(No Model.)

M. V. B. & F. N. ETHRIDGE.

SHOE HEELING MACHINE.

No. 261,145. Patented July 18, 1882.

Fig. 1.

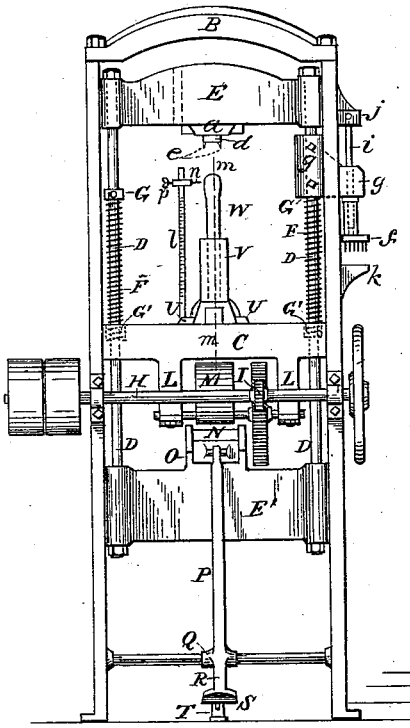


Fig. 2.

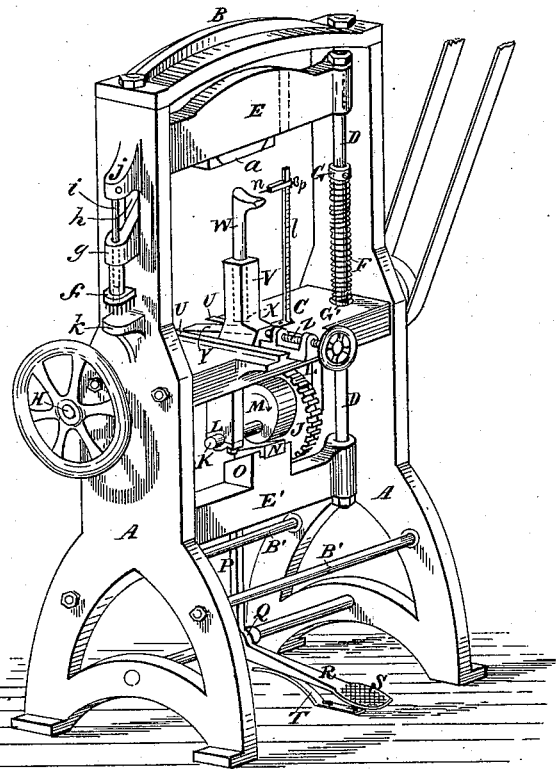


Fig. 3.

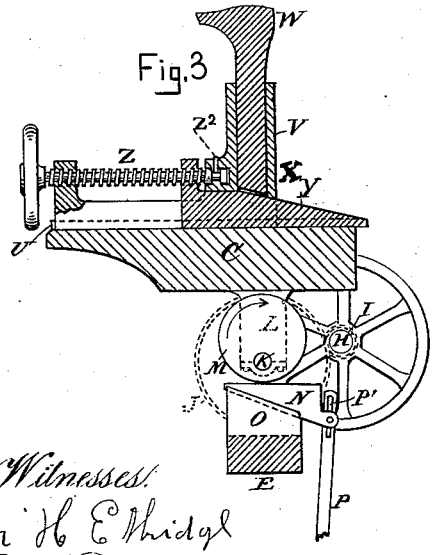
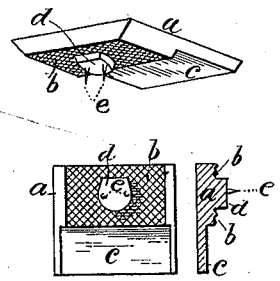


Fig. 4.



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SHOE-HEELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 261,145, dated July 18, 1882.

Application filed May 1, 1882. (No model.)

To all whom it may concern:

Be it known that we, MARTIN VAN BUREN ETHRIDGE and FRANK NEWELL ETHRIDGE, of Lynn, in the county of Essex and State of Massachusetts, have invented an improved machine for securing heels to boots and shoes and preparing said heels preparatory to their application to the sole, of which the following is a specification.

Our invention relates to an improved machine for nailing heels on boots and shoes; and it consists in an upright frame supporting a central bed-plate, to the upper surface of which is attached an adjustable lasting-jack, the lower end of which is beveled at such an inclination as to facilitate the elevation and depression of said jack through the medium of an inclined block or wedge upon which it rests, said wedge traveling in a suitable opening through the base of the lasting-jack standard, and operated by a screw the end of which has a circumferential slot for the reception of a stop-pin, which pin attaches said screw to the standard, the rotation of the driving-screw operating the wedge. The under side of the bed-plate has journals supporting a shaft upon which is mounted a driving-gear and rotating cam, the latter acting upon an inclined plane movable through the action of a foot-lever and supported upon a block forming part of the lower gate-head, which gate is sustained by two guide-rods and operated by said cam in a vertical direction.

Secured to the under side of the upper gate-head is an adjustable metal heel-plate provided with a smooth and an indented floor, one upon a lower plane than the other. The indented floor is provided with a projection suiting the form of the heel to be attached, and having two spurs whose office is to retain the heel in proper position before the nails are driven. In the downward motion of the gate, by action of the cam, said adjustable plate is brought in juxtaposition with the nail-prepared heel held by the operator upon the shoe or boot previously placed over the last, when the nail-heads engage in the indentations in the aforesaid plate and are steadily driven into the sole, the distance of the nails driven being governed by the height of the heel-shaped metal projection above the indented floor. This operation permits the nails to remain exposed a sufficient length to receive and secure the top lift at the next rotation of the cam and consequent downward movement of the gate, the adjustable heel-plate meanwhile being moved forward by the hand of the operator so that the smooth floor of said plate may come in contact and press the face or top-lift upon the nails and complete the operation.

To the upper floor of the bed-plate is attached a device to insure the regular adjustment of the wedge supporting the lasting-jack, and also to mark the dimension of the heels, consisting of a fixed measure or rule, over which moves an adjustable index-point secured in any position to the measure by a nut and screw.

On the left side of the machine, and forming part of the same, is arranged a method of piercing the heels preparatory to receiving the nails, consisting of a plate to which is rigidly fixed a gang of awls, said awl-plate forming part of a hollow shaft secured to an arm projecting through a slot in the frame, and moved by and with the guide-rods supporting the gate, to which it is secured. A driving-rod rigidly keyed at one end to a suitable projection on the frame operates in the hollow chamber of the awl-shaft when the latter is driven up with the gate, and forces the leather heel from contact with the awls.

Further improvements in detail are described hereinafter.

Referring to the drawings, Figure 1 represents a rear elevation of my improved heeling-machine. Fig. 2 is an isometric projection thereof. Fig. 3 is a transverse section of bed-plate, wedge, and lasting-jack on the line *m*, Fig. 1. Fig. 4 embraces views of the heel-plate, in perspective, plan of face, and section.

A A indicate the side frames, united by the cross-head B and tie-rods B′ B′.

C is a bed-plate, through which right and left guide-rods D D pass, supporting the gate-heads E and E′.

F F are powerful lifting-springs seated against the collar G and within a suitable recess, G′, in each end of the bed-plate C.

H is the main shaft, to which is keyed the pinion-gear I, Fig. 1, which transmits its power to the large gear-wheel J, mounted upon the cam-shaft K, journaled at L L in bearings projected from the under side of bed-plate C.

M is a cam rotating upon the wedge N, said wedge sliding upon the block O, forming part of the gate E′.

P is the upper arm of the lever adjusting the wedge N. P′ is an elongated slot in the upper end of said lever, permitting a free movement of the same in the act of throwing in and out the wedge N, engaging with the cam M.

Q is the fulcrum of the levers P and R, said levers working in the ordinary manner by the foot of the operator at S.

T is a throwing-spring insuring the disengagement of the wedge N with the cam M.

U U are guides confining the base of the standard V, supporting the lasting-jack W, whose lower end is beveled, as at X, Fig. 3, to suit the incline Y, which is operated and adjusted by the driving-screw Z, the end of the same being atttached to the base of the standard V by the detaining-pin Z^2 traveling in a circumferential slot near the end of said screw.

a, Fig. 4, indicates the adjustable heel-plate, formed with beveled sides to fit corresponding guides in the under side of the gate-head E, Fig. 2.

b is the indented floor, so formed to receive the heads of the nails and hold them in a perpendicular direction while the leather heel is being pressed or driven upon the shoe or boot sole.

d is a projection formed upon the indented floor, and provided with spurs *e e* to hold the heel firmly in the proper position.

c is the smooth floor of the plate, so made to press the top-lift upon the heel without blemish, concealing the nails and completing the operation of heeling.

l is a fixed rule or standard, provided with an adjustable index-point, *n*, secured at any desirable height by the nut and screw *p*.

f indicates a gang of awls firmly attached to a projection, *g*, which projects through and travels in a slot, *h*, in the frame A of the machine, said projection being rigidly fixed to the guide-rod D and moving with it.

i is a driving-pin over which the hollow stem supporting the awls *f* moves upward and disengages the heel from the awls, which have pierced it for the reception of the nails.

Having explained the operation and construction of our improved invention, what we claim is—

1. In an improved machine for preparing and nailing heels, the adjustable lasting-jack W, having an inclined foot or rest, X, operating in combination with the wedge Y and driving-screw Z, substantially as and for the purpose specified.

2. The hand adjusting heel-plate *a*, having a smooth floor, *c*, and indented floor *b*, provided with the heel-driving plate *d* and spurs *e e*, for the purpose specified.

3. In combination with the lasting-jack W, the stationary measure Z, having a movable index-point, *n*, as set forth.

4. The wedge N, moving on the block O, operated by the levers P R, in combination with the cam M, producing the vertical movement of the gate E E′, substantially as specified.

5. The combination of the heel-piercing device *f*, actuated by the guide-rod D through the slot *h*, and operating outside of the frame A, as set forth.

6. The combination of the adjustable lasting-jack W, the movable heel-plate *a*, and upper gate-head E, all arranged substantially as set forth.

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