(No Model.)

F. W. McARDLE.

SOLE LEVELING MACHINE.

No. 551,222. Patented Dec. 10, 1895.

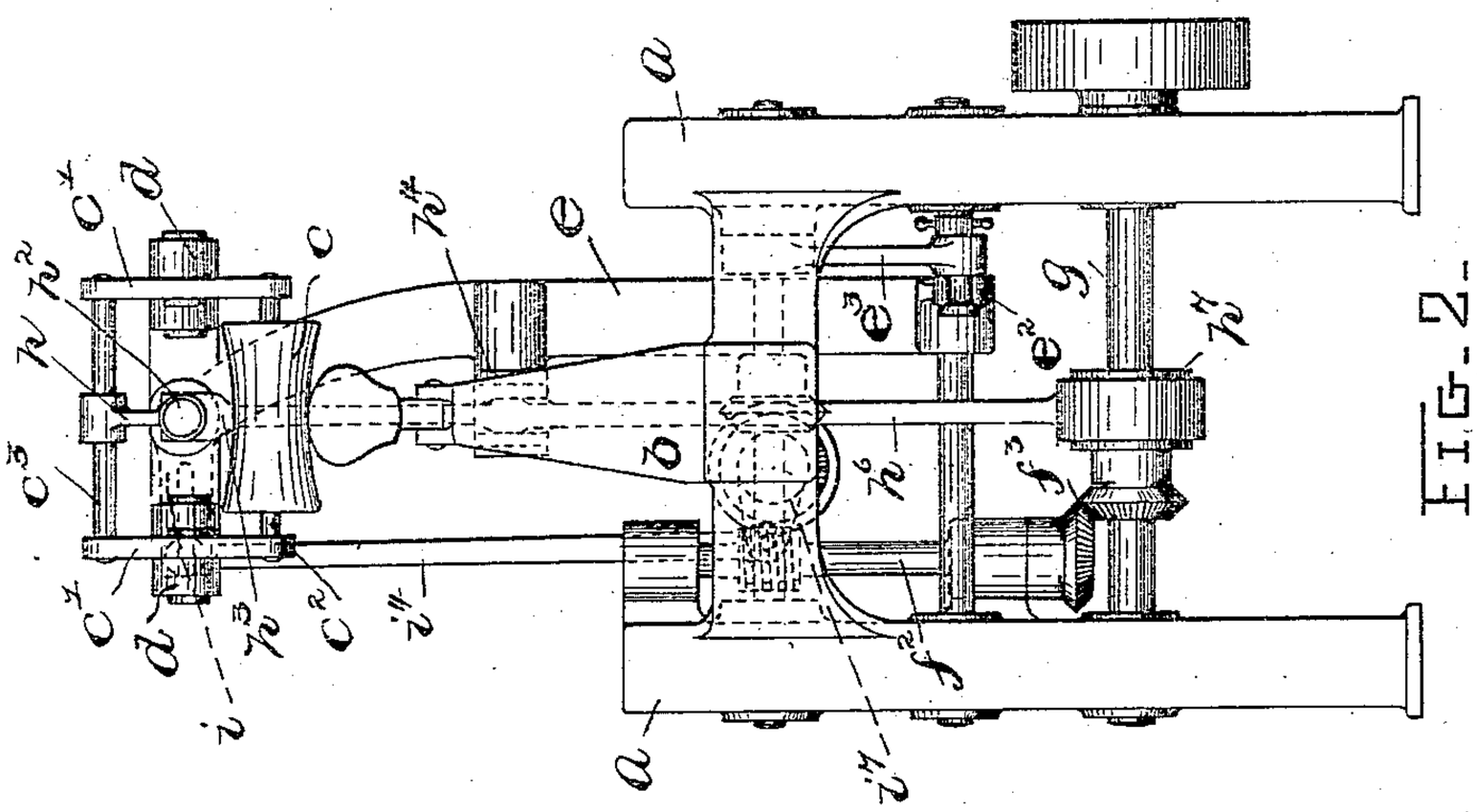

FIG. 2.

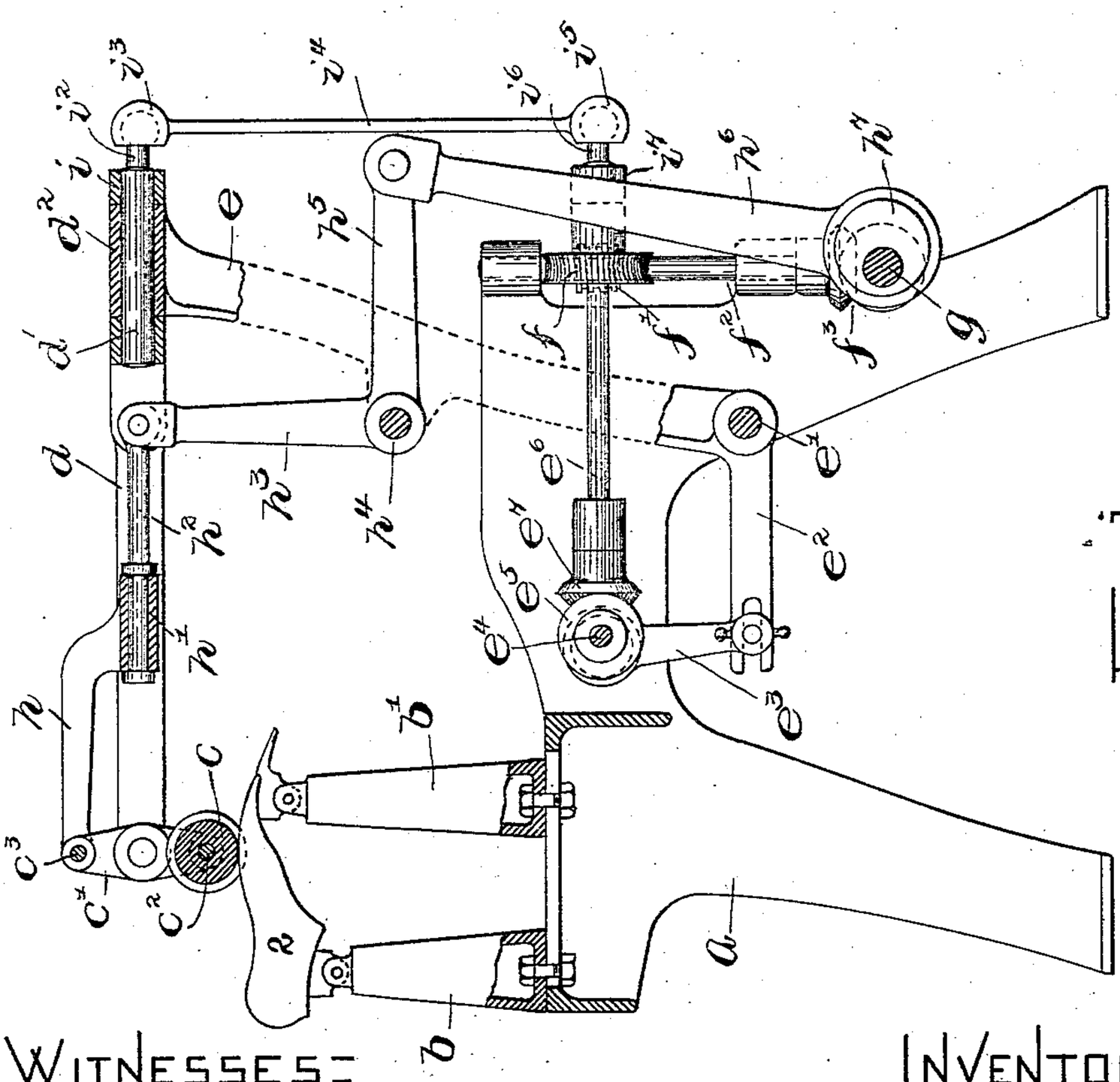

FIG. 1.

WITNESSES:

E. Parker Davis.

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INVENTOR:

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by

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UNITED STATES PATENT OFFICE.

FRED W. McARDLE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO EDWARD C. JUDD, OF SAME PLACE.

SOLE-LEVELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 551,222, dated December 10, 1895.

Application filed October 30, 1893. Serial No. 489,536. (No model.)

To all whom it may concern:

Be it known that I, FRED W. MCARDLE, 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.

The object of the present invention is to provide a new and improved machine for leveling the soles of boots and shoes, wherein an oscillating or reciprocating leveling-roll mounted on a rocking holder is moved progressively while it oscillates or reciprocates over the sole of the boot or shoe.

To accomplish this object my invention consists in the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 shows a part side elevation and part sectional view of the machine. Fig. 2 shows a front elevation.

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

In the drawings, the letter *a* designates the stationary supporting-frame of the machine, on a horizontal surface of which are adjustably erected a pair of rigid standards *b* and *b'*, which together constitute a jack for supporting the last 2, the said standards having suitable provision at their upper ends for receiving and holding the last. The leveling-roll *c* is supported in a roll-carrier, consisting of side arms *c'* and upper and lower connecting-rods c^2 and c^3, the lower rod c^2 forming a bearing for the roll.

The side arms *c'* of the roll-carrier are pivotally connected at points intermediate of their ends with side bars of a frame *d*, which carries a journal or trunnion *d'*, extending through a bearing d^2, formed at the upper end of the arm *e* of a vibratory bell-crank lever, which is pivoted at *e'* to the supporting-frame *a*. The forward-extending arm e^2 of said bell-crank lever is adjustably connected with a pitman e^3, which coacts with an eccentric on the shaft e^4, carrying a bevel-gear e^5, and connected with a rearwardly-extending shaft e^6 through a bevel-gear e^7 on the latter and meshing with the bevel-gear e^5. The shaft e^6 carries a worm-wheel *f*, which is engaged by a worm *f'* on a vertical shaft f^2, the latter being connected through bevel-gears f^3 with a main driving-shaft *g*. Through these devices the frame *d* is moved forward and back through a sufficient distance to carry the leveling-roll *c* from one end to the other of the surface to be leveled. This movement is a comparatively slow one, and while it takes place the leveling-roll is also oscillated, through the following means: The arm *h* is connected with the upper cross-bar c^3 of the roll-carrier, and is formed at its rear end with a bearing *h'* for a rod h^2, which is pivotally connected with one arm h^3 of a bell-crank lever, pivotally connected at h^4 with the arm *e*, which supports the frame *b*. The other arm h^5 of said bell-crank lever is pivotally connected with a pitman h^6, which coacts with an eccentric h^7, affixed to the driving-shaft *g*.

It is the design of this machine that the leveling-head shall do all the work of leveling, while the last-supporting jack remains fixed, and to this end provisions are made for rocking or oscillating the frame *d*, as follows: A crank-arm *i* is affixed to the journal or trunnion *d'* of the frame *d* and carries a pin i^2, having a ball formed on its end to receive a socket i^3 at the upper end of a pitman i^4, whose lower end is also provided with a socket i^5, engaging a ball formed on the end of a pin i^6, which projects from a crank-arm i^7, affixed to the shaft e^6. The tilting or rocking motions of the frame *b* being transmited from the screw *f'* are comparatively slow.

It is evident that the invention is capable of embodiment in other forms than that here shown, and hence is not limited in this respect.

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

1. In an organized sole-leveling machine, the combination with a jack or shoe-support, and a single power-shaft, of a rocking-holder moving progressively over the sole of the boot or shoe, a reciprocating leveling-roll mounted on said rocking-holder and moving progressively therewith while said roll is reciprocating, and mechanisms actuated by said single power-shaft and in operative connection with said rocking-holder and said leveling-roll for

reciprocating the leveling-roll and progressively moving and oscillating and tilting the said holder, substantially as described.

2. In an organized sole-leveling machine, the combination with a jack or shoe-support, and a single power-shaft, of a progressively moving and rocking-holder, a vibratory roll-carrier pivotally mounted on the holder, a leveling-roll mounted on and oscillated by the vibratory roll-carrier, and mechanisms actuated by the single power-shaft and in operative connection with the rocking-holder and vibratory roll-carrier for progressively moving and rocking said holder and vibrating said roll-carrier, substantially as described.

3. The combination with a jack or shoe-support, of a progressively moving and rocking holder, a pivoted lever on which the holder is journaled and by which said holder is supported and moved progressively, a reciprocating leveling-roll mounted on and moved progressively as it reciprocates by said holder, and means for vibrating said holder-supporting lever, rocking said holder and reciprocating said leveling-roll, substantially as described.

4. The combination with a jack or shoe-support, of a progressively moving and rocking-holder, a pivoted lever on which the holder is journaled and by which said holder is supported and moved progressively, a reciprocating leveling-roll mounted on and moved progressively as it reciprocates by said holder, a lever pivoted on said holder-supporting lever and connected with the leveling-roll for reciprocating the latter, a power-shaft, and connections between the rocking-holder, the levers and the power-shaft, substantially as described.

5. The combination with a jack or shoe-support, of a vibratory lever, a rocking-holder pivotally mounted on the upper end portion of the said lever and moving back and forth therewith, a reciprocating leveling-roll mounted on the rocking-holder and moving back and forth therewith while said roll is reciprocating, and means for vibrating the said lever, rocking said holder and reciprocating the leveling-roll, substantially as described.

6. The combination with a jack or shoe-support, of a vibratory lever, a rocking-holder pivotally mounted on the upper end portion of the said lever and moving back and forth therewith, a reciprocating leveling-roll mounted on the rocking-holder and moving back and forth therewith while said roll is reciprocating, a power-shaft, and mechanisms actuated by the power-shaft and in operative connection with the lever, the holder and the leveling-roll for vibrating said lever, rocking said holder, and reciprocating said leveling-roll, substantially as described.

7. In a sole-leveling machine, the combination of a lever pivoted to a stationary support and operatively connected with the main-shaft, a holder supported by said lever, a roll carrier pivotally connected with said holder, and a bell-crank-lever pivoted to the first named lever and connected with said roll-carrier and operatively connected with the main-shaft, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 27th day of October, A. D. 1893.

FRED W. McARDLE.

Witnesses:
A. D. HARRISON,
F. PARKER DAVIS.