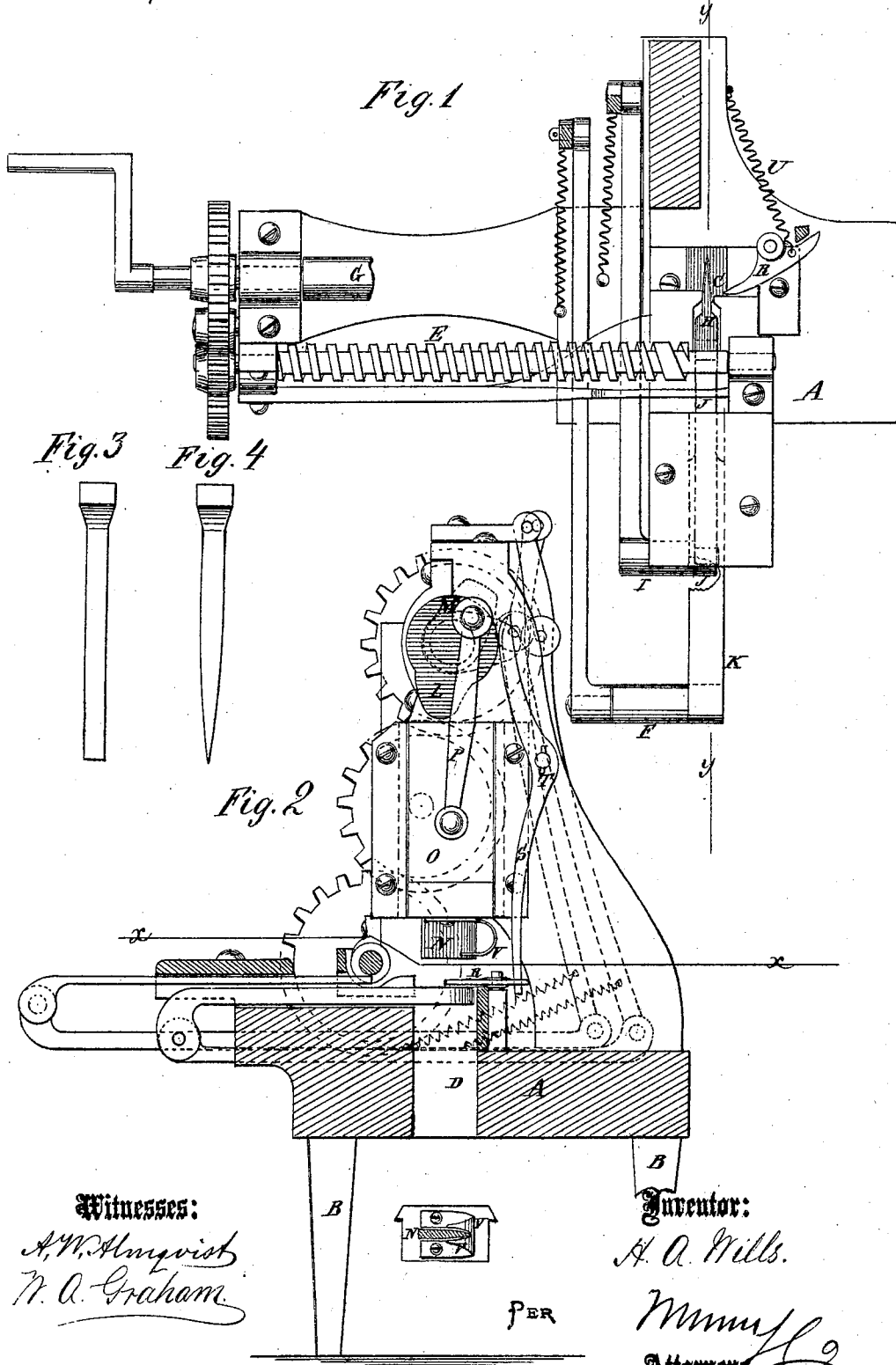


H. A. WILLS.  
 Improvement in Machines for Pointing the Extremities  
 of Horseshoe-Nails.

No. 129,077.

Patented July 16, 1872.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

HARRY A. WILLS, OF VERGENNES, ASSIGNOR TO JULIA A. WILLS, OF SAME PLACE, AND LUCY S. KINGSLAND, OF BURLINGTON, VERMONT.

## IMPROVEMENT IN MACHINES FOR POINTING THE EXTREMITIES OF HORSESHOE-NAILS.

Specification forming part of Letters Patent No. 129,077, dated July 16, 1872.

Specification describing a new and useful Improvement in Horseshoe-Nail Machinery, invented by HARRY A. WILLS, of Vergennes, in the county of Addison and State of Vermont.

This invention relates to machinery for manufacturing horseshoe-nails, and in improvements in a machine for shearing or tapering the point of the nail, many features of which machine are already secured to me by Letters Patent of the United States. The present invention consists in a sliding finger for filling the die, so as to form a smooth and level surface for the nail to slide on when it is pushed over the die for clipping, the finger being withdrawn when the nail reaches its position.

In the accompanying drawing, Figure 1 represents a horizontal sectional view of the machine taken on the line *x x* of Fig. 2. Fig. 2 is a vertical section of Fig. 1 taken on the line *y y*. Fig. 3 shows the nail before, and Fig. 4 shows it after, passing through the machine.

Similar letters of reference indicate corresponding parts.

A is the bed-plate of the machine, elevated to a convenient height on the legs B. The die C rests upon this bed. D is an aperture through the bed beneath the die, through which the nails are discharged after they are tapered or clipped. E is the feeding-screw, in contact with which the nails are fed and carried along to the die. At the end of the screw-thread the nails are turned at right angles with the screw by a mechanism described in my former patent, and are shoved in under the screw and on to the die by the pusher K. This pusher works horizontally against the head of the nail, and is actuated by means of a cam on the driving-shaft G. H is the finger, which is actuated in the same manner, and preceding the pusher in its motion. This finger fills up the die and makes an even surface for the nail to slide upon, and that is its only object. Without this finger for filling the die the nails are liable to catch

or tip, so that the operation of shearing is imperfectly performed, and it is this feature of the machine which I claim as novel, the machine otherwise being in common use, with the exception of the wiper. The reciprocating mechanism for operating the finger H is marked I. The slide to which the finger is attached is directly beneath that of the pusher, both being seen in dotted lines in the drawing, and marked, respectively, J and K. They are nearly identical in form, and both are supported by upright bars from a frame above the driving-shaft G, and operated by cams L M on that shaft. N represents the plunger, by which the nail is forced down through the die. This plunger is connected with a vertical slide, O, at the end of the machine, which receives a vertical movement by means of a crank-pin in the end of the driving-shaft and the connecting-bar P.

The working parts of the machine are arranged and timed to work in rotation. First, the finger H slides forward and fills the die, making an even surface over which the nail is forced by the pusher K. Then the finger is withdrawn and the plunger N strikes it, cutting a piece of metal from each side as it forces the nail through the die. R is the wiper for keeping the die clear of scraps. It consists of a bar pivoted at its center to the bed, with one end resting on the die. S is an upright lever, pivoted to the frame of the machine at T, with its lower end in contact with the outer end of the wiper. At each revolution of the driving-shaft and directly after the cut is made, a cam on the shaft strikes the upper end of the lever S, which imparts motion to the wiper, giving it a revolving motion, and causing its inner end to sweep over the die and clear it of the scraps cut from the nail. The back motion of the wiper is produced by a spring, U, attached to the wiper and to the bed-plate. V is a bow spring on the lower end of the plunger-slide, the recoil of which accelerates the raising of the plunger after the cut is made, and also clears the plunger of the scraps cut off.

I do not limit myself to the precise form or arrangement of the parts claimed, as variations may be made without departing from my invention.

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

The sliding finger H, arranged to enter die,

form a smooth level surface for the nail, and withdraw therefrom as soon as the nail has reached the position in which it remains while being cut, as described.

HARRY A. WILLS.

Witnesses:

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