

L. DAROZIR.  
Last-Channeling Machine.

No. 209,113.

Patented Oct. 22, 1878.

Fig. 1.

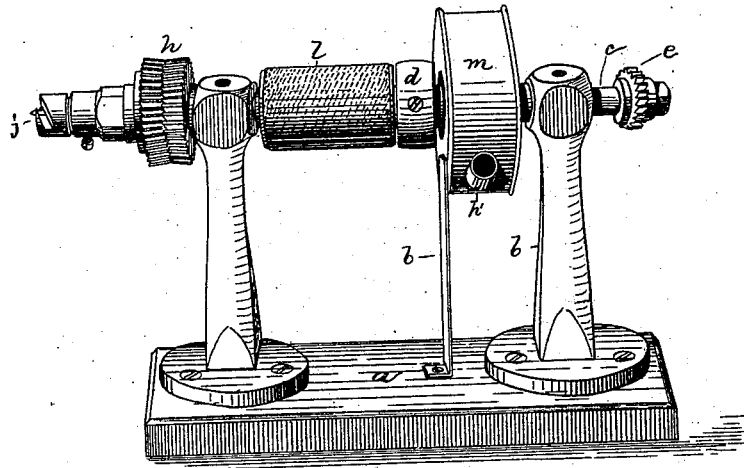


Fig. 2.

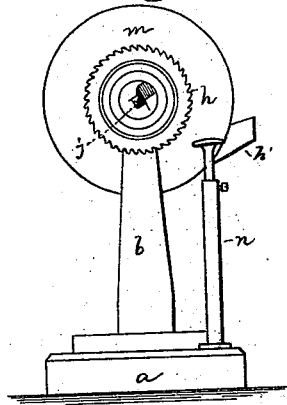


Fig. 3.

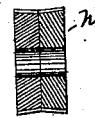
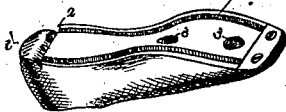


Fig. 4.



Witnesses.

*L. H. Lotimer.*  
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Inventor.

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per *Leroy & Morgan* Attys.

# UNITED STATES PATENT OFFICE.

LEVI DAROZIR, OF NATICK, MASSACHUSETTS.

## IMPROVEMENT IN LAST-CHANNELING MACHINES.

Specification forming part of Letters Patent No. **209,113**, dated October 22, 1878; application filed November 20, 1877.

*To all whom it may concern:*

Be it known that I, LEVI DAROZIR, of Natick, in the county of Middlesex and State of Massachusetts, have invented an Improved Shoe-Last-Channeling Machine, of which the following is a specification:

This invention relates to a machine designed to channel and otherwise prepare the bottoms of old and worn-out or new lasts for the reception of filling-pieces of leather or other substance, into which the pegs or fastenings uniting the soles to the uppers pass when driven through the inner sole in the manufacture of boots and shoes.

Wooden lasts are rapidly worn out, and soon become useless by the action of the awl and pegs and have to be thrown away. This loss of lasts is a very serious item of expense in the manufacture of boots and shoes.

By the machine herein described, old and worn-out lasts may be channeled or cut to receive a leather or equivalent filling, as described in another application, filed concurrently with this, for a patent for a shoe-last, and to which reference may be had, and such lasts so prepared may be reused and reprepared from time to time, thereby resulting in great saving in cost of lasts.

This invention consists in a last-channeling machine composed of a rotating mandrel or shaft, a toothed, rotating, grooving, or milling tool adapted to cut channels in the edges of the last-bottom and the rounded recesses at the heel of the last, all substantially as hereinafter described.

The invention also consists in a last-channeling machine having a shaft and toothed channeling or grooving cutters and an abrading-cylinder to dress or abrade the bottom of the last, substantially as set forth.

Figure 1 represents my improved machine in perspective; Fig. 2, an end view; Fig. 3, a section of the heel-cutters, and Fig. 4 a view of a last cut by the machine.

The letter *a* represents a bed-plate, having suitable standards *b b*, that sustain a rotating shaft or mandrel, *c*, provided with a belt-pulley, *d*, by which the shaft is revolved at the required speed. This shaft is provided at one end with a toothed channel-cutting tool, *e*, of

the width of the desired channel to be cut, such channel being shown at *f*, Fig. 4.

At the opposite end of the shaft is placed a cutter, *h*, (see section, Fig. 3,) preferably made in several pieces, so as to cut the heel of the last rounding, as seen at *i*, Fig. 4. The toothed surface of this cutter or tool *h* is made as wide as the distance between the end of the heel of the last and the shoulder 2, and the cutter may then be shaped to give to the last the desired curve from the shoulder 2 to the heel. At the end of the shaft is placed a boring-tool, *j*, by which to bore out the holes 3 in the last-bottom to receive center pieces or plugs of leather or wood.

The shaft is provided at *l* with a cylinder covered with sand-paper or equivalent material, to dress or abrade the bottom of the last after the filling-pieces of leather are applied. The tools working in the hard wood of the last make fine dust.

To prevent this interfering with the operator and to direct it in any desired direction, I place on the shaft a fan-wheel of any ordinary construction, it working in a case, *m*. This fan-wheel creates a current or blast of air, which may be directed through a flexible or other tube (attached to the fan-spout *h'*) to the cutter where the operator is working, when the blast of air will blow the dust away.

The machine may be provided with suitable rests, as shown at *n*, and with edge-gages, by which to assist in holding the shoe-last in position and in guiding it in the proper path to the action of the cutters.

I do not broadly claim a rotating shaft and a toothed wheel to cut wood or metal; nor do I broadly claim a rotating cylinder covered with sand-paper; but I am not aware that a machine was ever before made to cut channels in wooden lasts and cut the heels and renovate old or prepare new lasts, substantially as described.

I claim—

1. In a machine for channeling lasts, the tool-carrying shaft *c*, in combination with the toothed cutting-tool *h*, constructed, as shown, to cut the recess at the heel rounding from the shoulder 2 to the end of the heel, substantially as described.

2. A machine for channeling lasts having an operating-shaft, *c*, a cutter, *e*, to cut channels in the last, and a cutter, *h*, constructed, as shown, to cut the recess at the heel rounding from the part 2 rearwardly, substantially as described.

3. A machine for channeling lasts having the shaft *c*, sole-channeling tool *e*, heel-rounding cutter *h*, tool *j*, for boring holes in the soles, and the cylinder *l*, for dressing the last by

grinding or abrading, substantially as described.

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

LEVI DAROZIR.

Witnesses:

G. W. GREGORY.

S. B. KIDDER.