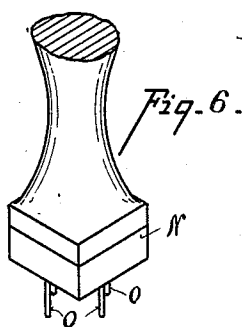
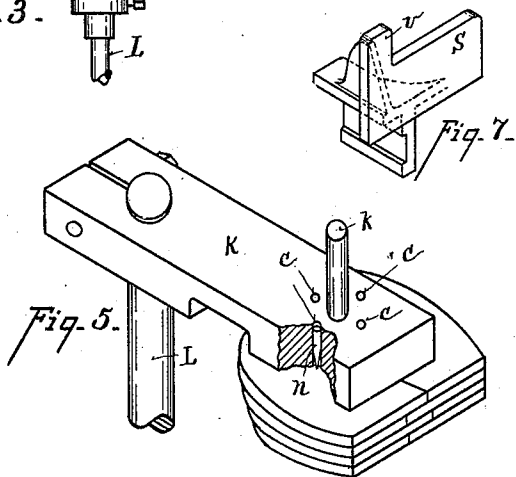
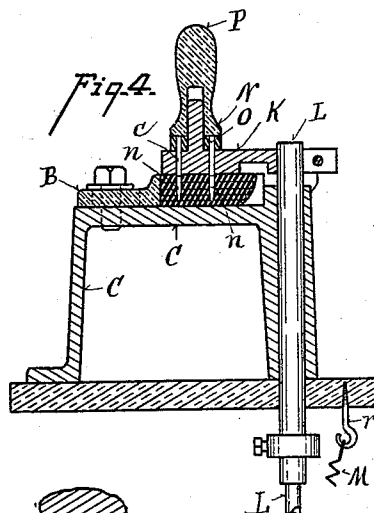
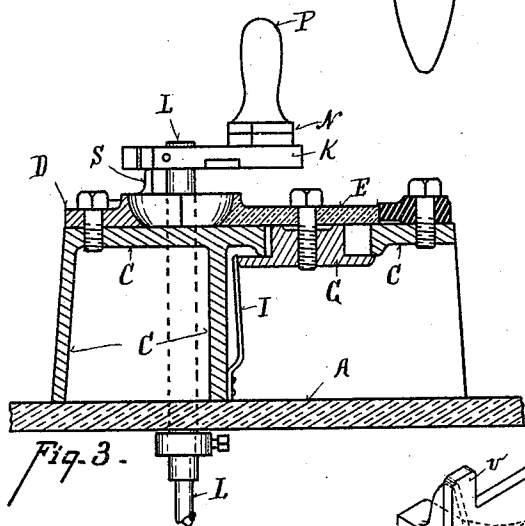
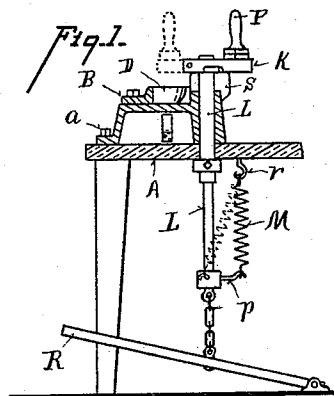
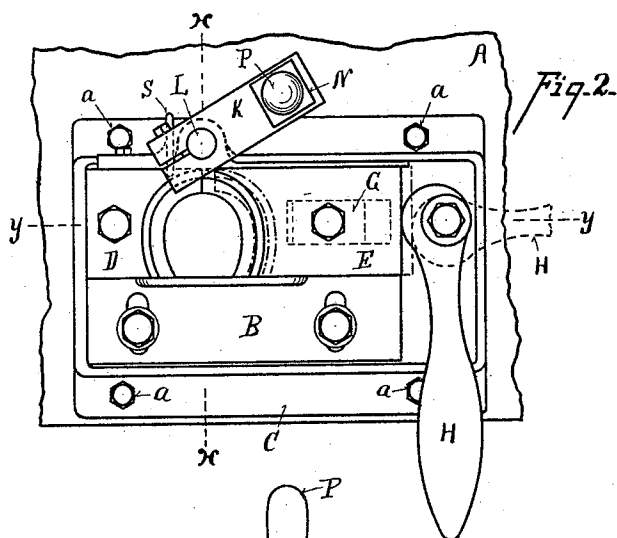


(No Model.)

S. ROSS.
HEEL FORMER AND NAIL DRIVER.

No. 569,938.

Patented Oct. 20, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

SIMON ROSS, OF CINCINNATI, OHIO, ASSIGNOR TO THE ROSS-MOYER MANUFACTURING COMPANY, OF SAME PLACE.

HEEL-FORMER AND NAIL-DRIVER.

SPECIFICATION forming part of Letters Patent No. 569,938, dated October 20, 1896.

Application filed March 16, 1896. Serial No. 583,394. (No model.)

To all whom it may concern:

Be it known that I, SIMON ROSS, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Heel-Formers and Nail-Drivers, of which the following is a specification.

My invention comprises a shoe heel-forming and nail-driving machine.

The object of my invention is to provide a machine in which the lifts forming the heel are placed within a mold, which is made sectional, one section of which is operated by a power-moving device, which compresses the lifts circumferentially against the stationary section, and then while they are in this position a nailing-head is moved into position and a nail-driver is driven by a blow to fasten the lifts together. Then the sectional mold is moved to allow the removal of the completed heel.

The features of my invention will be more fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation, partly in section, of my improvement. Fig. 2 is a top plan view of Fig. 1. Fig. 3 is a section on line *y y*, Fig. 2. Fig. 4 is a section on line *x x*, Fig. 2, showing the nail-driver in position after the nails have been driven. Fig. 5 is a detailed sectional view of the nailing-head. Fig. 6 is a perspective view, partly in section, of the nail-driver detached from the nailing-head. Fig. 7 is a detail of a modification of the nailing-head stop.

In the preferred form of construction the heel-machine is shown as supported upon a table A, and the base of the machine is adapted to be attached to the table by anchor-bolts *a*.

C represents the bed of the machine.

D represents a sectional mold-plate secured to the bed of the machine and recessed in the form of half of a heel. This plate is of sufficient thickness to inclose the heel-lifts of which the heel is formed.

E represents a sectional mold-plate, the counterpart of mold D, and it is made movable preferably in the following manner:

G represents a guide-block seated in a recess, as indicated by dotted lines, Fig. 2.

H represents an eccentric-lever engaging against the end of the mold-plate E. When the lever H is moved into the position shown in full lines, Fig. 2, the heel-plate E is moved up into the position shown in Figs. 2 and 3, and the heel-lifts are compressed between the heel-forming sections D E. When the lever is turned in the position shown in dotted lines, Fig. 2, the spring I, bearing against the guide-block G, moves it outward and opens the sectional mold, allowing the heel to be readily taken out. This is the preferred form of devices for moving the heel-section E.

K represents a nailing-head supported upon a rod L.

M represents a retractile spring attached to the rod L and to the table in such a manner that the head K is normally lifted up, so that said head is free to be swung around. The said nailing-head is pierced with a series of holes *c* for the nails. *n* represents the nails which are dropped into said holes.

N represents the nail-driver, which is provided with rods or mandrels O, which, when the driver is placed in position, rest upon the ends of the nails *n*. The nails are driven by a blow struck upon the head P of the driver N.

In the preferred form of construction the hook *p* is vertically under the hook *r*, and the strain of the spring holds the nailing-head in the position shown in Fig. 2. In this position the nailing-head rests upon the posts *s*. When the operator takes hold of the driver, it is readily swung around on the swiveling rod L, bringing the spring M into the position shown in dotted lines, Fig. 1, and this brings the nailing-head, with the holes *c*, vertically over the lifts to be nailed. The treadle R can then be depressed so as to bring the nailing-head down upon the lifts. The driver is then removed and the nails inserted in the holes *c*. The rods O of the driver are then placed upon the heads of the nails. The stem K entering the recess in the head of the driver serves as a guide to hold the driver vertically and to bring the rods O into position, resting upon the nails. A smart blow struck upon the head of the driver will force the nails through

the heel, and if the nails are long enough they will come in contact with the bed C and be turned or clenched. When the operator releases his foot from the treadle R, the spring 5 will automatically raise the rod L, carrying the nailing-head, and swing it around automatically in the position shown in Fig. 2.

In Fig. 7 I have shown a modification of the post S, which serves as a rest or stop for the 10 nailing-head. In the modification I provide a lug V, which projects up above the plane of the nailing-head. The rear edge will serve as a stop to limit the movement of the nailing-head as it moves around to the position shown 15 in Fig. 2. The side of said lug will serve as a stop for the front end of the nailing-head, so that it will be centrally over the lifts. This is quite advantageous when the heel-lifts are made of several pieces. If the heel is to be 20 made of a series of lifts, each lift formed of one piece, a less number of nails are required to hold the lifts together than when the lifts are formed of several pieces or sections.

In the operation the handle of the driver 25 serves as a convenient means for bringing the nailing-head into position for nailing the heel-lifts together. When the treadle is depressed, the nailing-head is brought firmly down against the lifts and held by the foot of the 30 operator for the insertion of the nails. It is obvious that the nailing-head could be moved by a separate spring than that employed to raise the treadle, but the form shown is preferable.

35 I do not wish to limit myself to the use of the spring I for moving the mold-section E outward, for other well-known means might be employed for moving the section E positively in both directions. The sections D E 40 are readily detachable, each being secured by a single screw, so that sections for different shapes and sizes of heels can be interchangeably employed.

The nailing-head serves the double function of nail-holder and platen or compressor 45 to compress the lifts vertically. Again, the strain of the blow for driving the nails is in part received by this platen and imparted to the heel-lifts, which are compressed by the 50 blow simultaneously with the blow of the nail.

I claim—

1. In a combined heel-former and nailing-machine, the combination with a supporting-bed, of a stationary sectional heel-mold, a 55 movable sectional heel-mold operating in conjunction therewith, a vertically-movable and horizontally-swinging nail-head, and a nail-driver coöperating with said nailing-head, substantially as described. 60

2. The combined heel-former and nailing-machine consisting substantially of the bed supporting a stationary sectional heel-mold, a movable sectional heel-mold operating in 65 conjunction therewith, a nailing-head supported upon a swiveling rod and adapted to be moved into engagement with the heel and moved away therefrom, and a driver detachably connected thereto, substantially as specified. 70

3. In combination with a heel-former and nailing-machine, the swiveling nailing-head K provided with one or more nail-orifices c, means for elevating, swinging and depressing 75 said head to engage with the heel and serve as a platen, substantially as specified.

4. In a heel-forming and nailing machine provided with a heel-compressing mold, the swiveling nailing-head K provided with nail- 80 holes c, means for bringing it into position to engage with the top of the heel, in combination with the detachable driver provided with nail-engaging rods, substantially as specified.

5. In a heel-forming and nailing machine provided with a heel-compressing mold, the 85 swiveling nailing-head K in combination with a stop supported upon the frame of the machine upon which the said head rests when it is swung out of the nailing position, substantially as specified. 90

6. In a heel-former and nailing-machine, employing heel-compressing molds, the swiveling nailing-head K, means for moving said head into engagement with the top of the heel-lifts, a stop-gage for limiting and registering the movement of said head, substan- 95 tially as specified.

In testimony whereof I have hereunto set my hand.

SIMON ROSS.

Witnesses:

W. R. WOOD,
W. F. HORMON.