

C. GOODYEAR, Jr. & C. DANCEL.
Boot and Shoe Sole Channeling-Machines.

No. 146,669.

Patented Jan. 20, 1874.

Fig. 1.

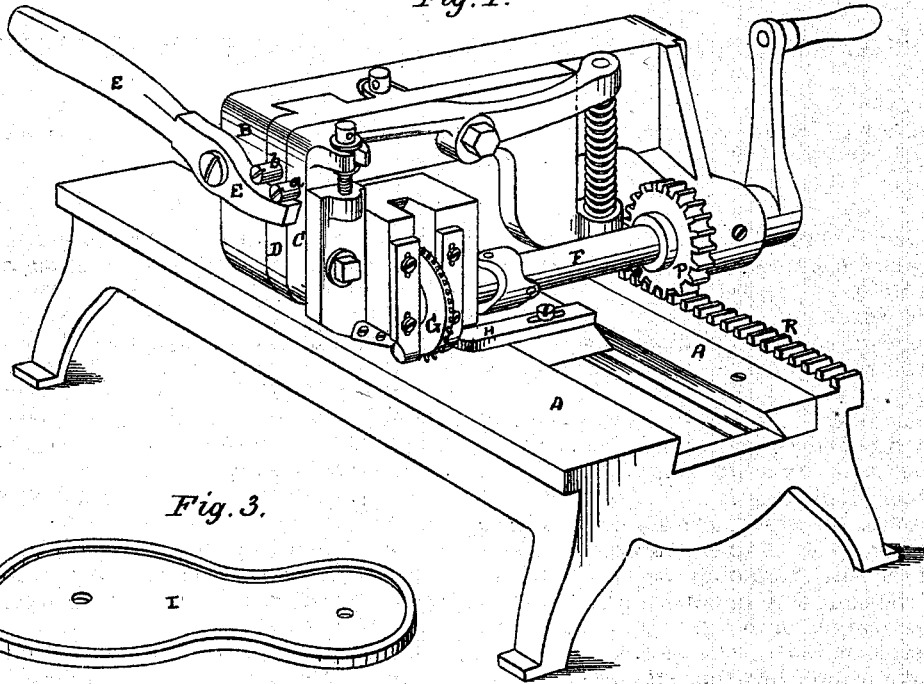


Fig. 3.

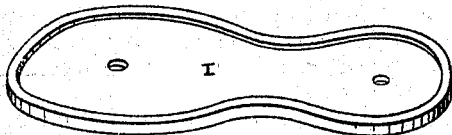
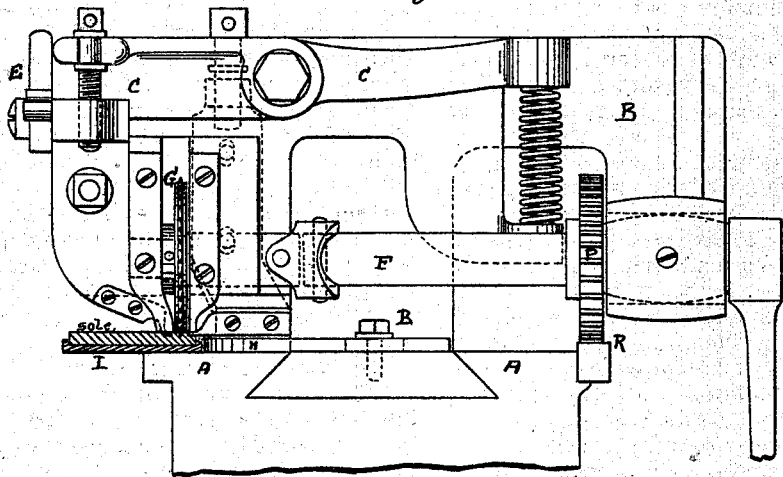


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES GOODYEAR, JR., AND CHRISTIAN DANDEL, OF NEW YORK, N. Y.

IMPROVEMENT IN BOOT AND SHOE SOLE CHANNELING-MACHINES.

Specification forming part of Letters Patent No. **146,669**, dated January 20, 1874; application filed January 2, 1874.

To all whom it may concern:

Be it known that we, CHAS. GOODYEAR, JR., and CHRISTIAN DANDEL, both of New York city, New York, have invented new and useful Improvements in Boot and Shoe Sole Channeling-Machines, of which the following is a specification:

The machinery to which our invention is particularly directed is that adapted to channel boot and shoe soles, to prepare them for machine or hand sewing.

The soles, for this purpose, have formed in them, on one of their faces, an inside channel or slit extending parallel with the edge of the sole, and an outside angle **L** or **V** groove or feather or beveled edge, according to the style of shoe it is desired to make. Soles have before been thus channeled by machinery.

One object of this invention is to dispense with the feeding devices which have heretofore been commonly used in such machines. Another is, an improved method of holding the sole while it is being channeled, so that it need not be distorted, twisted, or stretched out of shape, as is frequently the case in channeling soles where the leather is thin and soft or spongy. Another advantage is, that the sole-holder does not clog against the edge-guide, as soft soles are apt to do.

The machine in which these improvements are embodied is characterized, chiefly, by the following features: First, an inside channel knife or cutter, and a knife-stock, in which said knife is secured at the proper inclination to make the slanting cut required for the inside channel, in combination with the vibratory frame or arm carrying said cutter-stock; second, an outside-edge groover or beveler, which may be mounted upon an adjustable head in such a manner as either to gage from the top surface of the sole, in which case the edges of the soles, when channeled, will vary in thickness according to variations in the thickness of the leather; or this cutter may be attached to the frame in such manner as to reduce the edges of the soles to a uniform thickness, irrespective of variations in the thickness of the leather; third, the mechanism upon which the cutters are mounted is made to traverse back and forth upon a bed-plate or slide similar to

the slide of an engine-lathe, the surface of one of its edges forming the rest or support for the sole-holder hereinafter described, and taking the place of the bottom roll or revolving table usually forming the support for the sole in machines of this class; fourth, a sole-holder, which consists of a plate of suitable material—preferably brass or iron—having the form of the sole, and surrounded by a rim inclosing the edge of the sole, to keep the same in its place, and to preserve it from being distorted while being channeled.

We will now proceed to describe the manner in which our invention is or may be carried into effect, by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of a machine made in accordance with our invention. Fig. 2 is a side elevation of the same, showing a sectional view of the sole and sole-holder. Fig. 3 is a view of the sole-holder.

The slide-rest or table is shown at **A**. Suitably supported upon it, so as to be capable of longitudinal movement, is the head **B**, which carries the cutters. As the essential features of this part of the mechanism have been fully described in former patents, (notably in that issued to Benjamin H. Hadley, September 30, 1873, No. 143,237,) and as it forms no essential portion of what is claimed in this improvement, we do not here enter into an extended description of the same, but simply indicate the several parts, referring to the said Hadley patent for a particular description of the organization and mode of operation. **C** is the arm that carries the slanting cutter. **D** is the vertically-movable head, to which said part **C** is pivoted. These parts are raised, the arm **C** first, and the head **D** afterward, by a lever, **E**, pivoted to the main head **B**, with a shorter arm located under two pins, *a b*, one on each part **C D**, so arranged that the lever will first come in contact with pin *a*, and so tilt arm **C** before coming in contact with pin *b* on the head **D**.

The feed-dogs, or any feed devices—such as necessary in a machine constructed like the Hadley machine referred to—are here dispensed with.

On the shaft **F**, that, in the Hadley machine, carries the feed-dogs, we mount a presser-roll, **G**, (hereinafter described,) arranged to press

upon the sole between the outside-groove cutter and the slanting cutter.

The longitudinal backward and forward movement of the head B may be imparted by a screw, or in any suitable manner; but the plan which we prefer, and which is illustrated in the drawings, is, by means of a rack and pinion, the rack R being placed upon the edge of the table or slide opposite to that used as a support for the sole-holder. The pinion P is made fast to one end of the shaft F, upon the other end of which shaft is the presser-roll G, with a roughened or toothed periphery, which bears upon the edge of the sole within the sole-holder, and travels, in a straight line, along the table A, the edge of the sole being brought in the path of the same, and of the cutters or groovers, by the manipulation of the operator. The object of this presser-roll is to bear upon the sole held in the sole-holder, so as to keep both from slipping along upon the table when the cutters incline to drag the same in the operation of cutting the channels. This action of the presser-roll is due, in part, to the fact that it receives a positive movement of revolution, which movement tends to hold the sole and sole-holder stationary while the head B moves.

The sole-holder, to which reference has been made, is indicated by the letter I. It consists, in this instance, of plate, surmounted by a rim, flange, or wall, of less height than the thickness of the sole, the inner face of said flange having the contour or configuration of the sole, so that the latter will fit snugly within it.

The exterior edge of the holder, in the present instance, constitutes a pattern, and, by keeping it pressed against guide H, the sole will, during its varied movements, be maintained in its proper position under the cutters. The sole, instead of being fed or drawn through between feed-rolls, or other feeding device, against the action of the cutters or channel-knives, is simply placed in the holder, and laid upon the table A, as represented in Fig. 2, and is turned and guided by the operator in such a manner that the presser-roll shall travel at a uniform distance from its edge. In order that this operation may be performed with certainty, we employ, preferably, the stop or guide H above named, which is attached to the head B, and which travels along with the cutters, so that, by pressing the edge of the sole-holder against the stop, the channels will be cut a uniform distance from the edge of the sole.

Other devices would, obviously, serve the

same purpose, such as a stud or pin traveling in a groove on the under side of the sole-holder, or in the edge of the same, in which manner the guiding and turning of the sole might be made automatic; but no claim is here made to any of these devices.

It is obvious that, for convenience of working, the table or support for the sole should be as long as the distance around the largest size of sole, and that a separate sole-holder is required for each size.

It is also obvious that the machine-head, instead of traveling back and forth in a straight line, might be made to travel in a circle.

What we claim, and desire to secure by Letters Patent, is—

1. A channeling-machine in which the channel knives or groovers are made to travel or move along over the work-supporting table in a path independent of the pattern or outline of the sole to be channeled, the sole being relatively stationary, instead of being fed or forced against the channel-knives by feeding devices, substantially as shown and set forth.

2. In a channeling-machine the combination, with the supporting-table, of the cutter-carrying head sliding thereon, substantially in the manner and for the purpose described.

3. The combination of the supporting-table and the rack thereon, with the driving-pinion engaging said rack, and mounted on a shaft carried by the movable or sliding cutter-head, substantially as and for the purpose described.

4. The combination, with the sliding head and the cutters, of the presser-roll, carried by said head, and acting upon the sole during the cutting or channeling operation, substantially in the manner shown and set forth.

5. The presser-roll, carried by the sliding cutter-head, and positively driven or rotated in the direction herein specified during the movement of said cutter-head, as and for the purposes stated.

6. In machines for channeling the soles of boots and shoes, a sole-holder, flanged or recessed to receive and hold the sole during the channeling operation, substantially as and for the purposes described.

In testimony whereof we have hereunto signed our names this 31st day of December, A. D. 1873.

CHAS. GOODYEAR, JR.
C. DANIEL.

Witnesses:

C. D. ADAMS,
CHAS. T. DE FOREST.

1873