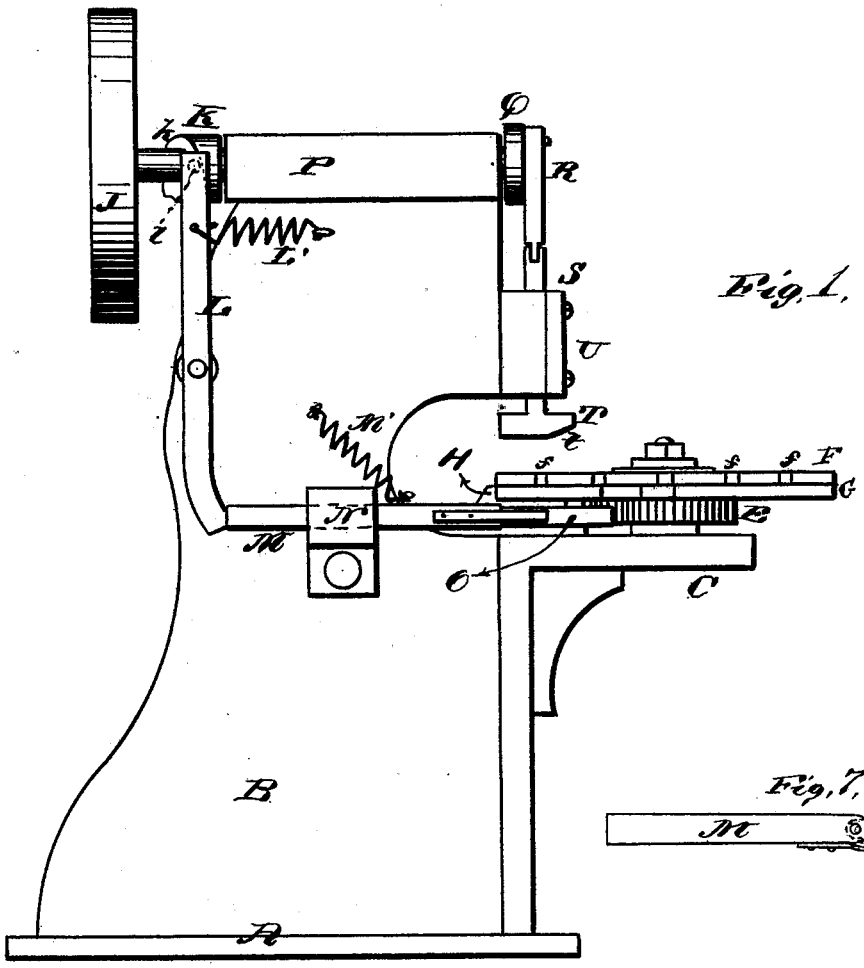

Fig. 1.

Fig. 7.

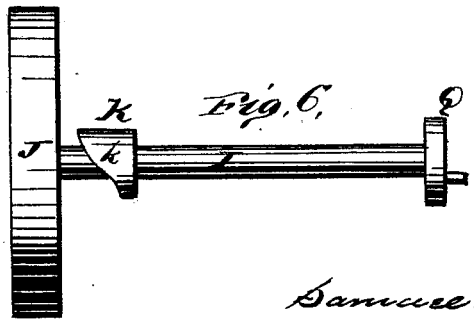

Fig. 6.

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2 Sheets—Sheet 2.

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Fig. 2

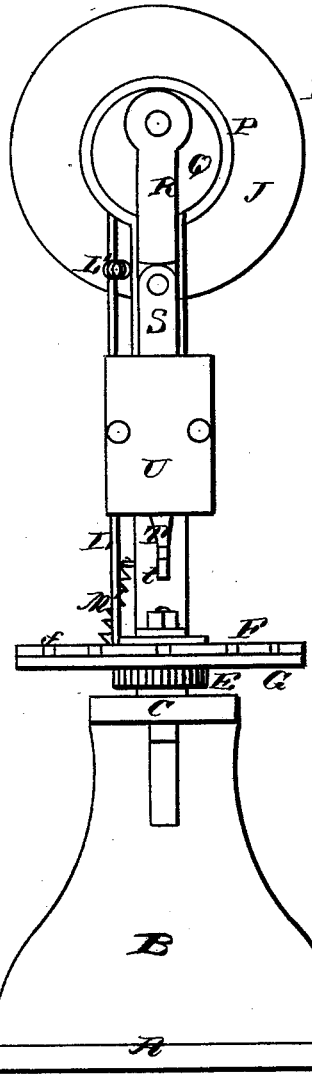


Fig. 3.

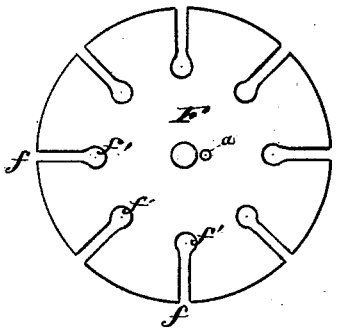
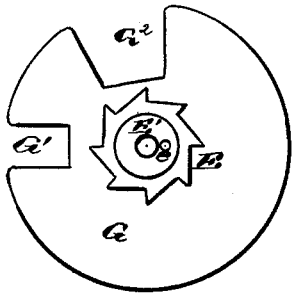


Fig. 4.



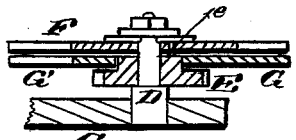
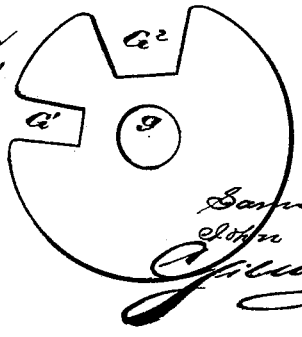


Fig. 9.

Fig. 5.

Fig. 8.



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UNITED STATES PATENT OFFICE.

SAMUEL S. MORTIMER AND JOHN R. ROBINSON, OF WOONSOCKET, R. I.

IMPROVEMENT IN MACHINES FOR FINISHING HORSESHOE-NAILS.

Specification forming part of Letters Patent No. **189,769**, dated April 17, 1877; application filed February 10, 1877.

To all whom it may concern:

Be it known that we, SAMUEL S. MORTIMER and JOHN R. ROBINSON, of Woonsocket, in the county of Providence and State of Rhode Island, have invented a new and valuable Improvement in Horseshoe-Nail Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of our horseshoe-nail machine; and Fig. 2 is a front view of the same. Figs. 3, 4, 5, 6, 7, 8, and 9 are detail views thereof.

This invention relates to horseshoe-nail machines; and consists in certain improvements therein, hereinafter more fully set forth.

In the annexed drawings, A designates the bed or base of my machine, and B a standard or supporting-frame secured thereon. The front of said supporting-frame is provided with a projecting flat block or small table, C, on which is an upright pivot-bolt, D. E designates a ratchet-wheel, which turns upon said pivot D, and is provided with a small drum, E′, on its upper side, from which drum a small stud or pin, *e*, extends upwardly into a socket or recess, *a*, on the under side of a nail-blank-carrying disk, F. G represents a disk, provided with a central orifice, *g*, (see Fig. 8,) for the reception of the drum E. Said disk G sets between disk F and ratchet E, which turn together, and is held stationary by a small anvil or raised block, H, formed on the top of the inner part of projecting block C, already described. Said small anvil or raised block H sets into a rectangular recess, G′, of said disk G, as shown in Fig. 4. Said disk G is also provided with a larger opening or recess, G^2, which allows the nails to fall through into any suitable receptacle, as they are carried around by blank-conveying disk F after being formed.

Said disk F is provided around its circumference with a number of radial recesses, *f*, each of which is adapted to hold the blank of a horseshoe-nail, the inner ends thereof being provided with expansions *f′*, as shown in Fig. 3, to allow room for the head of the nail. Said conveyer or blank-carrying disk F is rotated continually by a step-by-step motion produced as follows: In the top of standard or supporting-frame B is journaled a shaft, I, rotated by a crank-wheel, J, and carrying a collar, K. The face of said collar nearest to said crank-wheel is recessed helically, so as to form a snail-shaped cam, *k*, which bears against a stud, *l*, on the upper end of a lever, L, of the first kind, which is pivoted to said standard or supporting-frame. The lower end of said lever bears against the rear end of a horizontal bar, M, which slides longitudinally in a guideway or casing, N, fixed to the side of said supporting-frame or standard B, and carries at its front end a spring-pressed pawl or dog, O. (Shown in detail in Fig. 7.) Said pawl engages with some one of the teeth of the ratchet-wheel E at each forward movement of said sliding bar M, and thus produces the step-by-step rotary motion of the blank-conveyer F, above referred to. As soon as stud *l* passes the thickest part of the cam-faced collar K, the pressure on said stud is suddenly removed, and lever L and bar M are retracted by springs M′ and L′ attached to them, respectively, and also to standard or supporting-frame B.

Said driving-shaft I has its bearing in a tubular block or sleeve, P, fixed to the top of standard B, and is provided at its front end with a small crank-wheel, Q, which operates a pitman, R, that transmits vertical reciprocatory motion to a plunger, S, carrying a stamping-hammer or former, T. Said plunger S works in a solid guide-casing, U, secured to the front of standard or frame B, and said stamp or former T is provided with an upward bevel, *t*, at the front part of its stamping-face.

The arrangement of the foregoing devices is such that said stamp-hammer or former is brought down upon anvil or raised block H simultaneously with the presentation of each successive nail-blank to said former T and anvil or block H. A single stroke suffices to give the desired form, and conveying-disk F then removes the nail, presenting another blank in its place. By maintaining the rotation of

driving-shaft I, and feeding conveying-disk F with blanks, the operation of nail-forming, as above described, may be continued indefinitely.

The various parts of this apparatus are made quite strong, to resist the considerable strain to which they are subjected; but may be readily detached for the purpose of inspecting or cleaning them.

Base plate or disk G provides a smooth and secure bearing-surface for blank-conveying disk F to turn upon, and prevents the blanks from falling out of the recesses *f* in said conveying-disk.

What we claim as new, and desire to secure by Letters Patent, is—

The combination, with the ratchet-wheel E, having drum E′ and stud *e*, and the blank-carrying disk F, having recesses *f* and perforation *a*, of the sliding bar M, pawl O, lever L, cam-faced collar K, driving-shaft I, sleeve P, crank-wheel Q, pitman R, plunger S, springs L′ M′, and former T, substantially as described, and for the purpose set forth.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

SAMUEL S. MORTIMER.
JOHN R. ROBINSON.

Witnesses:
FRANCIS L. O'REILLY,
GEORGE A. WILBUR.