

(No Model.)

2 Sheets—Sheet 1.

E. E. WINKLEY.
SOLE LEVELING MACHINE.

No. 541,988.

Patented July 2, 1895.

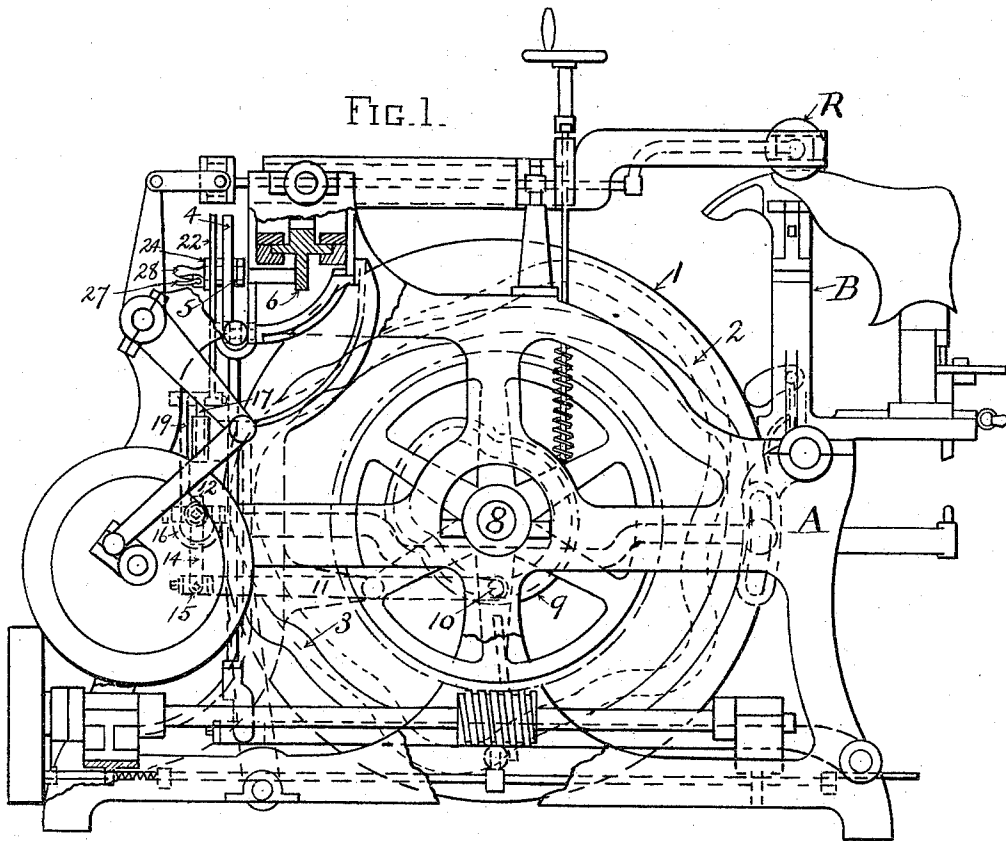


FIG. 4.

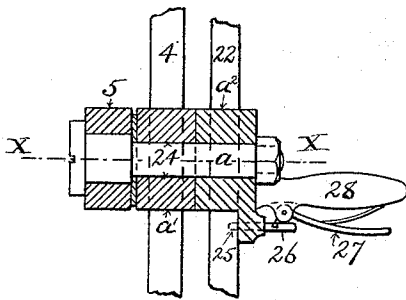
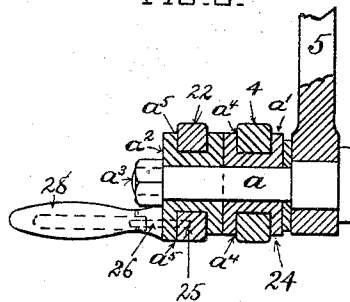


FIG. 5.



WITNESSES.

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By his attorney

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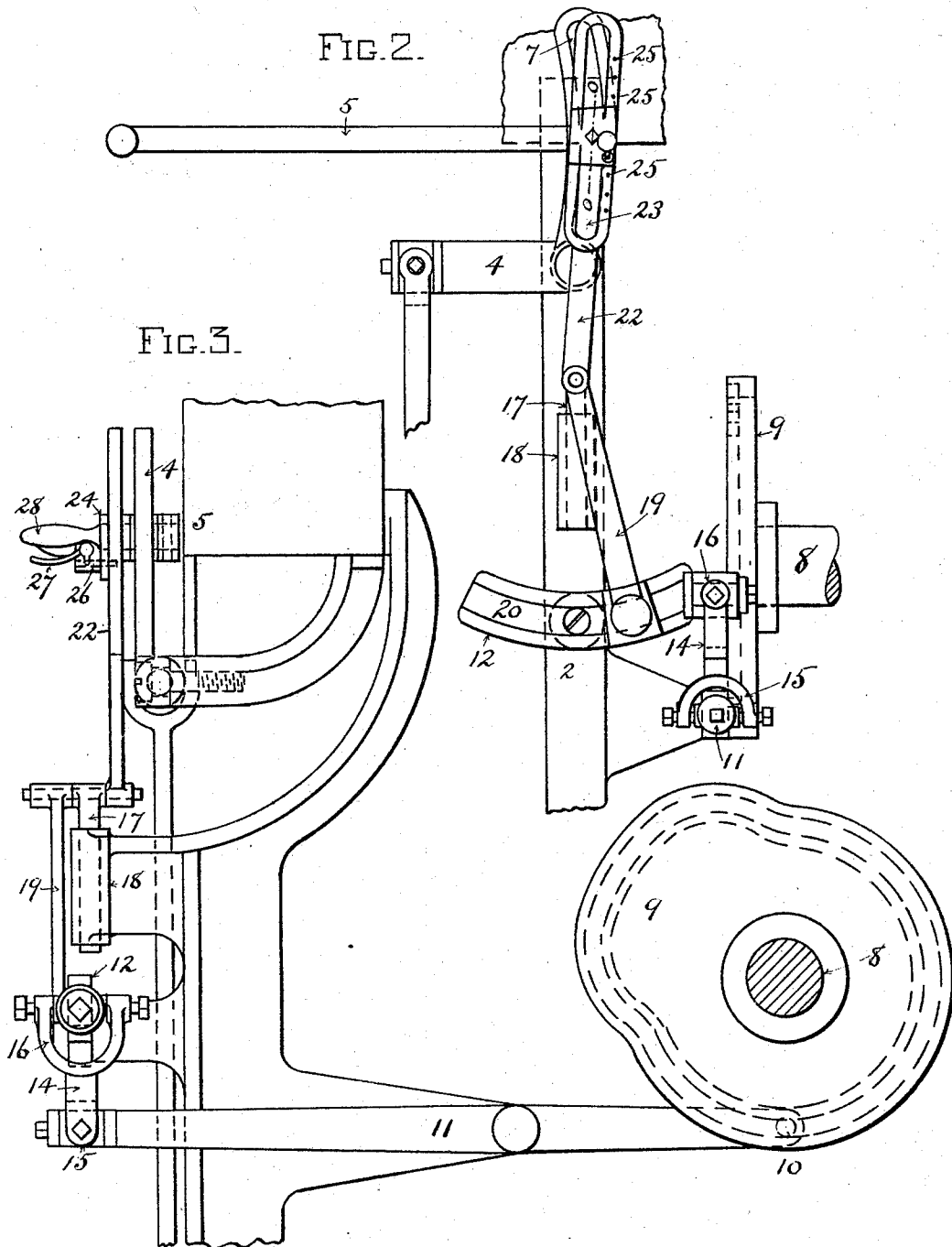
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2 Sheets—Sheet 2.

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SOLE LEVELING MACHINE.

No. 541,988.

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WITNESSES.

Fred V. Hart.
L. A. Terrill

INVENTOR.

Erastus E. Winkley
By his Attorney
Benjamin Phillips

UNITED STATES PATENT OFFICE.

ERASTUS E. WINKLEY, OF LYNN, MASSACHUSETTS.

SOLE-LEVELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 541,988, dated July 2, 1895.

Application filed April 24, 1895. Serial No. 547,042. (No model.)

To all whom it may concern:

Be it known that I, ERASTUS E. WINKLEY, a citizen of the United States, and a resident of Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented a new and useful Improvement in Sole-Leveling Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates generally to that class of leveling-machines in which the operation of leveling a shoe is performed by a vibrating leveling-roll applied under pressure to the sole, and more particularly to machines of the above class which are provided with connecting mechanism rendering them automatic in their operation.

My invention is an improvement upon the machine shown and described in the pending application of Erastus E. Winkley and Benjamin Phillips, filed November 21, 1894, Serial No. 529,505. In the machine of said application the relative lateral inclination of the jack and roll is varied to give the proper shape or curvature to the sole by a cam and suitable connections which are arranged to tip the roll laterally, and such mechanism is provided with means of adjustment whereby a greater or less degree of inclination may be given to the roll by action thereof; but the arrangement of said mechanism is such that if adjusted to increase the inclination of the roll while acting upon the shank of a shoe, a proportional increase will occur at the ball portion.

It has been found in practice that the result above suggested is undesirable upon certain classes of work in which a flat fore part and a round shank are required.

My present invention consists of an improved adjustment device whereby the action of said mechanism upon the roll or jack to vary their relative lateral inclination at different parts of the shoe may be independently adjusted; and my invention has for its object to increase the utility of machines of this class.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the machine of said Winkley and Phillips application, showing my present invention applied thereto.

Fig. 2 is a detached back view (enlarged) of a device embodying my present invention. Fig. 3 is a side view (enlarged) of same. Fig. 4 is a section on line *o o*, Fig. 3. Fig. 5 is a section on line *X X*, Fig. 4.

Similar letters and figures of reference refer to similar parts throughout the several views.

In the drawings, A represents a frame suitable to support the working parts of the machine. In the frame A is mounted a shaft 8, free to rotate in suitable bearings and carrying a wheel 1, which preferably rotates therewith.

R represents the leveling-roll to which a motion of vibration is imparted by an eccentric and suitable connections as fully described in said Winkley and Phillips applications.

B represents the shoe-supporting jack arranged to oscillate longitudinally under the vibrating roll R as described in said Winkley and Phillips application.

On the wheel 1 are formed the two path-cams 2 and 3. The path-cam 2 controls the oscillation of the jack B under the roll R, and the path-cam 3 is arranged to impart a rocking motion to the bell-lever 4, which is pivoted at the angle to the frame A and which is connected by a connecting-rod 5 with the sliding rack-rod 6, which is arranged to rock the roll R to change the relative lateral inclination of the roll R and jack B, all as fully shown and described in said application above cited.

In said Winkley and Phillips application the bell-lever 4 is provided with a circular adjustment-way 7, along which the connecting-rod 5 is movable to adjust the amount of tip or degree to inclination imparted to the roll R by the rotation of cam 3; but it is evident that such adjustment similarly affects the action of all parts of the cam 3 on the connecting mechanism above described, and if set to give a greater inclination of the roll R while operating upon the shank of a shoe the amount of inclination of roll R while operating upon the fore part will also be increased, so that if adjusted to give a more rounded shank the machine will give a more rounded fore part, and if set to flatten the fore part the machine gives a flatter shank.

In my present invention I mount upon the

shaft 8 an auxiliary cam 9, which rotates with the shaft 8 and therefore with the wheel 1 and its cams 2 and 3. In the cam 9 runs the cam-roll 10 which is carried by a rocking lever 11 intermediately pivoted to the frame A or suitable bracket thereon.

Pivoted to the frame A or other suitable support adjacent to the end of lever 11 and on the opposite side of its fulcrum from the cam roll 10 is a vibrating or rocking lever 12, which is connected with the lever 11 by means of the link 14.

It will be noted that in the form of my invention as shown in the drawings the plane of the rocking motion of lever 11 is at right angles, or nearly so, to the plane of the rocking motion of lever 12, and to allow for such motion of levers 11 and 12 the link 14 is provided with the saddles 15 and 16, which are secured to the respective levers 11 and 12 by pivotal connections also at right angles, or nearly so, to each other.

Preferably above the lever 12 is a sliding rod or tongue 17, which is arranged to reciprocate longitudinally in suitable guide-way 18 and is connected with the lever 12 by the pivoted link 19. The link 19 is pivotally secured to the lever 12 in the circular adjustment-way 20, along which it may be moved and set in any desired position.

The adjustment-way 20 may extend along the lever 12 on both sides of its pivotal support 21, as shown in the drawings, and preferably does extend over such support in such manner that the link 19 may be set, if desired, upon the rocking center of lever 12, so that the lever 12 may be rocked by without imparting any motion to the link 19.

To the tongue 17 is pivoted a connecting rod 22, which extends along one of the arms of the bell-lever 4, and is pivotally connected with the connecting-rod 5 carried by said arm.

As hereinbefore stated and as shown in said Winkley and Phillips application, the bell-lever 4 is provided with a circular adjustment-way 7, along which the rod 5 is movable. The connecting-rod 22 is also provided with an adjustment-way 23, preferably straight, along which its connection with rod 5 is movable. As shown in the drawings, the rod 5 is provided with a shoulder 24, which extends through both adjustment-ways above described.

The shoulder 24 may conveniently consist of a bolt a , which extends through the connecting-rod 5 and carries the guide-pieces a' and a'' , which are fitted to the respective adjustment-ways 7 and 23, and are arranged to turn independently upon the bolt a . (See Fig. 5.) The bolt a may be conveniently held in position by a nut a^3 .

As shown in Fig. 5, each of the guide-pieces a' and a'' is provided with longitudinal slots $a^4 a^4$ and $a^5 a^5$, which engage the sides of the adjustment-ways 7 and 23, and which guide the movement of the pieces a' and a'' along the adjustment-ways 7 and 23. The slots a^5

a^5 further act to hold the upper end of the rod 22 in position.

The shoulder 24 is left movable along the adjustment-way 7 for the purposes hereinafter described, but is locked in a predetermined position in the adjustment-way 23 conveniently by the following mechanism: As before stated the sides of the adjustment-way 23 engage with the slots $a^5 a^5$ on the shoulder 24, and upon one side thereof is formed a series of holes 25 25 25. A longitudinally-reciprocating spring-pressed pin 26 is provided, which passes through a suitable bearing in the side of the slot a^5 and engages with one of the holes 25 25, &c.

A releasing-lever 27 may be conveniently provided, by means of which the pin 26 may be drawn out of engagement to allow the shoulder 24 to be moved along the adjustment-way 23.

For the purpose of lowering or raising rod 5 in the adjustment-ways 7 and 23 the shoulder 24 is conveniently provided with a handle 28, under which the lever 27 is pivoted, (see Fig. 3,) so that when the handle is laid hold of to raise or lower the rod 5, the lever 27 is operated to release the pin 26.

The operation of my invention is described as follows: As the cam 9 rotates, when the eccentric portion thereof reaches the cam-roll 10 the lever 11 is depressed, raising the link 14 and the lever 12, and, when the link 19 is upon the right side of fulcrum 21, (as shown in Fig. 2,) raising the link 19, the sliding tongue 17, and the connecting-rod 22, and thereby moving the connecting-rod 5 along the adjustment-way 7 farther from the rocking center of the bell-lever 4, which increases the length of the stroke given to the connecting-rod 5 by the rocking motion of the bell-lever, and correspondingly increases the length of the reciprocation of the rack-rod 6 and the amount of inclination given to the roll. If the link 19 is set upon the left of the center 21 the tongue 17 is depressed by the motion of lever 12, as above described, and the rod 5 brought nearer to the center of bell-lever 4, and the amount of inclination given to roll R diminished. By setting the rod 5 at different points along the adjustment-way 23 the amount of inclination given to roll R by the primary cam 3 may be adjusted, and by setting the link 19 at different positions along lever 12 in the adjustment-way 20 the change effected in the operation of cam 3 upon roll R by the auxiliary cam 9 may be regulated.

As shown in the drawings, when the link 19 is on the center 21 the operation of cam 3 is not affected by auxiliary cam 9, when at the right of the center 21 the amount of inclination given to the roll R during its operation on certain parts of the shoe is increased, and when lever 19 is at left of center 21 the inclination of the roll R while operating on the same parts is diminished.

As shown in the drawings, the cam 9 is so formed and timed with reference to the cam

3 that it affects its operation on the roll R only while the latter is shaping the fore part of the shoe, so that the machine may be adjusted to give the required curvature to the shank by setting rod 5 at the required point along the adjustment-way 23, and may be made to further flatten or round off the fore part by setting the lever 19 in the required position along the adjustment-way 20.

10 It will be noted that the auxiliary cam 9 does not substantially interfere with the changes in the inclination of the roll R as effected by cam 3, but simply increases or diminishes the extent of such changes.

15 It will be readily seen from the foregoing description that by the mechanism herein described I am enabled to adjust the roll R to shape the shank and fore part of a shoe independently of each other.

20 Having thus described my invention and its operation I desire to say that I do not consider my invention limited to its application to the machine of the Winkley and Phillips application as herein shown, nor to the details of mechanism shown in the drawings or described in this specification; but

25 I claim as broadly novel and desire to secure by Letters Patent—

30 1. In a sole leveling machine the combination of a vibrating leveling roll, a shoe supporting jack, connected mechanism for relatively actuating the roll and jack to level the sole of a shoe placed upon the jack, and an automatically operating adjusting device connected with said actuating mechanism where-
35 by the same is operated to shape the shank and forepart of a sole independently of each other, substantially as described.

40 2. In a sole leveling machine the combination of a vibrating leveling roll, a shoe supporting jack, a cam and connecting mechanism for oscillating the jack under the roll, a cam and connecting mechanism for changing the relative lateral inclination of the roll and
45 jack, and an auxiliary cam and connecting

mechanism for adjusting said changes in lateral inclination, substantially as described.

3. In a sole leveling machine having a vibrating leveling roll, a shoe supporting jack, and mechanism for changing the relative lateral inclination of the roll and jack, the combination of a rocking lever, independent means for actuating the same, and suitable connections between said lever and the mechanism for changing the relative lateral inclination of the roll and jack, arranged to modify the operation of said mechanism, substantially as described.

4. In a sole leveling machine having a leveling roll and shoe supporting jack, the combination, with mechanisms for changing the relative lateral inclination of the roll and jack, of means for adjusting said mechanism to regulate the amount of such change of inclination, and mechanism for automatically varying said adjustment during the operation of the machine, substantially as described.

5. In a sole leveling machine having a leveling roll and shoe supporting jack, the combination of a rocking bell lever mounted upon a suitable support, a circular adjustment way in said lever, a longitudinally reciprocating connecting rod provided with a longitudinal adjustment way and supported adjacent to said bell lever, a connecting rod connected with suitable mechanism for rocking the roll and provided with a shoulder extending through the adjustment way in the bell lever and into the adjustment way in the connecting rod and a device for locking said shoulder to said connecting rod, substantially as described.

In testimony whereof I have hereunto set my hand, in the presence of two attesting witnesses, this 22d day of April, A. D. 1895.

ERASTUS E. WINKLEY.

Witnesses:

C. E. WHYTE,
CHARLES H. PURCELL.