(No Model.)

M. A. TYLER & E. MERRITT.

HEELING MACHINE.

No. 382,121. Patented May 1, 1888.

Fig. 1.

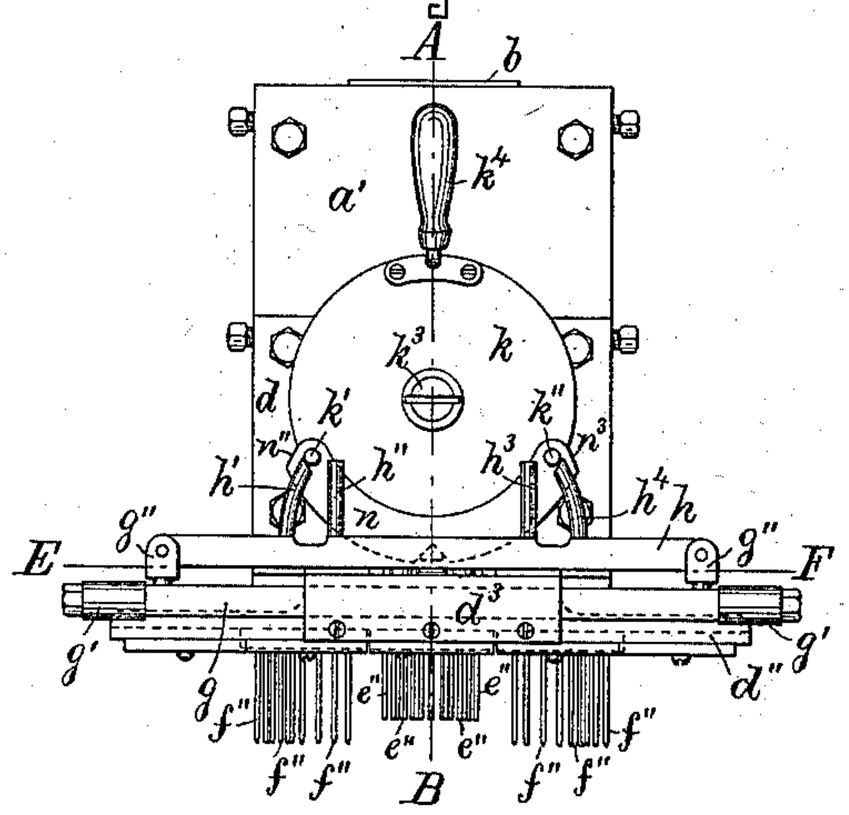


Fig. 2.

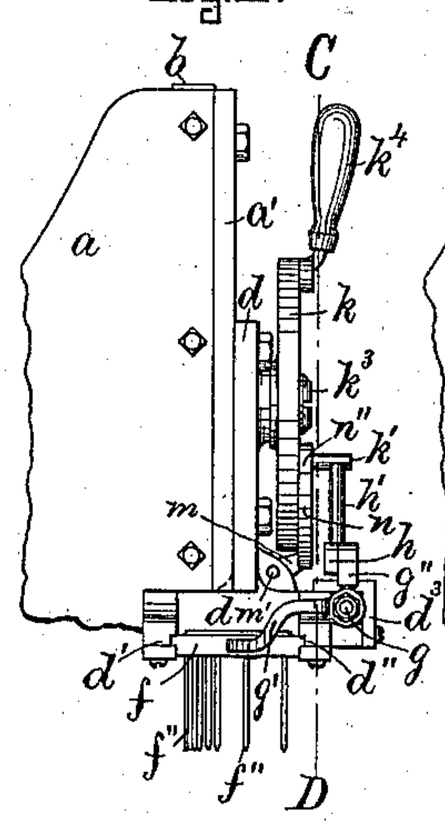


Fig. 3.

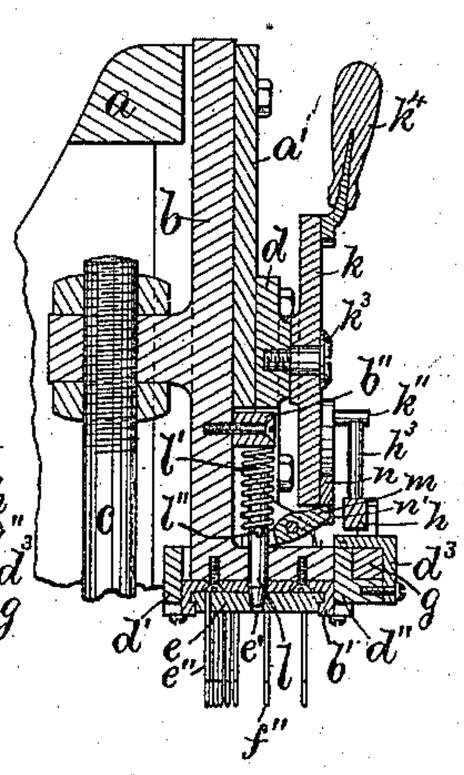


Fig. 5.

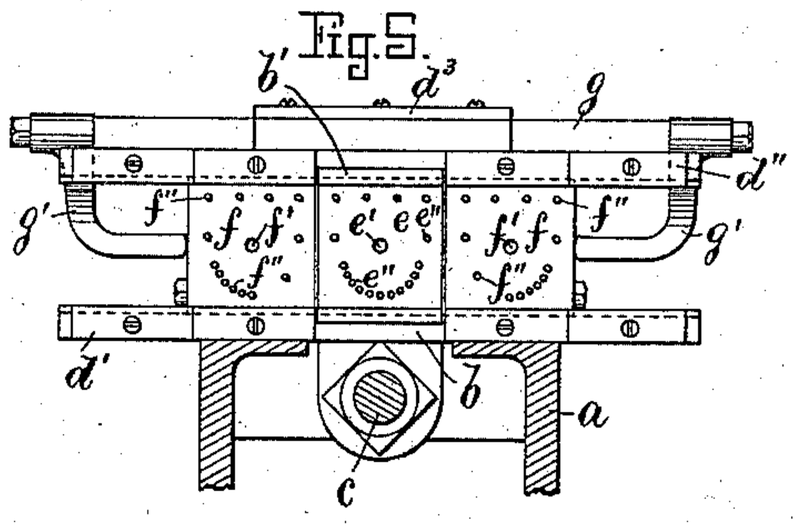


Fig. 4.

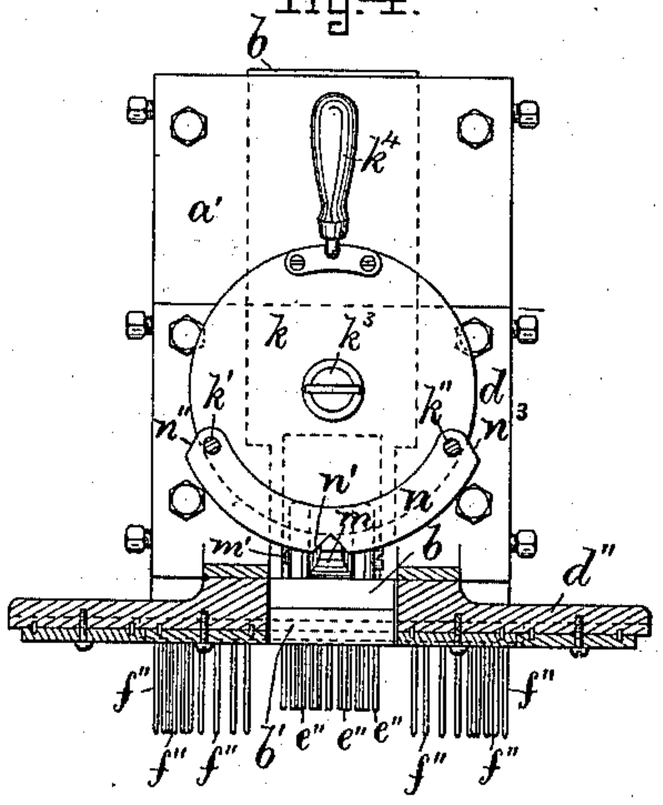


Fig. 6.

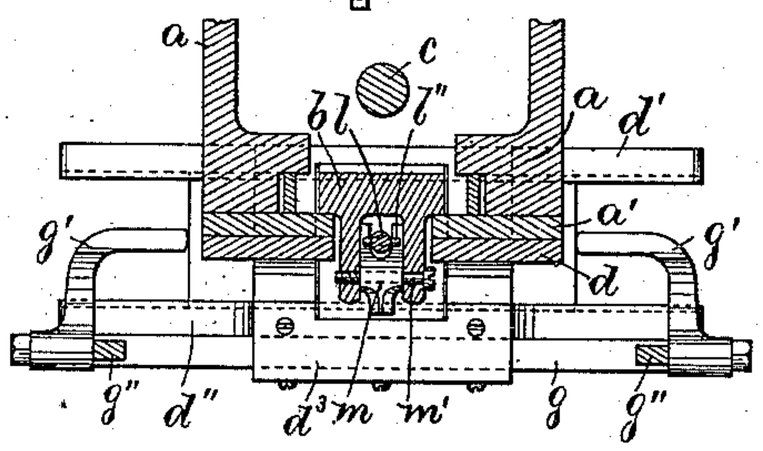
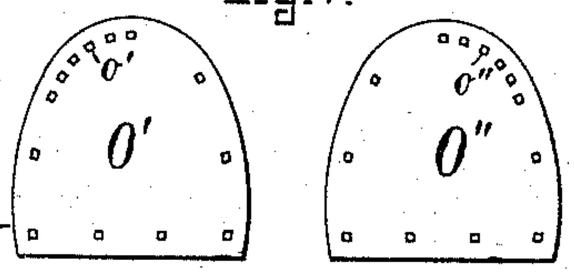


Fig. 7.



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UNITED STATES PATENT OFFICE.

MERRILL A. TYLER, OF EASTON, AND EDWARD MERRITT, OF BROCKTON, MASSACHUSETTS, ASSIGNORS TO THE AMERICAN HEELING MACHINE COMPANY, OF PORTLAND, MAINE.

HEELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 382,121, dated May 1, 1888.

Application filed March 27, 1885. Renewed May 29, 1886. Again renewed March 16, 1888. Serial No. 267,321. (No model.)

To all whom it may concern:

Be it known that we, MERRILL A. TYLER, a citizen of the United States, residing at Easton, in the county of Bristol and State of Massachusetts, and EDWARD MERRITT, a citizen of the United States, residing at Brockton, in the county of Plymouth, State of Massachusetts, have jointly invented certain new and useful Improvements in Heeling-Machines; and we do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

This invention relates to improvements in heeling-machines, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a front elevation of the improvement, and Fig. 2 represents a side elevation of the same. Fig. 3 represents a vertical section on the line A B shown in Fig. 1. Fig. 4 represents a vertical section on the line C D shown in Fig. 2. Fig. 5 represents a bottom view of the improvement, and Fig. 6 represents a cross-section on the line E F shown in Fig. 1. Fig. 7 represents bottom views of a pair of right and left nailed heels.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In applying heels to boots or shoes it is usually the custom to drive more nails in that portion of the heel that is on the outside of the boot or shoe, so as to strengthen the heel in such part and to prevent it from wearing out too quickly on its outer edge while the boot or shoe is in use. Such re-enforcing of the outer edge of a boot or shoe heel is known in the art as "slugging."

Our object is to produce a machine in which such slugging of the heels may be accomplished without driving the nails by hand-labor, and for this purpose we employ, in combination with a vertically-movable plunger, a driver-block and a pair of right and left awl-blocks, and mechanism for moving and holding each of such driver and awl blocks alternately in position below the plunger to cause them to move vertically, one at a time, with the plunger, and to be laterally adjustable to and from the guide in the lower part of the plunger, as will be hereinafter more fully shown and described.

a is the head or upper part of the stationary frame of a heeling-machine, on which *b* is the vertically-movable plunger, attached to the connecting-rod *c*, that is moved up and down by suitable mechanism, well known in the art.

a' is the front plate, secured to the front of head *a*, as usual. To the outside of plate *a'* is firmly secured the bracket-plate *d*, the lower end of which is made in the form of horizontally-grooved guides *d' d''*, in which the driver-block *e* and right and left handed awl-blocks *f f* are horizontally adjustable, so as to bring either of them in the correspondingly-grooved guide-plate *b'*, that is secured to the under side of plunger *b*, or made in one piece with it, as may be desired.

When the plunger *b* is in its normal upper position, (shown in the drawings,) the grooved guide-plate *b'* of the plunger *b* and the stationary guides *d' d''* are horizontally in one and the same plane, and in such a position of the aforesaid guides the awl-blocks *f f* and driver-block *e* may be moved forward or back in a horizontal direction, so as to bring either of them into the plunger-guide *b'*, and thereby permit such block to move up and down with the plunger when the latter is operated vertically, and during such vertical motion of the plunger the remaining blocks are held stationary in the grooved guides *d' d''* by the following mechanism:

d^3 is a horizontal guide secured to the front of guide *d''*, in which is located the sliding bar *g*, that is free to move horizontally to the right and left in said guide d^3, and has secured to its ends the bent arms or levers *g' g'*, the inner ends of which abut against the outer edges of the respective awl-blocks *f f*, as shown in Figs. 2, 5, and 6, by which arrangement a horizontal motion is imparted to awl and driver blocks *f f e* when the bar *g* is moved in its bearing to the right or left. To the slide-bar *g* are secured the stop projections *g'' g''*, which serve as stops against the ends of guide d^3 when the blocks *e f f* are moved to their extreme limits to the right or left. The projections or stops *g'' g''* are connected by means of

the rod *h*, having upwardly-projecting pins or teeth *h' h'' h³ h⁴*, (shown in Figs. 1, 2, and 3,) which pins are acted on by the projections *k' k''*, secured to the disk *k*, loosely journaled on the stationary stud or screw *k³*, that is secured to the bracket-plate *d*, as shown in Figs. 1, 2, 3, and 4.

k⁴ is a handle or lever on the disk *k*, by which the latter can be oscillated on its fulcrum *k³*. Thus, by turning the disk *k* to the right or left, its projections *k' k''* engage with the respective pins *h' h'' h³ h⁴*, and by the connecting mechanism, as above described, a horizontal adjustment of the driver and awl blocks *e f f* is obtained by such oscillation of the disk *k;* but it is also necessary that the said disk *k* should be held firmly in position when adjusted to bring either of the driver or awl blocks *e f f* directly below the plunger *b*, and it is equally important to temporarily center and secure the block that is below the plunger *b* to the latter, and for these purposes the blocks *e f f* have the respective central recesses or perforations, *e' f' f'*, (shown in Figs. 3 and 5,) in which the vertically-yielding locking-pin *l* is made to enter, such locking-pin being guided in a vertical perforation in the lower portion of plunger *b* and forced automatically downward by the influence of a suitable spring, *l'*, the upper end of which rests against a projection, *b''*, on the plunger *b*, and the lower end resting on a pin or collar, *l''*, secured to locking-pin *l*, as shown in Fig. 3.

In front of pin *l* is hinged at *m'* to the plunger *b* the small lever *m*, forked in its inner end, as shown in Figs. 3 and 6, the pin or collar *l''* resting on top of such forked inner end of lever *m*, while its outer end is actuated by the cam-segment *n*, that is secured to the front of the disk *k*. Such segment *n* has a central locking-recess, *n'*, into which the outer end of lever *m* is made to rest when the disk *k* and the respective driver and awl blocks *e f f* are in the positions shown in Figs. 1, 4, and 5. Besides the central locking-notch, *n'*, the segment *n* has inclined cam-faces *n'' n³* in its ends, to serve as locking-faces in conjunction with the outer tapering end of the yielding lever *m* when the disk *k* is oscillated to its limit in a right or left direction.

e'' are the drivers, secured symmetrically to the under side of the driver-block *e*.

f'' are the awls, secured to the under side of the respective awl-blocks *f*, such awls being unevenly distributed on the said awl-blocks—that is, a greater number on the outer edge of each block, to correspond to the desired positions of the nails *o' o''*, as required, for right and left boot-heels O' O''. (Shown in Fig. 7.)

In the drawings the driver-block is shown as being located between the awl-blocks; but although this is preferable it is not essential, as it may be arranged on one side of the awl-blocks without departing from the essence of our invention.

The operation of this our improved machine for slugging boot or shoe heels is as follows: By taking hold of the handle *k⁴* the disk *k* may be turned around its axis to its right-hand limit, and during such motion of it the inclined side of recess *n'* causes the lever *m* to raise the locking-pin *l* upward until its lower end is disengaged from the perforation *e'* in the driver-block *e*, and to remain in such disengaged raised position during the continuance of the motion of disk *k* by the influence of cam-segment *n* on the outer end of lever *m*. After the driver-block *e* is thus liberated from the plunger *b* and the turning of the disk *k* continued, its projection *k''* comes in contact with pin *h³* on bar or rod *h*, causing it and the bar *g*, with its arms or levers *g' g'*, to move to the left, and with them the driver and awl blocks *e f f*, until the awl-block on the right of B in Fig. 1 is brought centrally below the plunger *b* within its guide-plate *b'*, and locked to it by the liberation of the locking-pin *l*, caused by the rise of the outer end of lever *m* when the end of cam-segment *n* comes above the yielding outer end of said lever *m*. The boot or shoe is then held firmly in position below the plunger *b* and its awl-block by means of a jack, as usual, after which the machine is set in operation by applying power to the connecting-rod *c*, causing the plunger to descend and the awls to perforate the heel, after which the plunger and awl-block ascend to their normal highest positions. The disk *k* is then swung to the left until the driver-block *e* is locked in position within the guide-plate *b'* centrally below the plunger *b*, as shown in Figs. 1, 3, 4 and 5, when power is again applied to the connecting-rod *c*, causing the plunger *b*, with its driver-block *e* and drivers, to descend and drive the nails into the boot or shoe heel, the nails during such operation being located in a correspondingly-perforated holder or loader block, as is usual in the art of nailing boot or shoe heels. Thus, by manipulating the disk *k*, either of the awl-blocks *f f* may be brought below and temporarily secured to the plunger *b* and caused to descend with the latter, so as to perforate the heel as may be desired for right or left boots, and by afterward sliding the driver-block in position below the plunger *b* the nails in the usual loader are driven into the desired positions on the heel by the descent of the plunger and its temporarily-secured driver-block.

In using the machine for nailing right and left heels all right ones may be nailed successively and the left ones in a similar manner, or lefts and rights may be nailed alternately in pairs at the option of the operator, as may be most convenient and practical.

We wish to state that we do not claim in this application the method of nailing the boot or shoe heels as described, as the same forms subject-matter for a separate application for a patent now pending.

Having thus fully described the nature, construction, and operation of our invention, we wish to secure by Letters Patent and claim—

1. In a heeling-machine, the driver-block *e* and right and left awl-blocks *f f*, located in horizontal guides below the plunger *b*, in which they are laterally adjustable, so as to bring one of such driver and awl blocks centrally below the plunger of the machine, as and for the purpose set forth.

2. In a heeling-machine, the vertically-movable and laterally-adjustable driver-block *e*, in combination with vertically-movable and laterally-adjustable right and left awl-blocks *f f*, as and for the purpose set forth.

In testimony whereof we have affixed our signatures in presence of two witnesses.

MERRILL A. TYLER.
EDWARD MERRITT.

Witnesses:
ALBAN ANDRÉN,
HENRY CHADBOURN.