(No Model.)

D. W. KEITH.

NAIL PLATE FEEDER.

No. 321,114. Patented June 30, 1885.

Fig 1

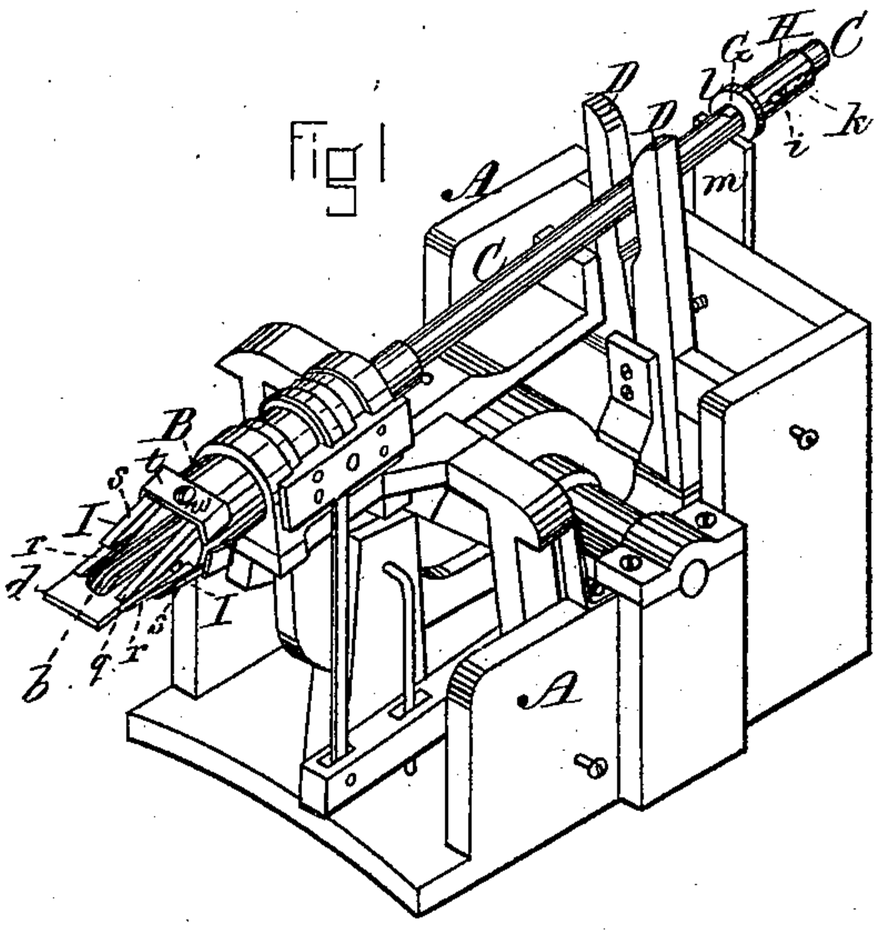


Fig 2

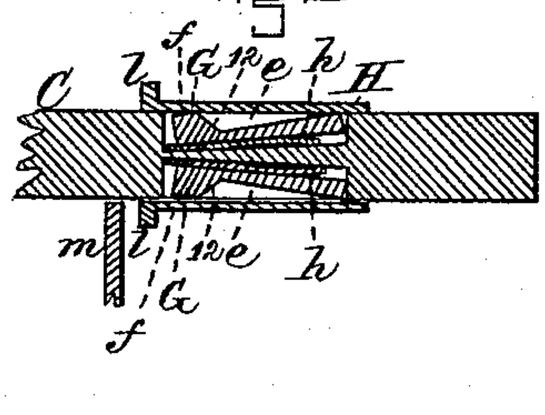


Fig 3

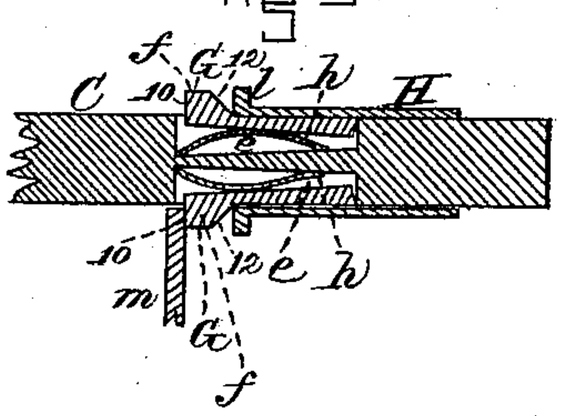


Fig 4

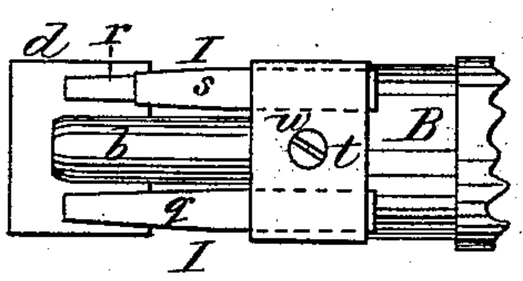
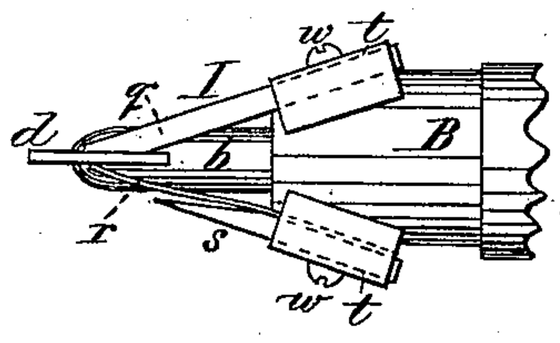


Fig 5



WITNESSES

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DAVID W. KEITH, OF WEST WAREHAM, MASSACHUSETTS.

NAIL-PLATE FEEDER.

SPECIFICATION forming part of Letters Patent No. 321,114, dated June 30, 1885.

Application filed August 6, 1884. (No model.)

To all whom it may concern.

Be it known that I, DAVID W. KEITH, a citizen of the United States, residing at West Wareham, in the county of Plymouth and State of Massachusetts, have invented certain Improvements in Nail-Plate Feeders, 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 nail-plate feeder having my improvements applied thereto. Fig. 2 is a vertical section through the rear end of the nipper-rod. Fig. 3 is a similar section with the parts in a different position. Fig. 4 is a plan of the barrel and nail-plate guides. Fig. 5 is a side elevation of the same.

In certain descriptions of nail-plate feeders as commonly constructed the nipper-rod is fed forward until a collar or projection thereon is brought into contact with a rest on the machine, which forms a stop to prevent the further advance of the nipper-rod and the liability of the nippers being caught between the cutters. With this device it often happens that after the last perfect nail has been cut from the plate close up to the nippers a small portion of the "butt-end" of the nail plate still projects therefrom, and on the next forward movement of the nipper-rod, when it is arrested by the stop, a sufficient portion of the butt-end is projected between the cutters to form a "sliver" or "splinter," and the action of the cutters in cutting off this splinter often draws out the butt-end from between the nippers just far enough to cause another splinter to be cut on the next advance of the nipper-rod, and in this manner several of these splinters are frequently cut through the carelessness of the operator.

My present invention has for its object to overcome this difficulty and to effectually prevent the cutting of these slivers from the butt-end of the nail-plate; and my invention consists in a nipper-rod adapted to be drawn back on its rest after the cutting off of the last perfect nail, and then arrested and held back before it reaches the point to which it was carried on its previous forward movement, whereby the cutting of splinters, as heretofore, is avoided.

My invention also consists in the combination, with the barrel, of two pairs of nail-plate guides, each pair consisting of a rigid arm and a spring adapted to bear upon opposite surfaces of the nail-plate near its edges, as hereinafter set forth.

In the said drawings, A represents the frame-work of the feeder; B, the turning-barrel; C, the nipper-rod carrying the nippers *b* which hold the nail-plate *d*, and D D a pair of jaws, which embrace the nipper-rod and advance it with the nail-plate at the required times. The construction of the turning-barrel and its operative mechanism, and also that of the jaws D D and the mechanism for actuating the same, are all well-known, and as they form no part of my present invention will not be further described. Within slots or recesses *e*, near the rear end of the nipper-rod C, are placed two levers or stops, G G, which are adapted to be thrown out by means of springs *h h*, Fig. 3, so that the front square ends 10 of their heads *f* will project beyond the surface of the rod C on opposite sides thereof, the rear portion of each head having an incline, 12. These levers are pressed inward by a sleeve, H, placed over them and adapted to slide upon the nipper-rod C, its movement in either direction being limited by a pin, *i*, and slot *k*, and at the front end this sleeve is provided with a flange or projection, *l*, which is adapted to be brought into contact with a stationary rest or bar, *m*. As the nipper-rod is fed forward by the action of the jaws D D, when the nail-plate has been cut nearly up to the nippers, the flange *l* of the sleeve H is brought into contact with the edge of the rest *m*, which causes the sleeve to be slid backward on the nipper-rod a short distance at each subsequent forward impulse of the latter until the front edge of the sleeve H is in line with or just in front of the commencement of the inclines 12 of the stops G, the square front ends, 10, of the heads of the latter having passed over the edge of the rest *m* without catching thereon, as seen in Fig. 1, as they are prevented by the surrounding sleeve H from being projected outward by their springs. The parts are so arranged that when in this position there will be a sufficient length of the nail-plate projecting beyond the nippers to form the last perfect nail, and as the nipper-rod is advanced to enable this last

perfect nail to be cut, the sleeve H is pushed still farther back on the nipper-rod, thus carrying its front edge backward over the inclines 12, when the stops or levers G will be tripped or released and their heads *f* thrown out by the springs *h* into the position seen in Fig. 3, so that on the next forward movement of the nipper-rod one or the other of these stops, according as the barrel B may happen to be turned, will come into contact with the rest or bar *m*, and thus arrest the nipper-rod in advance of the point to which it was carried on the previous forward movement, thus rendering it impossible for any small portion of the nail-plate, not sufficient to form a perfect nail, which may project beyond the nippers from being caught by the cutters, and in this manner all liability of slivers or splinters being cut from the butt-end of the nail-plate is entirely avoided.

I do not confine myself to the employment of the sliding sleeve H for retaining and releasing the stops G, as it is evident that any other suitable device which will prevent the stops G from being thrown out until the required time, and will then trip or release the same to allow them to project out into a position to catch over a stationary edge or projection, and thus limit the advance of the nipper-rod, may be employed instead, if preferred.

To the front end of the turning-barrel B are secured on opposite sides two pairs of guides, I I, which serve to hold the nail-plate and prevent it from slipping laterally, thereby insuring its proper delivery to the cutters of the nail-machine.

Each pair of guides consists of a rigid or stiff arm, *q*, of tapering form, and a spring, *r*, the latter having a rigid arm, *s*, arranged outside of it and forming a stop therefor to prevent it from being unduly bent. The rigid arms *q q* of the two pairs of guides bear upon opposite surfaces of the nail-plate, as do also the springs *r r* to enable the nail-plate to be turned slightly in either direction against the resistance of the springs, and the arms and springs are secured to the barrel by two caps, *t*, each cap being held by a single screw, *w*, as seen in Figs. 4 and 5, whereby their attachment and detachment are facilitated.

I am aware that the barrel of a nail-plate feeder has been provided at its front end with two pairs of spring-guides for the nail-plate, each pair consisting of two springs adapted to bear upon opposite surfaces of the nail-plate; but these springs are extremely liable to bend and break while the machine is in operation, and require to be frequently removed from the barrel and hammered into proper shape to perform their work. These objections and difficulties I have overcome by the employment of the rigid arms, arranged as described, which effectually prevent the springs from becoming bent out of shape or broken. I therefore lay no claim to a guide composed of a pair of springs, but confine myself to the construction shown and described.

What I claim as my invention, and desire to secure by Letters Patent, is--

1. In a nail-plate feeder, the combination, with a nipper-rod, of a movable stop or projection applied thereto and adapted to be thrown out to catch against a stationary edge or portion of the machine to limit the forward movement of the nipper-rod, and means for retaining and tripping or releasing the said stop, substantially as and for the purpose set forth.

2. In a nail-plate feeder, the nipper-rod C, provided with movable stops or projections G, adapted to be thrown out from opposite sides thereof to catch against a stationary edge or portion of the machine to limit the forward movement of the nipper-rod, in combination with the slide H, having a projection, *l*, adapted to be brought into contact with a rest or projection, *m*, whereby the slide is moved to release or trip the stops G, substantially in the manner and for the purpose described.

3. In a nail-plate feeder, the combination, with the nipper-rod C, of the movable stops G, placed within slots or recesses *e*, and adapted, when released, to be projected outward by springs *h*, and having inclines 12, as described, and the slide H, with its projection *l*, adapted to retain the stops flush with the surface of the nipper-rod and release or trip the same when slid upon the rod C, as the latter advances, by contact with a rest or projection, *m*, all constructed to operate substantially as and for the purpose set forth.

4. In a nail-plate feeder, the combination, with the barrel B, of the two pairs of nail-plate guides I I, each pair consisting of a rigid arm, *q*, and a spring, *r*, bearing upon opposite surfaces of the nail-plate, substantially as and for the purpose set forth.

5. In a nail-plate feeder, the combination, with the barrel B, of the two pairs of nail-plate guides I I, secured thereto by the caps *t* and screws *w*, each pair consisting of a rigid arm, *q*, and a spring, *r*, provided with a stop-arm, *s*, so arranged that the rigid arms *q q* of the two pairs of guides will bear upon opposite surfaces of the nail-plate, substantially as and for the purpose described.

Witness my hand this 2d day of August, A. D. 1884.

DAVID W. KEITH.

In presence of—
P. E. TESCHEMACHER,
W. J. CAMBRIDGE.