

UNITED STATES PATENT OFFICE.

HENRY H. ARNOLD, OF ROCKLAND, MASSACHUSETTS.

CHANNELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 484,130, dated October 11, 1892.

Application filed August 1, 1891. Serial No. 401,359. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. ARNOLD, of Rockland, county of Plymouth, State of Massachusetts, have invented an Improvement in Channeling-Machines, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

In United States Patent No. 458,331, granted to me August 25, 1891, a channeling-machine for boots and shoes is shown adapted to cut a channel in the sole after it has been secured upon the last, using the last as a guide. A feeding device is shown comprising a gage-roll adapted to bear upon the welt side of the sole and against the upper drawn taut over the last and a roll located opposite the channel-cutting tool, which bears upon the under side of the sole, said roll being made slightly yielding. The channel-cutting tool is mounted in a rocking or tilting holder, yet so far as my present invention is concerned it may be held stationary. The operator, with the lasted shoe in hand, presses it up against the gage-roll and holds it while it is fed along by the feeding mechanism and channeled. As it is desirable to simplify the construction of the machine for this class of work as much as possible, in order that it may be operated by boys or unskilled operators, I have provided an additional guide-roll adapted to bear upon the under side of the sole to be channeled, near that edge opposite the point where the cutting-tool is acting. The axis of this guide-roll is parallel to the axis of the yielding feed-roll beside it, or substantially so. The sole to be channeled bears upon the holder carrying the channel-cutting tool and upon this guiding-roll, thereby affording good and sufficient bearings at or near the opposite edges thereof with the yielding feed-roll between them. This guiding-roll, while being held in fixed position, is preferably adjustable.

The drawing shows in front view a channeling-machine embodying this invention.

The main framework comprising the base-plate A, having on it stands or supports B B', the shaft *a*, supported in the frame *a'*, pivoted at *a²*, and having at one end a roll *a³*, provided with a rubber or yielding band *a⁴*, a gear *a⁵* (see dotted lines) on said shaft *a*, engaged by a pinion *a⁶*, also shown by dotted lines and

secured to a short arm having its bearings in the stand B, a toothed wheel *a⁷*, fixed to said arm, a crank *a⁸*, secured to it, and a yielding support *b'* for the shaft-supporting frame *a'*, a frame *c'*, pivoted to the stand B at *c²*, a shaft *c*, supported by it, a pinion *c³*, which is engaged and rotated by the toothed wheel *a⁷*, and beveled gears *c⁴* *c⁵*, a gage-roll *c⁶*, a rod *d*, by means of which the frame *c'* may be raised and lowered, the channel-cutting blade *f²*, mounted in a block *f*, pivoted to the outer curved end *f'* of the oscillating arm supported in the stand B', and means for adjusting said arm are all substantially as shown and described in said patent. The gage-roll *c⁶* is adapted to bear upon the welt side of the sole against the upper drawn taut over the last, while the said sole bears upon the holder or block *f*, carrying the channel-cutting blade, and upon the feeding-roll *a³*. The roll *c⁶* and roll *a³* constitute the feeding mechanism. A stand B² is also erected on the base A, which is slotted at its upper end to receive a stud B⁶, on which is loosely mounted a guide-roll *b*. The stud B⁶ is held in fixed position by a nut *b³*. The guide-roll *b* is hence held in fixed position, yet is adapted to be adjusted at will. The guide-roll *b* bears against the under side of the sole to be channeled, near its edge opposite the point of action of the channel-cutting-blade, so that a bearing will be provided for the sole at said point at or near each edge of the sole—as, for instance, on the holder or blade *f* at one edge and on the roll *b* at the opposite edge. The yielding feed-roll *a³* is located between them. The sole having been secured to a last over, which the upper is drawn taut in any usual or suitable manner, is brought to bear upon the two bearings *f* and *b*, as shown, or substantially so, and is fed forward by the feeding mechanism. It will be understood that a transverse line taken across the ball portion of the sole will be substantially straight, as represented, and a transverse line taken across the shank portion will be materially curved, so that as the sole is fed forward, as shown, the roll *a³* will yield, yet the guide-roll *b* will continually operate as and subserve the function of a fixed bearing at the under side of the sole. It will also be understood that the sole at the ball portion is much wider than at the shank portion, and

hence the guide-roll *b* will be placed sufficiently near to the channel-cutting blade to bear upon the sole at the narrowest part.

By the employment of a guide-roll, such as *b*, it will be seen that skill is not required to handle a shoe, it being only necessary to hold it down on the roll *b* while the feeding mechanism carries it forward.

I do not desire to limit myself to a movable guide *b*—as a roll, for instance—as it is obvious that it may be stationary.

I claim—

In a channeling-machine for boots and shoes, a channel-cutting blade and holder for

it and feeding mechanism, including a support for the sole contiguous to the cutting-blade, combined with a guide, as *b*, adapted to bear upon the side of the sole being channeled at or near the edge opposite the edge being channeled, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY H. ARNOLD.

Witnesses:

BERNICE J. NOYES,
FRANCES M. NOBLE.