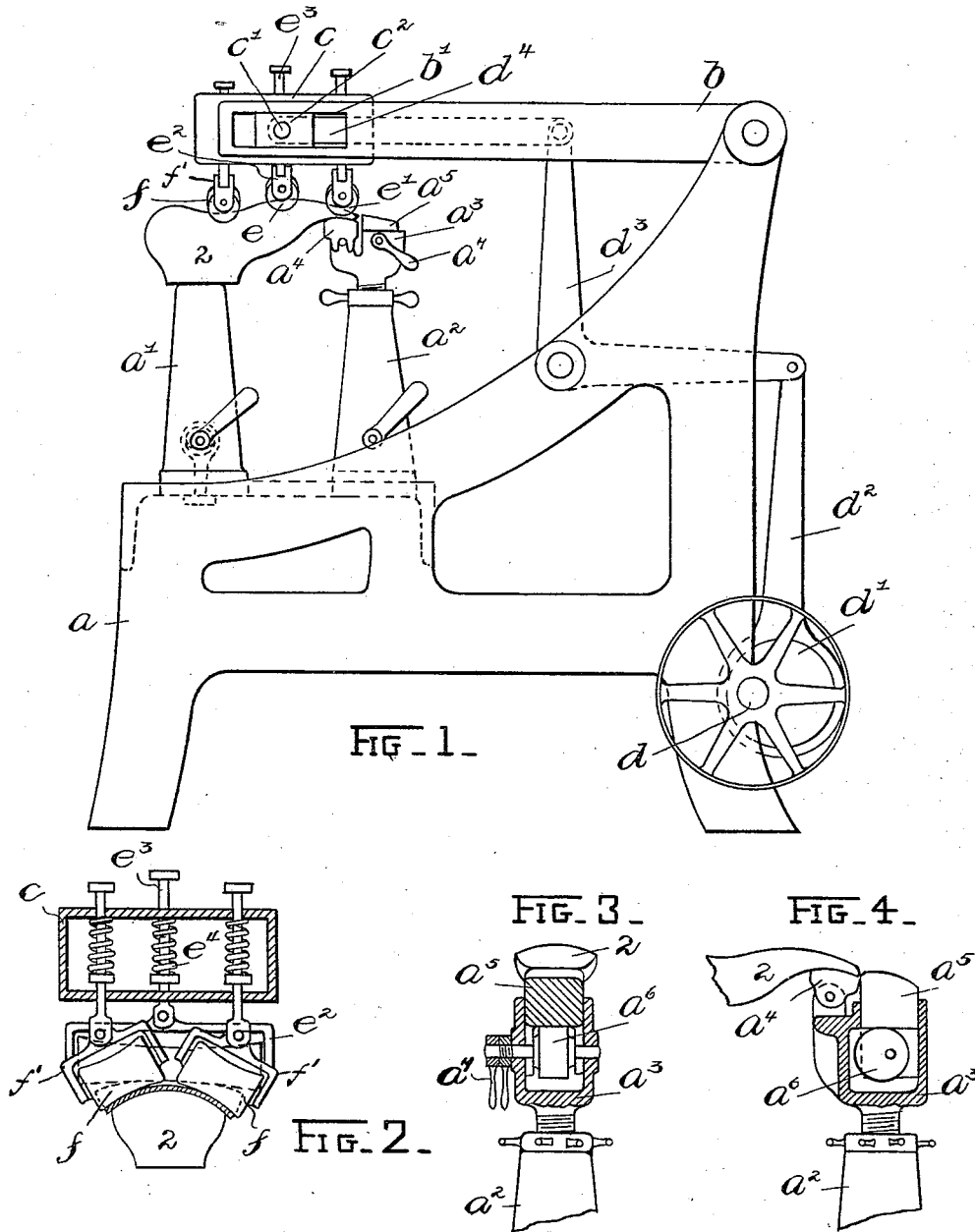


(No Model.)

E. C. JUDD & F. W. McARDLE.
SOLE LEVELING MACHINE.

No. 523,285.

Patented July 17, 1894.



WITNESSES:
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UNITED STATES PATENT OFFICE.

EDWARD C. JUDD AND FRED W. McARDLE, OF BOSTON, MASSACHUSETTS;
SAID McARDLE ASSIGNOR TO SAID JUDD.

SOLE-LEVELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 523,285, dated July 17, 1894.

Application filed October 24, 1893. Serial No. 489,020. (No model.)

To all whom it may concern:

Be it known that we, EDWARD C. JUDD and FRED W. McARDLE, both of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sole-Leveling Machines, of which the following is a specification.

This invention relates to an improvement in sole-leveling machines, and one object is to provide a construction which will permit the employment of a rigid last-supporting jack.

Another object is to provide an improved arrangement of leveling-rolls, which will be productive of a more uniform effect upon the sole.

A still further object is to provide an improved adjustable roll-receiver at the toe of the last.

To the above ends, the invention consists in certain novel features of construction and combinations of parts hereinafter described and claimed.

The accompanying drawings illustrate an embodiment of the invention.

Figure 1 shows a side elevation of the machine. Fig. 2 shows an enlarged cross-section of the carrier which supports the leveling-rolls, the latter appearing in elevation. Figs. 3 and 4 show detail sectional views of the roll-receiver.

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

In the drawings: the letter *a* designates the main supporting-frame of the machine; and *a'* *a*², standards, adapted to be rigidly adjusted upon the horizontal portion of the frame *a* and to support the last 2. The standard *a*² has a vertically-adjustable head *a*³, which carries a pivotal toe-rest *a*⁴, and also an adjustable roll-receiver *a*⁵ adapted to slide vertically in the head *a*³ and adjustable therein by means of a cam or eccentric *a*⁶ upon which said roll-receiver rests and a handle *a*⁷ for operating said cam. When the leveling-roll runs off the end of the last, it is adapted to be received upon the upper inclined surface of the roll-receiver *a*⁵, and the latter, through the means described, may be adjusted for toes of different heights.

A vertically-swinging frame *b* is pivotally

connected at one end with the main supporting-frame *a*, and at its opposite or free end is formed with longitudinally-extending slide-ways *b'*, which support a box or casing *c*, having trunnions *c'*, which engage boxes *c*² fitting the slide-ways *b'*. The box *c* carries the leveling-rolls, and is adapted to be reciprocated through suitable connections with the driving-shaft *d*, such as those here shown, which comprise an eccentric *d'*, affixed on the driving-shaft; a pitman *d*², co-acting with said eccentric; a bell-crank lever *d*³, pivoted to the frame *a* and having one arm connected with the pitman *d*²; and a rod *d*⁴, connected at one end with the other arm of said bell-crank lever, and bifurcated to form arms which embrace the trunnions *c'* of the box *c*.

The leveling-rolls, as here shown, comprise a middle roll *e* and forward roll *e'*, both adapted to extend entirely across the last, and each supported in a laterally rocking yoke or bracket *e*², to which is jointed a stem *e*³. This stem extends up through the box *c*, and has a sliding engagement therewith, and on the interior of said box a spiral spring *e*⁴ surrounds the stem and bears at one end against a collar thereon, and at the opposite end against the top wall of the box *c*, whereby said spring tends to press the roll downward.

In addition to the middle and forward rolls *e* and *e'*, two rear rolls *f* are arranged to act upon the central or shank portion of the sole, and these two rolls *f* are arranged on opposite inclinations, and are mounted in laterally rocking yokes or brackets *f* yieldingly supported in the same manner as the rolls *e* and *e'*.

In place of either of the single rolls *e* and *e'*, two rolls such as *f* may be used, if desired.

In the operation of the machine, reciprocating motion is imparted to the box *c* to a sufficient extent to cause the leveling-rolls to act upon the entire surface of the sole. By reason of the leveling-rolls being yieldingly supported, each independently of the other, they conform to the contour of the sole, and all remain in contact with the sole, so that all of them are at all times operating upon the sole.

It is evident the construction here shown may be varied in many particulars, without

departing from the spirit and scope of the invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with a rigid last-supporting jack, of a vertically swinging-frame arranged above the jack, a reciprocating carrier mounted on said frame, a series of laterally rocking, spring-pressed yokes or brackets carried by the reciprocating carrier, a series of leveling rolls arranged respectively on the said laterally rocking-yokes or brackets, and means for reciprocating the carrier; substantially as and for the purpose described.
2. The combination with a suitable jack, and a frame arranged above the jack, of a carrier mounted on the frame, a series of laterally rocking, spring-pressed yokes or brackets carried by the carrier, and leveling rolls arranged respectively on the said laterally rocking yokes or brackets, substantially as described.
3. The combination with a last-supporting jack, of a vertically-swinging frame above the jack, a reciprocal box in said frame, a leveling-roll in a support having a stem which extends through said box, a spring surrounding said stem within the box and exerting a downward pressure, and means for reciprocating the box.
4. The combination with a last-supporting jack, of a vertically-swinging frame above the jack, a reciprocal box in said frame, a level-

ing-roll in a support having a stem pivotally connected with it and extending through said box, a spring surrounding the stem within the box and exerting a downward pressure, and means for reciprocating the box.

5. The combination with a last-supporting jack, of a vertically-swinging frame above the jack, a reciprocal carrier in said frame, a plurality of leveling-rolls yieldingly and independently supported in said carrier and comprising a central roll adapted to extend entirely across the sole and a pair of oppositely-inclined rolls on one side of said central roll, and means for reciprocating the carrier.

6. In a sole-leveling machine, a standard which supports the front part of the last and has a vertically-adjustable head with a toe-rest, a roll-receiver vertically adjustable in said head, and means for adjusting the same.

7. In a sole-leveling machine, a standard which supports the front part of the last and has a vertically-adjustable head with a toe-rest, a roll receiver vertically adjustable in said head, and a cam for adjusting the same.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 21st day of October, A. D. 1893.

EDWARD C. JUDD.
FRED W. MCARDLE.

Witnesses:

C. F. BROWN,
F. PARKER DAVIS.