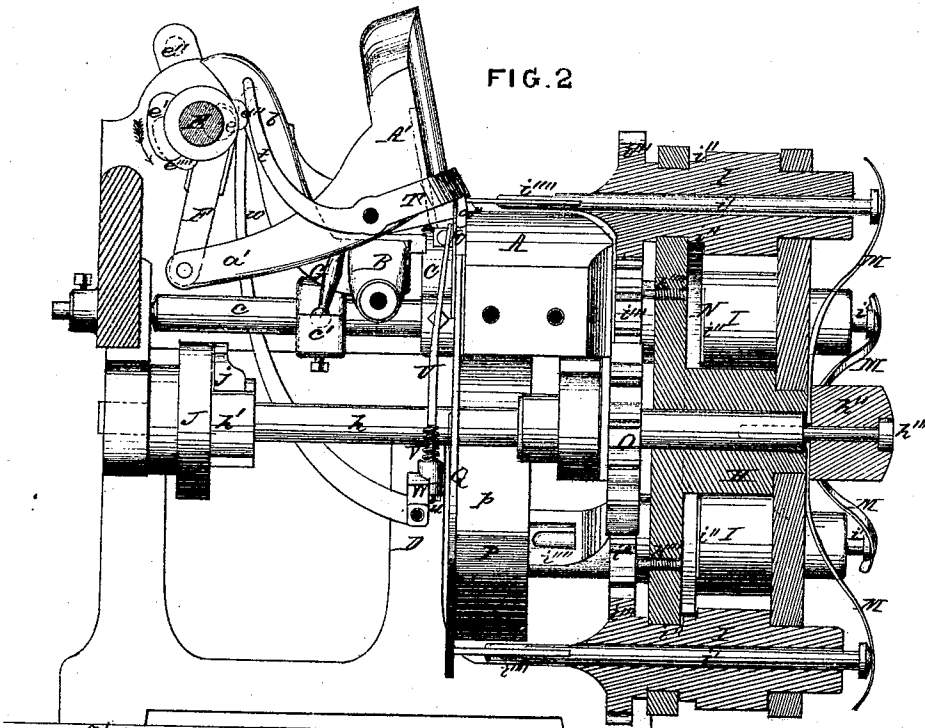
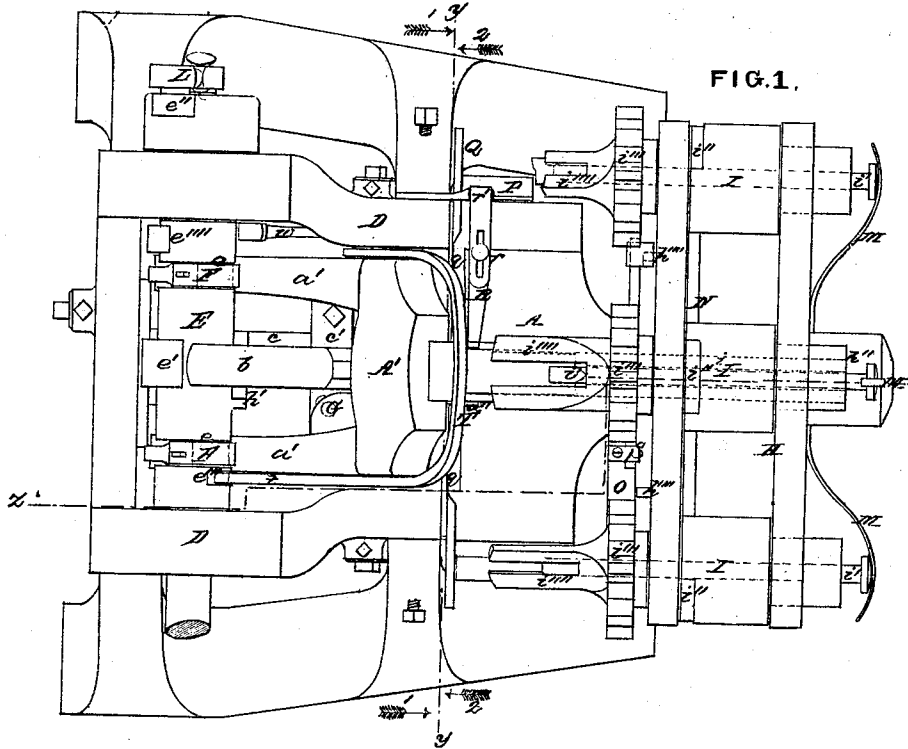


D. J. Farmer, 2, Sheets, Sheet 1.

Making Cut Nails.

No. 103730.

Patented May 31, 1870.



Witnesses.
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Wm. H. Brewster

D. J. Farmer
by *[Signature]*
Attys.

D. J. Farmer,

2, Sheets, Sheet 2.

Making Cut Nails.

No. 103,730.

Patented May 31, 1870.

FIG. 3.

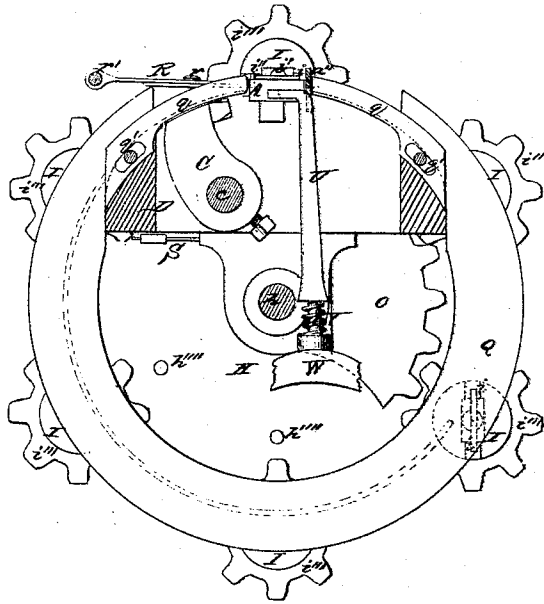
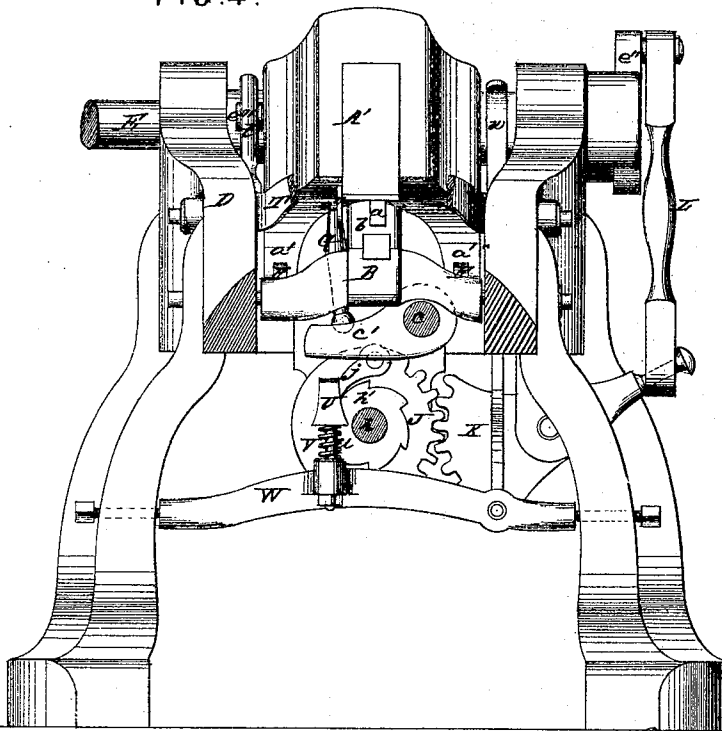


FIG. 4.



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United States Patent Office.

DAVID J. FARMER, OF WHEELING, WEST VIRGINIA.

Letters Patent No. 103,730, dated May 31, 1870.

IMPROVED MACHINE FOR MAKING 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 and State of West Virginia, have invented an Improved Nail and Tack-Machine, of which the following is a specification.

Nature and Objects of the Invention.

My invention consists in the employment or use, as a plate-feeding device, of a traversing table, provided with a series of "feeders" proper, and so arranged and actuated as to present a number of plates successively, in proper manner, to the cutters, as hereinafter explained.

Also, in a novel combination and arrangement of parts for holding and turning the plates in a feeder of this description.

Also, in the provision of a novel combination and arrangement of stops and gauges for regulating and determining the position of the plates under the cutter.

Also, in the provision of a device, of novel construction, to hold the nail-plates while they are being cut,

Also, in a superior construction of "nipper" for catching the nail-blanks as they are severed from the plate.

The several parts of my invention are applicable to machines having one or a plurality of cutters.

Description of Drawing.

The accompanying drawing represents a single-cutter machine, illustrating my invention.

Figure 1 is a plan view.

Figure 2, a vertical longitudinal section in the planes indicated by the line $z z$, fig. 1.

Figure 3, a vertical transverse section on the line $y y$, fig. 1, looking in the direction of the arrows 1.

Figure 4, a vertical transverse section on the line $y y$, fig. 1, looking in the direction of the arrows 2.

Similar letters of reference indicate like parts in the several figures.

General Description.

The cutter-table and head $A A'$, griper B , and header C of my improved machine may be of any preferred form, and arranged and actuated in any proper manner.

A frame, D , of suitable form and dimensions, supports these and the other parts of the machine.

In the arrangement represented in the drawing, a single driving-shaft, E , mounted in the upper rear extremity of the frame, imparts proper motion to the several moving parts.

The cutter-head A' may receive its motion and power from such shaft through lever-arms a' , pitmen F , and crank-wrists e , and the griper B through an arm, b , and cam, e' .

The header C is connected, through a shaft, c , a

lever-arm, c' , and a toggle-link, G , with the cutter-head A' , at a point on the back of the same, and thus receives its motion therefrom.

Arranged in front of the cutter-table A is a traversing-table, H , provided with a series of feeders, I , and adapted, by its actuation, to present said feeders successively in proper position before the cutters.

The table H , as represented, is mounted on an axial shaft, h , which, extending longitudinally through the machine, is provided at its inner end with a tight ratchet-wheel, k' , and a loose cogged disk, J , the latter carrying a gravitating or spring-pawl, j , engaging with said ratchet-wheel k' , through which devices, in connection with a cogged segment, K , meshing with the disk J , and a connecting-rod, L , or their equivalents, an intermittent rotary motion is imparted to said table from a crank, e'' , on the driving-shaft C .

The feeders I , being arranged in a concentric annular series in the table H , at equal distances apart, the teeth of the ratchet-wheel k' corresponding in number therewith, and the parts properly adjusted, at each revolution of the driving-shaft, one of said feeders will be brought before the cutters in proper position.

The feeders or conductors I are hollow, and their cavities are provided, on opposite sides, with straight longitudinal grooves, i , (represented by dotted lines in figs. 1 and 3,) for the guidance of the plates, which are advanced through the medium of stems i' , by springs M , or their equivalents; said springs may radiate, as shown, and be secured by a central washer, k'' , and screw, k''' .

To enable the feeders to turn or reverse the plates, they are further severally adapted to rotate on their axes, as represented, suitable means being provided to actuate and hold them.

For rotating the same, I provide each with a pinion, i'' , and the frame with a toothed segment, O , properly arranged, which latter, by said pinions engaging with it as they are carried past in the movement of the table, causes them to make a half revolution, as required.

An annular spring, N , arranged within the circular series of feeders, and pressing outward against flat surfaces $i''' i'''$ on each, corresponding with their respective faces, may form a brake or yielding stop to hold the same in the positions to which they are moved.

I further provide the frame with a segmental flange, P , concentric with the table H , and in such proximity thereto, and of such relative radius, as for the flat points i'''' of the feeders I to pass so closely to it as to preclude turning, a gap, p , corresponding with the segment O , permitting their being turned by the provided means, and an annular disk or flange, Q , paral-

lel with the table, and behind said flange P, to limit the projection of the plates, the same losing its continuity at the cutters, and terminating in extensions *g*, adjustable by slots *g'*, or their equivalent, to accommodate different lengths of cutters.

The usual stop *a* on the cutting-head limits the insertion of the plates thereunder.

The plates are supported by the stop Q and its extensions, *g*, until they arrive at the cutters, when they are projected against the stop *a* on the cutter-head A'.

A gauge, R, on the side of the cutter from which the plates are advanced, adjustable on pin *r*, and hinged at *r'*, to permit the passage of the plates thereunder, determines the proper position of the plates under the cutter.

The plates are brought back against the gauge R by a spring, S, attached to the frame, and engaging with pins *h'''* on the inner face of the table H. On the positive motion of the table being resumed, said spring is overcome, and the pins carried past it.

The feeders are prevented from being carried beyond the range of the spring S, by the momentum of the table, by a stop, *a''*, projecting from the face of the cutting-head A', and occupying, in the depressed position of said head, a recess in the cutter-table A.

A jaw, T, arranged in front of the cutter-head A', and pivoted concentrically therewith, or otherwise, and actuated, at the proper moment, through a lever-arm, *t*, and a cam, *e''*, or their equivalents, serves to hold the plates down on the stationary cutter, preparatory to and while they are being cut from.

The nipper U, by which the nails are caught as severed and presented to the griper, I compose of an upright rod, of suitable form, supported vertically by a spring, V, to enable it to give way to the cutting-head. It is connected, by a stem, *u*, occupying a corresponding socket in a rock-shaft, W, to said rock-shaft, and is actuated through said rock-shaft, a lever-arm, *w*, thereof, and a cam surface, *e'''*, on the driving-shaft, or their equivalents.

The machine is intended to cut tapering blanks, and may have either suitably-shaped cutters or a properly-arranged table for this purpose.

I propose making the traversing-table H of any suitable form to adapt it to operate substantially as herein described.

The feeders I may be made in any desired number of parts.

Advantages.

Among the advantages of my improved constructions, combinations, and arrangements of parts may be named the following:

By the employment of the traversing-table, with its number of feeders, the use of a number of plates at the same time is permitted, thus greatly lessening the labor of feeding the machine, and adapting it to work continuously.

The devices for turning the feeders are of superior simplicity, and insure proper action.

The arrangement of stops and gauges insures the registering of the plates with the cutters, and the production of perfect nails. The plate-clamping device further insures this.

The improved construction of the nipper enables a more positive movement and, consequently, increased effectiveness.

With necessary modification in dimensions of parts, but without any change in the essential characteristics of the invention, the same may be applied to the manufacture of tacks as well as of nails.

Claims.

I claim as my invention—

1. The traversing-table and series of nail-plate feeders or conductors, in combination with the cutters and mechanism to feed said nail-plates forward between said cutters, substantially in the manner set forth.

2. In combination with the table H, the series of nail-plate feeders I, the pinions *i''*, and rack O, for the purpose stated.

3. In combination with the series of feeders I, having flat surfaces *i'' i'''*; and arranged in annular series in a rotating-table, H, and adapted to be reversed as described, the annular spring N, arranged within the series, as set forth for the purpose shown.

4. The combination of the flange P with the traversing series of reversing feeders I, as and for the purpose set forth.

5. The combination of the guard-flange or stop Q, and adjustable extensions *g*, with the traversing series of feeders I, for the purpose shown.

6. The combination of the hinged gauge R with the traversing-table, series of feeders I, and a suitable device for temporarily reversing the motion of said table, for the purpose described.

7. The combination of the spring S, pins *h'''*, traversing-table H, and series of feeders I with the gauge R, for the purpose set forth.

8. The stop *a''*, attached to the cutter-head A', in combination with the cutters, as set forth.

9. The combination, with the cutters, and with the cutter-head and table A A', of the gripping-jaw T, arranged and operated substantially as described, for the purpose set forth.

10. The nipper U, arranged in upright position beneath the cutters, and adapted to receive a positive oscillation through a rock-shaft, W, and lever-arm, *w*, substantially as shown and described.

DAVID J. FARMER.

Witnesses:

JAMES M. PIPES,
JOHN P. FARMER.