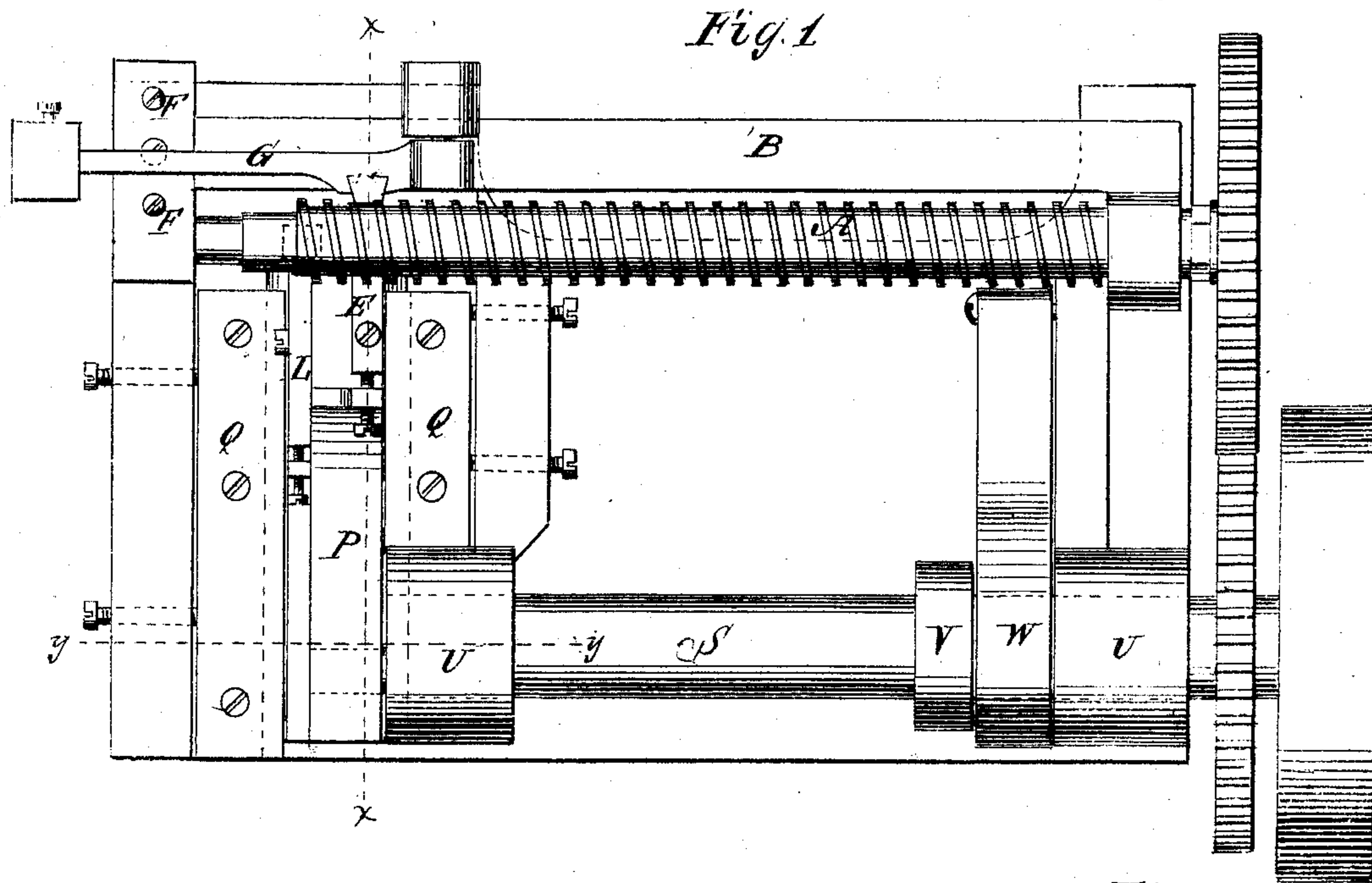


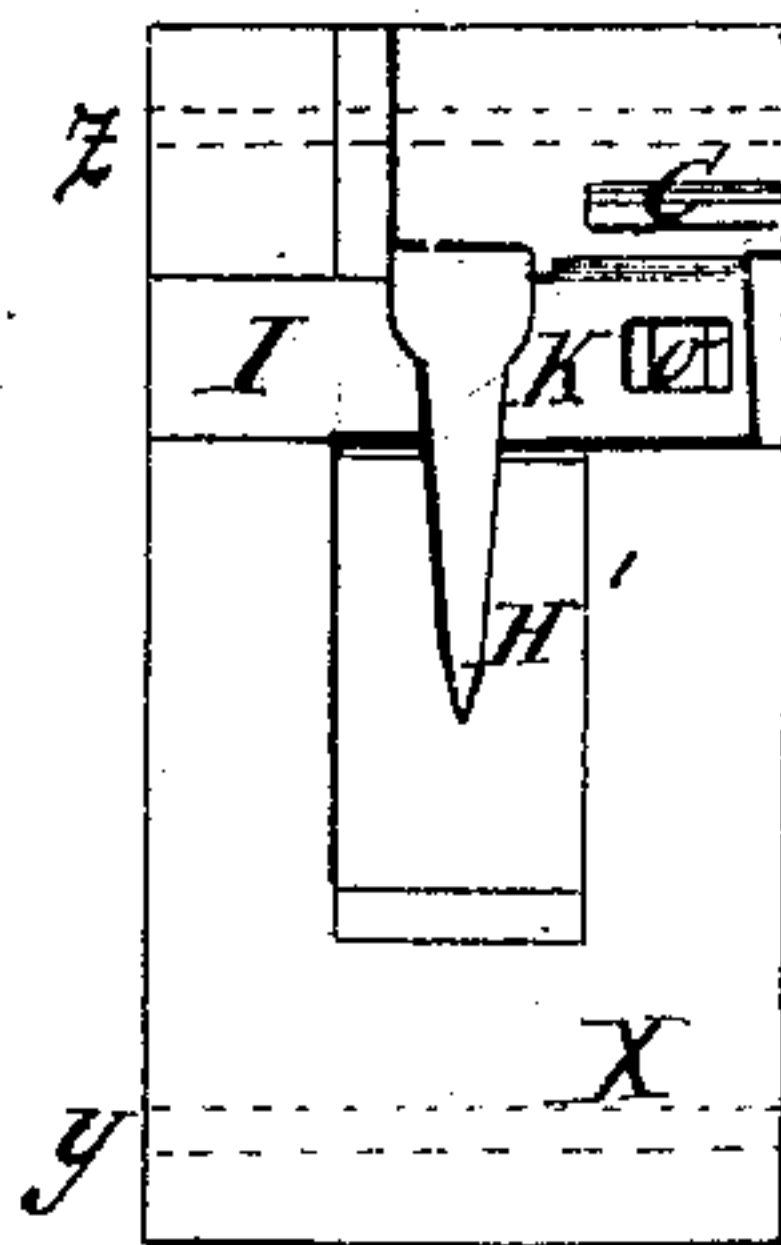
**R. ROSS.**  
**Machines for Swaging and Trimming the Points of**  
**Horseshoe Nails.**

No. 139,332.

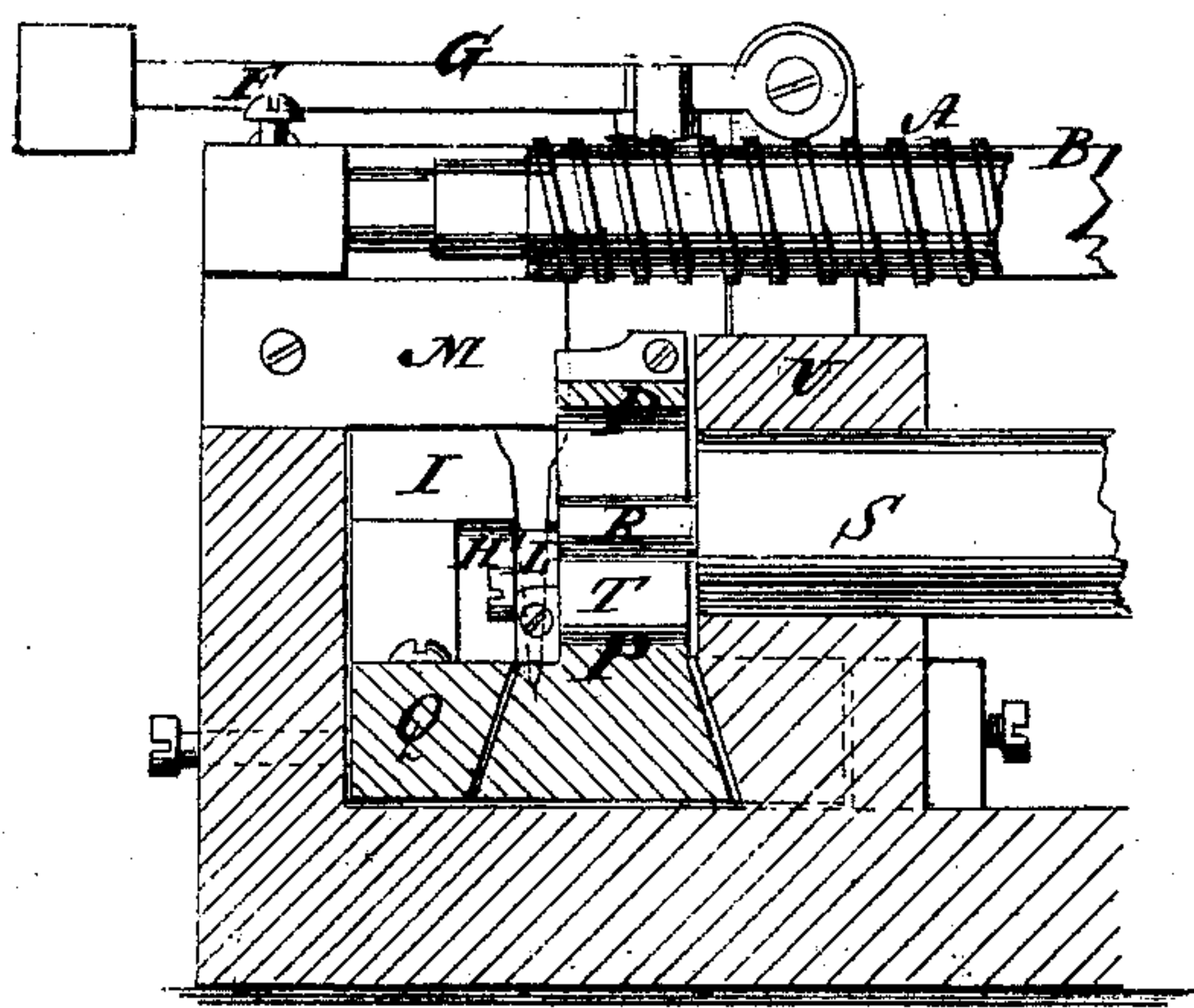
Patented May 27, 1873.



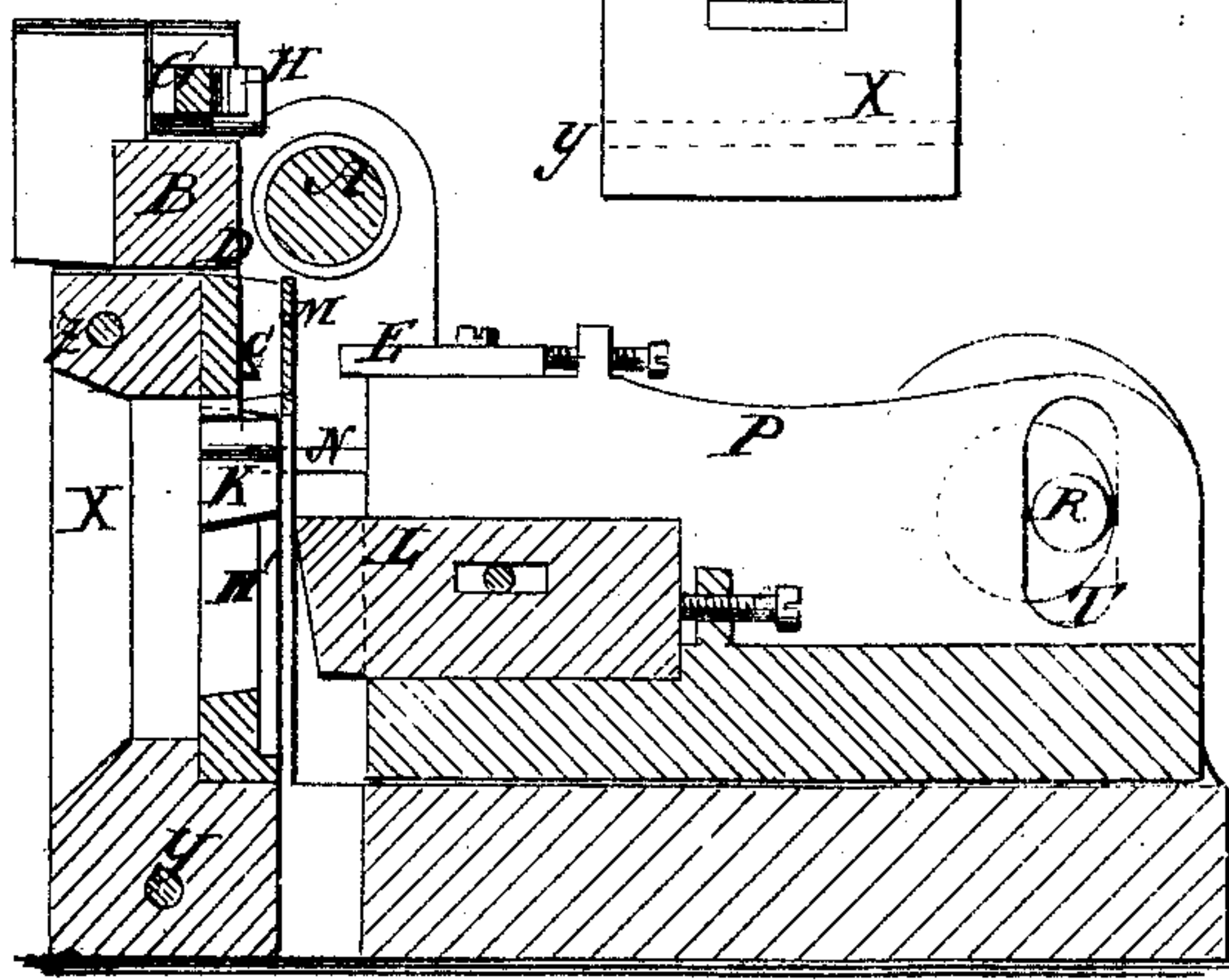
*Fig. 4*



*Fig. 3*



*Fig. 2*



**Witnesses:**

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# UNITED STATES PATENT OFFICE.

ROBERT ROSS, OF VERGENNES, VERMONT, ASSIGNOR TO NATIONAL HORSE-  
NAIL COMPANY, OF SAME PLACE.

## IMPROVEMENT IN MACHINES FOR SWAGING AND TRIMMING THE POINTS OF HORSESHOE-NAILS.

Specification forming part of Letters Patent No. **139,332**, dated May 27, 1873; application filed  
July 27, 1872.

*To all whom it may concern:*

Be it known that I, ROBERT ROSS, of Vergennes, in the county of Addison and State of Vermont, have invented a new and Improved Machine for Beveling and Trimming the Points of Horseshoe-Nails, of which the following is a specification:

My invention consists of a die on the side of a vertical wall, and a horizontal reciprocating die working toward and from it below a screw-feeder, and a bar parallel with it, by which the nails are fed along, points downward, to these dies to be beveled to the required shape flatwise at the points, the movable die being so timed as to come against the points as they pass in front of it. The feed-screw and bar are adjustable vertically to regulate the length of the bevel for the points. The invention also consists of a weighted lever combined with said feed devices and beveling-dies to retain the nails between the dies while being acted upon. The invention also consists of a vertical stationary die, and a movable punch, and a pair of holding-dies in combination with the said feeding devices, for trimming the edges or narrow sides of the nails for about half their length from the point, more or less, the nails being presented to the said trimming-dies by dropping, point foremost, from the feed devices in front of the stationary trimming-die and being caught at the head by the holding-dies, so that the point to be trimmed is suspended in front of the stationary trimming-die and held till the movable trimming-die comes up and forces it through the other one and out of the holding-dies. One of the said holding-dies has a slight movement to open and let the nails drop in freely, and then close on them to hold them snugly till the movable trimming-die acts. The invention also consists of an arrangement of the stationary beveling and trimming dies on a supporting-block, which is pivoted to the frame at one end, and confined by a locking-pin at the other end in such manner that by removing the locking-pin the block can be readily swung over on its pivot to afford ready access to said dies for repairing them; and the invention also consists of an arrangement of the crank-shaft

which works the movable die-stock by a crank or wrist pin, so that it can slide away from the stock readily to allow of withdrawing the stock to grind the dies without taking them off, and a combination of a latch and collar with the shaft for holding it in connection with the stock.

Figure 1 is a plan view of my improved beveling and trimming machine. Fig. 2 is a transverse sectional elevation taken on the line *xx* of Fig. 1. Fig. 3 is a longitudinal section on the line *yy*. Fig. 4 is a front elevation of the holding-dies, the stationary trimming-die, and the supporting block therefor, which is pivoted to the machine, as aforesaid.

Similar letters of reference indicate corresponding parts.

A represents the feed-screw, and B the bar parallel with it, between which the nails, being suspended in the grooves points downward, are fed to the dies, coming first in front of the fixed beveling-die C, which projects from the vertical wall D in the requisite form to bevel the points of the nails properly when the movable beveling-die or punch E comes against them while they are suspended in front of said die C. This operation is performed very quickly and without the stopping of the nails to wait for the action of the dies. The die C is much longer than the width of the nails, to insure the supporting of the nails properly at the rear side when the punch comes against them, and to compensate for any little inaccuracy in the feed that may be, but it is intended to have the feed-screw adjustable endwise to regulate the presenting of the nails to the dies. Both the feed-screw and the bar B are adjustable vertically by the screws F, to regulate the beveling of the points as to the length. A weighted lever, G, with a die to rest on the heads of the nails, is arranged in such relation with the feed-screw, the bar B, and the dies C E that the nails will come under the lever and be subject to the weight of it at the time the beveling-dies are acting to prevent the nails from escaping upward from the dies while being acted upon by them, which the form of the dies tends to cause them to do. After the nails have been beveled they pass along to a point above and in front of the



stationary point-trimming die H', and drop down through an enlargement of the groove of the feed-screw, between the horizontal holding-dies I K, where they are held till the movable trimming-die or punch L comes up, and forces them through die H' and out of the holding-dies, thereby trimming off the narrow sides or edges of the nails. A plate or shield, M, prevents the nails from falling out of the dies at the front. The holding-die I is stationary, but the one K has a slight forward and backward movement to open sufficiently to let the nails drop in freely and then close and hold them snugly until the trimming-die L acts. This movement is caused by a bent bar, N, entering a hole in the die between two friction-rollers and withdrawing again, the said bar being mounted on the stock P, which carries the dies E and L. This stock works between adjustable gibs Q, which are provided for readily shifting it laterally to adjust the dies, and it is worked by a crank-pin, R, of the driving-shaft S, said pin working in a slot, T. The said shaft is arranged in its bearings U, so that it can slide endwise away from the stock E to disconnect the crank-pin from it to allow said stock to be withdrawn from the gibs for grinding the dies. A collar, V, and a pivoted catch, W, are provided with said shaft to hold it in connection with the stock by the dropping of the latch between one of the bearings and said collar. X is the block to which the dies H' I K are connected, and which is pivoted to the frame by a bolt,

Y, and held by another, Z, so that by removing the latter the block can be turned down on its pivot to present the dies in a convenient place for inspection and removal.

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

1. The combination of the feed-screw A, bar B, and the point-beveling dies C E, substantially as specified.

2. The combination with the above of the weighted lever G, substantially as specified.

3. The combination, with said feed-screw and bar, of the holding-dies I K, and point-finishing dies H L, substantially as specified.

4. The arrangement of the dies H' I K on a supporting-block pivoted to the machine, substantially as specified.

5. The driving-shaft S, arranged in its bearings and with the stock P to disconnect from the latter by sliding therefrom, as described, and the combination with said shaft and one of its bearings of the latch W and collar V, substantially as specified.

6. The feed-screw A and bar B, arranged to be adjusted relatively to the point-beveling dies, substantially as specified.

7. The combination of the guard M with the holding and point-finishing dies, substantially as specified.

ROBERT ROSS.

Witnesses:

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