(No Model.) 2 Sheets—Sheet 1.

F. F. RAYMOND, 2d.

HEEL ATTACHING MACHINE.

No. 326,779. Patented Sept. 22, 1885.

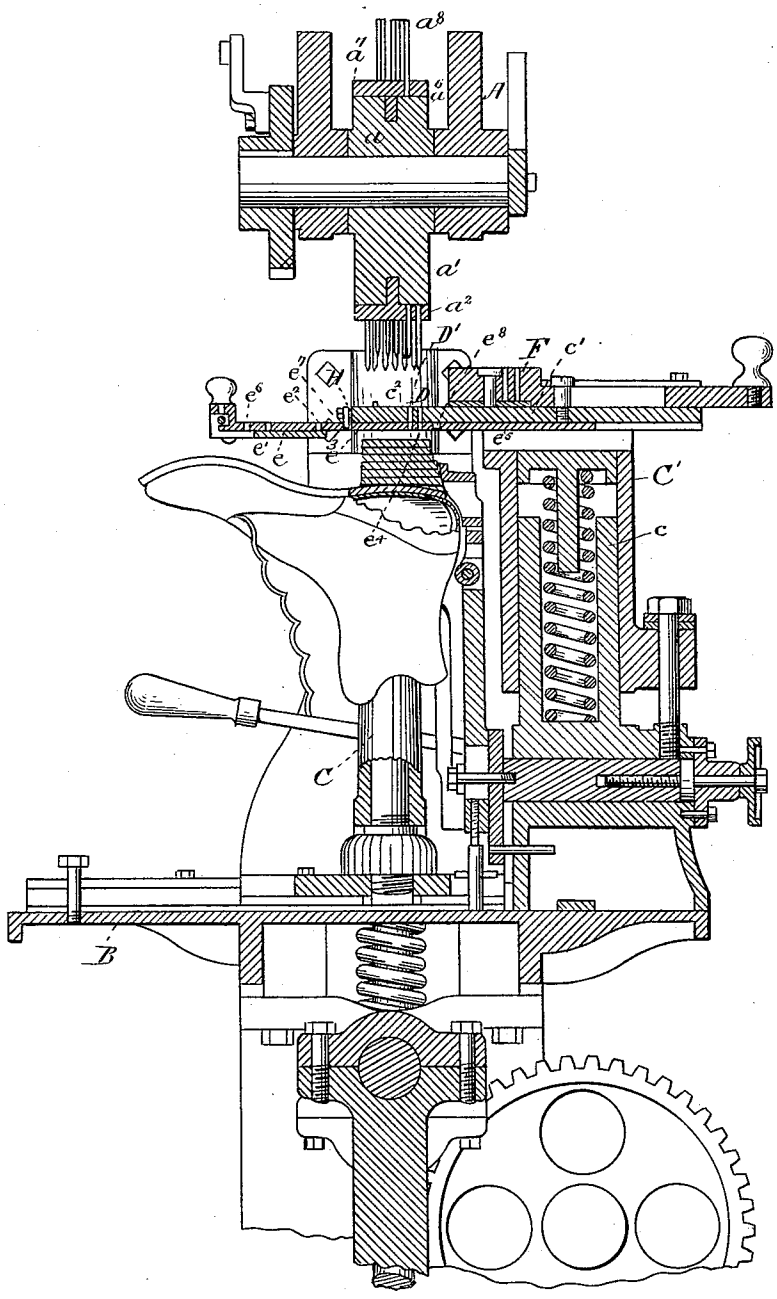


Fig. 1.

WITNESSES

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INVENTOR

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(No Model.) 2 Sheets—Sheet 2.

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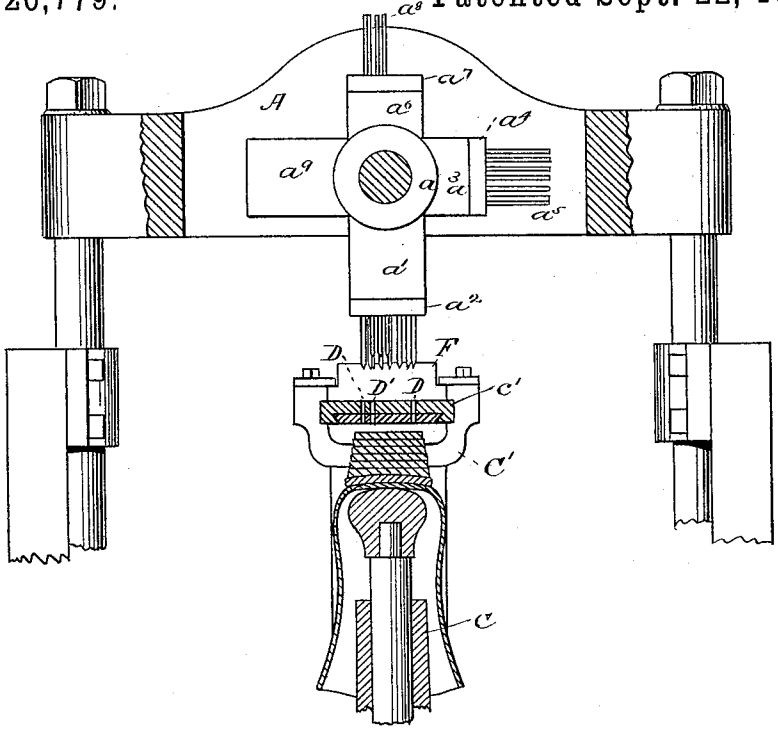


Fig. 2.

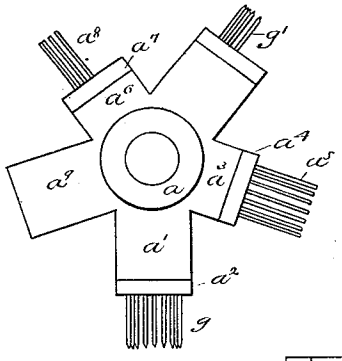


Fig. 4.

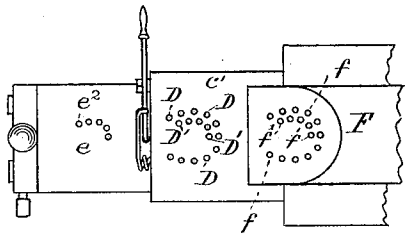


Fig. 3.

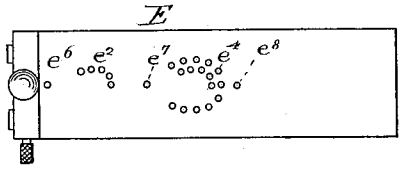


Fig. 5.

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UNITED STATES PATENT OFFICE.

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

HEEL-ATTACHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 326,779, dated September 22, 1885.

Application filed June 20, 1885. (No model.)

To all whom it may concern:

Be it known that I, FREEBORN F. RAYMOND, 2d, of Newton, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Heel-Attaching 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 object of this invention is to provide means for successively driving two gangs or groups of fastenings, one of which is adapted to be used in attaching the heels or heel-blanks to the soles of the boot or shoe, and the other to drive an auxiliary gang or group of fastenings through the top lift of the heel, either for fastening the top lift to the heel-blank, or to provide a wearing-surface, or to form an ornamental finish by driving a supplemental gang of nails.

The machine is especially designed for carrying out or practicing some of the steps of the process of attaching heels to boots or shoes described in my application of even date herewith.

The subject-matter of this invention was first described in my application filed January 31, 1885, Serial No. 154,500, and was removed therefrom by amendment.

Referring to the drawings, Figure 1 shows a vertical central section of the central and upper parts of a National machine with my improvements. Fig. 2 is a view, part in section, part in elevation, of the upper parts of the machine, further showing the combination. Fig. 3 is a plan view of the templet and parts of the nail-carrier and spanker-plates, hereinafter described. Fig. 4 is a view in elevation of a form of the revolving head. Fig. 5 is a plan view of a sliding plate, hereinafter referred to.

The invention is represented in the drawings as applied to a machine having the characteristics of the "National Heeling-Machine," so called, and A represents the cross-head, which is reciprocated as described in the Henderson patent, No. 316,894, or in any other desirable way. It carries or supports the revolving head a, which is provided with the arm a', carrying or supporting the awl-holding block a^2, the arm a^3, supporting or carrying the block a^4, holding or carrying a gang or group of drivers, a^5, the arm a^6, carrying or supporting the block a^7, holding the gang or group of drivers a^8, and a spanker-arm, a^9.

B is the bed of the machine.

C is the sliding jack.

c is the post to support the carriage C', which is vertically movable upon the post, and which supports or carries the templet-plate c', having at its front end the templet c^2. The templet, preferably, is not movable horizontally, although I do not confine myself especially to this construction. The templet-plate has two sets of holes: first, the holes D, through which pass the attaching-nails, or those nails which are used in fastening the heel or heel-blank to the soles of the boot or shoe; second, the holes D', through which the supplemental or auxiliary gang of fastenings are driven. There is also arranged to slide in the carriage C', below the templet-plate, or in a dovetail or other recess formed therein, the plate E. This plate has the section or part e, which carries the top-lift-holding devices e', which are substantially like those described in the said Henderson patent; and this section also has the perforations e^2, which, when this part e is moved into position under the templet c^2, come in register with the holes D. The plate E also has the section e^3, which has the holes e^4, that register with the holes D of the templet-block; and it may also have the surface e^5 unperforated, to form a spanker, as hereinafter specified.

The nail-carrier F may or may not be automatically moved into and out of operative position. It has two sets of holes, one set, f, being arranged to register with the holes D, and the other set, f', being arranged to register with the holes D'.

H is a spring-bolt attached to the forward end of the templet-plate for locking the plate E in any of the three positions which it may occupy, and the plate has the three holes e^6 e^7 e^8 for its reception.

It will be seen from what I have stated that the construction is quite similar to that of the National heeling-machine, the differences be-

ing, however, sufficiently distinct not to require further identification. The nail-carrier F has a revolving or sliding bottom with perforations, and it is automatically moved to uncover both sets of holes upon a forward movement of the plate into position over the templet-block, as described in said Henderson patent, or in any other suitable way.

The operation of the machine is as follows: The last or heel-support, with the boot or shoe thereon, is moved into position under the templet and the heel-blank located thereon, and if the top lift is not attached to the heel-blank then the portion e^3 of the plate E is in operative position under the templet-block. The awl-block may have two sets of awls—one adapted to be used with the holes D and one with the holes D′, to form two sets of holes in the heel-blank, and I have so represented it in Fig. 1; or, if desired, there may be an additional arm provided the revolving head for carrying an additional gang or group of awls, as shown in Fig. 4, in which case the first set, g, of awls will be used in connection with the holes D, and the second set, g', in connection with the holes D′ of the templet-block. The first operation is the driving of the awls, and this forms the holes in the heel or heel-blank for the reception of the attaching-nails; and if two sets of awls are used in the same block, then additional holes are formed in the heel-blank for the reception of the auxiliary or supplemental gang or group of nails. The nail-holder F having been loaded with the attaching-nails, it is then moved forward into position and the nails discharged into the holes D. The gang or group of drivers upon the block a^2 is then moved into position and reciprocated, thereby driving the attaching-nails into the heel or heel-blank and soles; and the ends or butts of these nails may or may not be left projecting above the surface of the heel-blank. If a top lift is then to be applied, the plate E is moved to bring the top lift, which has been placed in the top-lift-holding device e', into position over the heel; and if it is desirable to perforate the top lift before the driving of the supplemental group of nails the additional awl-holding arm above spoken of is used, and a gang of awls thereon is brought into position and reciprocated, forming the holes therein and in the heel-blank. The holes f' of the nail-carrier, being supplied with the nails used for the secondary or supplemental group or gang, are moved forward and the nails deposited in the holes D′ of the templet-block. The revolving head is moved to bring the gang or group of drivers a^3 into position, the cross-head reciprocated, and the supplemental gang or group of fastenings driven. The top of the heel or top lift may be further acted upon after the withdrawal of the drivers by the spanker e^5, and when this is desirable the plate E is moved to bring the spanking-surface under the templet, and the revolving head is moved to bring the arm a^9 into place; and upon a reciprocation of the cross-head the arm a^9 is brought down upon the templet-plate, and the spanker thereby forced upon the surface of the heel or of the top lift, and this additional spanking produces a more uniform result and better finish than where it is not employed. If the top lift is not applied after the attaching-nails have been driven, then, of course, the top-lift-attaching portion of the plate E is not used, the attaching-nails in that event being driven directly through the top lift, heel-blank, and soles, and the portion e^3 of the plate will have an additional set of holes to register with the holes D′, through which the auxiliary or secondary gang or group of nails are driven, and in this event it will not be necessary to use but one awl-holding block with two gangs or groups of awls and one nail-holder block holding two gangs or groups of nail-drivers, and the two gangs or groups of fastenings may be simultaneously fed to the holes in the templet-block by a nail-carrier, or successively, as may be desired.

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

1. The combination of the jack, a heel-support or last, a templet having the two sets of holes D and D′, and a reciprocating head carrying one or more gangs or groups of awls and two gangs or groups of drivers, one of which is adapted to be used with the holes D of the templet, and the other with the holes D′, and mechanism, substantially as described, for operating said awls, drivers, and templet, as and for the purposes described.

2. In a heel-nailing machine, the combination of the jack carrying the heel-support or last, the templet having two sets of holes, D and D′, and the nail-carrier F, having two sets of holes, f and f', and the nail-driving devices, all substantially as and for the purposes described.

3. In a heel-nailing machine, the combination of the templet c^2, having two sets of holes, D and D′, with the plate E, having the section or part e^3, provided with holes e^4, and the section or part e, having the top-lift-holding devices, and the holes e^2, as and for the purposes described.

4. The combination of the templet c^2, having the two sets of holes D and D′, and the plate E, having the section e^3, provided with the holes e^4, the section e, having the holes e^2, and the top-lift-holding devices, and the section e^5, all substantially as described.

5. The combination of the templet c^2, having the two sets or series of holes D and D′, and the plate E, having the section e^3, provided with two sets of holes corresponding or registering with the holes D and D′, and the section e^5.

6. The combination, in a heel-nailing machine, of the work-support, the templet having the two sets of holes D and D′, the recip-

rocating head carrying two gangs or groups of awls and two gangs or groups of drivers, and a spanker-arm, all substantially as described.

7. The combination, in a heel-nailing machine, of the work-support, the templet having two sets of holes, D D′, and a reciprocating cross-head carrying two separate gangs or groups of drivers, and mechanism, substantially as described, for operating said templet and drivers.

FREEBORN F. RAYMOND, 2D.

Witnesses:
THOS. WM. CLARKE,
FRED. B. DOLAN.