

P. H. HOWE.

MACHINES FOR FLANGING SHOE NAIL STRIPS.

No. 176,313.

Patented April 18, 1876.

Fig. 1.

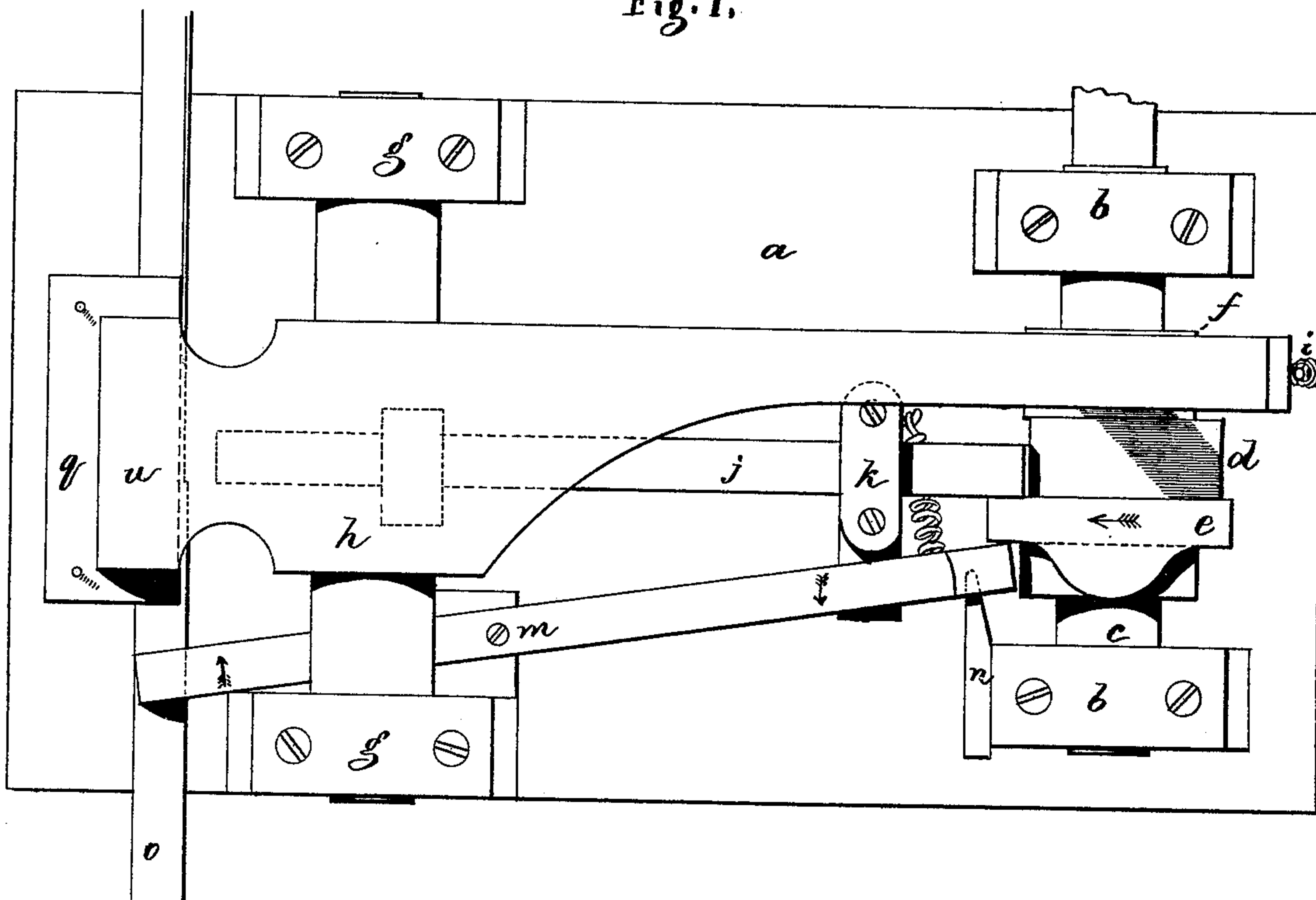


Fig. 2.

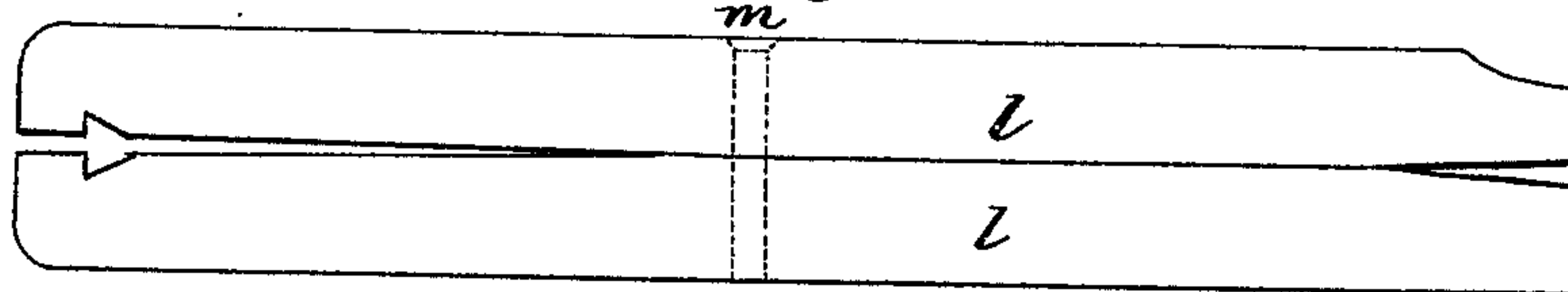
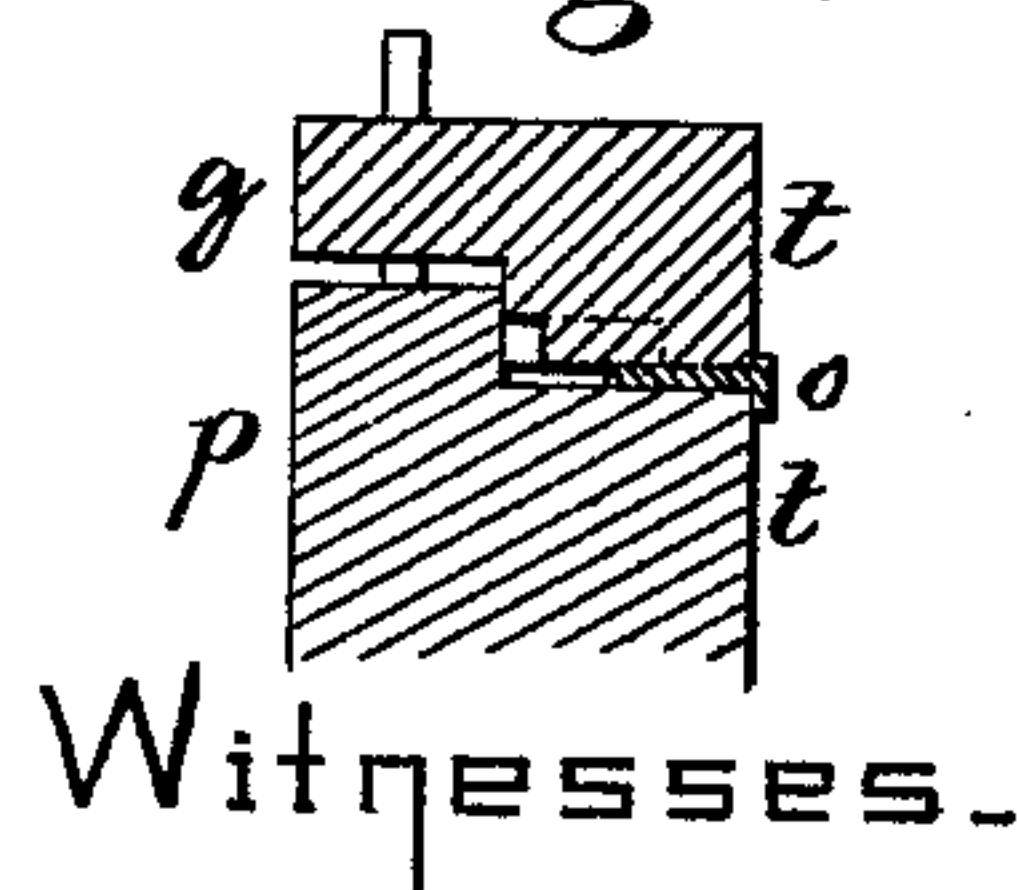


Fig. 3.



Witnesses.

L. H. Latimer.

W. J. Pratt.

Fig. 4.

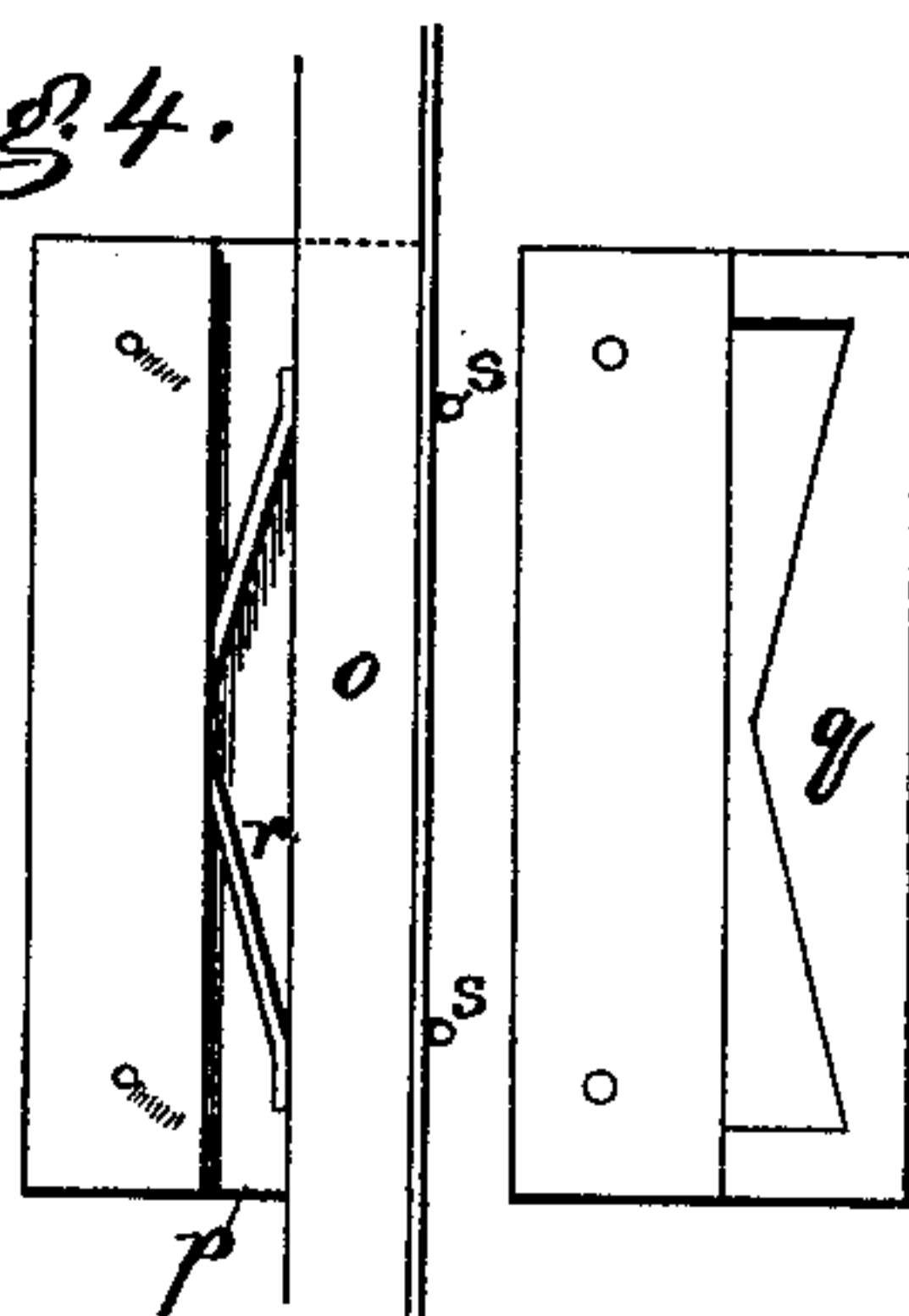
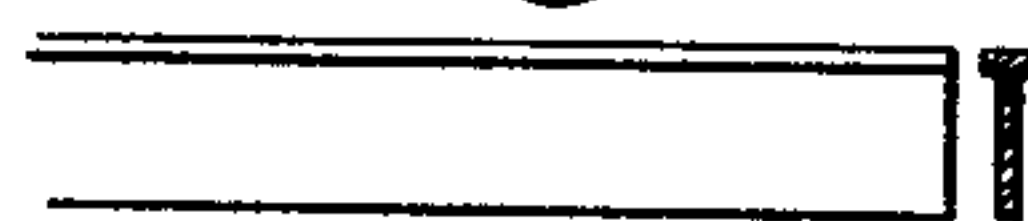


Fig. 5.



Inventor.

Philip H. Howe

per Josiah Gregory Atty.

# UNITED STATES PATENT OFFICE.

PHILIP H. HOWE, OF LAWRENCE, ASSIGNOR TO LYMAN R. BLAKE, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN MACHINES FOR FLANGING SHOE-NAIL STRIPS.

Specification forming part of Letters Patent No. **176,313**, dated April 18, 1876; application filed November 22, 1875.

*To all whom it may concern:*

Be it known that I, PHILIP H. HOWE, of Lawrence, in the county of Essex and State of Massachusetts, have invented an Improved Machine for Flanging Sole-Fastening Strips, of which the following is a specification:

This machine relates to mechanism for flanging one edge of a sole-fastening strip, the flange serving as the head-forming portion of sole-fastenings cut from such flanged strip.

This invention consists in a holding mechanism for the strip, combined with a heading-tool and a feeding mechanism; also, in the combination, with a holding mechanism, of a gage and a spring, or equivalent, to press the strip against the gage.

Figure 1 is a top view of a machine embodying my invention. Fig. 2 is a view of the feeding mechanism; Fig. 3, a section of the holding mechanism with flanged strip; Fig. 4, a detail of the holding mechanism; and Fig. 5, a side and sectional view of the sole-fastening strip.

In the drawing, *a* is the bed of the machine, having bearing *b* for the main shaft *c*, provided with cams *d e f*. In bearings *g* are supported the journals of a lever, *h*, shown as a rocking lever, and operated at each rotation of shaft *c* by cam *f*, its motion in the other direction being given by a spring, *i*. The flanging-tool *j* is reciprocated in suitable guides *k*, being thrown quickly forward to strike the nail-strip *o* a blow by the cam *d*, and returned by a spring. The feeding mechanism consists of nippers *l* connected by a pin, *m*, and suitably connected with the frame of the machine, so as to permit the nippers to be vibrated horizontally by the cam *e*, and when so moved in the direction of the arrows thereon the rear ends of the nippers are forced upon a wedge-piece or feed-closer, *n*, the latter entering between the members of the nippers. A spring or other device holds the forward end of the nippers or feeding device open for the passage of the strip *o*, and such forward ends are closed firmly on the strip so as to grasp and move it only as the cam *e* is moving the feeding device in the direction of the arrow.

The strip *o* to be flanged is of metal, of any suitable quality and length. It is placed within the grasp of the feeding device, and between the bed *p* and the plate *q*, the latter being acted on intermittingly by a lever, *h*, the bed-plate and lever constituting the holding mechanism, and a spring, *r*, in the bed pushes the strip *o* against the gages *s*. (See Figs. 3 and 4.) The strip to be flanged is a plain flat strip. (See the end of strip, Fig. 1.) The gages *s* are removed from the faces *t* of the bed and plate, so that just enough of the edge of the strip to form a flange may extend between the faces *t* and the gages *s*, this distance being governed by the width of the flange desired, and in practice the gages will be adjustable. The spring *r* keeps the strip pressed out against the gages, and the flange is, therefore, kept uniform.

With the parts as represented in Fig. 1, the operation is as follows: The strip *o* rests between the bed *p* and the plate *q*, and the forward end *u* of the lever does not press the plate down on the strip. Now, the rotation of the shaft in the direction of the arrow thereon causes the cam *e* to move the feeding device, and as it moves the feeder is closed on the nail-strip, and moves it forward between the parts *p q* of the holding mechanism. Then the lever *h* is so moved that its end *u* forces the plate *q* firmly down on the nail-strip *o*, and then the flanging-tool is thrown forward, and strikes the edge of the strip a blow, and batters or pounds such edge to the shape shown in the cross section of Fig. 5. The blows of the flanging-tool are quick and sharp, and the number of blows within a given distance struck on the edge may be varied by changing the length of each feeding movement.

This mechanism shows one way of carrying out my invention; but it is evident the mechanism might be changed without departing from my invention; for, instead of the feed shown, I might use other forms of nippers, moved by different devices, or I might use a rotary or wheel feed, as in sewing-machines.

Instead of the flanging-tool being a reciprocating bar, it might be a vibrating bar or hammer-like instrument, adapted at one end to



strike the edge of the strip, and the intermitting action of the strip-holding mechanism might be produced by a cam, or other device than the lever *h*. For the devices forming these different mechanisms I may use any well-known equivalent.

I am aware that strips have been flanged by rolling; but I consider this objectionable, because the flange is very liable to be of unequal widths and irregular, and the flanged edge is drawn or elongated by the pressure of the rollers.

By beating up the flange the head is made more solid, and the flange can be made very uniform, for before each blow is struck the strip is pushed against the gages.

I claim—

1. In a machine for flanging sole-fastening

strips, the combination, with a holding mechanism for the strip, of a feeding and reciprocating flanging mechanism, adapted to operate and form a double flange, all substantially as described.

2. The combination, with the holding mechanism for the strip, of a spring and gage to retain beyond the edge of the bed the proper amount of the strip to form the flange, substantially as described.

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

PHILIP H. HOWE.

Witnesses:

G. W. GREGORY,  
S. B. KIDDER.