(103.)

THOMAS M. LAWRENCE.

Improvement in Nail Cutting Machines.

No. 122,324. Patented Jan. 2, 1872.

Fig. 1.

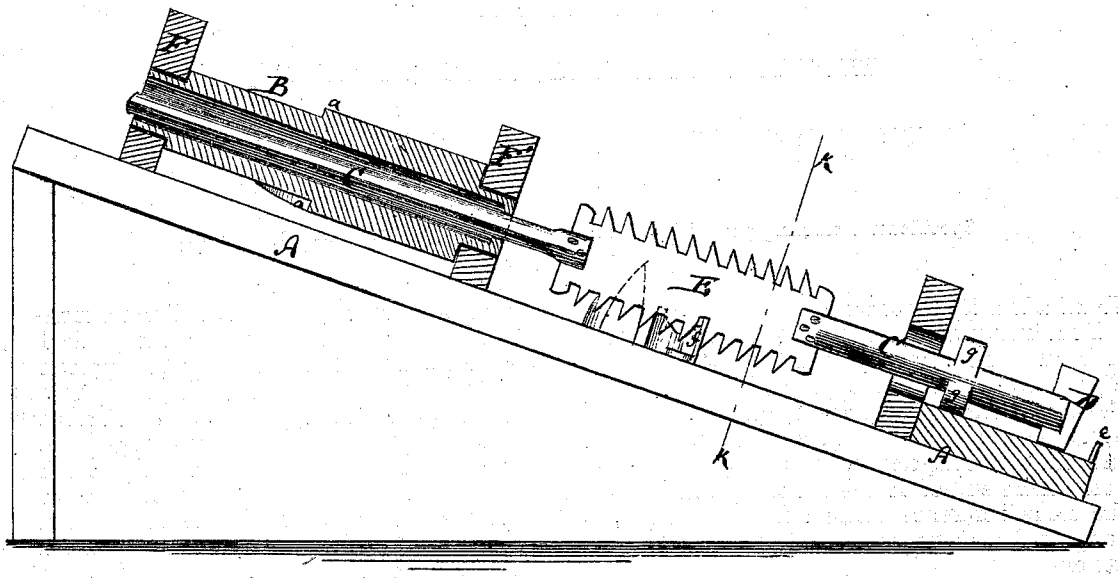


Fig. 2.

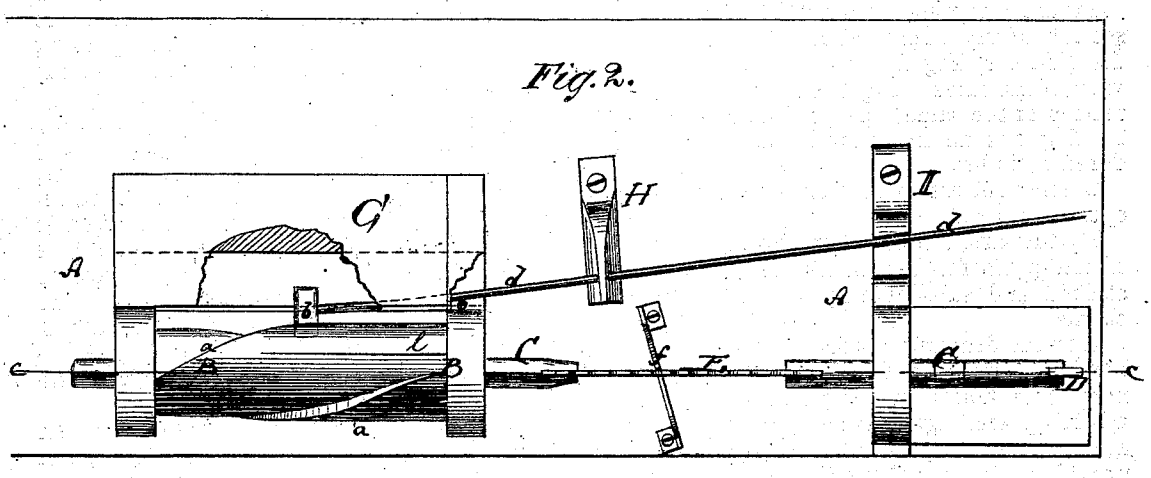


Fig. 3.

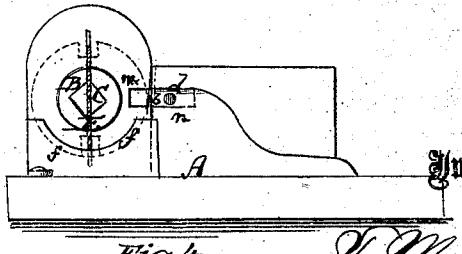
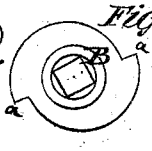


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS M. LAURENCE, OF PIQUA, OHIO.

IMPROVEMENT IN NAIL-CUTTING MACHINES.

Specification forming part of Letters Patent No. 122,324, dated January 2, 1872.

To all whom it may concern:

Be it known that I, THOMAS M. LAURENCE, of Piqua, in the county of Miami and State of Ohio, have invented a new and Improved Feed-Mechanism for Nail-Machines; and 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 vertical longitudinal section of my improved nail-feeder taken on the line *c c*, Fig. 2. Fig. 2 is a plan or top view of the same. Fig. 3 is a detail transverse section of the same taken on the line *k k*, Fig. 1. Fig. 4 is an end view of the spiral-shouldered cylinder.

Similar letters of reference indicate corresponding parts.

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

A in the drawing represents an inclined table; F F′, uprights thereon, in which are bearings for a hollow rotary cylinder, B; and G, a block placed against the uprights F F′, and alongside said cylinder. The cylinder B is provided with spiral shoulders *a a*, extending half-way round it, and from one upright to the other, and also with short shoulders or ribs *l* at the front. The block G has a straight guide-channel, *n*, formed in the face through its whole length, and next the cylinder, while the upright F has a recess, *m*, commencing from the inside, but only extending part of the way through it. *b* is a block which is reciprocated in the guide-channel *n* and against the shoulders *a a* in order to give a semi-revolution to the cylinder B. *d* is a spring-rod, to which the block *b* is attached at the end, and by which it is reciprocated. H is a guide-block, through which is a horizontal slot of sufficient width to allow consideralble lateral play to the rod *d*. I is another block, in which are two open grooves, one straight and the other oblique thereto. C is the nipper-rod, at whose end the plate is held, and which it is the object of the above-described device to rotate half-way round after each nail is severed.

The mode of operation of my nail-plate turner is as follows: The spring-rod *d* is pushed forward until the block *b* has entered the groove *n*, when it is raised and forced laterally into the oblique groove of the block I. This brings the block *b* with an elastic pressure upon the surface of cylinder B. Pushing the said block *b* to the back of the cylinder, it slips down from the end thereof into the recess *m;* and when the rod *d* is drawn, passes behind a shoulder on the other side of the cylinder. If the rod *d* is now drawn forward it revolves the cylinder a semi-revolution, and, passing closely between the shoulder and rib, at the front thereof, holds the said cylinder and nipper-rod C, so that the plate is sustained firmly in a horizontal position. E is a plate having teeth inclined backward on the front edge, but straight on the other. This is fastened between the two ends of nipper-rod C C so as to form the middle thereof, and to be in the same plane with the nail-plate. *f* is a plate fixed on the table A, and arranged in a plane at an oblique angle to that of the toothed plate E. This constitutes my improved device for drawing back the nail-plate, as it is turned, to enable it to clear the cutter.

The mode of its operation is as follows: As the nipper-rod is turned, the incline of one of the teeth of plate E, being carried against the oblique plate *f*, draws back said rod a small but sufficient distance to enable it to turn without obstruction. The upright I is vertically-slotted, and the cylinder B receives the square end of rod C in a bearing sufficiently large to allow of a small upward movement, necessary in turning the plate. This elevation is produced in the usual manner by cams G G on the front end of the nipper-rod and a little way from the nail-plate.

I am aware that a cylinder, in which a nipper-rod is received, and by whose rotation it is turned, is not new; but

Having described all that is necessary to a full understanding of my invention, what I do esteem to be new, and desire to protect by Letters Patent, is—

1. The spring-rod *d*, sliding block *b*, block G having straight channel-guide *n*, cylinder B having spiral shoulders *a a*, ribs at the front end, and uprights F F′, in the former of which

is a recess, *m*, all constructed, arranged, and applied together to operate substantially as and for the purpose specified.

2. The combination of the subject-matter of above claim with nipper-rod C C, toothed plate E, and oblique plate *f*, as and for the purpose set forth.

3. The subject-matter of the above claims, in combination with the cams *g g* and stop *e*, arranged as and for the purpose specified.

THOMAS M. LAURENCE.

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