(No Model.)

J. H. POPE.

NAIL DIE FOR HEELING MACHINES.

No. 411,835. Patented Oct. 1, 1889.

Fig. 1.

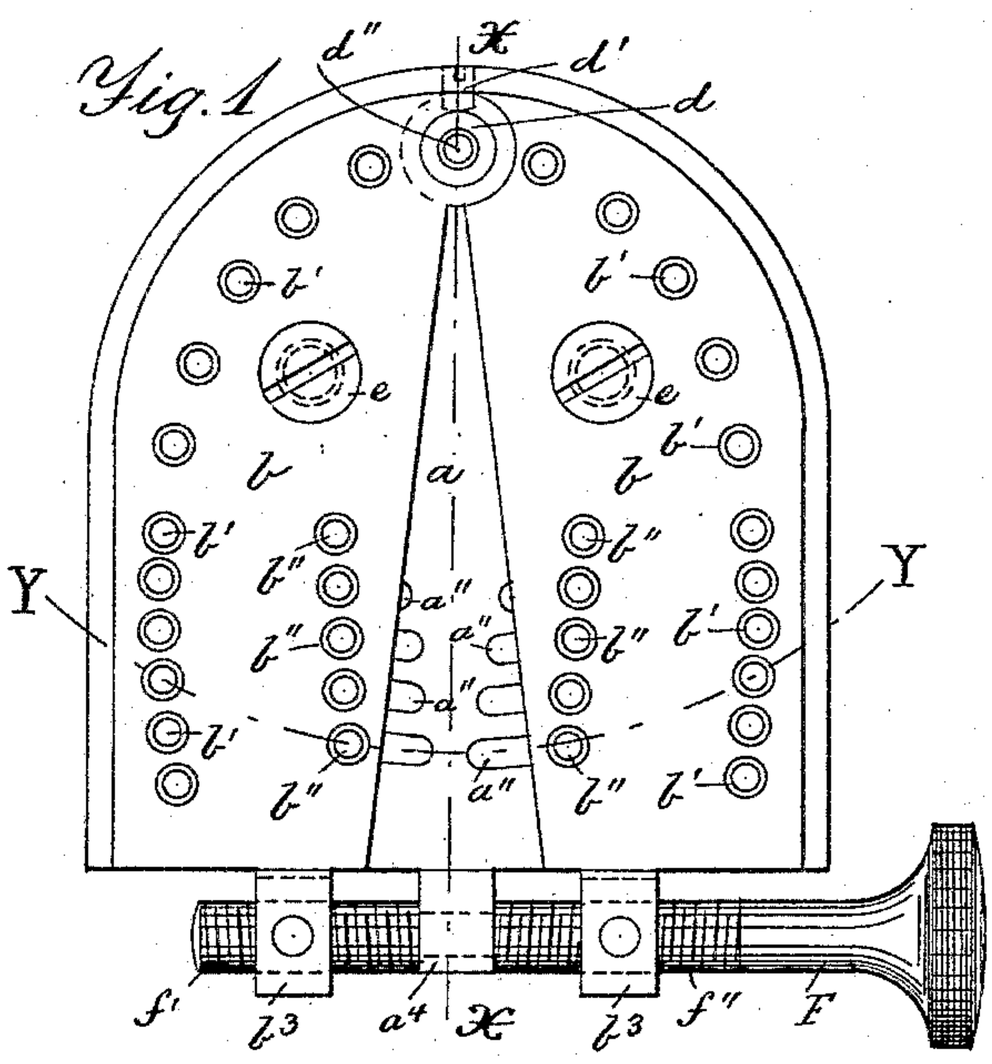
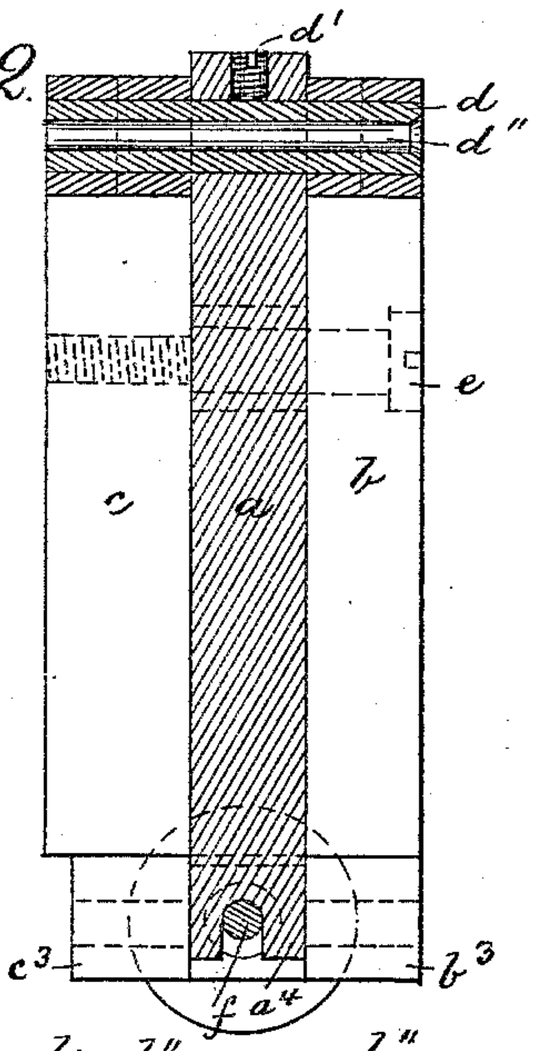


Fig. 2.



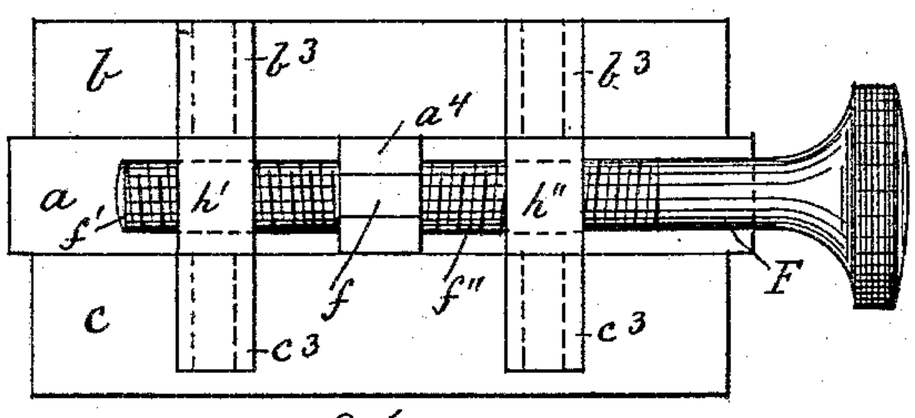


Fig. 3.

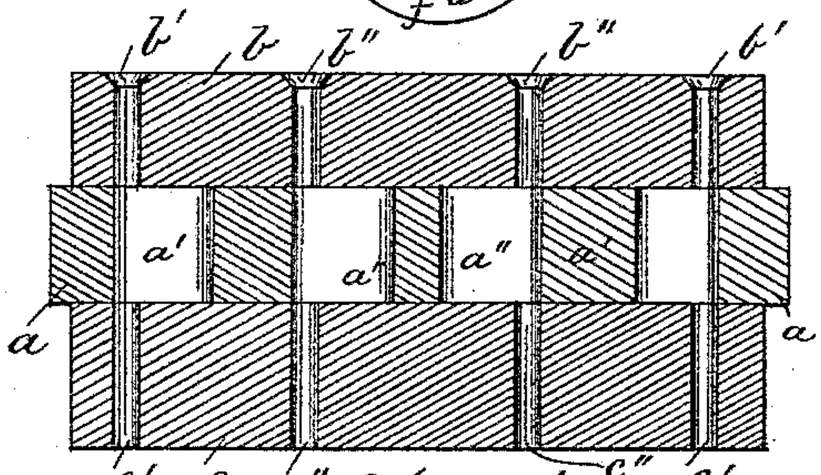


Fig. 4.

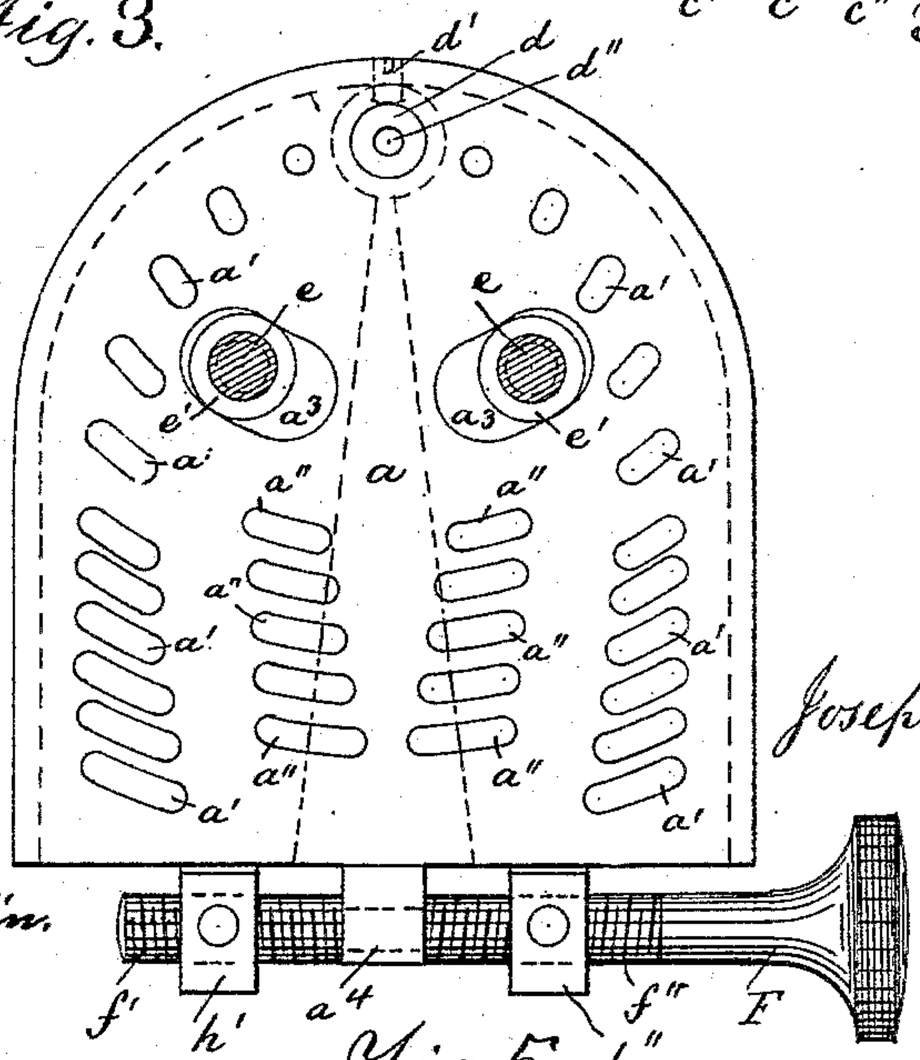


Fig. 5.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOSEPH HORACE POPE, OF BROCKTON, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN HEELING MACHINE COMPANY, OF SAME PLACE.

NAIL-DIE FOR HEELING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 411,835, dated October 1, 1889.

Application filed February 23, 1889. Serial No. 300,859. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HORACE POPE, a citizen of the United States, and a resident of Brockton, in the county of Plymouth and State of Massachusetts, have invented new and useful Improvements in Adjustable Nail-Dies for Heeling-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in nail-dies for heeling-machines, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a plan view of the improved nail-die. Fig. 2 represents a longitudinal section on the line X X, shown in Fig. 1. Fig. 3 represents a front elevation of said nail-die. Fig. 4 represents a cross-section on the line Y Y, shown in Fig. 1; and Fig. 5 represents a plan view of the stationary middle plate of the improved nail-die.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In heeling-machines for the purpose of nailing heels to boots or shoes perforated nail-dies are used, such dies having perforations adapted to receive the nails, which are afterward driven by a set of drivers attached to a driver-block. In such nail-dies the perforations are arranged according to the size of the heel that is to be nailed, and a separate and particularly perforated nail-die has to be used for each size of heels.

A nail-holder for a heeling-machine has been composed of slotted plates and a series of blocks having nail-receiving apertures, such blocks being separately adjustable by nuts in the slots of the plates to hold nails for heels of different sizes; but such is objectionables in that each block must be independently adjusted, which requires considerable time and skill.

The objects of my invention are to avoid the foregoing objections and provide a sectional nail-die wherein each section has a series of nail-holes and the sections can be accurately adjusted and locked in their adjusted position relatively to a stationary die-plate having a series of slots which register with the nail-holes in the adjustable sections under all adjustments of the latter. These objects I accomplish by the construction and combination of devices hereinafter described and claimed.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, where it will be seen that the nail-die as a whole is composed of a middle stationary plate or die *a*, on the top and bottom of which are arranged the adjustable dies *b b* and *c c*. The dies *b b* and *c c* are hinged to the middle stationary die *a*, as follows: A tube *d* is placed in a vertical perforation in the rear end of the said middle die *a*, which tube is secured to the latter by means of a set-screw *d'* or other suitable or equivalent device. To the ends of said tube *d* are pivoted the upper and lower adjustable dies *b b* and *c c*, as shown.

d'' is a central vertical perforation in the tube *d*, which is adapted to receive one of the attaching-nails that are to be driven.

b' b' b' represent vertical perforations in the upper adjustable dies *b b*, adapted to receive the attaching-nails to be driven close to the curved edge of the heel; and *c' c'* represent corresponding vertical perforations in the lower adjustable dies *c c*, the perforations in said upper and lower adjustable dies being arranged centrally in lines, the one above the other, so as to properly guide the nails when driven.

b'' b'' are vertical perforations in the adjustable dies *b b*, adapted to receive the breast-nails; and *c'' c''* are corresponding perforations in the lower adjustable dies *c c*, the perforations in the upper dies being arranged centrally in lines above the corresponding perforations in the lower adjustable dies, as shown.

Through the stationary middle die *a*, I make a series of vertical slotted perforations *a' a'*, corresponding to the perforations *b'* and *c'* in the upper and lower adjustable dies, and said middle die has also a series of slotted vertical perforations *a'' a''*, corresponding to the breast-nail perforations *b'' c''* in the upper and lower adjustable dies *b* and *c*, as

shown. The said slotted perforations a' and a'' in the middle die are preferably made curved with radii, having the axis of the tube d as a center, so as to permit the nails to be driven through the perforations in the said upper, middle, and lower dies during the various adjustments of the said upper and lower dies. The upper and lower dies b c are connected to the middle die with freedom of lateral adjustments, preferably by means of set-screws e e passing loosely through perforations in the upper die b and screwed into screw-threaded perforations in the lower die c. Where said screws pass through the middle die a, I prefer to surround them with sleeves e' e', as shown in Figs. 2 and 3; but this is not essential.

a^3 a^3 are slotted perforations in the middle die a, through which the screws e e or their sleeves e' e' pass loosely, so as to permit of the free adjustment of said upper and lower dies relative to the stationary middle die a.

The upper and lower dies b c b c are preferably adjusted in a positive manner by the following mechanism:

In a bearing a^4, made in one piece with or suitably secured to the middle die a, is journaled the reduced portion f of the adjusting-screw F, which is provided with right and left handed screw-threads f' and f'', as shown, which screw-threads are screwed through the correspondingly-threaded nuts h' and h'', pivoted in bearings b^3 c^3, secured to or made in one piece with the said respective upper and lower adjustable dies b and c, as shown in Figs. 1, 2, 3, and 5. Thus it will be seen that the dies b b and c c may be adjusted in a lateral direction to and from each other, according to the size of the heel that is to be nailed, simply by turning the screw F a little to the right or left, as the case may be; and, further, that the said movable die-plates b c are after adjustment locked or held in fixed positions relatively to each other, while the slots in the stationary die-plate a register with the nail-holes in the movable die-plates under all adjustments of the latter.

What I wish to secure by Letters Patent and claim is—

1. A nail-die for a heeling-machine, consisting of a middle stationary die-plate having a series of slots, movable top and bottom die-plates each having a series of nail-holes, respectively, coincident with the slots, and adjusting and holding devices for adjusting the movable die-plates and holding them in fixed positions relative to each other, said slots of the stationary die-plate registering with the nail-holes in the movable die-plates under all adjustments of the latter, substantially as described.

2. A nail-die for a heeling-machine, consisting of a middle stationary die-plate having a series of slots, a series of movable top and bottom die-plates arranged upon each side of the stationary die-plate and each having a series of nail-holes and adjusting and holding devices for simultaneously adjusting the movable die-plates and holding them in fixed positions relatively to each other, substantially as described.

3. The improved nail-die, as described, consisting of the stationary slotted middle part a, and the upper and lower perforated expansive dies b b c c, pivoted to a tube d, secured to said middle part, combined with the set-screws e e, for holding said middle and expansive dies together, and the right-and-left-handed screw F, journaled in a bearing on the middle die a and working in nuts pivoted to the expansive dies b b c c, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 26th day of January, A. D. 1889.

JOSEPH HORACE POPE.

Witnesses:

ALBAN ANDRÉN,

SELMA R. SCHELIN.