E. P. RICHARDSON.

Sole-Nailing Machines.

No. 152,686. Patented June 30, 1874.

Fig. 1.

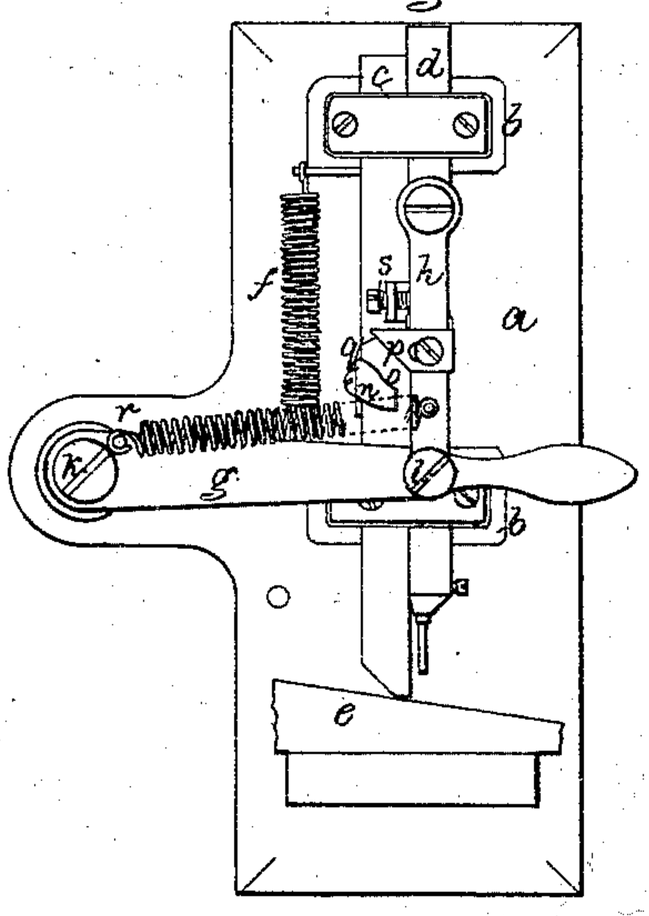


Fig. 2.

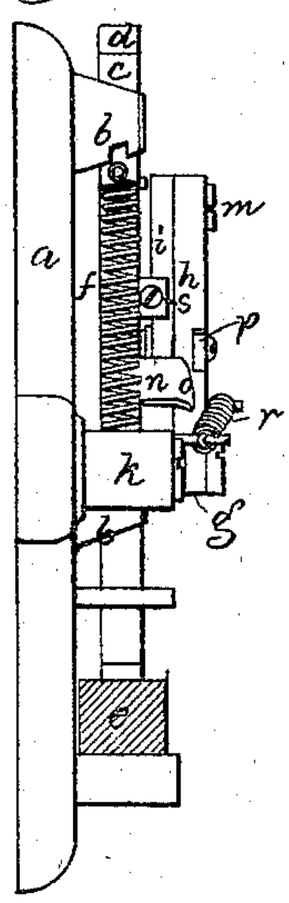
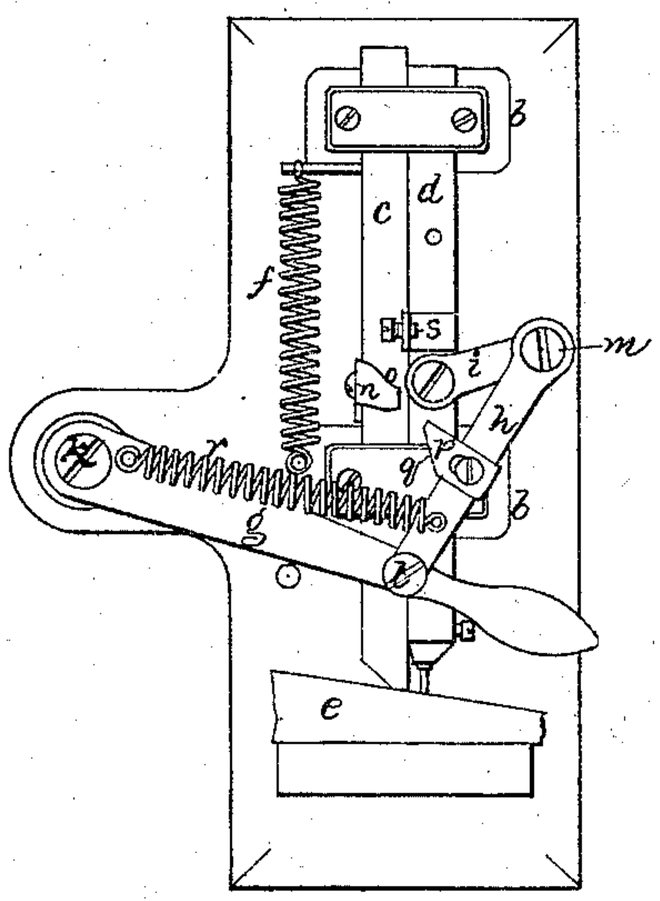


Fig. 3.



Witnesses.
Geo. T. Smallwood Jr.
T. C. Smith

Inventor.
Everett P. Richardson.
per John J. Halsted
Atty

UNITED STATES PATENT OFFICE.

EVERETT P. RICHARDSON, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN SOLE-NAILING MACHINES.

Specification forming part of Letters Patent No. **152,686**, dated June 30, 1874; application filed June 1, 1874.

To all whom it may concern:

Be it known that I, EVERETT P. RICHARDSON, of Lawrence, in the county of Essex and State of Massachusetts, have invented certain Improvements in Sole-Nailing Machines, &c.; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to an adjunct or combination of devices to be used in connection with sole-nailing machines, and with other machines in which a slide-bar is used, to give a blow or to work any tool affixed to the bar.

The design of the invention is to enable a variable movement of the bar to be made, the extent of movement to vary in accordance with the varying position of the surface against which the bar or its tool is to work.

The invention will be particularly described as an adjunct to a sole-nailing machine. In such a machine, or in some of such machines, the inner surface of the sole, resting upon a fixed support, causes the outer surface of the sole to vary in position vertically by reason of the unequal thickness of the sole; and the foot of the presser-bar, against which the outer surface of the sole is held, is caused to correspondingly vary in a vertical position when in contact with the sole. I avail myself of this varying position of the presser-bar foot to obtain a greater or less throw of the driver, or of the awl, if an awl be used.

My invention consists, primarily, in making such a connection between the presser-bar, or its equivalent, and the tool-carrying bar, as to automatically change the throw of said latter bar.

Figure 1 shows the mechanism in front elevation. Fig. 2 is a side elevation. Fig. 3 shows the mechanism tripped.

a denotes the frame-plate having bearings *b*, in which slide two vertical bars, *c d*, the bar *c* being a presser-foot bar, and the bar *d* a driver-bar, or other tool-carrying bar. *e* represents the surface into which or against which the presser-bar rests. The foot of said bar may be drawn to the surface by a spring, *f*, and as the surface *e* moves under said foot the bar is positioned by the position of the surface against which it is held, or by the action of the spring. The tool-bar *b* is driven toward and from the work by any suitable mechanism, and in the drawing it is shown as jointed to a lever, *g*, by links *h i*. The lever is pivoted to a stationary fulcrum, *k*, and to it is jointed, at *l*, the link *h*, the opposite end of said link being jointed to one end of the other link, *i*, as seen at *m*, the other end of said link *i* being jointed to the bar. In normal position the two links are in line, one being directly over the other, and both being also in line with the tool-carrying bar.

When the link *h* is drawn down or thrown up by movement of the lever *g*, or otherwise, it will be obvious that the tool-bar and links move as one so long as they keep in line. It will also be obvious that, if the upper end of the link *h* be started laterally, the motion of the link will throw out the other link, *i*, and will cause the links to open instead of affecting the tool-bar.

Extending from the presser-bar *c* is an arm, *n*, having an incline, *o*, and to the link *h* is fixed a plate, *p*, having an incline, *q*, the two inclines being in the same vertical plane, and so arranged that the incline *q* strikes the other incline as the tool-bar moves down. The position at which the inclines collide will, of course, be determined by the position of the presser-bar, and the position of the presser-bar, as before observed, is varied by the position of its foot resting upon the changing work beneath it. When the incline *q* strikes the incline *o* it throws the link *h* outward, and the downward force exerted upon the link *h* then operates to simply swing open the links *h i*, and not to force down the tool-bar. Consequently, the tool-bar stops at a position predetermined by the presser-foot bar; or, in other words, at a fixed position with relation to the surface of the work against which the tool operates. Thus, if an awl is being used, it will always penetrate to a certain distance into the stock, however irregular the surface of such stock may be; or a driver may drive the nails so that their heads all stand uniformly with relation to such surface; or any other tool will have its action governed from the irregular position of the surface of the stock against which it operates.

A spring, *r*, may be used to bring the links into line when they are thrown up, and the normal position of the link *i* may be regulated by a set-screw, *s*.

I claim—

In combination with a presser-bar whose position is determined by the position of the surface against which it presses, a tool-carrying bar whose throw is regulated from the presser-bar, substantially as shown and described.

EVERETT P. RICHARDSON.

Witnesses:

M. W. FROTHINGHAM.

C. WARREN BROWN.