(No Model.)

F. F. RAYMOND, 2d.

HEEL NAILING MACHINE.

No. 561,611. Patented June 9, 1896.

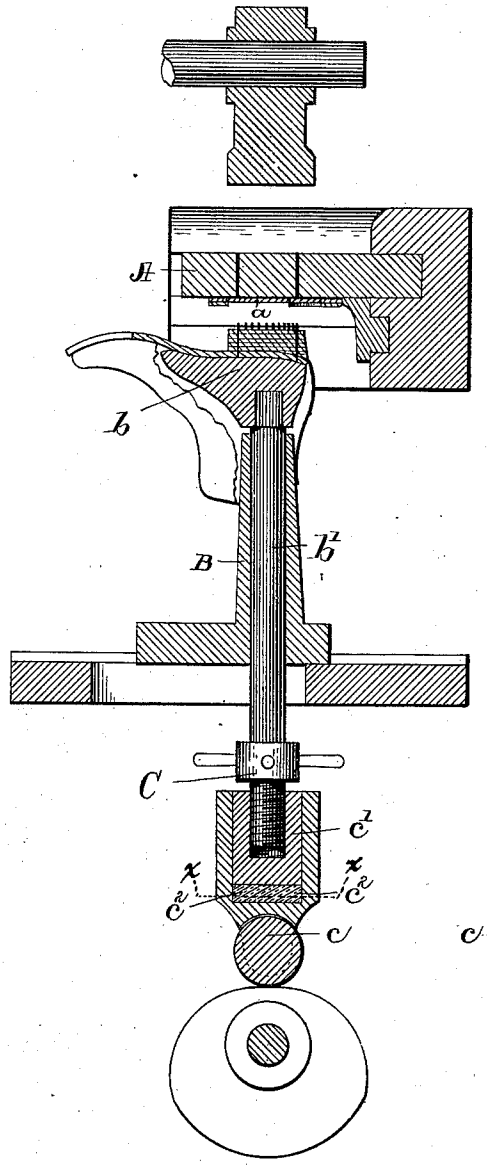

Fig. 1.

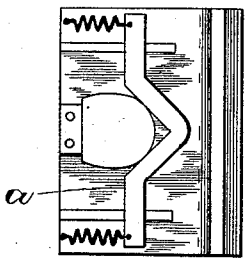

Fig. 3.

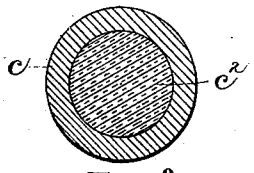

Fig. 2.

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UNITED STATES PATENT OFFICE.

FREEBORN F. RAYMOND, 2D, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO JAMES W. BROOKS, OF PETERSHAM, AND JOHN BROOKS, OF CAMBRIDGE, MASSACHUSETTS, TRUSTEES.

HEEL-NAILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,611, dated June 9, 1896.

Application filed July 13, 1889. Renewed January 3, 1894. Serial No. 495,559. (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.

It is very desirable to apply or spank top lifts varying in thickness to the heels of boots and shoes without adjusting any part of the machine, especially with reference to the thickness of the top lifts; and my invention relates to means whereby this result is accomplished, and it comprises the use in connection with the spanker or top-lift-applying plate of a compressible elastic medium interposed, preferably, between the last and the pressure-head or applying device of the machine, whereby the jack automatically yields without other adjustment to accommodate top lifts varying in thickness.

In the drawings, Figure 1 is a view in vertical section taken from front to rear or enough of a heel-nailing machine to illustrate the construction and operation of the invention. Fig. 2 is a view in horizontal section upon the dotted line *x x* of Fig. 1. Fig. 3 is a view in plan, inverted, of the top-lift-spanking plate and holder.

I have represented only so much of the mechanism of a heeling-machine as is necessary to properly show the working of the invention, and in the drawings, A represents a top-lift-spanking plate. *a* represents the top-lift holder upon said plate.

B is the jack.

b is the last supported upon the jack-spindle *b'*. The jack-spindle is vertically movable by a pressure-head C. This pressure-head is made in two parts—namely, the lower part *c*, which is directly acted upon by a pressure-cam, and the upper part *c'*, upon which the end of the jack-spindle rests. Between the upper and lower parts of the pressure-head is a ring or circular piece of rubber c^2 of any desired thickness. This ring may or may not be partially confined between the lower and upper parts of the pressure-head. The pressure-head is provided with sufficient movement to move the heel upon the boot or shoe placed on the jack sufficiently to insure the spanking of the thinnest top lift, and the rubber or compressed elastic medium between the two parts of the pressure-head permits the necessary yielding of the heel, last, and jack-spindle upon the application of thicker lifts, and this compensating action of the machine is automatic—that is, it does not depend upon the adjustment by hand of any part. This feature is especially desirable in an automatic machine where the pressure-head is lifted to different heights by this actuating mechanism during the operation of compressing and attaching the heel-blank and applying the top lift, as it is certainly very undesirable and almost practically impossible to make an adjustment of the height of the last by hand between the nailing of the heel-blank and the spanking of the top lift, as it would call for the stopping of the machine between the two operations to enable such adjustment to be made. Even if the top lifts were sorted as to thickness before they were used, a proceeding which would take some little time, there would still be sufficient difference in thickness and in the density of the lifts to make a machine, when the jack is adjusted by hand for such lifts, operate but fairly well; but by means of the automatic compensating feature herein described the operation of the machine is made continuous, the top lifts do not need to be sorted as to thickness, and no adjustment is required by hand—that is, the operator does not need consider the thickness of his top lift. Thin and thick may be alternated and each be perfectly applied to the heel-blank.

The essential feature of the invention is the employment of a yielding compensating medium of the character specified, which is capable of transmitting from the source of power sufficient pressure to permit of the proper application of a very thin top lift, and yet of such a yielding nature that it will yield sufficiently to permit of the proper application of a thick top lift as well—that is, while elastic it must be sufficiently resisting to per-

mit the work to be done, and yet while resisting it must yield sufficiently to allow the spanking of the thicker lifts, and must also upon the spanking of such thick lifts automatically return to its normal or original condition each time to receive the next lift in order, which possibly may be a very thin one. More than this, the invention permits the placing of very thin top lifts without causing the heads of the blind nails to appear too prominently. This is because the compensating feature permits the last and work to yield after the top lift has been applied to the blind nails, but before the top lift is compressed to such an extent as to cause the lift to be pressed upon the blind nails sufficiently to cause them to appear through the lift or to show unduly.

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

In a heel-nailing machine, in combination with a top-lift plate or spanker, a jack, a jack-spindle, and a last, of a pressure-applying head or device arranged below and adjustably connected to the lower end of the jack-spindle and consisting of a lower part c directly acted upon by a pressure-cam, and an upper part c' to which the jack-spindle is connected as set forth, and a piece c^2 of rubber, inserted between said parts c and c', substantiaily as described.

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