H. B. Landers,

Cut Nail Mach.

No. 113,310. Patented Apr. 4, 1871.

Fig: 1.

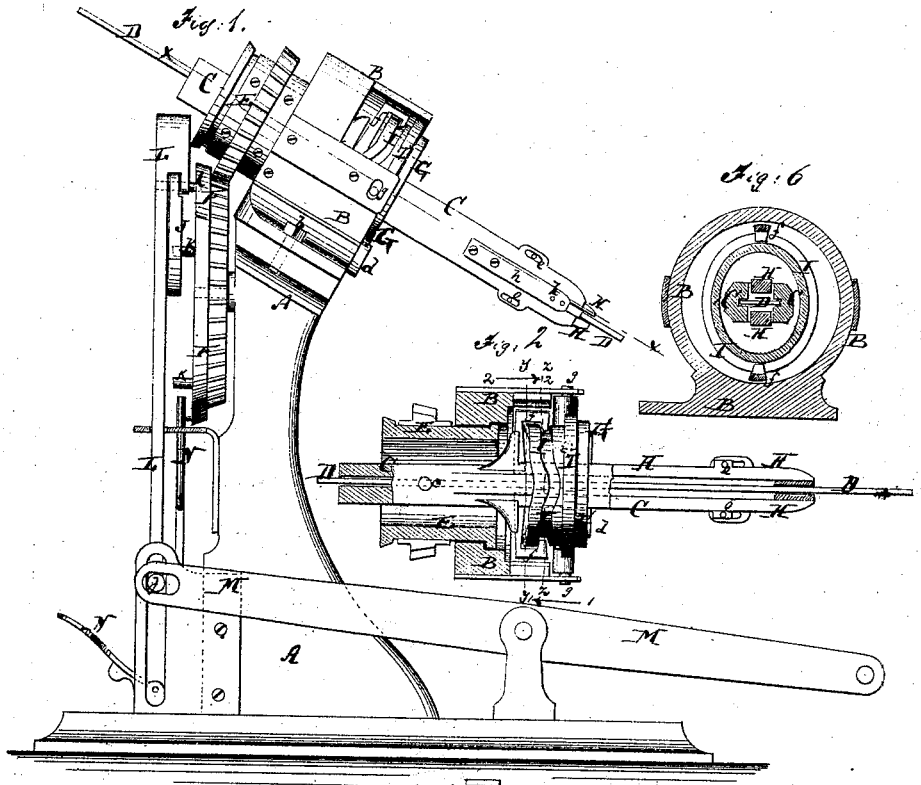


Fig: 6

Fig: 2

Fig: 4

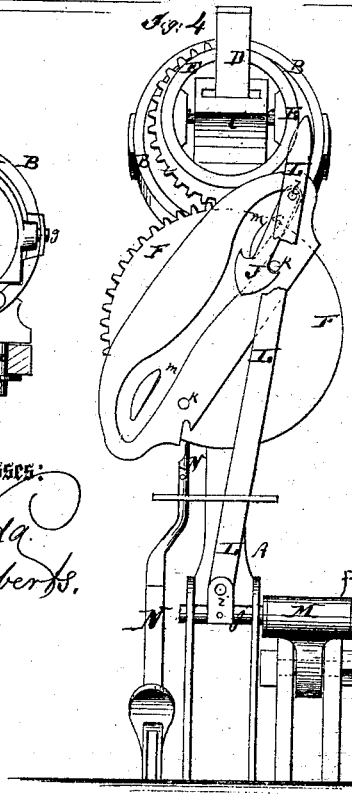


Fig: 3

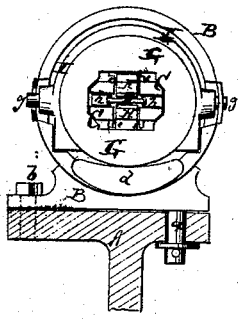
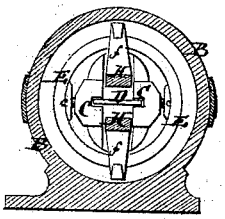


Fig: 5



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IMPROVEMENT IN FEEDERS FOR NAIL-MACHINES.

Specification forming part of Letters Patent No. 113,310, *dated April* 4, 1871.

To all whom it may concern:

Be it known that I, HENRY B. LANDERS, of Williamsburg, in the county of Kings and State of New York, have invented a new and Improved Feeder for Nail-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 represents a side elevation, partly in section, of my improved feeder for nail-machines. Fig. 2 is a top view, partly in section, of the same, the plane of section being indicated by the line *x x*, Fig. 1. Fig. 3 is a face view, partly in section, of the same. Fig. 4 is a rear elevation of the same. Fig. 5 is a transverse section of the same taken on the plane of the line *y y*, Fig. 2, the arrow 1 indicating the direction of the eye toward the plane of section. Fig. 6 is a similar section of the same taken on the plane of the line *z z*, Fig. 2, the arrow 2 indicating the direction of the eye.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide a mechanism whereby plate-iron can be fed to the cutting apparatus of a nail-machine at such regular intervals that the blanks can be cut therefrom with the desired velocity.

The invention consists of several novel features of mechanism whereby the desired result is obtained with the aid of but little power, and so that one person can at the same time attend to several feeding-machines and keep them in good working order.

A in the drawing represents the standard or stationary frame of my improved feeder. It is made of suitable form and size, and sustains a jacket, B, which rests on the inclined face of the standard, so as to stand in an inclined position, as shown.

The jacket B is pivoted to the standard by a pin, *a*, and locked thereto by another pin or fastener, *b*.

Through the inclined tubular aperture of the jacket is fitted the "feed-case" C. The same is of prismatic or cylindrical form, and has a longitudinal aperture or opening of such shape that the flat bar or plate D of iron from which the nails are to be cut can be held therein and moved through it.

The feed-case C is, by projecting trunnions *c c*, pivoted within a tube, E, which is journaled in the jacket B, near to the back end of the same, to revolve freely.

The tube E projects beyond the back of the jacket, and is toothed to receive oscillating motion from a toothed disk or wheel, F, into which its teeth are meshed. The tube E, when turned, carries the feed-case around with it.

In front the feed-case passes through a sleeve, G, which has an oval outer edge. The case C fits the sleeve in such manner that the same will turn with it.

The sleeve rests on a concave support, *d*, which is affixed to the jacket.

When the sleeve G is turned to rest on the support with its major axis, it will elevate the front part of the feed-case, the latter at the same time being in position to hold the plate D on edge, as in Fig. 2.

When the sleeve rests with its minor axis on the support *d*, it holds the feed-case lower than before, while the same retains the plate D in a horizontal position, as in Fig. 3.

The front of the feed-case C projects beyond the sleeve G, and carries on its opposite faces a pair of nippers, H H, which are pivoted to the feed-case at *e*, the pivot-pins passing through slots, as in Fig. 1, to allow some longitudinal, as well as oscillating, motion to the nippers.

The lower ends of the two bars constituting the nippers are intended to bite against the opposite faces of the plate D. To do this their upper or back ends must be swung apart. With this object a hook, *f*, projects outwardly from the upper end of each upper bar, and fits over the edge of an annular cam, I, into a zig-zag groove cut into the same.

The cam I is placed around the sleeve G, and has projecting trunnions *g g*, which fit through vertical slots in the jacket B, as shown. The cam I is thereby enabled to move up and down with the sleeve G during the aforesaid vertical change of its axis, but cannot turn with it.

The outer edge of the cam I is also of oval form, and so placed that its major axis is vertical.

The hooks *f* will thereby be drawn apart when vertical, to close the nippers against the plate D, while they will be nearer together when in a horizontal position, so as not to hold the said plate.

While the hooks *f* are in a vertical position to cause the nippers to bite, they are also farthest forward, while, when the nippers are not holding the plate, they (the hooks) are drawn back in the zigzag groove of the cam I. Thus when a plate, D, has been inserted within the feed-case, to protrude beyond the front or lower end of the same, it will, after each half revolution of the tube E, be taken hold of and moved forward by the nippers, the degree of feed being equal to the longitudinal play of the hooks in the zigzag groove. While the plate D is thus held by the nippers a blank is cut from one end by an oblique cutter, and then the plate is reversed and fed ahead to have another blank cut from its end.

The oblique position of the cutter being always the same, it follows that, owing to the reversal of the plate D after each cut, the blanks separated from it will be of tapering form.

The aforesaid up-and-down play of the sleeve G and front part of the feed-case, rendered possible by the pivoting of the latter in the tube E, serves to raise the plate D clear of the cutter-head while on edge, and to prevent friction of said plate on the cutter.

Spring-clasps *h h* are arranged on the narrow sides of the feed-case, for holding the plate D while the same is released by the nippers.

Motion is imparted to the disk F by means of a pawl, J, which is pivoted to a rod, L, which at its lower end is pivoted to ears *i* projecting from a vertically-reciprocating cross-bar *j*. The pawl is harpoon-shaped, and locks alternately under two pins, *k k*, that project from the face of the disk F.

A pin, *l*, projecting from the rod L, enters a groove, *m*, in the face of a plate on the disk.

As the rod L is lowered by the bar *j* the pawl fits under the lower pin *k*. When the bar *j* is raised the rod and pawl are also elevated, and carry the disk partly around, causing thereby a half revolution of the tube E. During the downward stroke of the bar *j* the disk remains at rest and the plate D undisturbed, to allow the blank to be cut. The pawl engages then the other pin *k*, and at the next upward stroke turns the disk in the opposite direction. During all these movements the upper end of the rod L is guided by the groove *m*. The bar *j* is connected with an oscillating lever, M, or other mechanism, receiving its motion from the same.

When it is desired to stop the motion of the tube E without arresting the propelling machinery, a foot-lever raises a bar, N, against a pin, *k*, preventing the pawl from taking hold of the same.

The jacket B is pivoted to the standard by a pin, *a*, to permit the plate D to be swung clear of the cutter when the pin *b* is withdrawn, in order to allow the cutters to be sharpened.

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

1. The combination of the nipper-levers H and feed-case *c* with the hooks *f* and an eccentric disk, or its equivalent, for actuating the hooks to open and close the nippers, substantially as described.

2. The combination of the nipper-levers H and feed-case *c* with the hooks *s* and the eccentric and irregularly-grooved cam I, as and for the purpose set forth.

3. In combination with the subject-matter of the preceding claim, the eccentric sleeve *c* and support *d*.

4. In combination with the tube E and its toothed segment, the toothed wheel or segment F, the slotted plate and the pins K thereon, the pawl J and mechanism for actuating said pawl, substantially in the manner described.

5. In combination with the slotted plate and pins K, the pawl J, rod L, and mechanism to impart to said rod vertically-reciprocating movement, substantially as described.

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