

F. D. BALLOU.

Channel-Openers for Boots and Shoes.

No. 158,232.

Patented Dec. 29, 1874.

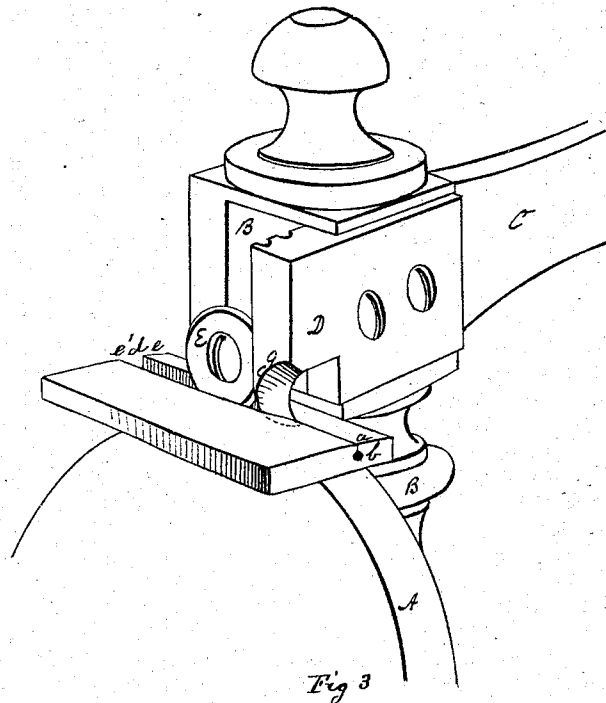


Fig 3

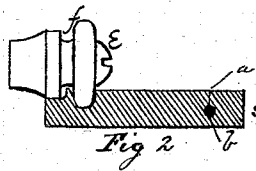


Fig 2

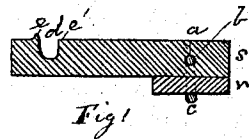


Fig 1

Witnesses,
Geo. W. Copeland.
Hebron Libbey

Francis D. Ballou
Inventor

UNITED STATES PATENT OFFICE.

FRANCIS D. BALLOU, OF ABINGTON, MASSACHUSETTS.

IMPROVEMENT IN CHANNEL-OPENERS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **158,232**, dated December 29, 1874; application filed July 31, 1874.

To all whom it may concern:

Be it known that I, FRANCIS D. BALLOU, of Abington, Massachusetts, have invented a Channel-Opener for Boots and Shoes, of which the following is a specification:

This invention relates to a channel-opener for boots and shoes. It is intended for use where the channel is formed by cutting vertically down through the sole, and afterward gouging a cord or bead of leather from the bottom of the cut in which the loops of the stitches are to lie.

This channel is shown in all the figures at *a b*, where *a* is the cut and *b* the cavity from which the leather has been removed. At *b c*, Figure 1, a sole, *s*, and welt *w*, or two pieces of leather, *s* channeled and *w* not channeled, are shown united by stitches.

To use this channel in the best way it must be opened before sewing, as shown at *d*, Fig. 1, of full size all the way. I do this by the machine shown in Fig. 3, in perspective.

A is a feed-wheel. *B* is a post, having near its top a recess in which fits block *B'*, which is fast on the arm *C*. This arm *C* is pivoted at its outer end, and the block *B'* has vertical play, being depressed by a weight, spring, or other proper device, so as to always work at a proper distance from the upper surface of the channeled leather. Upon block *B'* is fastened plow *D*, sharpened and molded, at *g*, into a sort of share and mold-boards to open a furrow where the channel has been cut. Behind the channel-plow *g*, and set at the same gage from the end of block *B'*, following the channel-plow *g* as closely as convenient, is roll *E*. This roll fits the furrow tightly enough to compress the leather, and to act, in combination with wheel *A*, as a feed-roll. Roll *E* is formed with a neck, as shown at *f*, Fig. 2, to allow room for the displaced leather forming the cover of the channel *b*. The displacement on the opposite side, at *e'*, Fig. 1, finds room by crowding up on the face or front of the roll *E*.

A piece of channeled leather in this machine is treated as follows: The nose of the share of plow *g* is inserted in the channel *b*, and is worked along by the hand till roll *E*

catches, when wheel *A* is turned, and the channel opened by the share and, turned by the mold-boards of plow *g*, is opened of full width, the leather being compressed by roll *E*, and ironed down, as it were, so as to stay in place.

The leather should be worked wet, as usual.

I am aware that, in opening the flap-channel common in machine-made shoes, a roll working parallel to the plane of the sole has been used to fold the flap back on the sole, and that a roll covering this flap has also been used to roll it down after it has been folded back, as shown in patents to Fischer, July 2, 1872, No. 128,610, and to Chickering & Tuttle, August 12, 1873; but in neither of these cases is there a compression of the leather in the groove of the channel, or an enlargement of the channel by the wheel of the opener, and the channel is a different channel.

I am also aware that in Guschetti's patent, May 3, 1873, a channel-tool is made in three parts, following each other in this order: The slitting-knife, the gouge to make a hollow at the bottom of the slit, and a bar to open out the flaps or covers of the channel. This is used on the same channel as mine, but it has no wheel *A*, no roll *E*, and the plow exists only in the form of an equivalent in the tool which cuts the channel.

My object is to cut and form the channel so as it may form a guide for the sewing with a raised throat, for which I have asked for a patent. It is necessary that it shall be of uniform size and compressed. The roll *E* is, therefore, made as a tight fit to the channel, so as to widen it, and compress it while opening.

I claim as my invention and desire to secure by Letters Patent—

In a channel-opener, the combination of the plow *g*, roll *E*, of the face and surface shown, to travel in the vertically-cut channel, and wheel *A*, substantially as and for the purpose described.

FRANCIS D. BALLOU.

Witnesses:

GEO. W. COPELAND,
HEBRON LIBBEY.