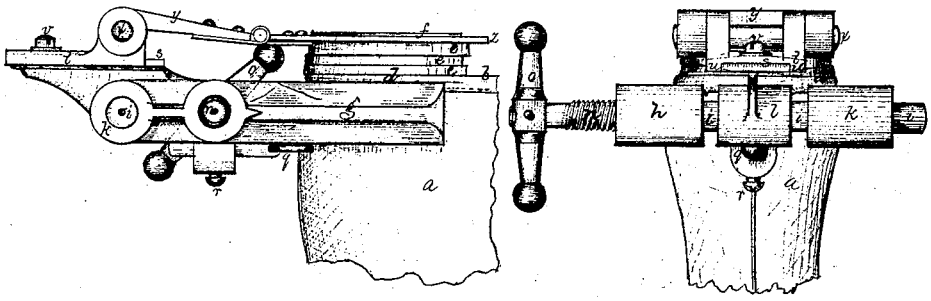
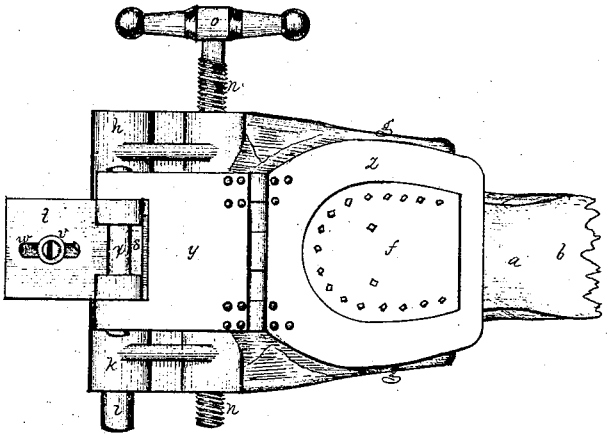
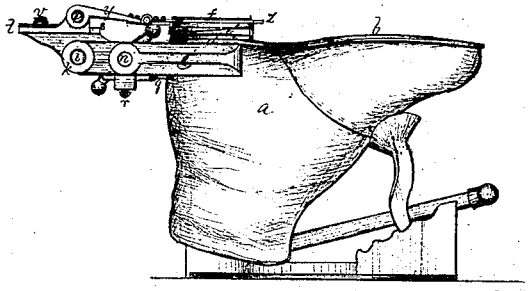
Reed & Keith,

Heeling Boots.

No. 109,756. Patented Nov. 29. 1870.







Witnesses.
I. B. Kidder.
M. W. Frothingham.

I. K. Reed & A. B. Keith
by their Attys.
Crosby, Halstead & Gould

United States Patent Office.

TIMOTHY K. REED, OF EAST BRIDGEWATER, AND ARZA B. KEITH, OF NORTH BRIDGEWATER, MASSACHUSETTS.

Letters Patent No. 109,756, dated November 29, 1870.

IMPROVEMENT IN MACHINES FOR HEELING BOOTS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, TIMOTHY K. REED, of East Bridgewater, and ARZA B. KEITH, of North Bridgewater, all in the county of Plymouth and State of Massachusetts, have jointly invented an Improvement in Heeling Boots and shoes; and we do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification is a description of our invention sufficient to enable those skilled in the art to practice it.

The invention relates to a method of locating heels in the manufacture of boots and shoes, so as to correctly place each heel to be nailed with reference to the rear or counter part of the boot or shoe.

Generally, the heel to be nailed is located by the eye of the workman, and, as the edge of the heel is rough or untrimmed, it is impossible to accurately place all heels by the eye alone.

The object of our invention is to obviate the necessity of such eye location, by employing a device which shall positively or mechanically place the heel accurately with reference to the counter or rear part of the boot or shoe.

To accomplish this we combine with two jaws which grasp the counter adjacent to the soles (or the rear part of the sole if it has been trimmed) a heel-plate or holder, which receives the heel and presents it to the sole, this heel-plate having an opening corresponding to the size and shape of the top or finishing-lift of the heel, which lift is cut by a die to or approximately to its ultimate shape, and having provision for vertical movement to carry it toward or from the shoe. It is in the combination with calipering-jaws of a heel-holder, so formed as to receive the upper heel-lift or a pattern-plate applied thereto, and capable of such movement as to locate the heel upon the shoe centrally with respect to said jaws, and to the opposite surfaces grasped thereby, that our invention primarily consists.

The drawing represents a machine embodying our improvements.

A shows the machine in side elevation.

B is an end view of it.

C, a plan.

D shows the invention in connection with a nailing-jack, upon which the last and shoe are supported.

a denotes the shoe.

b, the sole.

d, the rear or heel part of the sole.

e e e f are the heel-forming lifts, *f* being the top lift.

At D the shoe is shown as placed upon a last, mounted upon a nailing-jack, and it is in connection with such a machine that our invention is particularly intended for use.

g g denote two jaws or caliper-arms, the rear end *h* of one of which has projecting from it a horizontal pin, *i*, upon which the rear end *k* of the other slides, said pin passing through a stationary head-piece, *l*.

In an extension of this head-piece a screw-shaft, *n*, is journaled at its center, and so as to rotate without end movement, the opposite ends of this shaft having, respectively, right and left-hand screw-threads, which pass through the shanks of the opposite jaws *g g*, working in nut-threads in said shanks, the shaft having at one end a handle, *o*, by which to turn it, both jaws being equally and simultaneously separated from or drawn toward each other by rotation of the shaft, and having such equal and simultaneous movement relative to the center line of the head-piece.

The boot or shoe to be heeled is placed upon a suitable last, and the jaws *g g* being sufficiently separated they are brought to the opposite sides of the counter, and the screw-shaft is then turned so as to bring them up snugly against the shoe, the upper inner edge of each jaw preferably entering the rand or crease, between the heel part of the sole and the counter.

Beneath the jaws an adjustable gauge, *q*, may be used, for positioning the jaws for boots and shoes of different shapes or sizes, the shank of this gauge sliding in a piece projecting down from the head *l*, and being fixed in position by a screw, *r*.

Upon the head-piece *l* is a central bed-plate, *s*, bearing a slide-plate, *t*, having guide-lips *u* projecting from it, enabling it to slide forward or back, a screw-pin, *v*, extending through a slot, *w*, serving to confine the slide-plate in position.

At the inner end of this plate is a horizontal hinge-pin, *x*, upon which is mounted a vertically-swinging plate, *y*, at the front end of which is a heel-plate or heel-guide, *z*, preferably hinged to the front edge of the plate *y*.

This guide is made with an opening corresponding to the size and form of the upper and finished or shaped heel-lift *f*, or of a pattern-plate, which may be fastened to the lifts.

The longitudinal center of this opening corresponds exactly with the center line between the caliper-jaws *g g*, and this corresponding position it maintains under any change of position which it may be made to assume, so that when a heel is presented to the shoe by the heel-plate, such heel must be centrally located with reference to the rear end or heel part of the shoe body.

In commencing to use the device for any size or style of boot or shoe the caliper-jaws are first made to accurately embrace the counter just beneath the sole. The gauge *q* is then moved forward until it touches the counter, and is then confined by its screw *r*. The upper lift of the heel, or the heel-pattern, is then placed in the heel-plate, and the heel is brought down to the shoe. The first heel is carefully positioned as to the length of the shoe by the eye of the

operator, the plate *t* being loosened so that it can be freely slid, and, when in correct position, the screw *v* is tightened. After this every heel is quickly located, without disturbance of the gauge *q* or plate *t*, by calipering the counter, placing the heel in the heel-plate, and then bringing the heel down to the shoe.

The position of the gauge *q* and plate *t* relatively to the jaws *g g* may be at first determined by trial upon a finished boot or shoe and the heel thereof, instead of by the eye, and instead of using the counter as the calipering-guide the heel part of the sole may be first finished and used as the calipering-surface.

When the heel has been located as described, two or more nails are partially driven to secure the heel to the sole, and then the heel-plate is swung up and the nailing is continued, the jaws being first removed or not, as may be desirable.

After nailing, the shoe is ready for the trimming of the heel in a heel-trimming machine, and as the heel has been located with reference to the counter, and the nail-holes are punched equi-distant from the edge of the located heel-lift *g*, it follows that, if the paring or trimming-knife be guided from the counter or from the edge of the finished lift *g*, or the pattern-plate used instead of such lift, it will not be liable to come in contact with the nails.

The detail of mechanism of the invention may be varied so long as there is combined with a calipering or grasping mechanism a heel-holding device having a fixed relation to a central line between the calipering or grasping-jaws, but we prefer the arrangement of the respective parts of the mechanism, substantially as shown.

We claim—

The combination, with calipering or grasping-jaws, of a heel-holding or presenting device, for accurately locating the heel to be nailed, substantially as described.

Executed October 24, A. D. 1870.

T. K. REED.
ARZA B. KEITH.

Witnesses:
J. B. CROSBY,
FRANCIS GOULD.