

(No Model.)

2 Sheets—Sheet 1.

O. GILMORE.
SOLE LEVELING MACHINE.

No. 344,650.

Patented June 29, 1886.

Fig. 1.

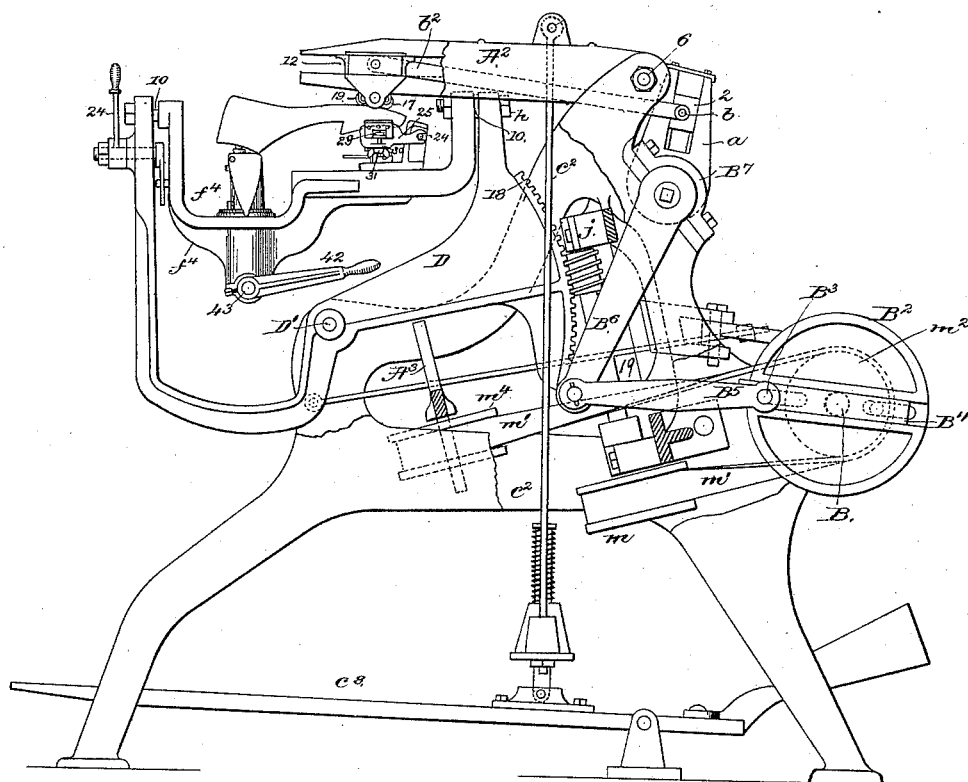
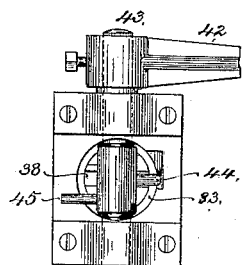


Fig. 2.



Witnesses.

John F. C. Prinkert
Fred L. Emery.

Inventor.

Othniel Gilmore
by Lemby Gregory attys.

(No Model.)

2 Sheets—Sheet 2.

O. GILMORE.

SOLE LEVELING MACHINE.

No. 344,650.

Patented June 29, 1886.

Fig. 3.

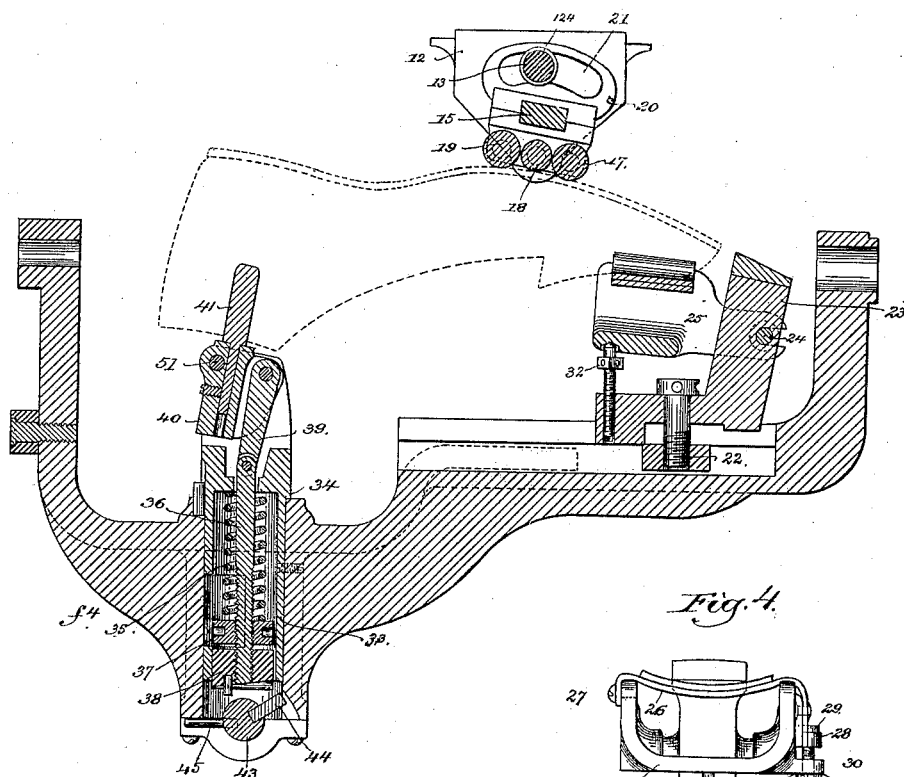


Fig. 4.

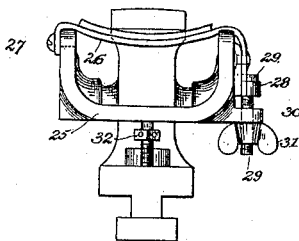
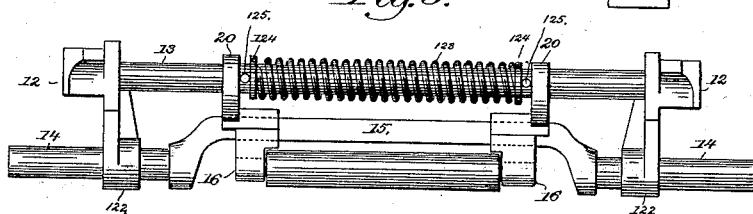


Fig. 5.



Witnesses.

John F. C. Prindle
Frederic L. Conway

Inventor.

Othmar Gilmore

by Crosby Gregory attys.

UNITED STATES PATENT OFFICE.

OTHNIEL GILMORE, OF NORTH RAYNHAM, MASSACHUSETTS.

SOLE-LEVELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 344,650, dated June 29, 1886.

Application filed March 24, 1886. Serial No. 196,361. (No model.)

To all whom it may concern:

Be it known that I, OTHNIEL GILMORE, of North Raynham, county of Bristol, and State of Massachusetts, have invented an Improvement in Sole-Leveling Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve the construction of machines for leveling soles; but some of the specific devices to be herein described are applicable to other classes of shoe machinery.

I have shown my improvements, to be herein claimed, as embodied in a machine substantially such as represented in my United States Patent No. 266,283, to which reference may be had.

One essential feature of my present invention is a reciprocating pivoted carriage provided with two or more rolls, each coming in operation successively upon the same portions of the sole to be leveled, the rolls acting one after the other upon any protuberances of the sole and gradually rolling them down to the desired level.

Another feature of my present invention is a peculiar toe-rest, it having a flexible strap upon which the toe of the last rests, the said toe-rest being made adjustable both vertically and horizontally to place the sole at the level of the receiver common to the said patent, in order that the rolls may pass from the toe of the sole and return thereon without injuring the toe of the sole.

Another feature of my present invention is the spring-held and jointed spindle which holds the last.

Figure 1, in side elevation, the frame-work being, however, partially broken out, represents a sole-leveling machine embodying my invention; Fig. 2, a detail of the rock-shaft and hand-lever to jack and unjack the last. Fig. 3 is an enlarged detail showing the last with a sole thereon and the vibrating carriage having the rollers to be described. Fig. 4 is a detail of the strap-like toe-rest, and Fig. 5 an enlarged detail of the carriage.

The main shaft B, (shown by dotted line, Fig. 1,) the disk B², the adjustable slide B⁴ therein, the link B⁵, the arm B⁶, attached to the arm of a rock-shaft held in bearings B⁷,

the arms a, attached to the said rock-shaft and forked to receive the loosely-sliding boxes 2, in which is placed the cross-bar b, the links b², the arms A², pivoted on the frame-work at 6, the U-shaped lever D, pivoted at D' and having a toothed sector, 18, the shaft 19, having a worm, j, and provided with a pulley, m, the stud A³, having the pulley m', the belt m', the link p, attached to the said lever, the yoke f⁴, pivoted upon the lever D, the rod c², the treadle c³, and means to connect them, are all substantially as in the patent referred to, where like parts are designated by like letters.

In the patent referred to the last was of metal; but the last herein shown is supposed to be of wood, and hence needs a toe-rest, and to enable the said toe-rest to adapt itself to variations in curvature of the last near the toe, and prevent marring the upper, I have made the said toe-rest as a flexible strap, it being made preferably of one or two pieces or layers of leather, one end of the strap being pivoted.

In Fig. 1 one of the arms A² is partially broken away. Each arm A²—one at each side of the machine—has at its inner side a groove or way in which is placed and guided a slide or carriage, 12, each slide having pivoted to it one of two like links, b², through which the said carriages are given a horizontally-reciprocating motion on the said arms A². These carriages are connected by a rod, 13, (see Fig. 5,) and each carriage has a hub or bearing, 122, to receive a journal, 14, of a yoke, 15, having ears 16, in which are mounted the journals of the rolls 17 18 19, the peripheries of which, next the bottom of the sole and last, are nearly in line. The yoke 15 has ears 20, each of which has a curved slot, as shown at 21, Fig. 3, the rod 13 being extended through the said slots.

From the foregoing description it is obvious that the yoke having the rolls mounted in it is free to tip about the journals 14 as a center, as the rolls of the carriage roll over the sole in the process of leveling the same.

Two or more rolls in one carriage operate more successfully in leveling the sole than does one roll, as described in my patent referred to, for the reason that the rolls act successively upon any high points or projections of the sole, each roll in turn partially flattening the

same. Were the surface of the sole externally level or a plane surface, then each roll would bear with equal force upon it, and the pressure of the rolls would be distributed over a considerable surface of the sole. On the occurrence of a bunch at the surface of the sole being rolled, the first roll to meet the bunch lifts the center roll from the sole, or relieves its pressure upon the sole, thus enabling the first roll to exert more pressure; but as soon as the center roll, 18, meets the bunch the said roll exerts upon the bunch the entire pressure which the operator is enabled to exert upon the surface being rolled.

The shaft 13, as shown, is surrounded by a spiral spring, 123, each end of which rests against a washer, 124, at the outer end of which is a pin, 125, the said pin being extended into or through the shaft 13. These pins 125 are of less length than the diameter of the washers 124, and the washers are of a little greater diameter than the slots 21. The spring and washers are intended to permit the frame 15 and its rolls therein to slide somewhat horizontally in the bearings 122 when the jack f^1 , containing the shoe of the sole being leveled, tips on its supporting-pins 10, the yoke 20, in the longitudinal movement of the frame, striking against one or the other of the washers, the spring permitting more or less end-play of the frame. The extent of pressure of the rolls on the sole is measured by the foot upon the treadle c^8 . The yoke f^1 , substantially as shown in the said patent, has adjustably attached to it by a bolt, 22, a roller-receiver, 23, which in practice has the same function as the roller-receiver marked g' in the said patent. The receiver has pivoted upon it at 24 one end of a somewhat U-shaped metal shell, 25, which supports the strap 26, and forms with the said strap the self-adapting toe-rest. The strap 26, which may be composed of one or more thicknesses of leather, is attached at one end, as at the left in Fig. 4, to the shell 25 by a single screw, 27, and the opposite end of the strap has riveted to it an ear-piece, 28, having a hole for the passage through it of a bolt, 29, the said bolt also passing through an ear, 30, of the shell 25, where it is provided with a nut, 31. By turning the nut in one or the other direction the strap 26 may be held more or less straight, so as to lap more or less about the last or shoe near the toe. The means employed to connect the strap to the shell permits the strap to rock or tip somewhat on the shell to enable the strap to adapt itself to the lengthwise curvature of the last.

The toe rest is made vertically adjustable by means of the screw 32. The yoke f^1 is provided with a vertical opening, in which is placed a hollow post, 33, having a shoulder, 34, which is kept seated upon the yoke. The

post receives within it a rod, 36, surrounded by a spring, 35, one end of which rests against the post and the other against a nut, 37, screwed upon the said rod. The rod 36 at its lower end is provided with a foot, 38, inclined or beveled at its lower end, as shown in Fig. 3. The upper end of the rod 36 is jointed to a link, 39, attached to the block 40, pivoted at 51 between two ears at the upper end of the post, the said block 40 having attached to it the heel-pin 41, which enters the heel of and holds the last.

Referring to the drawings, Fig. 3, it will be seen that the spring 35 normally forces the rod 36 down into the post, and through the link 39, block, and heel-pin holds the toe of the last pressed against the toe-rest.

To remove the last, the operator will engage the handle 42 (see Figs. 1 and 2) on the rock-shaft 43 and turn the same in the direction to cause the finger or cam 44 to act against the inclined end of the foot 38, lift the rod 36, and turn the pin 41 into vertical position, when the last may be removed without strain.

The pin 45 is merely a stop.

I am aware that a girth has been used in a lasting-machine to support the top of the foot of the last, but such girth does not act as a toe-rest.

I claim—

1. In a machine for leveling or rolling soles, the reciprocating carriage, its yoke, and two or more rolls carried by said carriage and arranged to operate substantially as described.

2. The yoke f^1 , the post, the pivoted block holding the heel-pin, and the link or rod combined with the spring, to operate substantially as described.

3. The yoke f^1 , the post, the pivoted block holding the heel-pin, and the link and rod, combined with the spring, the shaft, and projection to lift the rod, and with the toe-rest, substantially as described.

4. The toe-rest composed of the metal shell 25 and a flexible strap extended across the same, substantially as described.

5. The toe-rest composed of the metal shell and the flexible strap, combined with the receiver, to operate substantially as described.

6. The yoke, means, substantially as described, to hold the last, the flexible toe-rest, and the roll-receiver, combined with the reciprocating carriage, and the yoke provided with two or more rolls, to operate substantially as described.

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

OTHNIEL GILMORE.

Witnesses:

G. W. GREGORY,
F. CUTTER.