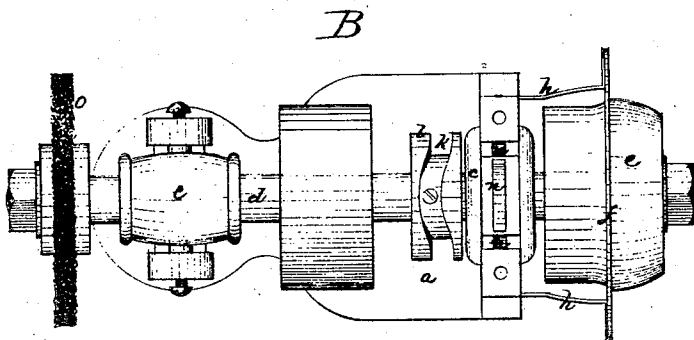
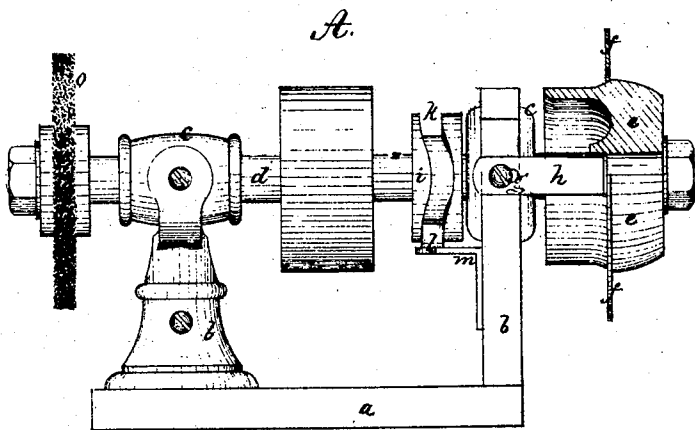


*Sawyer & Keniston,*

*Heel Machine.*

*No. 101,167.*

*Patented Mar. 22, 1870.*



Witnesses  
J. B. Kidder  
M. W. Frothingham.

J. H. Sawyer & C. Keniston.  
by their Atty  
Crosby Halsted & Gould

# UNITED STATES PATENT OFFICE.

J. H. SAWYER, OF BOSTON, AND CHARLES KENISTON, OF SOMERVILLE,  
MASSACHUSETTS.

## IMPROVED MACHINE FOR BURNISHING BOOT AND SHOE HEELS.

Specification forming part of Letters Patent No. 101,167, dated March 22, 1870.

*To all whom it may concern:*

Be it known that we, J. H. SAWYER, of Boston, in the county of Suffolk, and CHARLES KENISTON, of Somerville, in the county of Middlesex, all in the State of Massachusetts, have invented an Improved Machine for Burnishing the Heels of Boots and Shoes; and we do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of our invention sufficient to enable those skilled in the art to practice it.

Our improvement relates to the construction or arrangement of mechanism of machines designed for burnishing the edges of heels of boots and shoes.

Boot and shoe heels have sometimes been burnished by a machine having a rotary burnishing or polishing wheel, against the periphery of which the edge of the heel is pressed, while the boot is turned to bring the whole length of the edge to the action of the wheel. Although such machine does very good work, it is defective, in that the action of the wheel is in, and only in, the direction of the length of the heel-edge; and as the heel is generally made up of a series of "lifts," a lateral motion in the polisher is necessary to rub down and obliterate, or merge into one smooth surface, the adjacent edges of the respective lifts.

Our invention is intended to remedy this defect, and we accomplish the desired result by combining, with a rotary burnishing or polishing wheel, a provision for short lateral reciprocations of such wheel, so that the polishing-surface of the wheel acts in both directions, rotating against the heel-edge held against it, (and along the edge thereof as the boot or shoe is turned,) and acting across the edge by its laterally-reciprocating movements.

Our invention consists, primarily, in a machine for burnishing the heels of boots or shoes, having a rotary burnishing or polishing wheel, to which a lateral reciprocating movement is imparted.

The drawings represent a machine embodying our invention.

A shows a side elevation of the machine. B is a plan of it, the cap to one of the journal-boxes of the shaft being removed.

a denotes a suitable bed or frame, having

two uprights, *b*, in the tops of which are mounted boxes *c*, in which is journaled the rotary shaft *d*, driven by any suitable power. Fixed on the front end of this shaft is the burnishing or polishing wheel *e*, the periphery of which is inclined or curved laterally, so as to fit against the curved edge of the heel. Around, or partially around, this wheel extends a stationary ring or guard-plate, *f*, against which the flat bottom of the heel is held, while the edge of the heel is pressed up against the periphery of the wheel; and this guard may be made adjustable in position, relatively to the face of the wheel, by means of screws and slots *g*, the slot being made in the arms *h*, by which the guard is fastened to the adjacent upright *b*. The shaft *d* carries a cam-wheel, *i*, in the perimeter of which is a zigzag cam-groove, *k*, into which extends a pin, *l*, projecting from a plate, *m*, fixed to the framework of the machine.

The shaft *d* is made to slide in its bearings, as well as to rotate therein; and, as the shaft is rotated, the action of the cam-groove *k* and pin *l* causes a reciprocating movement to be imparted to the shaft *d* and wheel *e*, as will be readily understood.

The bottom of the heel to be polished being placed against the outer face of the guard *f*, the edge of the heel is held up to and pressed against the rotary burnishing-edge of the wheel, the shoe being turned to present all of the heel-edge to the wheel.

As the surface of the heel-edge is thus acted upon along its whole length, it will be obvious that, under the reciprocating lateral movement of the wheel across the edge of the heel, the asperities and irregularities of the edges of the respective lifts of the heel will be very quickly solidified, burnished, and run together, so as to form one smooth and unbroken surface, the wheel being supplied with blacking when necessary to impart the desired color and polish to the heel.

In order that there shall not be a dead or unyielding surface against which to hold the heel-edge, we mount the bearings of the shaft *d* with provision for slight play, placing between the sides of the front box or bearing and the adjacent surface of the housing springs *n*, which permit the shaft and its burnishing-

wheel to yield slightly under pressure, this provision being applicable to burnishing-wheels having no reciprocating movement, as well as such as are arranged as shown.

To enable the wheel *e* to be heated, it may be made hollow, or as a shell, open at its inner end, as seen at A, so that a gas jet or tip can enter the wheel, and cause its flame to impinge upon and heat the wheel, as will be readily seen.

The shaft *e* may carry a polishing-brush, *o*, to finish off the heels burnished by the wheel *e*.  
We claim—

In a machine for burnishing the heels of boots and shoes, a rotary burnishing-wheel having a reciprocating lateral movement, substantially as described.

Also, in combination with a rotary burnishing-wheel, a yielding journal-box, substantially as described.

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