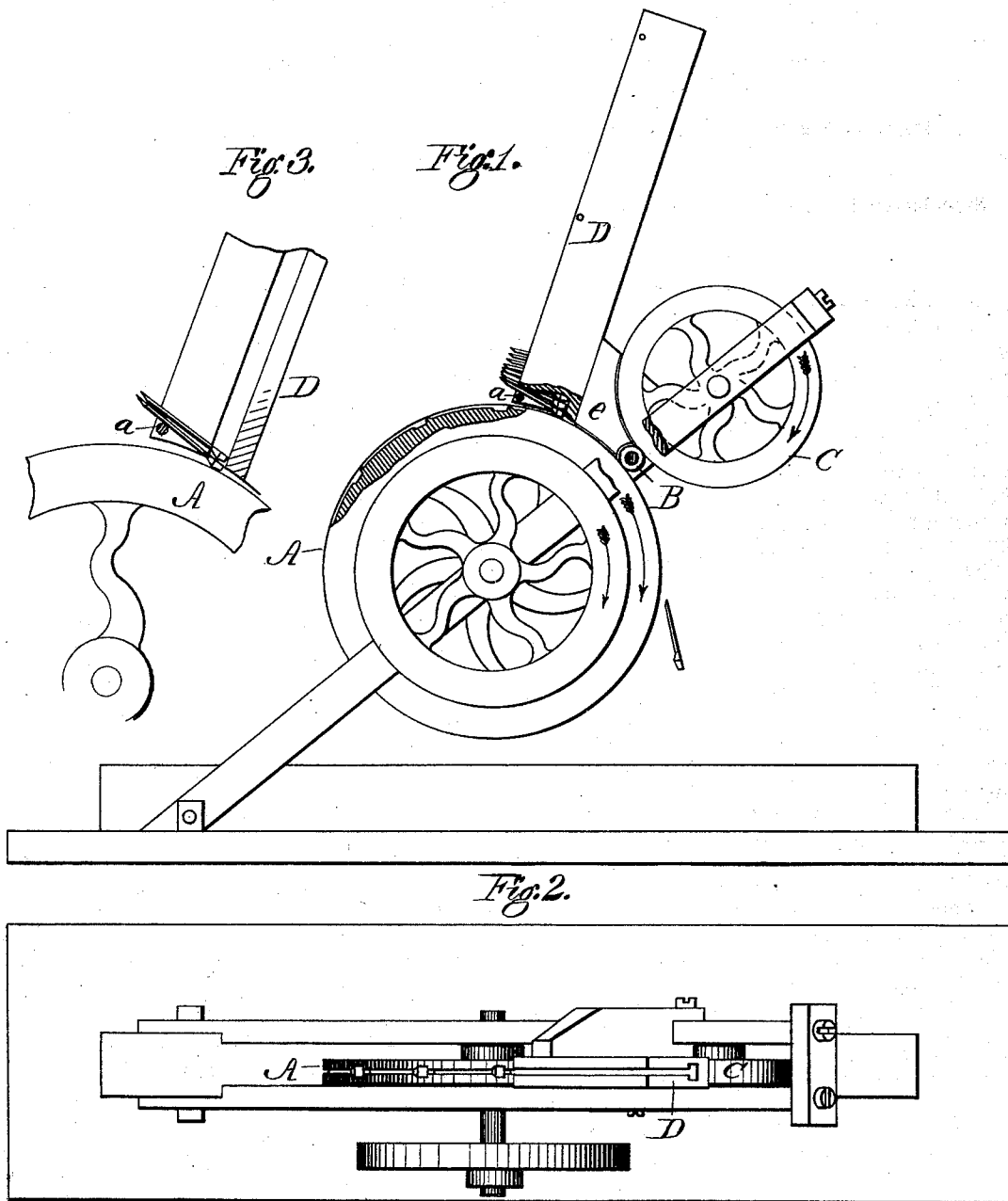


J. B. HUSTED.

Machines for Finishing Horseshoe Nails.

No. 156,090.

Patented Oct. 20, 1874.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JETHRO B. HUSTED, OF VERGENNES, VERMONT.

IMPROVEMENT IN MACHINES FOR FINISHING HORSESHOE-NAILS.

Specification forming part of Letters Patent No. **156,090**, dated October 20, 1874; application filed August 23, 1874.

To all whom it may concern:

Be it known that I, JETHRO B. HUSTED, of Vergennes, in the county of Addison and State of Vermont, have invented certain Improvements in Horse-Nail Machines, of which the following is a specification:

My invention consists of the combination of a wheel having dies cut in its face to receive and hold a horse-nail blank, and a small compressing-roll arranged to operate upon the nail for the purpose of solidifying, stiffening, and finishing the same. It also further consists in a slotted rack or slide, arranged to feed the blanks automatically to the die-wheel, and in the arrangement of a wheel in such a manner as to support the roll, and keep the same from springing, all as hereinafter more fully set forth.

Figure 1 is a side elevation; Fig. 2, a top-plan view, illustrating my invention, Fig. 3 being a view of a portion detached.

It is well known that horse-nails, when forged from the rod, are not sufficiently rigid to enable them to be readily driven in the hoof of animals; and it is therefore customary to hammer them by hand on an anvil before attempting to use them. Various styles of machines have also been devised in the effort to finish the nails so as to save this hand-labor.

My machine, which is designed for this purpose, contains a large wheel, A, in the face of which is cut a series of cavities or dies, of the size and form of the nails, as shown in Figs. 1 and 2, this wheel being mounted in any suitable frame so as to revolve truly. I then provide a smooth roll, B, which, as represented in the drawing, Fig. 1, is made very small in diameter, it being made very smooth and hard. This roll B I mount so as to bear against the face of the die-wheel A, as represented in Fig. 1. As this roll is to be subjected to a heavy pressure, I place behind it another wheel, C, which is heavy and strong, its face being turned off smooth and true, and made to bear against the roll B so as to hold the latter firmly up against the die-wheel A, and at the same time prevent the roll from springing. In a working machine the roll B and the supporting-wheel C would be mounted in movable boxes or bearings, and screws or other means used for adjusting them. For the purpose of

feeding the nails or blanks to the die-wheel, I use a slotted rack or tube, D, which is located vertically or slightly inclined above the wheel A, as represented in Fig. 1. The slot or cavity within this tube D corresponds in outline with the shape of a nail when laid on its side, as shown in Fig. 2, so that it may be filled with nails, and they will rest one upon another, as represented in Fig. 1.

As the wheel revolves, and brings a die or cavity under the tube, a nail will drop into it and be carried along from under the tube, and under the roll B, by which it will be compressed, solidified, and stiffened, the nail falling out as the wheel revolves.

The tube D may be made of such a width as to let the nails lie wholly within it; or it may be made narrower, so that the points will protrude through the slot on one edge. A pin, *a*, may be arranged transversely across the slot at the lower end of the tube D, in such a position that the point of the nail will rest thereon, as shown in Fig. 3, so as to cause the head of the nail to first enter its cavity in the wheel A, when, as it is moved along head foremost, its point will be drawn off the pin and fall into the die, there being a piece, *e*, fitted over the wheel A, between the tube D and the roll B, to keep the nail in the die, and guide it under the roll, as represented in Figs. 1 and 3. The object of using such a small roll is to bring the pressure to bear on a very small portion only of the surface of the nail at once, as, by so doing, it is found to operate much more efficiently than when a larger roll is used, the entire pressure being concentrated on a much smaller portion of the metal. For this reason I make my compressing-roll as small as possible, and retain the necessary strength.

It is obvious that any number of compressing-rolls may be arranged so as to act successively upon each nail, and thus solidify it to any desired degree. It is also obvious that, instead of forming the dies on the periphery of the wheel, they may be arranged on the face of a horizontal wheel or disk, and a feeding-rack and compressing-roll made to operate the same. In that case the roll would be made slightly conical to correspond with the circle of the disk or wheel, so as to roll truly thereon, and prevent any sliding or slipping

taking place between their surfaces. So, too, it is obvious that the dies may be formed in a series of flat blocks hinged together in such a manner as to form an endless chain or series of dies, and made to pass under the compressing roll or rolls, and operate the same. In such case there should be a strong supporting wheel or roll located under the chain of dies, directly opposite the point where the pressure of the compressing-roll is applied. I, however, prefer the form shown in the drawings, as it would have less joints, and be less liable to get out of repair.

Having thus described my invention, what I claim is—

1. In a machine for finishing horse-nails, the combination of the vertically-rotating wheel A, provided on its periphery with a series of finishing-dies, with the small compressing-roll B, said parts being constructed and arranged

in relation to each other, as and for the purpose set forth.

2. In combination with a moving series of dies and a small compressing-roll, B, the supporting wheel or roll C, arranged to operate as and for the purpose set forth.

3. The feeding rack or tube D, provided with a cavity corresponding in form with that of the nail, and having the pin *a* arranged to support the pointed end of the nails, to insure their heads entering the dies on the wheel A, substantially as set forth.

4. The combination of the die-wheel A, feeding-tube D, guide *e*, and compressing-roll B, all constructed and arranged for joint operation, substantially as shown and described.

JETHRO B. HUSTED.

Witnesses:

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O. L. HALL.