

S. K. PADEN.
Nail Plate Feeders.

No. 137,710.

Patented April 8, 1873.

Fig. 1.

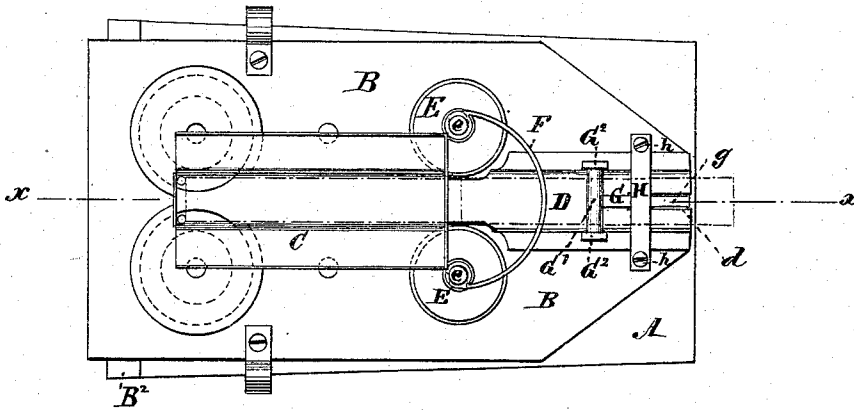


Fig. 2.

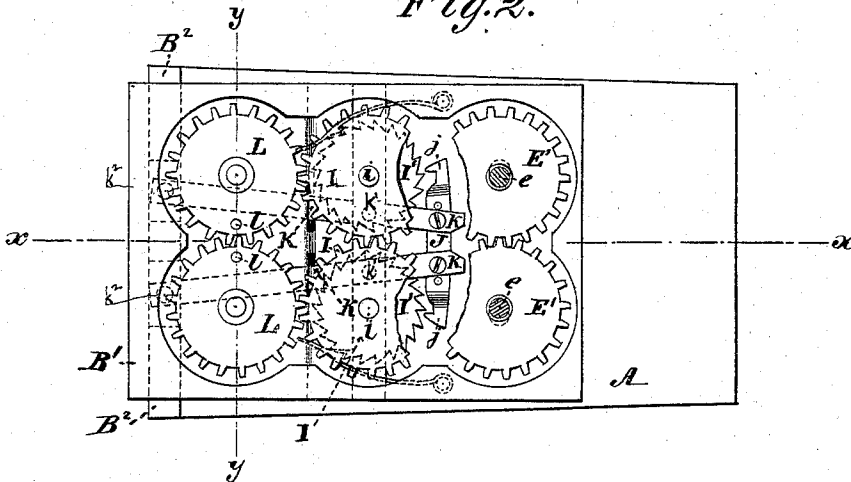


Fig. 3.

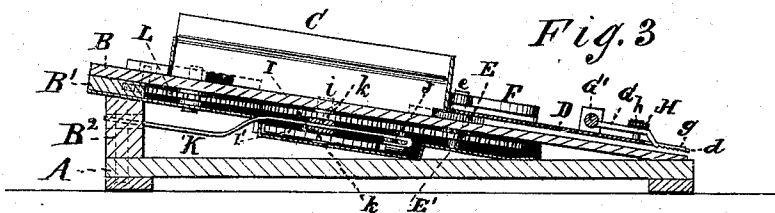
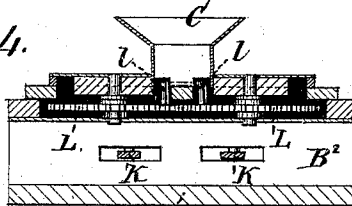


Fig. 4.



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UNITED STATES PATENT OFFICE.

SAMUEL K. PADEN, OF PULASKI, PENNSYLVANIA, ASSIGNOR TO HIMSELF
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IMPROVEMENT IN NAIL-PLATE FEEDERS.

Specification forming part of Letters Patent No. **137,710**, dated April 8, 1873; application filed
January 13, 1873.

To all whom it may concern:

Be it known that I, SAMUEL K. PADEN, of Pulaski, in the county of Lawrence and State of Pennsylvania, have invented a new and useful Improvement in Nail-Plate Feeders; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification.

The invention consists in the improvement of nail-plate feeders, as hereinafter fully described, and subsequently pointed out in the claims.

In the drawing, Figure 1 is a top view. Fig. 2 is a top view with plate B removed. Fig. 3 is a longitudinal section through line *x x* of Fig. 2, and Fig. 4 is a cross-section through line *y y* of Fig. 2.

A represents the table of a nail-cutting machine, at whose end is the bed-knife, and on which is located the inclined vibrator B B¹, over and from which is fed the nail-plate between the upper and lower cutters. B² is a fixed upright, upon which the vibrator is supported and moved. C is the hopper, in which are piled a number of nail-plates, and whose front is recessed at the bottom to allow the passage forward of a single plate at a time. D is a cover which receives and guides the plate as it is moved from off the hopper. E E are horizontal friction-disks, friction-feeders, or grippers, whose vertical shafts *e e* are placed in oblong bearings and drawn toward each other by a spring, F. These grippers pass through the sides of guide D, and are held by the spring F to nail-plates of varying widths. G is a crooked arm attached to a shaft, G¹, that rocks in uprights G² G², and has upon its free end a bearing, *g*, that has forwardly-projecting teeth which fit in slot *d* of guide-cover, and rests upon the plate at the end of table. H is a flat spring which exerts pressure upon the bearing-arm G in order to hold firmly in position that part of plate which is being cut and prevent the possibility of its being forced backward or forward by the cutter. The tension of the spring H may be increased or diminished by moving screws *h h* more or less up or down. The means by which the friction-disks E E are intermittently rotated

over the fraction of a circle necessary to give the required feed to the nail-plate consist of the spur-wheels E' E' on the shafts *e e*, the drive-wheels I I, and ratchet-wheels I' I', provided with suitable spring-detents, arranged on shafts *i i*, the bar J, having oppositely-placed hooks *j j*, one at each end, and the levers K K, pivoted between the bars *k k*. The drive-wheels I I are geared together so that the hook at one end of bar will always not only move its own ratchet to feed the plate, but will bring forward a new tooth for the opposite hook to catch upon in its own ratchet-wheel. No two drive-wheels and ratchet-wheels are believed ever before to have been combined with a double hook-bar in this manner for feeding purposes. By using the two levers K K, whose ends are pivoted at *k² k²* in the rigid upright B², and pivoting them within the bars *k k* at *k¹ k¹*, which bars are rigidly attached to vibrator B B¹, every horizontal movement of the latter not only places the nail-plate at the proper angle to cutter, but also feeds it forward to the exact distance required. In order to enable the vibrator to move over part of its course and allow the movable cutter to rise above the nail-plate before the latter is fed forward, I use the two separate levers K K, and pivot them in front to the double hook-bar, but each at some distance from the middle thereof, and on opposite sides of said middle, so that the hooks will be held off from the ratchet-wheels until the vibrator has gone over part of its course. These levers K K are adjustable upon the bar J, with their front ends to or from each other, to regulate the taper which is intended to be given to the nail. The bars K K, when adjusted on the bar J, must be also correspondingly upon *k k* or in the upright B². This is accomplished by a hook-bar, J, provided with two or more perforations for each lever, and by moving the fulcrum-pins or the pins by which said levers are pivoted in the slots of uprights B². The means by which I effect the movement of the bottom nail-plate from the hopper consist of the gear-wheels L L, having the side studs *l l*, which are arranged at such a distance from the center of wheel that each stud traverses a distance about

equal to the length of nail-plate, and thus is ready to push forward one nail-plate as soon as the other has left the hopper. These gear-wheels L L are operated by the drive-wheels I I. The hopper is open on the bottom at its upper end to allow the studs *l l* to protrude therethrough as they revolve in the recesses of part B of vibrator.

This nail-plate feeder performs its work with great accuracy and uniformity, while it cuts up the entire plate, and thus greatly economizes the metal.

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

1. The horizontal grippers E E, arranged on a horizontal vibrator, B B¹, and biting upon the edges of nail-plate, as and for the purpose set forth.

2. A pair of horizontal grippers, E E, arranged upon shafts held together by a single spring, F, as and for the purpose set forth.

3. A hopper, C, closed on all sides, but open on bottom and top, combined on the rear end with rotary studs *l* on wheels L, and on the front with grippers E E, as described, so that the studs *l* start the plate while the grippers then draw it out of hopper.

4. The elastic arm G, having shaft G¹ journaled in uprights G² G², and the end bearing *g* provided with forwardly-projecting teeth, as and for the purpose described.

5. The flat spring H, applied transversely of the presser G and held at each end by a screw, *h*, as described, to allow said presser to rise itself and raise the spring between the screws.

6. The combination, with friction-disks E E, of the connected wheels I I and the ratchet-wheels I' I' having detents, as and for the purpose specified.

7. The vibratory double hook-bar J, having a hook, *j'*, at each end, combined with the ratchet-wheels I' I', as and for the purpose described.

8. The combination, with the double hook-bar J *j j*, of the levers K K, fulcrumed in vibrator B B¹ and pivoted in front on each side of the middle of said bar J, as and for the purpose set forth.

9. The levers K K made adjustable on bars *k k* and in upright B² toward each other, as described, to regulate the taper of nail.

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Witnesses:

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