(No Model.)

S. W. ROBINSON.

MACHINE FOR UNITING THE SOLES AND UPPERS OF BOOTS OR SHOES.

No. 346,130. Patented July 27, 1886.

Fig. 1.

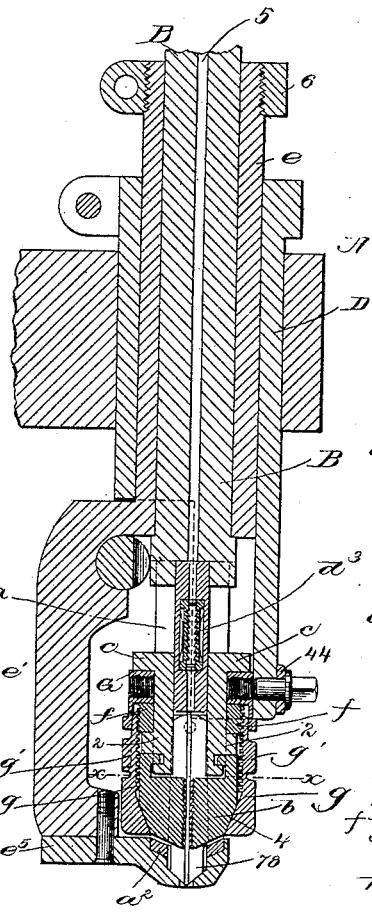


Fig. 2.

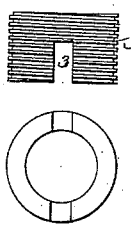


Fig. 3.

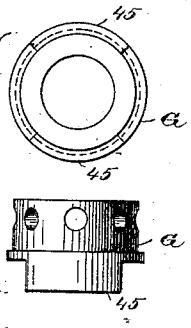


Fig. 4.

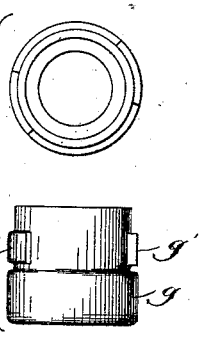


Fig. 5.

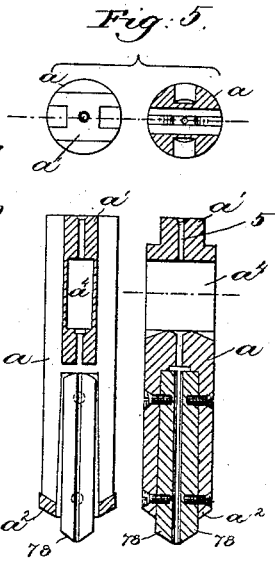


Fig. 6.

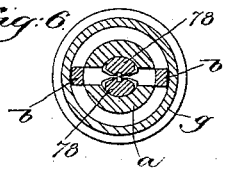


Fig. 7.

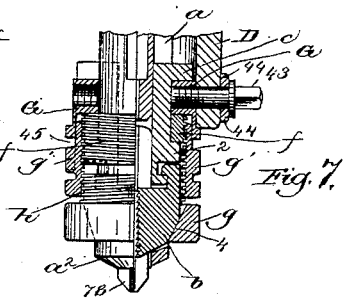
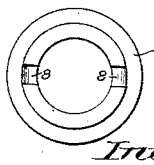


Fig. 8.



Witnesses.
John A. Rennie
John F. C. Prentiss

Inventor.
Stillman W. Robinson
by Crosby & Gregory attys

UNITED STATES PATENT OFFICE.

STILLMAN W. ROBINSON, OF COLUMBUS, OHIO.

MACHINE FOR UNITING THE SOLES AND UPPERS OF BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 346,130, dated July 27, 1886.

Application filed September 18, 1885. Serial No. 177,418. (No model.)

To all whom it may concern:

Be it known that I, STILLMAN W. ROBINSON, of Columbus, county of Franklin, and State of Ohio, have invented an Improvement in Machines for Uniting the Soles and Uppers of Boots and Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is an improvement on that class of machines represented in United States Patent No. 325,274, granted to me September 1, 1885, in which grippers are made to grasp, feed, and drive the wire into the stock; and my present invention has for its object to improve and simplify the devices for actuating the grippers to grasp the wire. In the said patent the grippers, suspended by gripper-carriers supported by a tappet-ring, have straight backs, and are forced inward to grasp the wire by means of a partially-rotating cam-ring; but herein the backs of the said grippers are beveled or inclined, and are acted upon by an incline or projection of a vertically-movable sleeve, the said sleeve being provided with a screw-thread, which has co-operating with it a screw-threaded thimble, the rotation of which moves the said sleeve vertically. When the said sleeve is moved vertically, its inclined interior acts upon the inclined or beveled backs of the grippers, causing them to grasp the wire; but when the sleeve is depressed the grippers release the wire.

My invention consists, essentially, in a slotted spindle, a tappet-ring, downwardly-extended grippers, and a screw-threaded thimble, combined with a vertically-movable screw-threaded sleeve having inclined surfaces to act upon inclined surfaces of the grippers and force them inwardly to grasp the wire to be driven.

Other features of my invention will be hereinafter described, and pointed out in the claims.

Figure 1 in vertical section represents a sufficient portion of the working-head of a nailing-machine for uniting soles to uppers, which, taken in connection with the patent referred to, will enable my invention to be understood; Fig. 2, a side elevation and top view of the threaded thimble removed; Fig. 3, an under side view and side elevation of the tappet-ring; Fig. 4, a plan and a side elevation of the threaded sleeve; Fig. 5, details in plan and section of the spindle-extension, showing the throat-pieces; Fig. 6, a section of Fig. 1 in the dotted line x x, and Figs. 7 and 8 modifications, to be referred to, Fig. 8 being a plan view of the separable cam portions of the sleeve.

The frame-work or bearing A, working-head D, the presser-plate carrying sleeve e within it, the collar 6, attached to the said sleeve, the attached bearing-plate e', presser-plate e^5, the spindle B, the tappet-ring G, provided with tappets 45, the screw 43, to connect the said ring with the working-head D, the washer 44, the throat-pieces 78, and detaining-jaws d^3 are all substantially as in my Patent No. 325,274, referred to, and in practice the said parts will be operated as in the machine described in the said patent.

Herein the spindle-extension a has at its top a prolongation, a', shown (see Fig. 5) as of H shape, to enter a correspondingly-shaped recess in the lower end of the spindle B, the conical lower end, a^2, of the said extension taking a bearing in a conical recess in the presser-plate e^5. The spindle-extension is slotted through to receive the grippers b and gripper-carriers c, and above the slots which receive the grippers the said spindle-extension is provided with a slot, a^4, to receive the detaining-jaws d^3, common to the said patent.

The gripper-carriers c herein shown have at their upper ends right-angled projections, which extend outwardly over the top of the tappet-ring G, as shown in Fig. 1. At their lower ends the gripper-carriers have hooks or projections, on which hang the hooks of the grippers b, and above the hooks or projections of the said carriers, which support the said grippers, the said carriers have lugs 2, that enter slots 3 in the externally screw-threaded thimble f, placed in a recess in the tappet-ring G, and between it and the spindle-extension.

The grippers b b, placed in the slots of the spindle-extension a, have their backs or outer edges inclined or beveled, as best shown in Figs. 1 and 7, to be acted upon by the inclined or projecting surface 4 of the vertically-movable sleeve g, provided with a screw-threaded surface, which is made to engage the screw-

threaded surface of the thimble *f*, the threads of the said sleeve and thimble being in this instance left-handed. The sleeve *g* at its outer side is provided with lugs *g' g'*, which, as the spindle B and its slotted extension are partially rotated, as provided for in the machine described in the said patent, strike against the stationary tappets 45 of the tappet-ring G, thus stopping the sleeve *g*, and thereafter in the further rotation of the spindle and spindle-extension with the grippers and gripper-carriers and the threaded thimble, the latter by its threads in engagement with threads of the sleeve arrested, as described, by the tappet-ring, is made to move the said sleeve vertically with relation to the spindle and grippers, the inclined or projecting surface 4 of the said sleeve at such time acting against the inclined backs of the grippers, forcing them in against the wire or fastening material (not shown) led through the center of the spindle and its extension and between the said grippers. The inward movement of the grippers causes the latter to grasp the wire firmly, and thereafter, as the working head and tappet-ring descend with relation to the spindle, the grippers are made to drive the wire into the stock, the descent of the spindle being arrested sooner or later, as provided for in the said patent, according to the thickness of the stock on the horn or other support.

In the modification shown in Fig. 7 the sleeve is made in two parts connected by screw-threads, as shown at *h*, the said threads being shown as right-handed.

In the modification, Figs. 7 and 8, the threaded shank of the lower portion of the sleeve *g* is slotted vertically at 8, the said slots being cut through the said threaded shank, the said slots being extended downward within the thicker portion of the sleeve, and having inclined bottoms, as shown at the right of Fig. 7, the said slots, just wide enough to receive the grippers, acting against the inclined backs of the grippers and pushing the latter inward, as described, to grasp the wire.

By dividing the sleeve *g* in two parts, as described, it is possible to accelerate the vertical movement of the inclined part of the said sleeve, and in the said modification it will be noticed that the inclined part of the sleeve *g* rotates in unison with the spindle rather than being entirely stopped or arrested, as in Fig. 1. Reverse rotations of the spindle and thimble causes the sleeve *g* to descend, permitting the grippers to release their hold upon the wire.

I do not herein lay any claim to a partially-rotating ring having cam-surfaces to act upon the grippers and force them in toward the wire, as that forms the subject-matter of an application made by me, Serial No. 152,571.

I claim—

1. The combination, substantially as described, of the working-head, its connected tappet-ring, gripper-carriers, grippers provided with inclines, threaded thimble, and vertically movable threaded sleeve having inclined or beveled surfaces, whereby as the sleeve is moved vertically the said grippers, acted upon by the sleeve, are made to grasp the wire and hold it to be driven.

2. The spindle having a slotted extension and grippers therein, combined with a vertically-movable screw-threaded sleeve having inclines or projections to act upon the backs of and cause the grippers to engage the wire during the vertical movement of the said sleeve, substantially as described.

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

STILLMAN W. ROBINSON.

Witnesses:
G. W. GREGORY,
B. J. NOYES.