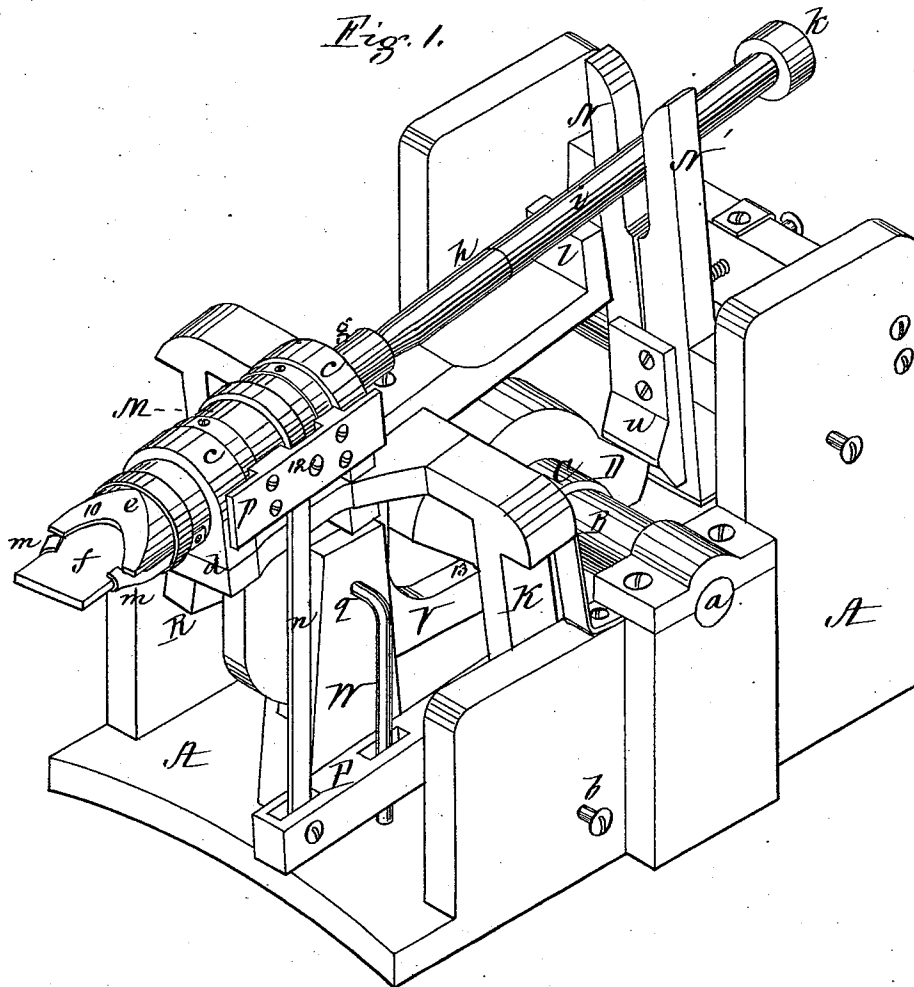


D. W. KEITH.
Nail-Plate Feeder.

No. 159,932.

Patented Feb. 16, 1875.



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Fig. 4.

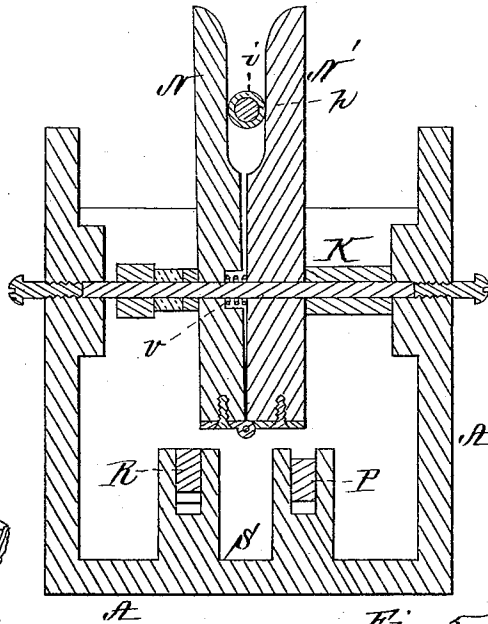


Fig. 8.

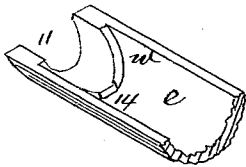


Fig. 5.

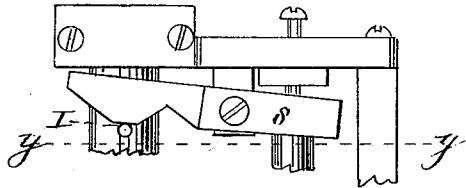


Fig. 7.

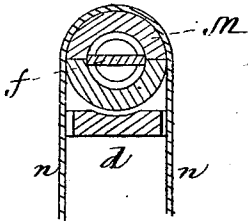
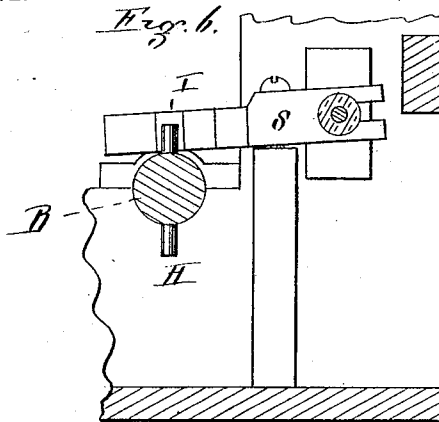


Fig. 6.



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DAVID W. KEITH, OF WEST WAREHAM, MASSACHUSETTS.

IMPROVEMENT IN NAIL-PLATE FEEDERS.

Specification forming part of Letters Patent No. **159,932**, dated February 16, 1875; application filed September 1, 1874.

To all whom it may concern:

Be it known that I, DAVID W. KEITH, of West Wareham, in the county of Plymouth and State of Massachusetts, have invented certain Improvements in Mechanism for Turning and Feeding Tack and Nail Plates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a machine for turning and feeding tack and nail plates, when constructed in accordance with my invention. Fig. 2 is a longitudinal vertical section through the center of the same. Fig. 3 is a transverse section on the line *w w* of Fig. 2. Fig. 4 is a transverse section on the line *x x* of Fig. 2; Fig. 5, plan of a portion of the machine. Fig. 6 is a vertical section on the line *y y* of Fig. 5. Fig. 7 is a section through the barrel which turns the plate; Fig. 8, perspective of the interior of the "nose-piece" or forward end of the barrel.

My invention has for its object to produce a simple mechanism for automatically turning and feeding the plate from which nails or tacks are to be made; and consists in a pair of vibrating jaws brought together by means of a lever operated by one or more pins or cams, for the purpose of holding the sleeve surrounding the rod with which the plate is connected, the jaws in this position (while holding the rod) being advanced by the revolution of a cam which comes in contact therewith.

My invention also consists in so constructing the interior of the "nose-piece" through which the plate is fed as to form guides for directing it into its proper position relative to the cutters, thus admitting of the insertion of the plate without stopping the machine, and insuring a uniform intermittent feed, as desired.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is the frame-work, in suitable bearings *a* in which runs the driving-shaft B, which carries four cams, C D E G, and two pins or projections, which, as they fulfill the office of cams, will herein be designated as cams H I. K is a vibrating frame,

the lower ends of which are connected together by a cross-bar, L, pivoted at *b b* to the inside of the frame. In suitable bearings *c c*, rising from the front projecting portion *d* of the frame K, is supported a hollow cylindrical drum or barrel, M, the forward end of which, termed the "nose-piece," *e*, is tapered off on two of its opposite sides, as seen at 10 11. The nail-plate *f* is grasped by a pair of nippers, *g*, to which is secured a long rod, *h*, surrounded by a sleeve, *i*, and provided with an enlargement, *k*, the sleeve resting on a support, *l*, and passing between a pair of jaws, N N', which embrace the sleeve and advance the nipper-rod *h'*, with its plate, at the desired times, as will be more fully explained hereafter. The object of the sleeve surrounding the nipper-rod is to allow the nippers and nail-plate to be turned slightly by the descent of the movable cutter, in case the plate should not be seated squarely on the stationary cutter underneath when the nail is being cut. The nail-plate *f* and nippers *g* pass longitudinally through the barrel M, the outer end of the nail-plate being held in position by spring-guides *m*, projecting at points diametrically opposite from the end of the "nose-piece" *e*, the pressure of the springs on the edges of the plate keeping it from slipping in a longitudinal direction while being turned, and at the same time allowing it to yield laterally when brought in contact with the guard of the nail-machine, (not shown,) whereby the delivery of the plate in the required line is insured. The barrel M is alternately rotated, first in one direction and then in the other, so as to turn the nail-plate as desired after each cut, by a strap or cord, N, passing over the barrel, and secured thereto at 12 under a cleat, *p*, which extends longitudinally along the barrel, one end of the strap being secured to a lever, P, and the other end to a lever, R, each lever being pivoted to a bifurcated standard, S, and operated alternately with the other by cams C G on the driving-shaft.

The cleat *p* has a twofold office—to keep the strap from slipping, and serves as a stop to limit the rotation of the barrel, the ends of the cleat coming into contact with the sides of the bearings *a a* when the barrel, with its nail-plate, has turned half a revolution.

The vibrating frame K is raised, to lift the nail-plate while being turned over, by a lever, V, pivoted at *q* within a bifurcated standard, W, rising from the frame-work, the top of the lever V striking the under side of the portion *d* of the frame K, and the lever V being actuated at the required times by the cams D E coming in contact with its lower bent end 13. The jaws N N' are secured upon a rock-shaft, X, and the jaw N is made to move toward the other, N', by a lever, *s*, vibrated by the cams H I, thereby causing the sleeve *k*, surrounding the nipper-rod, to be seized, after which the jaws N N' are rocked forward by the cams D E against the resistance of a spring, *t*, which returns the jaws to their normal position after each cam has passed out of contact therewith, the cams striking an incline, *u*, formed at the junction of the lower end of the jaws, thus causing the nippers, with the nail-plate, to be fed forward the desired distance. After the cams pass off the incline *u* the jaws are separated by a spring, *v*, and carried back to their original position, to be in readiness to take a new hold on the nipper-rod.

The interior of the nose-piece is, near its outer end, contracted in diameter, which contraction gives rise to shoulders 14, which, from

opposite points W, perpendicular to the plane of the plate, are inclined toward the end of the nose-piece, so that if a wrong position should be given to the plate on entering it will strike against the shoulders 14, and be arrested until the barrel shall have been turned to correspond, during which turning the plate will slide against the inclined shoulders *w*, until it comes in line with the notches in the sides of the nose-piece.

If desired, one shoulder or stop, 14, may be omitted without departing from my invention.

What I claim as my invention is—

1. The jaws N N', for seizing the sleeve *i*, surrounding the rod *h*, in combination with the lever *s*, cams H I, shaft B, and cams D E, substantially as and for the purpose set forth.

2. The nose-piece *e* with its shoulder or shoulders 14, inclined at *w*, in combination with the spring-guides *m*, substantially as described, for the purpose set forth.

Witness my hand this 24th day of August, 1874.

DAVID W. KEITH.

In presence of—

J. W. KEITH,
S. A. KEITH.