(No Model.) 2 Sheets—Sheet 1.

A. EPPLER, Jr.

SOLE LAYING MACHINE.

No. 315,922. Patented Apr. 14, 1885.

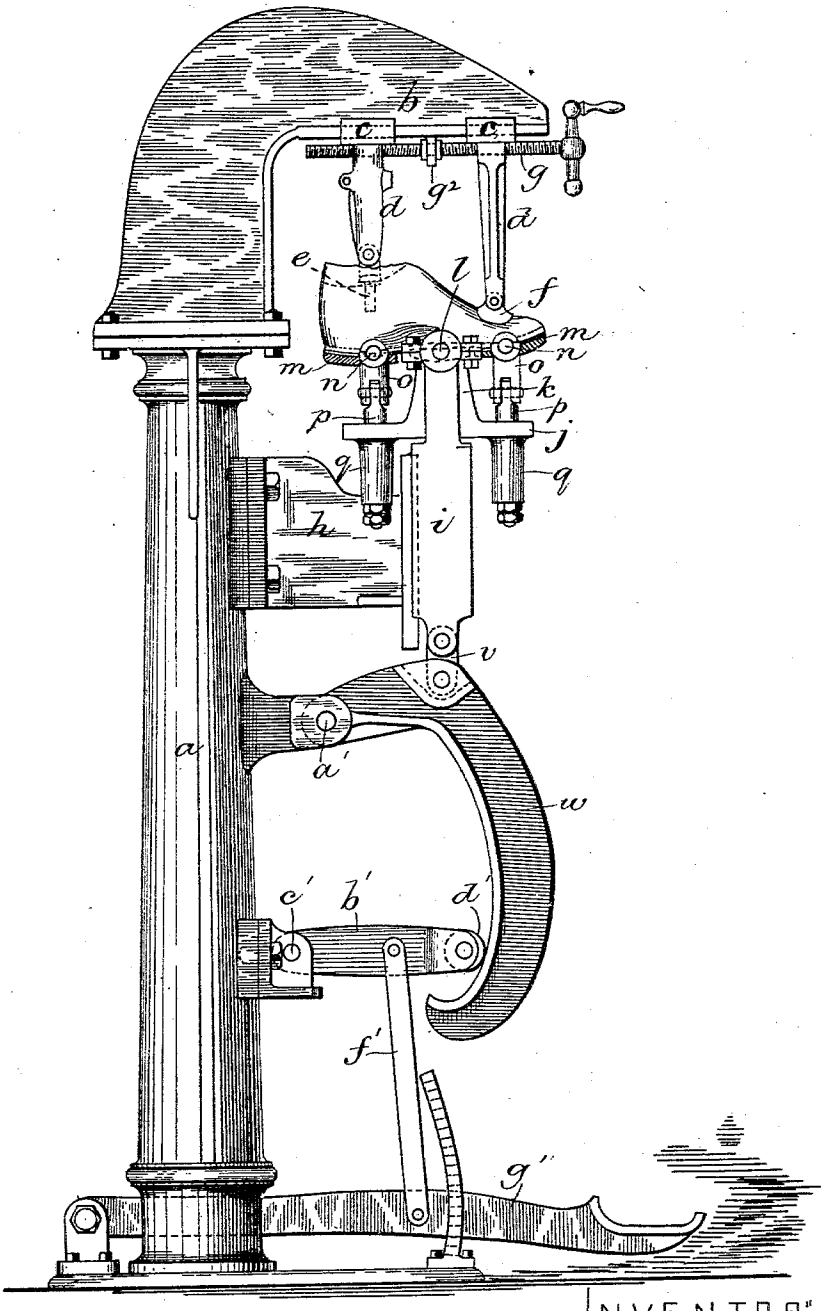

Fig. 1.

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R. J. Powers

INVENTOR:
A. Eppler Jr
by Wright Brown
Attys.

(No Model.) 2 Sheets—Sheet 2.

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SOLE LAYING MACHINE.

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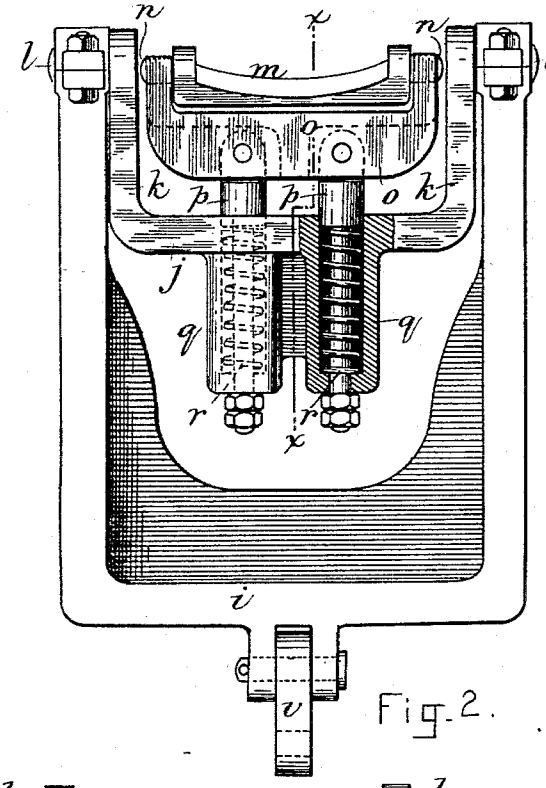

Fig. 2.

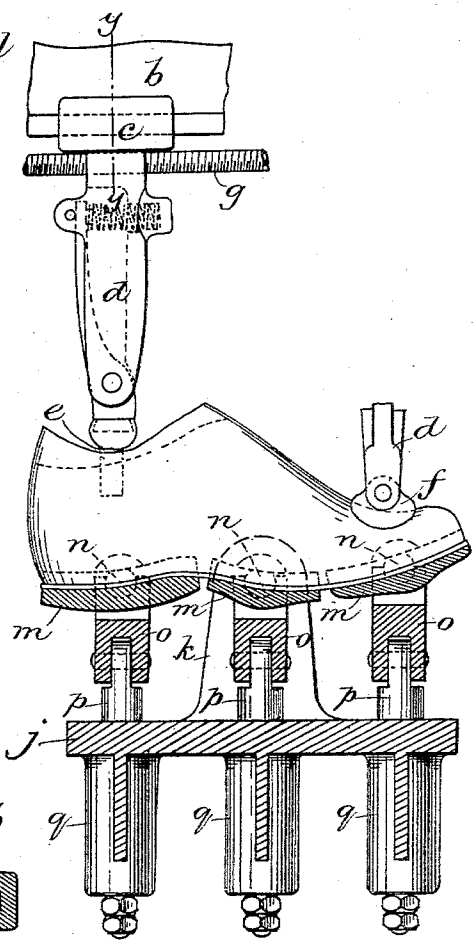

Fig. 3.

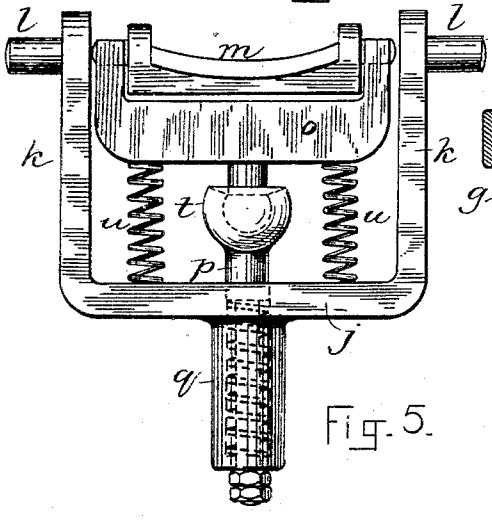

Fig. 5.

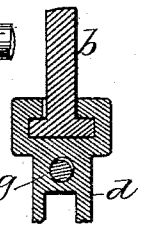

Fig. 4.

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INVENTOR:

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by Wright Brown

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UNITED STATES PATENT OFFICE.

ANDREW EPPLER, JR., OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE BOOT AND SHOE SOLE LAYING COMPANY, OF PORTLAND, MAINE.

SOLE-LAYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 315,922, dated April 14, 1885.

Application filed December 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, ANDREW EPPLER, Jr., of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Sole-Laying Machines, of which the following is a specification.

This invention relates to that class of sole-laying machines in which a series of pivoted pads are employed to press a cement-coated sole against a lasted upper and hold it while the cement is setting or hardening, as shown in Letters Patent of the United States granted to me September 2, 1884, No. 304,415.

The invention has for its object, first, to enable the pads to be inclined crosswise as well as lengthwise of the sole, so that they can fit the bottom of the boot or shoe more perfectly than heretofore.

The invention also has for its object to provide improved mechanism for pressing the pads against the lasted upper, and for supporting the lasted upper against such pressure.

To these ends my invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a machine provided with my improvements. Fig. 2 represents an end view of the vertically-sliding frame which supports the series of pads. Fig. 3 represents a section on line *x x*, Fig. 2. Fig. 4 represents a section on line *y y*, Fig. 3. Fig. 5 represents a modification.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents the supporting-standard, having an arm, *b*, at its upper end, on which are formed guides for two slides, *c c*. From these slides project arms *d d*, the one having at its lower end a pivoted spindle, *e*, formed to enter the usual spindle-socket in a last, while the other has at its lower end a pivoted toe-rest, *f*. A right and left screw-thread, *g*, swiveled on an ear, g^2, affixed to the arm *b*, and passing through correspondingly-threaded sockets in the arms *d d*, enable said arms and their slides to be moved simultaneously in opposite directions, to accommodate them to lasts of different sizes. The arms *d d* are thus kept at equal distances from the longitudinal center of the last.

h represents an arm or bracket attached to the standard *a* below the arm *b*, and having at its outer end vertical guides, on which slides a two-armed frame, *i*.

j represents a plate or holder having lugs or ears *k k* at its sides, which are pivoted at *l l* to the upper ends of the arms of the frame *i*, the plate *j* being thus adapted to be inclined lengthwise to any desired extent.

m m m represent the pads, which may be of any desired number, and constitute collectively a sectional sole-support. The pads are pivoted at *n n* to yokes *o o o*, there being one yoke for each pad. Said yokes are pivoted to vertical rods *p*, which pass downwardly through vertical sockets *q q* in the plate *j*, and are supported by springs *r* in said sockets. In the construction shown in Figs. 1, 2, and 3 each yoke *o* is pivoted to two rods, *p*, said rods being arranged side by side in a line extending crosswise of the boot or shoe.

It will be seen that the plate *j* and pads *m m m* are pivoted to swing lengthwise of the last, so that the pads can conform to the varying curves and inclinations of the bottom of the last, while the yokes *o o o* are pivoted to swing crosswise of the last, so that in case the last is somewhat inclined sidewise, in consequence of a slight inclination of the spindle-socket or from any other cause, the pads can readily adapt themselves to such inclination. This capability of sidewise inclination is secured by the employment of the two spring-supported rods *p p*, pivotally connected to the yokes *o* on said rods, normally keeping the yokes in a horizontal position crosswise of the last, and permitting them to be inclined in either direction. The same result may be accomplished by the modified construction shown in Fig. 5, in which only one rod *p* is employed to support each yoke, each rod being connected to its yoke by a ball-and-socket joint, *t*. Springs *u u* at opposite sides of the ball-and-socket joint hold the yokes in their normal position. In either case each pad is capable of yielding and of tipping universally independently of the other pads.

The lower end of the frame *i* is connected

by a link, *v*, with a curved arm, *w*, which is pivoted at *a'* to an ear on the standard *a*. *b'* represents a lever pivoted at *c'* to an ear on the standard *a*, and provided at its outer end with an anti-friction roller, *d'*, bearing against the concave inner edge of the curved arm or lever *w*. The lever *b'* is connected by a rod, *f'*, with a treadle, *g'*. When the treadle is depressed, it depresses the lever *b'*, and the latter acting on the curved arm or lever *w* forces it outwardly, thus causing the link *v* to raise the frame *i* and press the pads against a cement-coated sole laid on the bottom of a lasted upper held over the pads, as above described. The operator is thus enabled by foot-power to impart a sufficiently-strong upward pressure against the sole.

A fixed notched bar may be used to hold the treadle and maintain the pressure on the sole.

A head may be swiveled to the standard *a*, and provided with two or more arms *b*, each having last-supporting devices, the arms being used successively.

I claim—

1. In a sole-laying machine, the combination of a series of independent pads or sections collectively forming a sole-support, the yokes pivoted to said pads so as to permit the latter to tip lengthwise of the sole, the spring-supported rods *p*, pivoted to the yokes so as to permit the same to tip crosswise of the sole, a jack or last-support, and means, as described, for applying pressure to a sole interposed between a last on the jack and the sole-support, as set forth.

2. In a sole-laying machine, the combination of the vertically-movable frame *i*, the plate or holder *j*, pivoted to said frame, a series of pads supported by said plate and capable of tipping crosswise of the sole, and mechanism, substantially as described, for pressing the frame *i* and the pads against a sole placed upon the lasted upper, as set forth.

3. In a sole-laying machine, the combination of the vertically-movable frame *i*, the plate or holder *j*, pivoted to said frame, spring-supported rods *p* on said plate, the yokes *o*, pivoted to said rods, and the pads pivoted to the yokes, as set forth.

4. The combination, with the vertically-movable frame and the pivoted pads supported thereby, of the pivoted curved arm or lever *w*, connected by a link to said frame, the pivoted lever *b'*, bearing at its free end against the concave side of the arm or lever *w*, and the treadle connected to the lever *b'*, as set forth.

5. In a sole-laying machine, the jack or last-support composed of the two sliding arms *d d*, one having a jack-spindle and the other a toe-rest, and a right-and-left screw swiveled to the supporting-frame and capable of moving the arms *d d* simultaneously toward and from each other, combined with a sole-support and means, substantially as described, for operating it, as set forth.

6. The jack or last-support composed of the two simultaneously-adjusted arms, combined with the pivoted pads, the pivoted supporting-plate therefor, the frame *i*, and means for pressing said frame toward the supported last, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 13th day of December, 1884.

ANDREW EPPLER, JR.

Witnesses:
C. F. BROWN,
R. J. POWERS.