

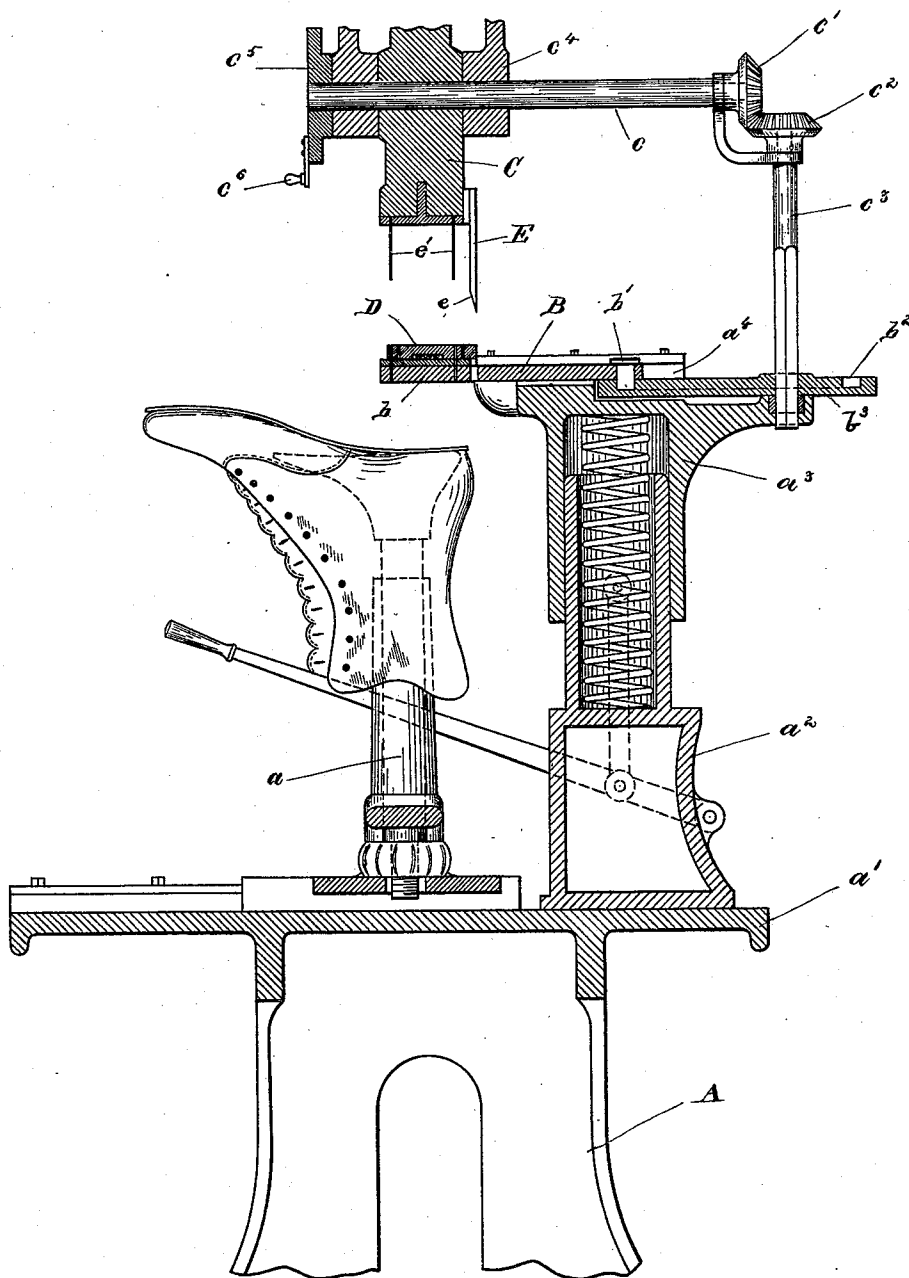
(No Model.)

3 Sheets—Sheet 1.

F. F. RAYMOND, 2d.
HEEL NAILING MACHINE.

No. 479,142.

Patented July 19, 1892.



WITNESSES—

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A. P. Porter.

FIG-1-

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(No Model.)

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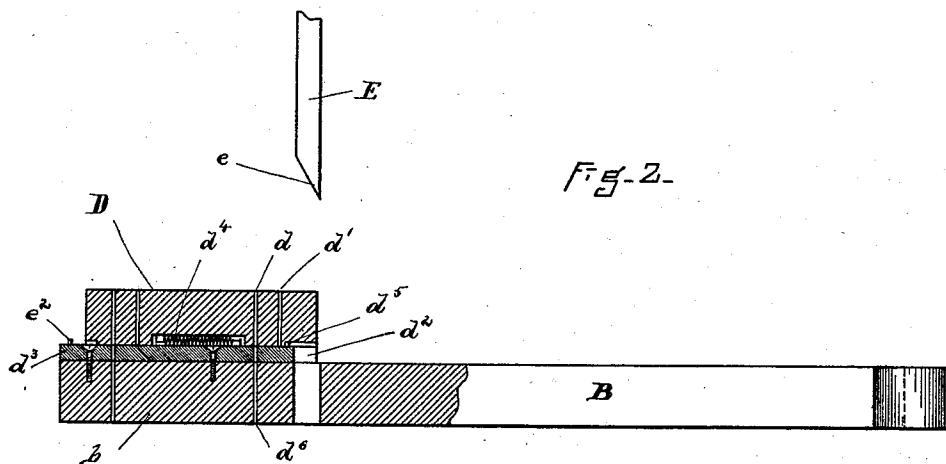


Fig. 2-

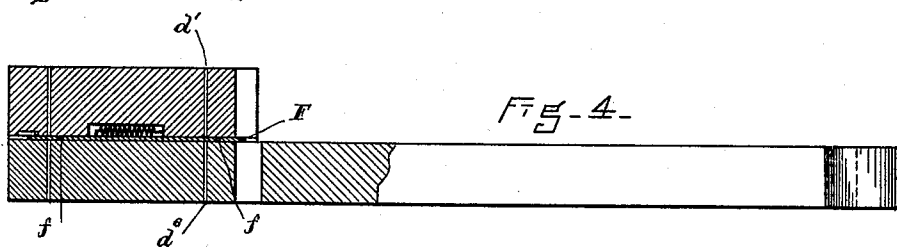


Fig. 4-

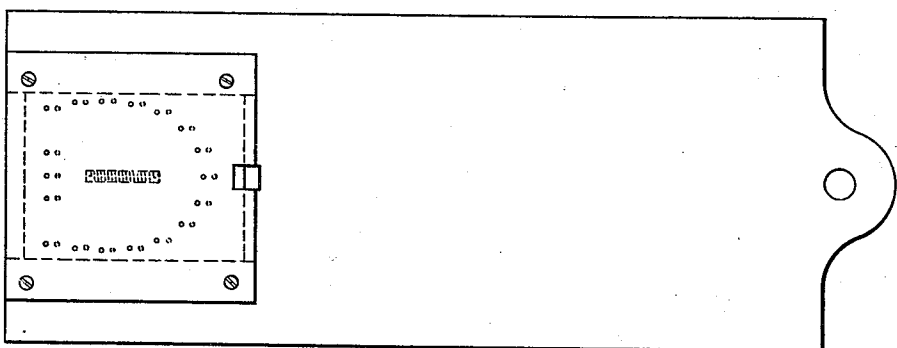


Fig. 3-

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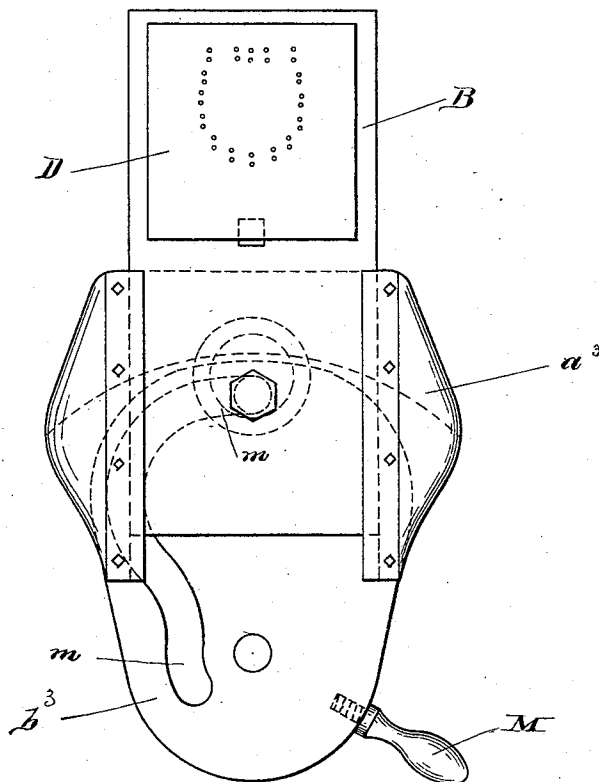


Fig- 5.

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UNITED STATES PATENT OFFICE.

FREEBORN F. RAYMOND, 2D, OF NEWTON, MASSACHUSETTS.

HEEL-NAILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 479,142, dated July 19, 1892.

Application filed July 27, 1889. Serial No. 318,948. (No model.)

To all whom it may concern:

Be it known that I, FREEBORN F. RAYMOND, 2d, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Heel-Nailing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention is an improvement upon the "National Heeling-Machine," so called, and it relates especially to the construction and organization of the sliding templet-plate and the nail-carrier and means for operating or moving the same into and out of operative position and a device for actuating the nail-carrier.

Heretofore machines having the National organization have employed a horizontally-movable templet-plate, supporting a templet at its front end, and a horizontally-movable nail-carrier plate having a nail-carrier at its front end, both plates being movable separately or independently of each other. The present invention involves the use of but one horizontally-movable plate, the said plate being the templet-plate and having the templet at its fore end, and the nail-carrier is supported by this plate. It is either provided with a slight movement upon said plate sufficient to enable its nail-receiving holes to be moved into and out of registration with the holes of the templet, or it has a slide-plate which is operated, as hereinafter specified, to cover and uncover the holes. The said templet-plate with the nail-carrier is movable into and out of operative position by means of a cam supported by the vertically-movable carriage, in the upper part of which the templet-plate is movable. The cam is represented as revolved by means of the device employed in rotating the rotary head of the machine; but it may be connected with any other part of the machine, or it may be turned by hand.

In the drawings, Figure 1 is a view, principally in vertical section, of the central part of a machine having the features of my invention. Fig. 2 is a view, part in elevation and part in section, enlarged, to further illustrate the invention. Fig. 3 is a plan view of the combined templet and nail-carrier. Fig. 4 is a view, partly in section and partly in side elevation, of a modified form of the com-

bined templet and nail-carrier. Fig. 5 is a view in plan illustrating the templet-plate cam as operated by hand.

A is the frame of the machine.

a is the jack; a' , the bed of the machine; a^2 , a post fixed to the bed, and a^3 a carriage vertically movable upon the post and having ways a^4 in its upper surface, which receive the templet-plate B and in which it is horizontally movable. The templet-plate has the templet b at its front end, and the cam-pin b' at its rear end enters a cam-groove b^2 in a cam-disk b^3 , also supported by the carriage a^3 . The cam is represented in Fig. 1 as connected with the shaft c of the rotary head C by means of a bevel-gear c' on the said shaft c and a bevel-gear c^2 upon a vertical shaft c^3 , upon which the cam is mounted, the bevel-gears c' and c^2 being movable with the cross-head c^4 , which supports the rotary head C. The rotary head C has arms upon which are mounted the various nailing devices—such as awls and drivers or either of them—and the top lift holder and spanker. It is represented as turned by hand by means of a disk c^5 , upon which are mounted handles c^6 . It may, however, be turned automatically by mechanism, substantially as represented in Patent No. 317,647 or a modification thereof. The cam-shaft is either movable in its bevel-gear or in the cam. The templet-plate supports a nail-carrier D. This nail-carrier, if awls are used, must have a limited sliding movement upon the templet-plate. If awls are dispensed with and drivers only used, it may be fixed upon the templet-plate and have a sliding hole covering and uncovering plate.

In Fig. 2 I have represented the construction necessary when awls are employed, and the nail-carrier plate is represented as provided with two sets of holes d d' and as having a dovetail recess d^2 , which fits a dovetail projection d^3 on the upper side of the templet. The nail-carrier is movable on this dovetail recess in one direction or in a direction to close the holes d' , which carry the nails by a spring d^4 , the spring tending to automatically move the nail-carrier against the stop d^5 and to hold it in that position continuously, except when moved therefrom by an actuating cause. The holes d , when the holes d' are closed, register with the holes d^6 in the templet, and it is through these holes and the holes of the templet that the awls are moved, and in the op-

eration of the machine the holes d are always in register with the holes d^6 of the templet, excepting at the time it is desired to deliver nails to said templet-holes d^6 from the holes d' of the nail-carrier. At such time the nail-carrier is moved upon the templet-plate sufficient to move the holes d out of register with the templet-holes d^6 and the holes d' into register with the said holes. This movement is of course in opposition to the spring, which always tends to return and hold the nail-carrier with the holes d' closed, and this movement can be given the nail-carrier by hand; but preferably it is given it by means of a tappet E, having an inclined end e , carried by the arm which supports the drivers e' . The inclined edge of this tappet is in advance of the drivers and comes in contact with the side of the nail-carrier and moves it forward against a stop e^2 , so that the holes d' register with the templet-holes d^6 before the drivers enter the holes. As above stated, this construction is employed when awls and drivers are both used in the machine. When drivers alone are used in the machine, the nail-carrier need have no movement upon the templet-plate, and this construction is represented in Figs. 3 and 4, where the nail-carrier plate is shown as fixed or secured by screws to the templet and as also having a slide-plate F, having the perforations or holes f , which are adapted to be brought into register with the nail-carrier holes d' . This plate F is moved to bring in perforate sections under the holes d' by a spring, and it is automatically moved to bring the perforations or holes in line with the holes d' by the tappet E, the tappet operating to move the said plate as it operates to move the nail-carrier in the other construction.

In operation the nail-carrier and templet are moved simultaneously into position over the work mounted upon the jack and out of position to enable the top lift to be applied, and the nail-carrier does not require a separate hand movement, as in the case of the National machine. This effects a saving in the cost of construction, saving of time in the operation of the machine, and also lessens the risk of breaking the machine.

In Fig. 5 I have shown the cam b^3 as provided with a handle, by which it is adapted to be turned by hand to move the templet-plate B into and out of position, the cam having sections at each end which act to register or lock the plate both in its operative position and in its inoperative position.

It will be observed that the combined templet and nail-carrier comprises a templet-plate which has a comparatively long rearward extension to enter the guides of the carriage a^3 , that the templet, preferably, is formed in the forward or front end of said plate, that the plate has a hole into which the tappet E may enter after it has moved the nail-carrier, and that the templet-plate can be removed from the carriage by simply taking out the cam-pin and drawing the plate forward.

In Fig. 5 I have shown the cam for moving the templet-plate as operated by hand, the cam-disk having the handle M, and a cam-groove having at each end a resting-section m , so that a partial rotation of the disk in one direction causes the templet-plate and the nail-carrier to be moved outward with the templet held registered in such position by the end section m of the cam-groove, while a movement of the cam-disk in the opposite direction withdraws the templet and holds it withdrawn.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a heel-nailing machine, the combination of a carriage having ways in which a templet-plate is movable horizontally, the said templet-plate, its templet, and a nail-carrier having a set of awl-holes and a set of nail-carrying holes attached to the templet-plate over the templet and having a slight or limited movement upon said templet sufficient to permit the awl-holes to be moved out of line with the holes of the templet and the nail-carrying holes to be moved into line with said holes of the templet, as and for the purposes described.

2. The combination, in a heel-nailing machine, of a carriage having ways or guides in which a templet-plate is movable horizontally, said templet-plate, a nail-carrier attached to said templet-plate and movable therewith, having a set of awl-holes and a set of nail-carrying holes, a cam connected with said templet for simultaneously moving the same and the nail-carrier, and a reciprocating tappet for moving the nail-carrier in relation to the holes of the templet-plate, substantially as described.

3. The combination, in a heel-nailing machine, of the nail-driving devices, the horizontally-movable templet, a cam for moving it into and out of position, a nail-carrier attached to said templet-plate, movable therewith by said cam, a reciprocating actuating device in the form of a tappet for moving said nail-carrier or its hole-covering plate in relation to the holes of the templet, and said hole covering plate having an opening and closing movement, substantially as described.

4. In a heel-nailing machine, the improved combined templet and nail-carrier comprising a templet-plate B, having the templet b at its front end and a separate nail holder or block secured to said templet or templet-plate in a position over said templet, a spring for holding the nail-holder out of alignment with the holes of the templet and adapted to deliver nails from its holes to the holes of the templet, and a reciprocating tappet for moving said nail-holder over the holes of the templet or templet-plate, substantially as specified.

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Witnesses:

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