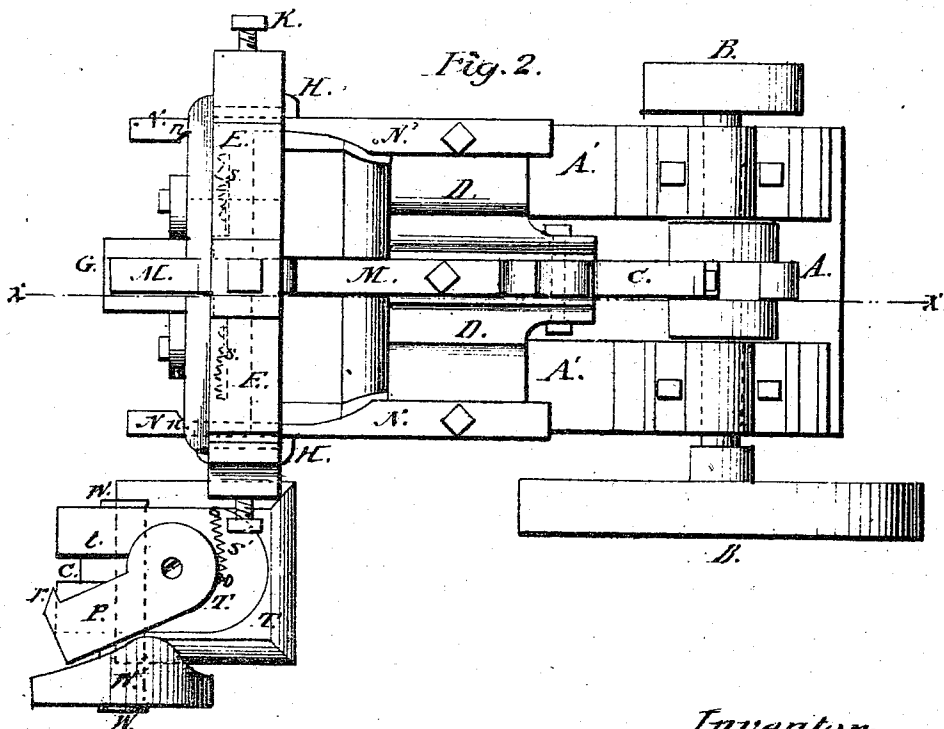
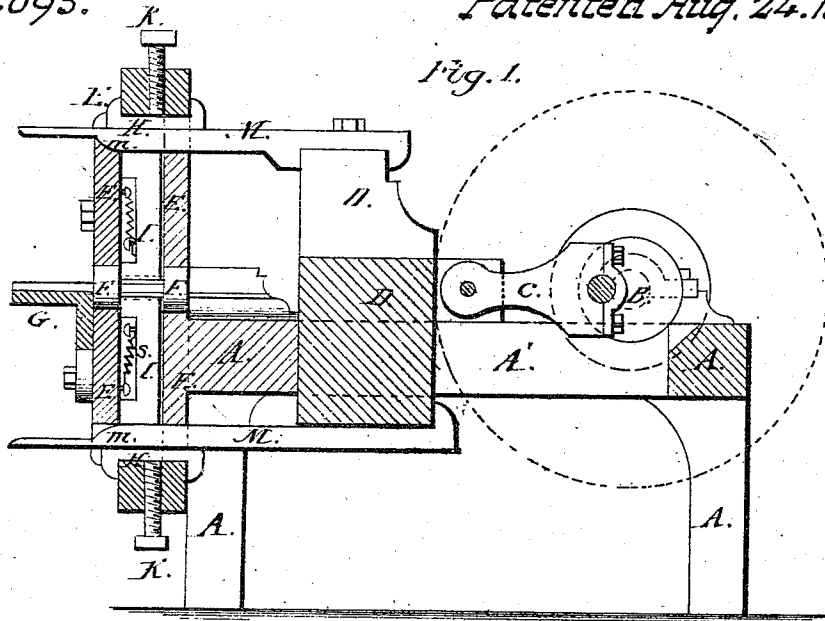


D. J. Farmer.

Imp'd. Horse-Shoe-Nail Mach.

No. 94,095.

Patented Aug. 24. 1869.



Witnesses:
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United States Patent Office.

D. J. FARMER, OF WHEELING, WEST VIRGINIA.

Letters Patent No. 94,095, dated August 24, 1869; antedated August 16, 1869.

IMPROVEMENT IN MACHINES FOR MAKING HORSESHOE-NAILS.

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

To all whom it may concern:

Be it known that I, D. J. FARMER, of Wheeling, in the county of Ohio, and State of West Virginia, have invented a new and improved Horseshoe-Nail and Swaging-Machine; and I 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 accompanying drawings, making a part of this specification; in which—

Figure 1 is a vertical section, through line $x x$ of fig. 2.

Figure 2 is a top view.

This invention has for its object to simplify the construction and render more convenient and effective the operation of machines for making horseshoe-nails, and for swaging iron into the form required for such nails and other small articles. To this end,

The invention consists in the use of an adjusting-apparatus, in connection with the sliding wedges that operate the dies, and in the general arrangement and construction of the machine, as hereinafter described and claimed.

In the drawings—

A A A' indicate the frame of the machine;

B being the driving-shaft;

C, the pitman; and,

D, the sliding block above referred to, operated by the pitman and guided by the side-pieces A' A' of the frame, which serve as ways for it to run upon.

A large, vertical, and nearly circular head-block, E, is fixed to the end of the frame opposite to that where the shaft is supported, and contains a central aperture, F, into which the nail is introduced, and a grooved guide-plate, G, to assist in feeding the nails properly to the dies.

The dies act upon the nail as it passes through the opening F, toward the shaft, two of them, I I, acting upon it vertically and two horizontally.

s s are springs for retracting the dies, after they have performed their work upon each nail.

The four dies are in the form of sliding blocks, moving back and forth in recesses in the head-block E, and are operated by four cam-arms, M M N N, projecting from the sliding block D, and extending through slots or sockets in the head-block, across the outer end of each die.

The two arms M M are made with the cam or shoulder, formed as seen at $m m$, so as to force the vertical dies I I in against the nail when the block D is moved toward the head-block E, and the other two arms have shoulders $n n$, inclined in the opposite direction, so that they force the horizontal dies in against the nail when the block D is retracted, the

operation of the whole apparatus being to bring the vertical dies to act upon the nail first, and then, when they are retracted, the horizontal dies.

H H are sliding blocks, acting against the back of the arms M M N N, in such a manner as to hold them, at all times, in contact with the dies, and

K K are adjusting-screws, to regulate the position of the blocks H H, and the force with which they bear upon the back of the arms.

In connection with this apparatus, an auxiliary one may be employed, consisting of a table, T, having a slot or gain, c, in one edge, and a square steel block, t, projecting up at one side of the slot or gain, and having a pivoted steel die, P, provided with a cutter, r, at its outer end, operating over the slot or gain and against the steel block, in the manner shown by fig. 2.

The combined die and cutter P is forced against the steel block by means of a cam-wheel, W, on a shaft, w, operated by belting or gearing (as may be most convenient in any particular case) from the main shaft.

The die is retracted by means of a spring, s'. All the springs used in the machine may be spiral, flat, or of any other convenient forms, and may be made of any material that will answer the purpose, and applied in any manner that the manufacturer prefers.

The die and cutter P is of a suitable form to shape the nail as desired, and to imprint upon it the trade-mark used by its proprietor.

The apparatus supported upon the table T may be connected with the main portion of the machine by any suitable means. I prefer to make it attachable detachable, and movable, in order that it may be adjusted in the most convenient positions for the workmen.

The pivot of the die and cutter P may also be made removable, and a set of dies, cutters, &c., may be employed in connection with the table, if desired, changeable at pleasure, for the purpose of forming other small articles as well as horseshoe-nails.

The operation of the machine is simple, convenient, and effective, and hardly needs further description.

The end of the nail-rod is introduced into the opening F, being slid in the proper position by means of the guide-groove of the table G, and is there swaged into the general form required. It is then taken out and thrust into the proper position, in the apparatus connected with table T, when a single stroke of the combined die and cutter P severs the rod, and finishes and stamps the trade-mark upon the nail.

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

1. In combination with the four reciprocating wedge-shaped arms, constructed to operate as described, and the dies and the head-block B, the blocks H, and adjusting-screws K, for the purpose set forth.
2. The arrangement of the several parts of the main apparatus, as above described; that is to say, the block D, the four long arms M N, each having the

shoulder *m n*, the circular disk or head E, having the central aperture F, the four dies, the springs *s s* working in a recess in the side of the dies, the blocks H, the adjusting-screws K, the crank O, and the shaft B, all constructed, connected, and operating together, in the manner herein set forth.

D. J. FARMER.

Witnesses:

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