



# United States Patent Office.

DAVID J. FARMER, OF WHEELING, WEST VIRGINIA.

Letters Patent No. 108,895, dated November 1, 1870.

## IMPROVEMENT IN MACHINES FOR CUTTING NAILS.

The Schedule referred to in these Letters Patent and making part of the same.

I, DAVID J. FARMER, of Wheeling, in the county of Ohio, State of West Virginia, have invented a new and improved Nail and Tack-Plate Feeder, of which the following is a specification.

### *Nature and Objects of the Invention.*

The machine is constructed with a reciprocating sliding table, carrying a number of nail-plate feeders, which are advanced alternately to the point at which the nail-blanks are cut off.

Some of the main features consist of—

First, a device for changing the feed each time the sliding table reaches the end of its stroke.

Second, a device for shifting the racks, whereby they are adapted for giving the semi-rotation to the feeders on one or the other side of the point at which the cutter acts.

Third, a guard-plate keeps the plates in the feeders, and the latter in the desired position.

### *Description of the Accompanying Drawing.*

Figure 1 is a top view of the machine.

Figure 2 is a side elevation.

Figure 3 is a transverse vertical section on the line *x z*.

Figure 4 is a detached view, showing the mode of shifting the feed-tappet to reverse the motion of the sliding table.

### *General Description.*

A is a bed, raised upon legs B, and supporting the sliding table C, which is reciprocated in the direction of its length by means of a cog-wheel, D, beneath which engages a rack, E, beneath the table.

The wheel D is keyed upon a shaft, F, which is turned by a lever, G, pawl H, and toothed wheel I.

The motion of the parts of the machine is derived from the lever G, which is reciprocated by the prime motor.

After the sliding table has been carried to the end of its range in one direction, a stud, *c*, on the side of the table, touches an arm, J, which extends upward from and is sleeved upon the shaft F.

The arm J tips the double pawl H, and causes it to act against the other side of the teeth on the ratchet-wheel, and thus to rotate the shaft in a direction the reverse of the former.

On the table C are one or more feeders, K, which hold the nail-plates, and present them at the gap *l*, in the guard-plate, in which the cutter works; in the illustration it is arranged for four feeders.

The feeder K consists of a barrel and a pair of grooved guide-bars, *k k*, the said grooves forming a channel, along which the nail-plates slip.

These guides may be made adjustable toward and from each other, so as to allow for different widths of plate adapted for different lengths of nails.

The nail-blanks are cut from the end of the plate with the taper in alternate directions, "heads and points." To secure this result the plate is turned over between each cutting. This is accomplished by the semi-rotation of the feeder.

On the end of the barrel K is a pinion, whose leaves are engaged by the cogs of the racks L, as the feeders and the table slide on the bed.

The racks are made to set out and in, so either one may be brought within range of the pinions on the feeder, the other rack at that time being beyond the reach of the pinion.

The racks L L are set out, by means of a sliding wedge, W, alongside of the bed.

This is operated by lugs *m m* on the side of the table, which engage projections on the wedge-slide, and slip it in one direction or other, to set out the rack, which is not required during a certain part of the stroke of the table.

One rack, L, comes into operation when the table is moving in one direction, and the other rack when it is moving in the other direction.

The table is moved one section at each revolution of the nail-making machine, or each operation of the cutters, and, when it is moved the whole distance of the feeders and delivers a blank from each plate, it becomes reversed by means of the double acting pawl H, which is actuated by the contact of the stud *c* with the arm J, as previously stated.

The feeders are semi-rotated by the contact of their pinions with one of the racks after delivering a blank, and the other rack is made to fall back, to allow the pinions to pass.

The table can be worked with one or more feeders, as desired.

The end of the nail-plate travels against the guard-plate X, and is ready to slip forward as soon as it reaches the gap where the cutters are stationed.

The spring-plate T is intended to hold the plate firmly, and also to act as a gauge.

Springs behind the racks L bear against them, to press them toward the sliding table when permitted by the wedge.

I have shown the reciprocating table provided with rotary feeders. The table, however, may have non-rotating but relatively stationary feeders; that is, not turning the nail-plate between each cut.

The feed-movement may be imparted to pushers or followers within the tubular feeders K by springs, or by cords and weights, or in any other customary and suitable manner.

I have not shown or described any such feeding-appliances, because they are common, and well understood.

*Claim.*

I claim as my invention

1. The intermittently-moving and reciprocating table and series of nail-plate holders, in combination with cutters, and with mechanism to feed the plate forward to said cutters, substantially as described.
2. In combination with the table C, the stud c, arm

J, lever G, double pawl H, and toothed wheel I, arranged to operate substantially as described.

3. The combination of the reciprocating table C, the racks L L, adjustable wedge W, and lugs m m, substantially as and for the purposes set forth.

4. The combination, with the hollow feeder K, of the continuously-grooved bars k k, to guide the plates to the cutter or cutters, as set forth.

Witnesses:

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