N. W. GOODRICH.

MACHINE FOR FINISHING HORSESHOE NAILS.

No. 177,237. Patented May 9, 1876.

Fig. 1.

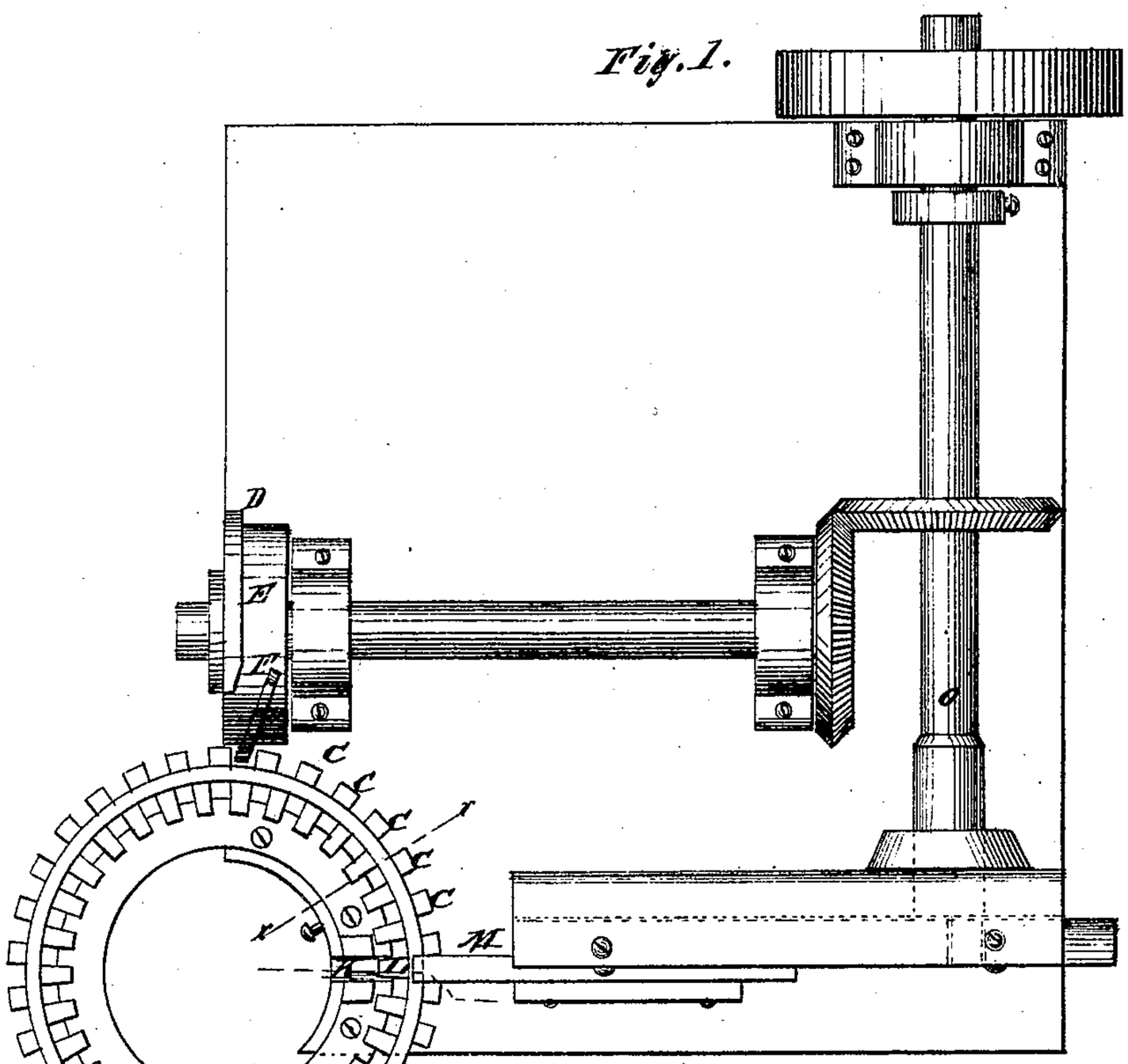


Fig. 2.

Fig. 3.

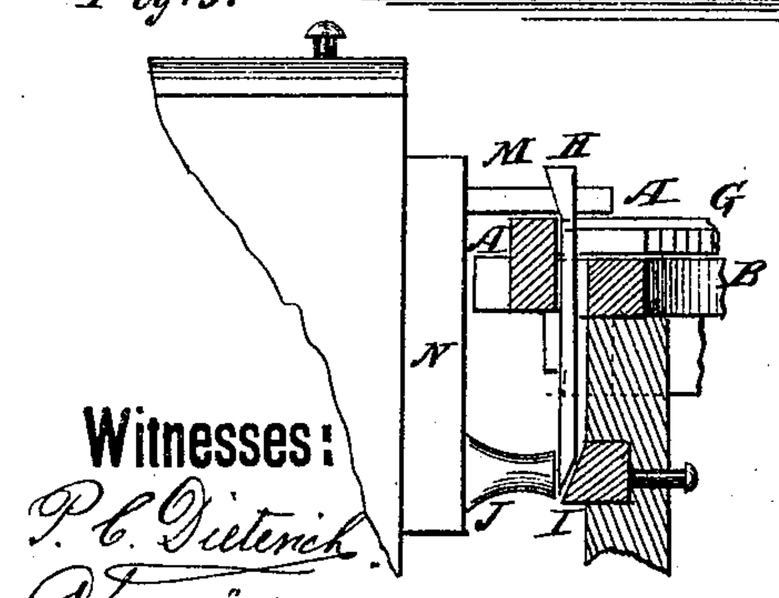


Fig. 4.

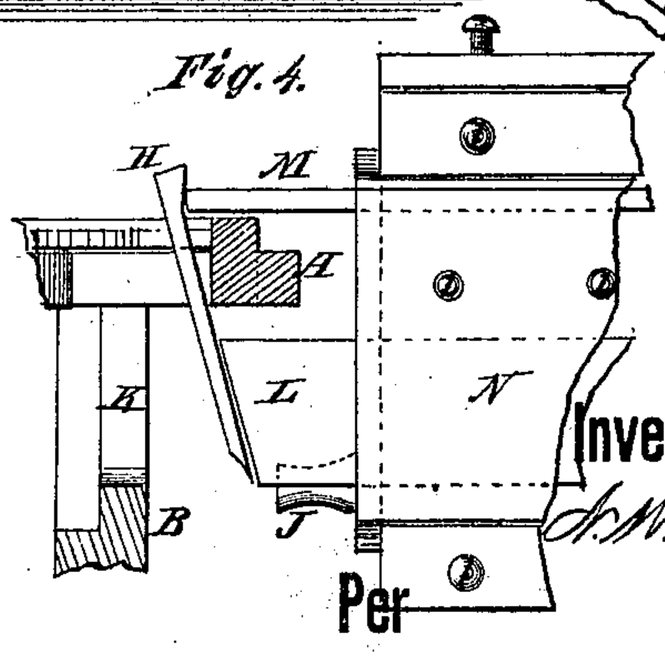
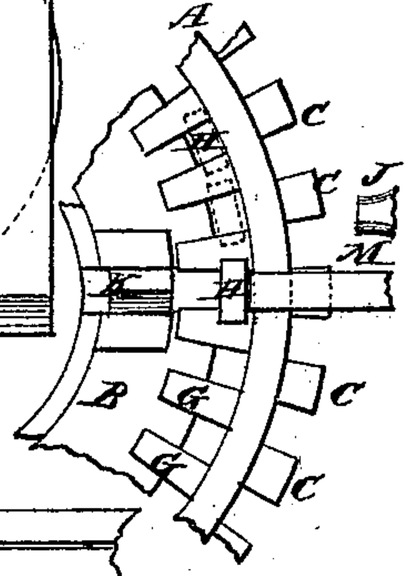


Fig. 5.



Witnesses:

P. C. Dieterich

C. Sedgwick

Inventor:

N. W. Goodrich

Per

Attorneys.

UNITED STATES PATENT OFFICE.

NELSON W. GOODRICH, OF VERGENNES, VERMONT.

IMPROVEMENT IN MACHINES FOR FINISHING HORSESHOE-NAILS.

Specification forming part of Letters Patent No. **177,237**, dated May 9, 1876; application filed April 19, 1873.

To all whom it may concern:

Be it known that I, NELSON W. GOODRICH, of Vergennes, in the county of Addison and State of Vermont, have invented a new and Improved Machine for Finishing Horse-Nails, of which the following is a specification:

My invention consists of a horizontally and intermittingly rotating ring nail-carrier, having notches in one side, in which the nails are suspended by the heads, combined with a stationary ring, on which it revolves, and having stationary point-beveling and trimming dies, to which the nails are carried and held by the carrier-ring, while movable point-beveling and trimming dies act upon the nails and complete the points, and the trimming-dies discharge them. The carrier-ring is, in this instance, arranged to carry the nails in inside notches, in which they are confined by the stationary ring, and the movable dies are arranged outside of the rings, and work toward the center; but the nails can as well be carried in outside notches, by which the ring is turned by a worm, and in which the nails can be confined until they come to the dies by a stationary guard; and the movable dies may be arranged inside of the ring, and the stationary dies outside, which I propose to do if I wish. There is a pusher combined with the movable trimming-die, to act on the heads of the nails and push them from the notches of the carrier into the stationary trimming-die at the same time that the movable trimming-die acts upon the point below the ring.

Figure 1 is a plan view of my improved machine. Fig. 2 is a side elevation. Fig. 3 is a section of Fig. 1 on the line *x x*. Fig. 4 is a section of the same figure on the line *y y;* and Fig. 5 is a plan of part of the carrier, stationary ring, and dies, shown on an enlarged scale.

Similar letters of reference indicate corresponding parts.

A represents the carrier-ring. It is fitted on the top of a stationary ring, B, so as to revolve upon it, and has projections or teeth C on the outside, by which it is moved intermittingly the distance from one notch to another, and allowed a period of rest between each movement by the rib D on the face of the disk E, which, for the most part of its length, is arranged in one plane, and allows the carrier to stand while it is passing; but it has a part, F, arranged in an inclined plane, which shifts the carrier when it passes. The carrier-ring is a little larger than the stationary ring, to allow the nails to hang between its inside face and the outside face of the stationary ring, and it is provided with projections G on its inner face, projecting to the outer face of B, below the top of it, and over the top, both to form the bearing of A on B and to hold the nails H between them, (also between the two rings,) the nails being dropped in the spaces between them by hand, or in any other way, a little in advance of the dies. The projections G extend below the lower side of A sufficiently to hold the nails against swinging laterally under the influence of the sudden starts and stops of the ring. I is the stationary point-beveling die, arranged in the side of the stationary ring, so that, before coming to the trimming-dies, the nails will be held with the points in front of it, to receive a blow from the movable point-beveling die J, to produce, by the beveled face of I, the beveled form necessary for the finished point of a horseshoe-nail. Next to the beveling-die is a slot, K, through the stationary ring, constituting a stationary trimming-die for shearing off the narrow edges of the nail and removing the metal swelled out by the beveling-dies, which it does by having the nail forced through it by the movable trimming die or punch L. The slot K extends from the top of the stationary ring, so that no obstruction is afforded for the upper portion of the nail, and it is at the same time discharged from the carrier by a pusher, M, which moves, together with the trimming-punch, against the nail.

The dies J L and pusher M are all mounted on the sliding die-stock N, which is worked by the crank-shaft O, which also works the disk E, which is so geared that it turns the carrier when the dies are withdrawn, and allows it to rest while they act on the nails.

The beveling-dies and trimming-dies act simultaneously, but on different nails, which are first beveled, then trimmed and finished.

It will be seen that by arranging a stationary guard around the outside of the carrier, and arranging the stationary dies outside and the movable ones inside, the machine could

be worked in the same manner; but probably the rings would have to be made a little larger to make room for the die-stock and the support for it.

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

1. The combination of the horizontally and intermittently rotating ring A and the stationary ring B, the former resting on the latter, and provided with teeth, projecting downward below its lower surface, adapted for carrying the nails and holding them to the dies, as shown and described.

2. The combination of the carrier, stationary and movable dies, sliding die-stock, the disk and worm for actuating ring A, and the driving mechanism, substantially as specified.

3. The pusher M, combined with the carrier A and the trimming-dies, substantially as specified.

NELSON W. GOODRICH.

Witnesses:
J. G. CONVERSE,
WM. S. HOPKINS.