

(No Model.)

3 Sheets—Sheet 1.

G. W. STACY.
SHOE HOLDER FOR NAILING MACHINES.

No. 519,208.

Patented May 1, 1894.

Fig. 1.

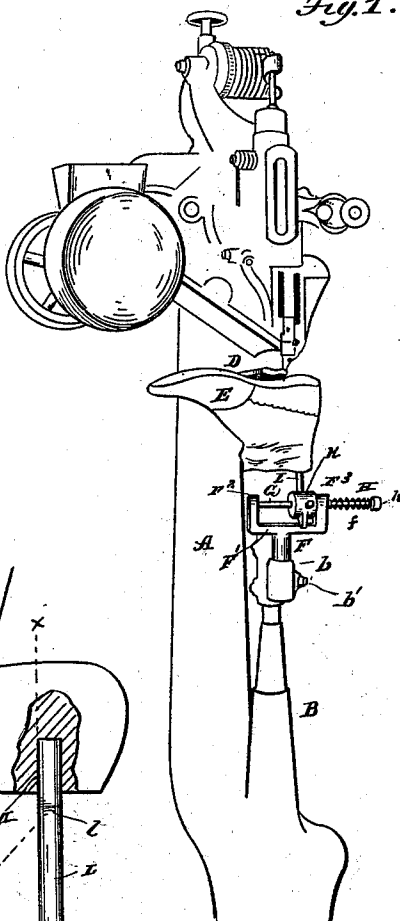
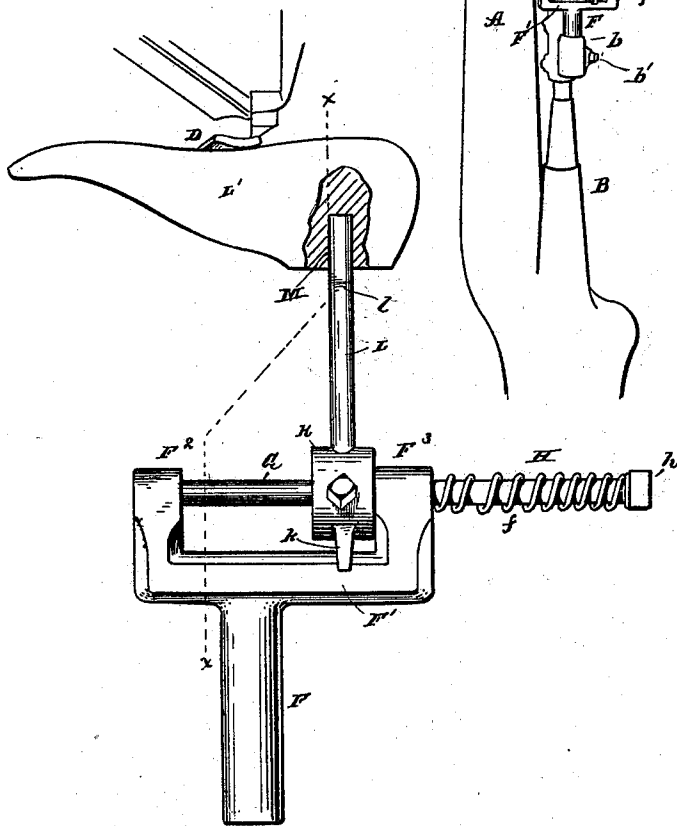


Fig. 2.



WITNESSES

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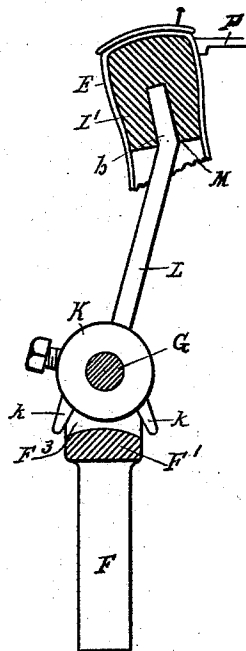
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Fig. 3.



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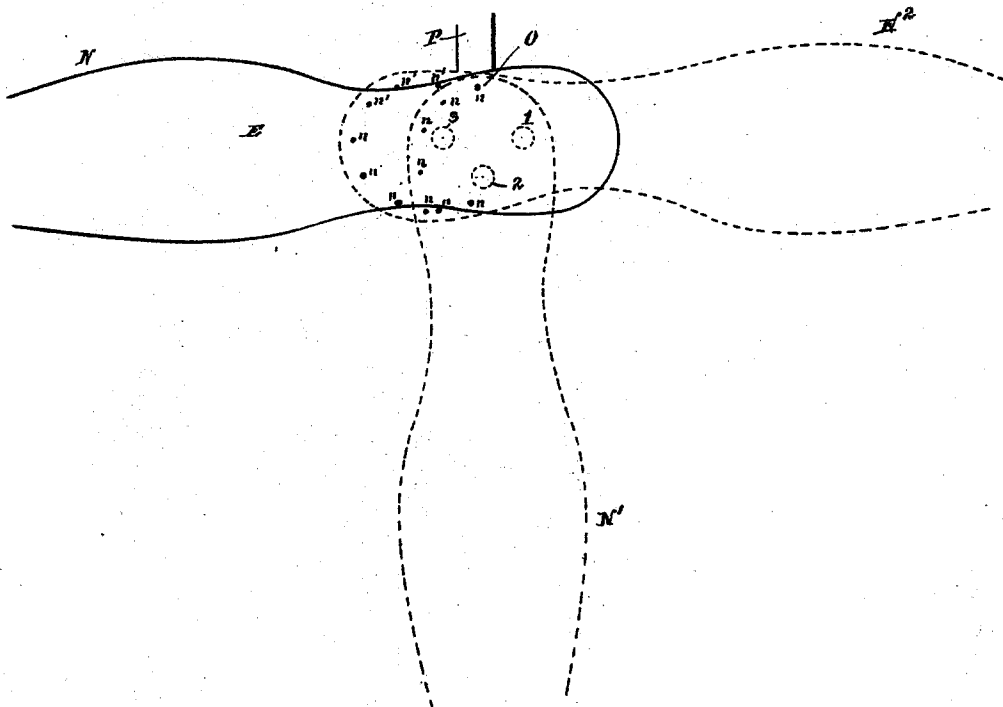
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Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE W. STACY, OF DETROIT, MICHIGAN.

SHOE-HOLDER FOR NAILING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 519,208, dated May 1, 1894.

Application filed September 7, 1893. Serial No. 435,029. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. STACY, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Automatic Shoe-Holders for Nailing-Machines; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to nailing machines for shoes, and consists in combining therewith an automatic shoe-holder of peculiar construction, embodying peculiar principles of operation, whereby the capacity of such machine is greatly enlarged.

There are several kinds of nailing machines in use and known to the trade, with all of which my improvement is adapted to be used with equal facility and advantage, and hence I do not deem it necessary to describe any one of them in detail, but only to describe so much thereof as will clearly explain to those skilled in the art, the manner of application and use of my attachment and invention. In large factories where nearly all the work is done by machinery the usual practice is to form the upper and insole on a last which thus secures and preserves the form of the shoe. The out sole is added and tacked sufficiently to hold it in position for the nailing machine; to do the nailing by such machine however, requires the withdrawal of the last during the operation of nailing. This endangers the proper shape of the shoe which is liable to be warped during the nailing operation, consequently in the better class of shoes the last is not withdrawn and the nailing is done by hand.

My invention has for its object the permitting of the nailing to be done on the machine without withdrawing the last from the shoe, and thus save the time and risk of the withdrawal of the last to permit machine nailing and the return of the last for finishing, on the one hand, or to save the hand work and permit the machine to be used where the last is not withdrawn in the other.

The device is illustrated in the accompanying drawings, in which—

Figure 1, is a perspective representation of a nailing machine, (excepting the foot) with my improvement in position. Fig. 2, is an enlarged elevation of the attachment and a last thereon. Fig. 3, is an irregular sectional view on line xx of Fig. 2. Fig. 4, is a diagrammatic view of the various positions of the bottom of the shoe when operated on under the nailer to show the movements required.

Similar letters refer to similar parts.

In the drawings, A, represents the stand-ard of a nailing machine, B, the pedestal for the usual horn which however is omitted; C, is the nailing head containing the feed mechanism for the nails and for driving the same, also the usual feed plate, D, operating the shoe E. In place of the horn heretofore employed which has been attached to the pedestal B, at b , I employ the device more particularly illustrated in Figs. 2, and 3, in which F, represents the shank adapted to be set into the pedestal B, at b , and held immovably therein by the set-screw b' . The upper end of the shank F, is bifurcated carrying a yoke having at the outer ends of a T-shaped cross-bar F' , upright lugs F^2 , F^3 , a longitudinal shaft G, which is freely permitted to rotate and to slide endwise in the bearings, but is not permitted to have any perceptible amount of lost motion therein. The shaft G, extends outward beyond the lug F^3 , some little distance as shown at f , and carries a coiled spring H, which is compressed with some tension between the lug F^3 , and a nut on the shaft at h . The tension of the spring H, normally keeps the shaft drawn in the position shown in Figs. 1 and 2. Upon the shaft G, is rigidly attached by means of a set-screw (or key if desired) a ring K, which takes the strain of the spring when the parts are in the position shown; rising from and rigidly attached to the ring K, is a horn, L, the upper end of which is fitted to carry a last, L' , by means of the usual orifice M, in the heel thereof as shown in the drawings at Fig. 3. The upper end of the horn is bent at, 1, so as to permit a slight offset between the perpendicular line of the nailing head and that of the pedestal below.

It is obvious that the upper end of the horn, L, can swing to and fro under the nailing head by virtue of the rotating capacity

of the shaft F; this motion is preferably limited by the lugs, *k, k*, rigidly attached by any suitable means to the ring K. It is also obvious that the horn, L, has a movement from right to left and the reverse due to the capacity of the shaft G, to move longitudinally as hereinbefore stated, which motion is limited by the bearing lugs, *F², F³*, and controlled by the spring H. A combination of the two capacities for movement permits adjustment of the last and surrounding shoe, as required in the nailing operation. These movements are illustrated in Fig. 4, in which the various positions of the shoe in nailing the heel from start to finish are illustrated.

N, represents diagrammatically the original position of the shoe with the heel to the right and the toe to the left.

O, is the nailing point under the plunger, the position of which necessarily remains constant under all circumstances.

1, represents the position of the horn in the last, corresponding to the position of the shoe just described.

2, is the position of the horn with the shoe turned into the position N', with the nailing half done. 3, indicates the position of the horn with the shoe in the finished position, N².

n, n, n, n, n, represent driven nails in the shoe when in the position N', and *n', n', n', n', n'*, the corresponding nails when in the position N².

P, is the guide plate attached to the head of the nailing head against which the shoe is moved by the operator.

It is obvious from this that the motion of the upper end of the horn caused by the movement of the shoe against the guard plate and around the fixed nailing point, O, is an irregular and complicated one. It is also obvious that during such movement the sole of the shoe must not when in position N, N², depart from a horizontal. These requirements are met in the device described. The operation can be easily apprehended from the foregoing description.

When the shoe is prepared for nailing with the forming last left in it, it is taken to the nailing machine, the usual orifice in the last enables it to be adjusted upon the horn, and

by manipulating it while against the guide plate, as shown in Fig. 4, at the same time throwing the machine into gear, the nailing is done, the shoe and contained last removed and another placed thereon when the operation is repeated. The shoes are then ready for heeling and finishing without withdrawing the last, as hereinbefore described.

It is obvious that top-lifts as well as heel-seats can be nailed on the nailer by means of this device.

I do not desire to confine myself to the exact form of this device, as it is obvious that it may be departed from and still use the principle and mode of operation of my invention.

What I claim is—

1. In an adjustable shoe holder for a nailing machine, the combination of the shank, a rotative shaft journaled thereon and capable of longitudinal movement in its bearings, a horn rigidly attached to said shaft and adapted to receive a last at its upper end, substantially as described.

2. In an adjustable shoe holder for a nailing machine, the combination of a shank, a rotative and longitudinally moving shaft located in appropriate bearings formed on said shank, said shaft carrying rigidly attached thereto a horn, a spring controlling the longitudinal movement of said shaft, and means for limiting said movement, substantially as described.

3. In an adjustable shoe holder for nailing machine, the combination of a shank, a horn, a last rotatively placed upon said horn, and intermediate means connecting said shank and said horn, consisting substantially of a rotative and longitudinally moving shaft located in appropriate bearings formed on said shank, said shaft carrying said horn, whereby the latter is permitted to move transversely in line with the axis of the shaft, compelling the uppersurface of the last to be constantly in the same transverse plane, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE W. STACY.

Witnesses:

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