L. R. BLAKE.

NAILING-MACHINE FOR BOOTS AND SHOES.

No. 189,835. Patented April 24, 1877.

Fig. 1.

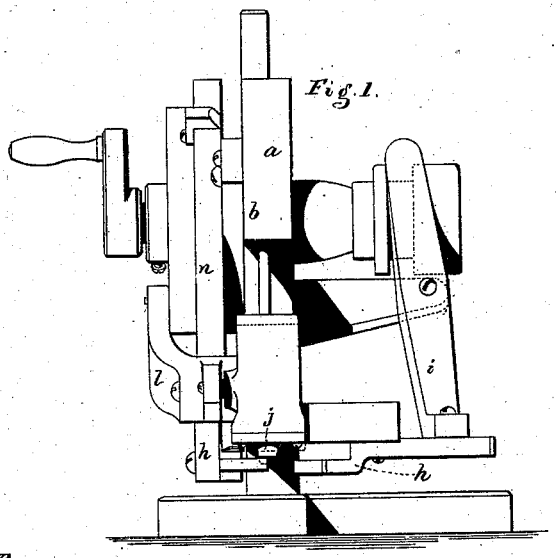


Fig. 3.

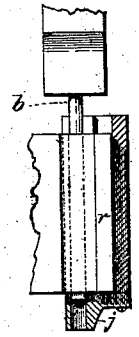
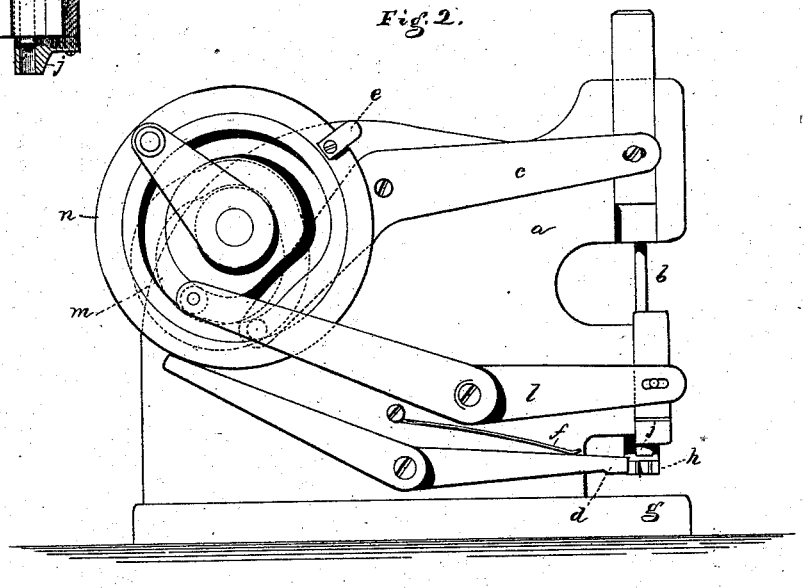


Fig. 2.



Witnesses.

L. H. Latimer.

C. C. Perkins.

Inventor.

Lyman R Blake

per Crosby & Gregory Att'ys

UNITED STATES PATENT OFFICE.

LYMAN R. BLAKE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN NAILING-MACHINES FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **189,835**, dated April 24, 1877; application filed December 28, 1876.

To all whom it may concern:

Be it known that I, LYMAN R. BLAKE, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Nailing-Machine, of which the following is a specification:

This invention relates to improvements in nailing-machines, adapted to partially drive headed tacks or nails; and it is an improvement upon an application heretofore filed by me in the United States Patent Office, May 5, 1876, to which reference may be had.

In that application the driver drives the head of the tack or nail below the end of the nail-tube, the support for the sole yields under the pressure of the partially-driven tack and driver, and the complete driving of the tack by the driver is thereby obviated.

In another application filed concurrently with this, I have shown and described a nail-tube provided with a lateral opening for the passage of the tacks or nails, through which the undriven upper end of the partially-driven tack or nail may be moved as the sole is fed horizontally for the reception of each tack.

In this present invention, the nail-tube is lowered upon the surface of the stock as each nail is being partially driven by the driver which does not extend in its down thrust as far as the end of the tube or the surface of the stock. When each tack or nail has been driven the proper distance, the head remaining above the surface of the stock three-sixteenths of an inch, more or less, and yet within the nail-tube, is uncovered by lifting the nail-tube above the stock far enough to clear the upper end of the tack or nail-head, thereby permitting the feeding device to engage and move the sole laterally and horizontally for the reception of a new tack or nail.

Figure 1 represents in front view sufficient of a nailing-machine to illustrate one embodiment of the invention; Fig. 2, a side view thereof. Fig. 3 represents the tube in detail.

The frame-work *a* may be of any proper shape. The driver *b*, awl, (if one is used,) presser, and tack or nail-selecting and presenting mechanism may be of any usual construction, and be operated by any usual devices.

In this instance the driver is moved by a vibrating lever, *c*. The presser *d*, operated by a cam, *e*, and spring *f*, to lift it from and depress it upon the stock, is employed to hold the stock or sole down upon the work-support *g*, except when the feed takes place. The support *g* will be made as a small anvil or surface adjustable as to its height, to adapt it to nails of different length, and stock of different thickness. The feed *h*, to be operated by the lever *i*, is adapted to engage each tack or nail after the nail-tube *j* is lifted and move it and the sole horizontally.

The presser may be of the form shown in the well-known McKay sewing-machine, and with it may be used a feed as used in such machine, or an awl-feed, or any other common feeding device adapted to engage the stock; but a feeding device to engage the tack or nail at or near its head is preferred. The nail-tube *j* is to be supplied singly with tacks or nails from any proper source. The tube, if used with headed nails, will be provided with any usual form of centering device, fingers, or jaws described in my other cases, to act upon the body or head, and properly direct the point of the nail. The tube will preferably be made in two parts—one part, *r*, attached fixedly to the machine, as in Fig. 3; the other part, *j*, being arranged to be moved up and down upon the head of the machine in proper guideways, (in this instance of the invention,) by means of a lever, *l*, operated by a cam-groove, *m*, in the cam *n* on the shaft *o*.

As shown in the drawing, the part *j* of the tube is elevated above the stock, and the feeder is drawn back. The driver, during the early stage of its descent, pushes the nail or tack, suitably presented, into the nail-tube down into the part *j* of the tube; then such part and driver descend together until the lower end of the part *j* rests upon the stock, when the driver, in its further movement, drives the tack or nail, guided or steadied by the tube into the stock, permitting its head to remain at the desired distance above the stock. In this condition, and preferably while the driver remains down, the nail-tube is lifted from the stock, uncovering the undriven upper end of the tack or nail, leaving it free to be moved from under the path of the driver by the feed preferably adapted to engage the

upper end of the nail. The nail-tube may be so connected with its actuating lever that it will yield vertically to slight irregularities of the stock.

With this nail-tube adapted to be raised and lowered, as described, I intend to employ a work-support, substantially as in my application first referred to, it being arranged so that its upper surface will be pressed upward to a certain fixed point prior to driving each tack or nail, its upward position, however, being made variable from time to time, according to the length of nail to be driven and the thickness of the stock.

The adjustment is made by raising or lowering the support with relation to the devices employed to lock or release it.

If desired, the tube may be made as a single piece, and be lowered and raised to bear upon the stock and to uncover the head of the nail.

I do not broadly claim a lifting nail-tube.

I claim—

A support for the stock and a driver adapted to descend to a position above the surface of the stock equal to the distance it is desired the head of the partially-driven nail shall project above the stock, in combination with a nail-tube adapted to descend below the lowest position of the driver to guide the nail and to be lifted to uncover the head of the partially-driven tack or nail, to permit the stock and partially-driven tack to be moved or fed, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LYMAN R. BLAKE.

Witnesses:

G. W. GREGORY,

S. B. KIDDER.