H. A. WILLS.

MACHINE FOR FINISHING HORSESHOE NAILS.

No. 170,793. Patented Dec. 7, 1875.

Fig. 1.

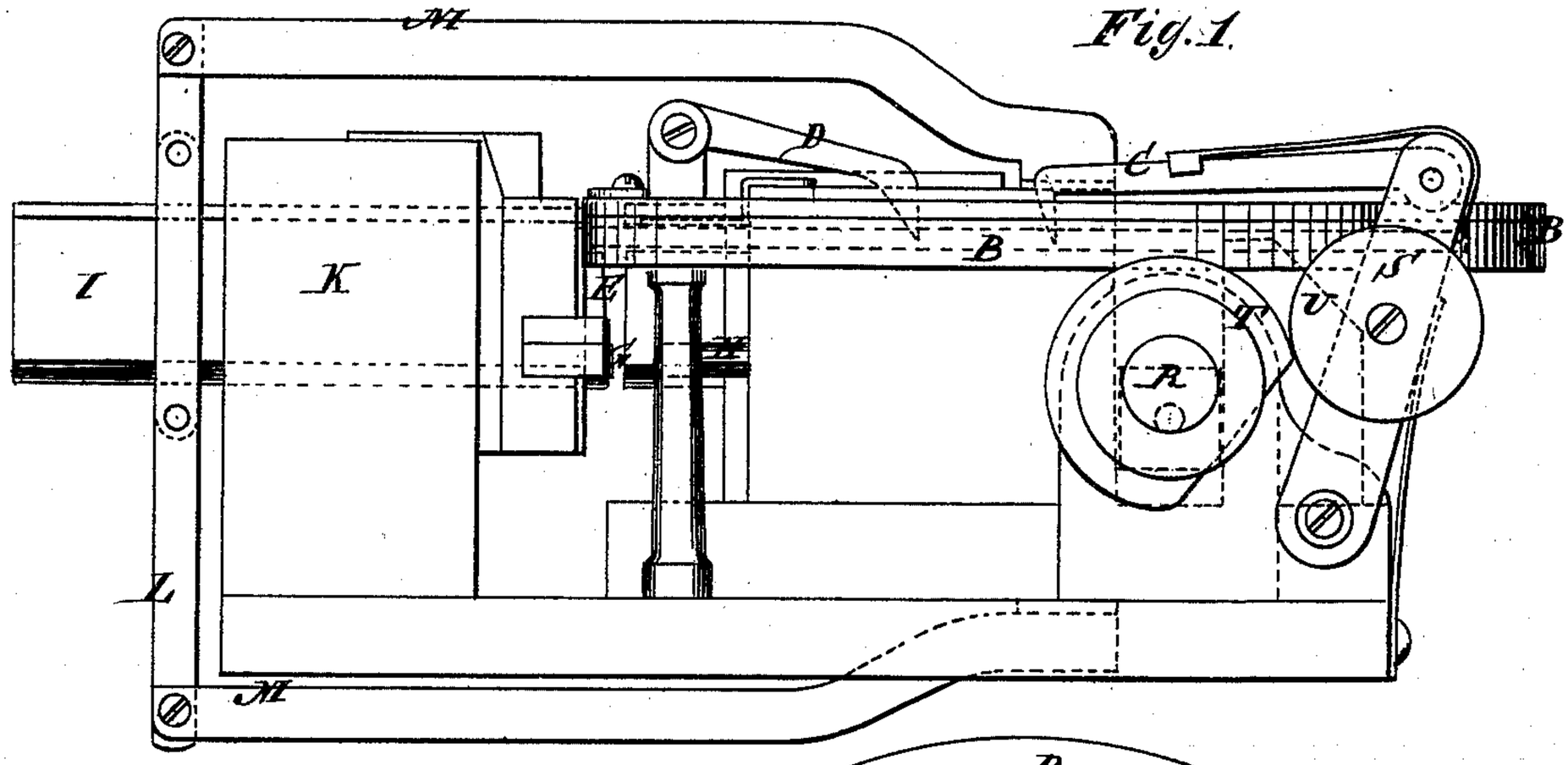


Fig. 2.

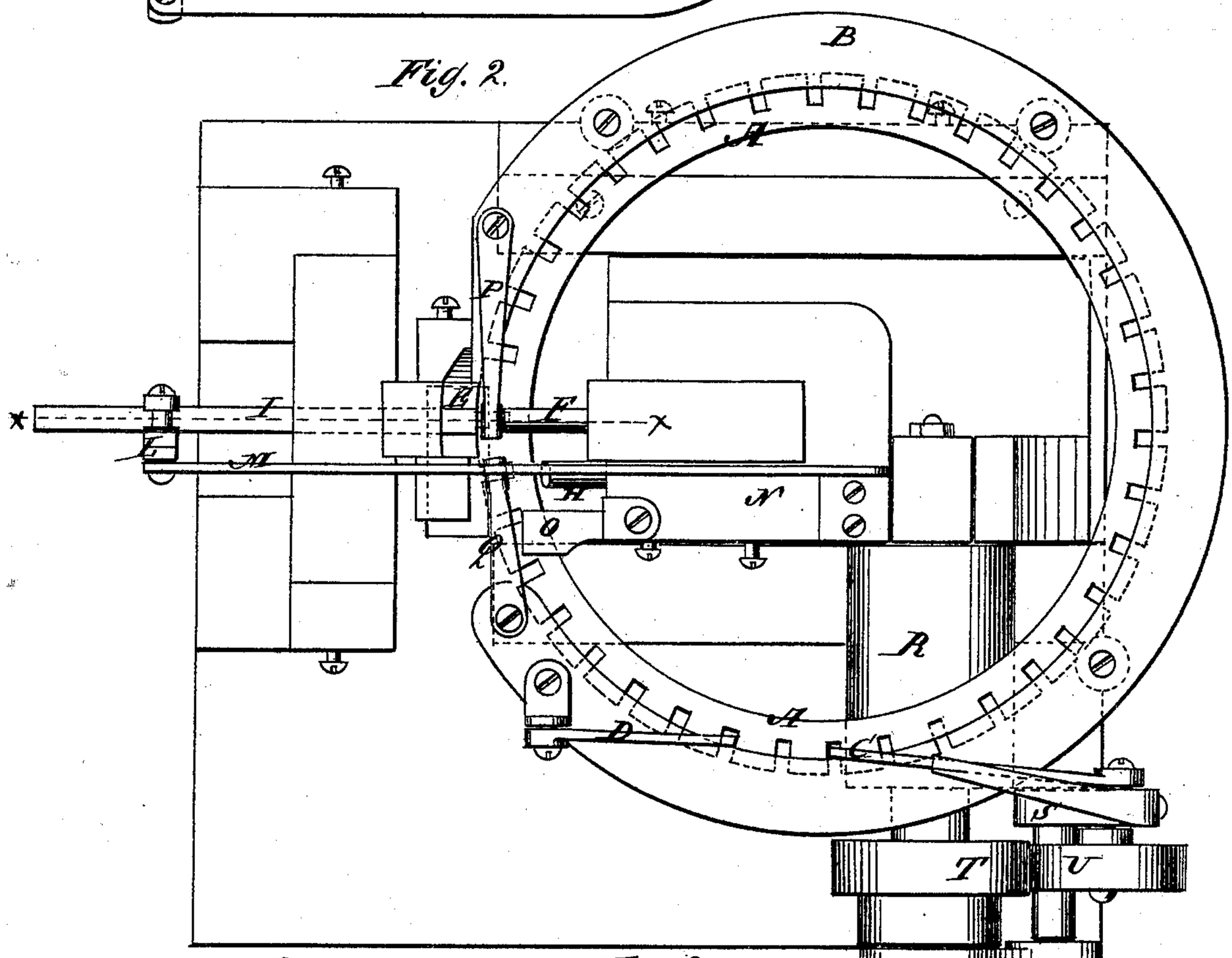
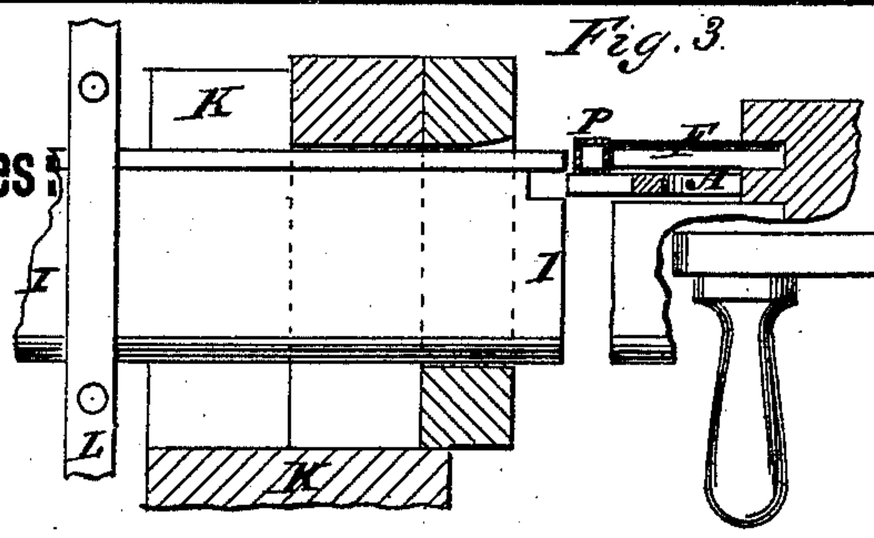


Fig. 3.



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UNITED STATES PATENT OFFICE.

HARRY A. WILLS, OF CHICAGO, ILLINOIS, ASSIGNOR TO JULIA A. WILLS, OF SAME PLACE, AND LUCY S. KINGSLAND, OF BURLINGTON, VT.

IMPROVEMENT IN MACHINES FOR FINISHING HORSESHOE-NAILS.

Specification forming part of Letters Patent No. **170,793**, dated December 7, 1875; application filed July 5, 1873.

To all whom it may concern:

Be it known that I, HARRY A. WILLS, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Horse-Nail Point Trimming and Beveling Machine, of which the following is a specification:

Figure 1 is a side elevation of my improved machine. Fig. 2 is a plan view. Fig. 3 is a section of Fig. 2 on the line *x x*.

Similar letters of reference indicate corresponding parts.

A is the notched ring-nail carrier, working in a stationary guide and support, B, and operated and controlled by the pushing-pawl C and holding-pawl D, as in other machines of this character. E represents the stationary trimming or shearing die, and F the movable die or punch, such as are common in machines of this character for shearing the surplus metal off the edges of the blanks at the points. The blanks are brought in front of these dies, one at each movement of the carrier, and held while the movable punch or die goes forward and drives them into the trimming-die.

I now propose to return the sheared blanks from the shearing-die into the carrier again, to be afterward carried to the point-beveling dies G H to be beveled, and for this purpose I provide a pusher or follower, I, in connection with the shearing-die, which follows close behind the punch F, when it withdraws, and pushes the nail immediately after it is sheared back into the notch of the carrier, out of which it was pushed to be sheared.

In this example I have arranged the follower in a stand, K, and connected it to the sliding stock N of the movable die by the bars L M; but any other approved contrivance for operating it may be employed. By the next movement of the carrier the sheared blank is presented in front of the beveling-dies, and held, while one side of the point is beveled in the usual way, by the ordinary point-beveling dies; and by another movement it is carried beyond the beveling-dies, and after the carrier stops it is discharged by a pusher, O, on the die-stock N, which moves against the head, and pushes it out of the notch while the dies are acting upon the succeeding blanks.

In order to prevent the blanks from turning in the trimming-die, or while moving from or back into the carrier, I have provided a little vibrating guider, P, with a slot on the under side, so arranged that just before the blank comes to rest in front of the shearing-dies the head will pass into the slot, which will hold the blank from turning: The guider swings forward and backward with the blank as it is pushed into the shearing-die and back again, and thus holds it until it moves forward to the beveling-dies, when it escapes from the guider P, and enters another stationary guide, Q, which holds it from turning while the beveling-dies are operating. From the guider Q the blanks escape, when moving away from the beveling-dies, so as to be discharged by the pusher O.

I propose to employ presses of any suitable kind to act upon the nail-heads, and hold them against rising upward when they are acted on by the dies.

The die-stock N is operated by a crank-shaft, R, to which the power is applied, and the said shaft also works the carrier by means of the pawl C, pawl-lever S, cam T, and a roller U.

In consequence of the thinness of the nail-blank at the point, and the very narrow part whereon it is beveled, after being sheared, there is no perceptible widening or spreading of the point by beveling it; or if there is, the widening is so graduated to the taper of the point that the taper is substantially the same as before the point is beveled.

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

1. In a horseshoe-nail-finishing machine, the combination of the reciprocating pusher I with the shearing-die, the punch F, and notched ring-carrier, as shown and described, for the purpose specified.

2. The vibrating guider P, having a slot or recess in its under side, in combination with the punch F, notched ring-shearing die, and pusher I, as shown and described, to operate as and for the purpose specified.

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Witnesses:

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