

(No Model.)

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HEEL NAILING MACHINE.

No. 571,087.

Patented Nov. 10, 1896.

Fig. 1.

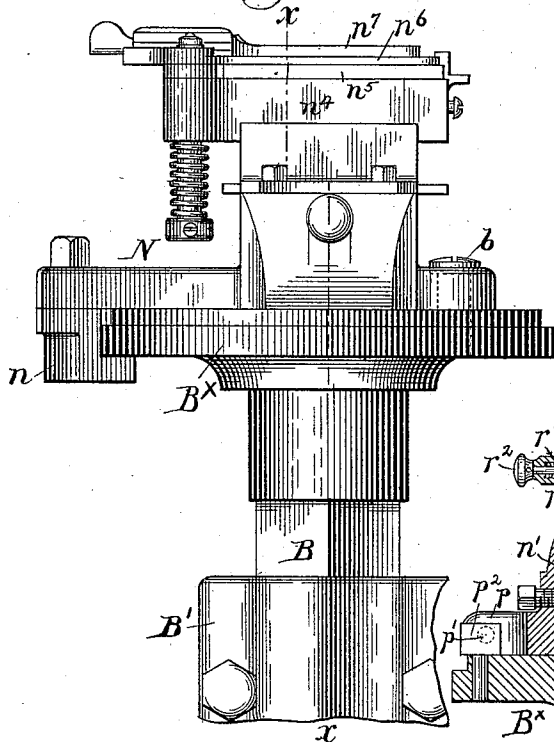


Fig. 3.

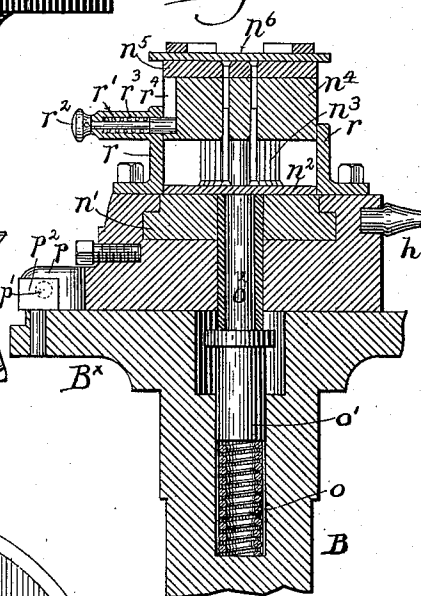
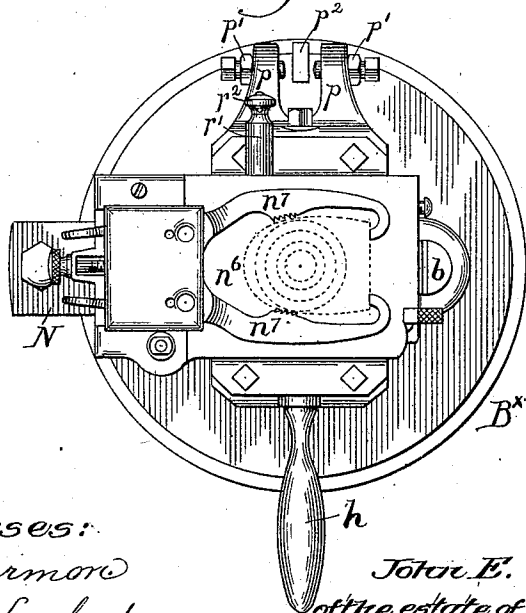


Fig. 2



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UNITED STATES PATENT OFFICE.

JOHN E. GLIDDEN, (ADMINISTRATOR OF CHARLES W. GLIDDEN, DECEASED,) OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO JAMES W. BROOKS, OF PETERSHAM, PRINCIPAL TRUSTEE, AND JOHN BROOKS, OF CAMBRIDGE, MASSACHUSETTS, ASSOCIATE TRUSTEE.

HEEL-NAILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 571,087, dated November 10, 1896.

Application filed February 10, 1896. Serial No. 578,658. (No model.)

To all whom it may concern:

Be it known that CHARLES W. GLIDDEN, late of Lynn, county of Essex, State of Massachusetts, deceased, invented an Improvement in Heel-Nailing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to and has for its object to improve heel-nailing machines of the class illustrated by United States Patent No. 500,486, dated June 27, 1893.

In applying heels to boots and shoes it is frequently necessary to place the tread of the heel nearer one—for instance, the outer—edge of the sole than the opposite or inner edge, and to accomplish this it is necessary that the machine be constructed to provide for a relative lateral movement of the nail-box and last or form carrying the shoe. It is also necessary at times to vary the angle of the median line of the heel relatively to the median line of the heel portion of the sole.

In the Patent No. 500,486 referred to means was provided for giving the bodily lateral movement referred to between the nail-box and last or form carrying the shoe, and to a limited extent the means there shown would provide for a change in the angle of the median line of the heel with relation to the median line of the heel portion of the sole; but in said machine practice has shown that when the imaginary axis about which the nail-box was swung approached closely to the breast of the heel the operation of the parts was not as satisfactory as is desirable. To obviate such difficulty, the present invention comprehends pivoting the nail-box upon its support or carrying-head, said pivot being located, preferably, close to the breast-line of the heel, suitable means being provided for limiting and varying the extent of swinging movement of the nail-box about its pivot. In practice the nail-box is usually mounted upon a carrier or carrier-plate, which is interposed between the box proper and its support or carrying-head, the

nail-box having a vertical relative movement to and upon this carrier-plate. Prior to this invention the nail-box in its vertical movements referred to has been usually guided by the nail-box spindle and a guide-pin arranged at a short distance from the same. In the swinging movements of the nail-box from side to side in the operation of the machine the necessity for a more certain guide for the nail-box has been developed, and my present invention comprehends lateral guides for the nail-box located outside and acting upon the outer faces of the box, where the necessary looseness between the guides and the nail-box produces the least variation in the position of the nail-box. In connection with one or both of these outside or lateral guides, there is provided a suitable stop to limit the vertical movements of the nail-box.

The above, with other features of the invention, will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1, in side elevation, shows a sufficient portion of a heeling-machine to enable the invention to be understood; Fig. 2, a top or plan view of the parts shown in Fig. 1, and Fig. 3 a section on the dotted line *xx*, Fig. 2.

In the particular embodiment of the invention herein selected and shown in the drawings the vertically-movable spindle B, its bearings B', and the spindle-head B^x may be of suitable construction, such, for instance, as shown in said Patent No. 500,486 referred to, the parts operating in the manner herein fully set forth.

Upon the spindle-head B^x there is pivoted at *b* the nail-box carrier N, shown as provided at or near its free end with a depending and inturned lip *n*, which by projecting under the edge of the spindle-head referred to holds the carrier N always down in its position upon the spindle-head.

The carrier N, as herein shown, is fitted to receive the usual dovetailed slide *n'*, upon which rests the driver-plate *n*², supporting the drivers *n*³ of the nail-box *n*⁴ of usual construction, said nail-box, as herein shown, be-

ing provided with the usual extension-plate n^5 and top-lift plate n^6 , pivoted thereto, said top-lift plate being provided with the usual top-lift-holding arms n^7 , all of which may be
 5 of usual construction and operate in manner well understood by those skilled in the art.

Within the spindle B is seated upon a spring o a supporting-pin o' , upon the upper end of which rests the usual nail-box spindle
 10 o^2 .

One part of the present invention lies in the pivoting of the carrier N and the nail-box mounted thereon to the spindle-head to enable it to be swung in an arc about its
 15 pivot to vary not only the lateral position of the nail-box relatively to the spindle, but also the angularity of the median line of the nail-box with relation to the median line of the heel portion of the usual sole. This
 20 swinging vibratory motion of the nail-box is limited by suitable, preferably adjustable, limiting devices, herein shown as comprising two laterally-extended arms pp on the carrier N, in which are tapped the adjusting-screws
 25 p' , shown as fitted with lock-nuts, said screws being adapted to act upon opposite sides of an ear p^2 on the spindle-head B^x . The carrier is provided at its side opposite the adjusting devices referred to with a suitable
 30 handle h , by means of which the operator is enabled to quickly swing the carrier and its attached nail-box.

To guide the nail-box in its vertical movements relatively to the carrier N, there is
 35 provided the guide-plates $r r$, shown as of considerable length and acting directly upon the outer side surfaces of the nail-box, as best shown in Figs. 1 and 3.

A certain amount of looseness is always
 40 necessary between the nail-box and its guides in order that the machine may operate with the proper degree of freedom, and by arranging the guides as herein shown guiding-surfaces of sufficient length may be had to permit the nail-box to move with the requisite
 45 freedom, and yet not have an excessive lost motion or lateral vibration with relation to its supporting parts, so that its position relatively to the shoe-sole may at all times be
 50 more accurately determined than has heretofore been considered practicable.

To limit the vertical movements of the nail-box, there is herein provided one of the guides r , (in the drawings that at the left, Fig. 3,) with a boss r' , through which is passed a pin r^2 ,
 55 acted upon within the boss by a spring r^3 , which presses the inner end of the pin into a vertical groove r^4 in the side of the nail-box, this pin acting upon the ends of the groove referred to to limit the movements of the
 60 nail-box in either direction.

The invention is not limited to the particular construction herein shown and described,

as it is evident the same may be varied without departing from the spirit and scope of 65 this invention.

Having described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a heeling-machine, the combination 70 with a nail-supporting head, of a nail-box pivotally mounted eccentrically upon the said head, substantially as described.

2. In a heeling-machine, the combination 75 with a supporting-head, of a carrier pivotally mounted thereupon for bodily lateral movement relative thereto, and a nail-box mounted upon and movable with the said carrier, substantially as described.

3. In a heeling-machine, the combination 80 with a supporting-head, of a carrier pivotally mounted thereupon, and a vertically-movable nail-box on and adapted to swing with the said carrier, substantially as described.

4. In a heeling-machine, the combination 85 with a supporting-head, of a nail-box pivotally mounted thereupon eccentrically to said head, and means to limit the swinging movement of the said nail-box, substantially as described.

5. In a heeling-machine, the combination 95 with a supporting-head, a swinging carrier thereon, of a nail-box vertically movable on the said carriage, and guides for the said nail-box acting upon the outer surfaces of 95 the latter, substantially as described.

6. In a heeling-machine, the combination with a supporting-head, a swinging carrier thereon, of a nail-box vertically movable on the said carriage, guides for the said nail-box 100 acting upon the outer surfaces of the latter, and means acting directly upon the nail-box to limit the vertical movement thereof, substantially as described.

7. In a heeling-machine, the combination 105 with a supporting-head, a swinging carrier thereon, of a nail-box vertically movable on the said carriage, guides for the said nail-box acting upon the outer surfaces of the latter, and a stop on one of the said guides to limit 110 the vertical movement of the nail-box, substantially as described.

8. In a heeling-machine, the combination with a supporting-head, a swinging carrier thereon, of a nail-box vertically movable on 115 the said carriage, guides for the said nail-box acting upon the outer surfaces of the latter, and a spring-controlled stop on one of the said guides to limit the vertical movement of the nail-box, substantially as described.

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