No. 745,980. PATENTED DEC. 1, 1903.

H. A. WEBSTER.

APPARATUS FOR LEVELING BOOTS OR SHOES.

APPLICATION FILED AUG. 9, 1899.

NO MODEL. 3 SHEETS—SHEET 1.

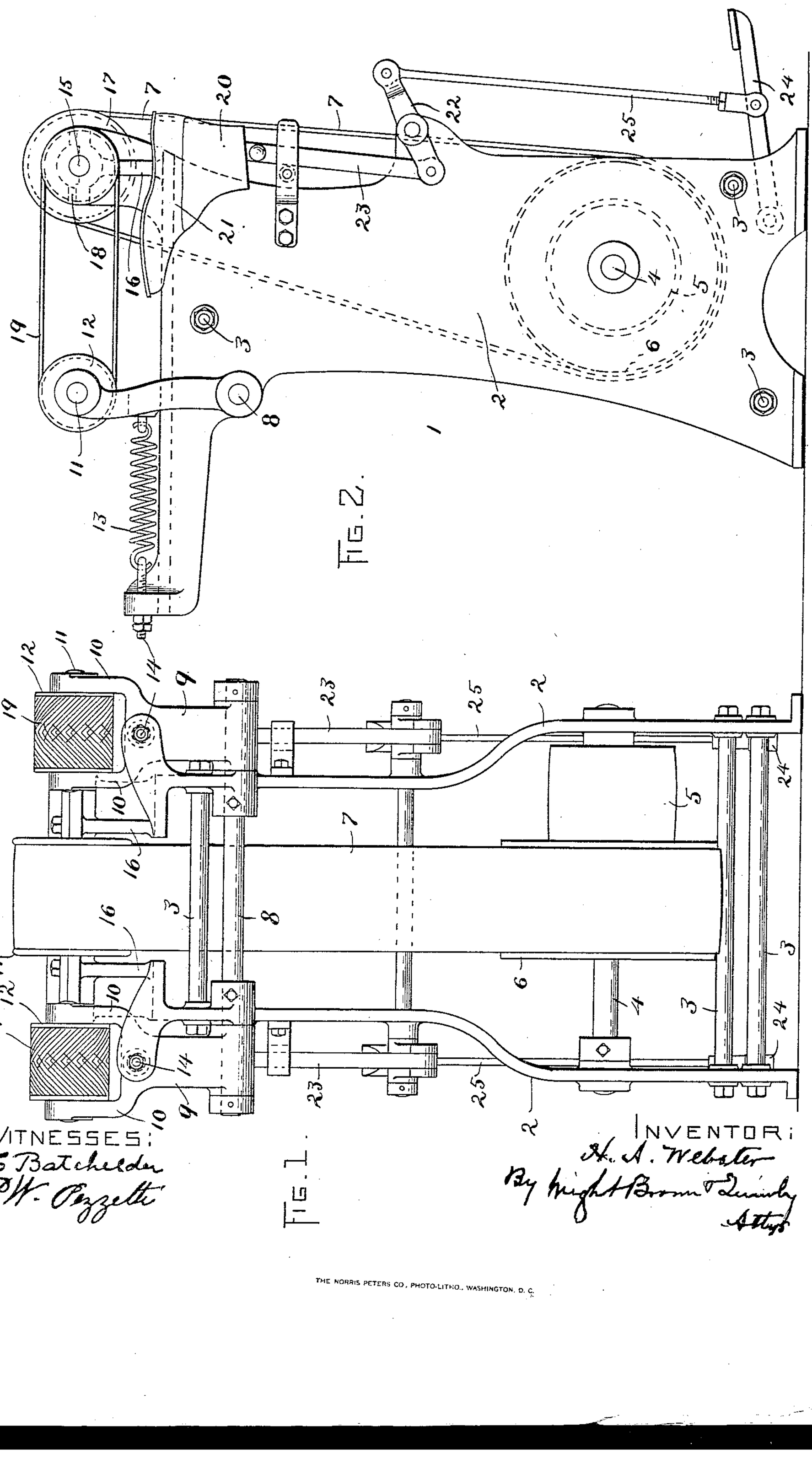

FIG. 2.

FIG. 1.

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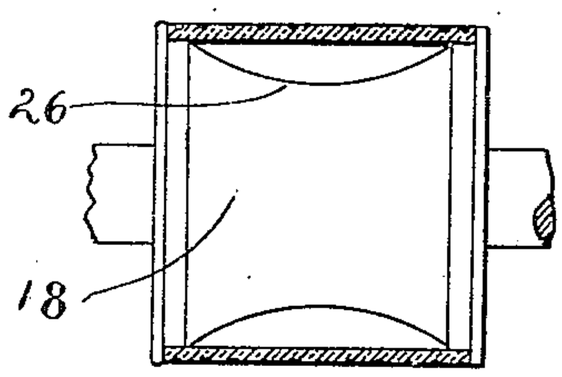
NO MODEL. 3 SHEETS—SHEET 2.

FIG. 5.



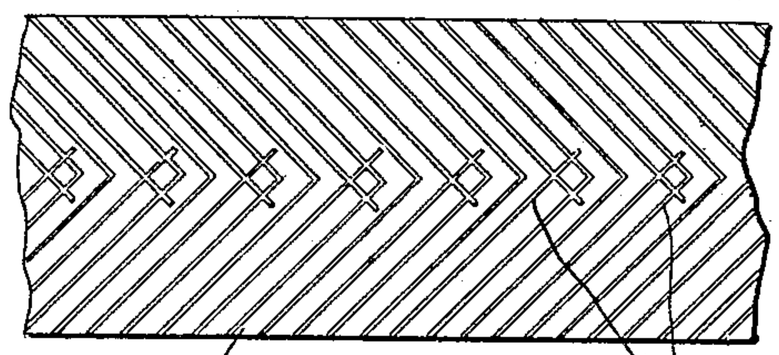
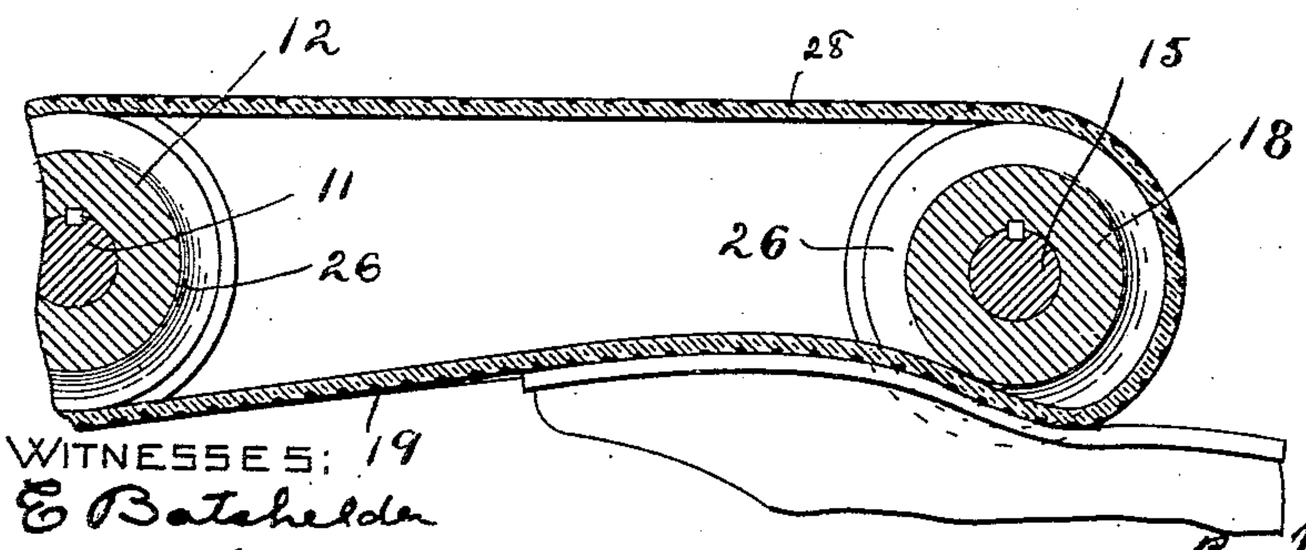


FIG. 4.

FIG. 3.



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NO MODEL. 3 SHEETS—SHEET 3.

FIG. 6

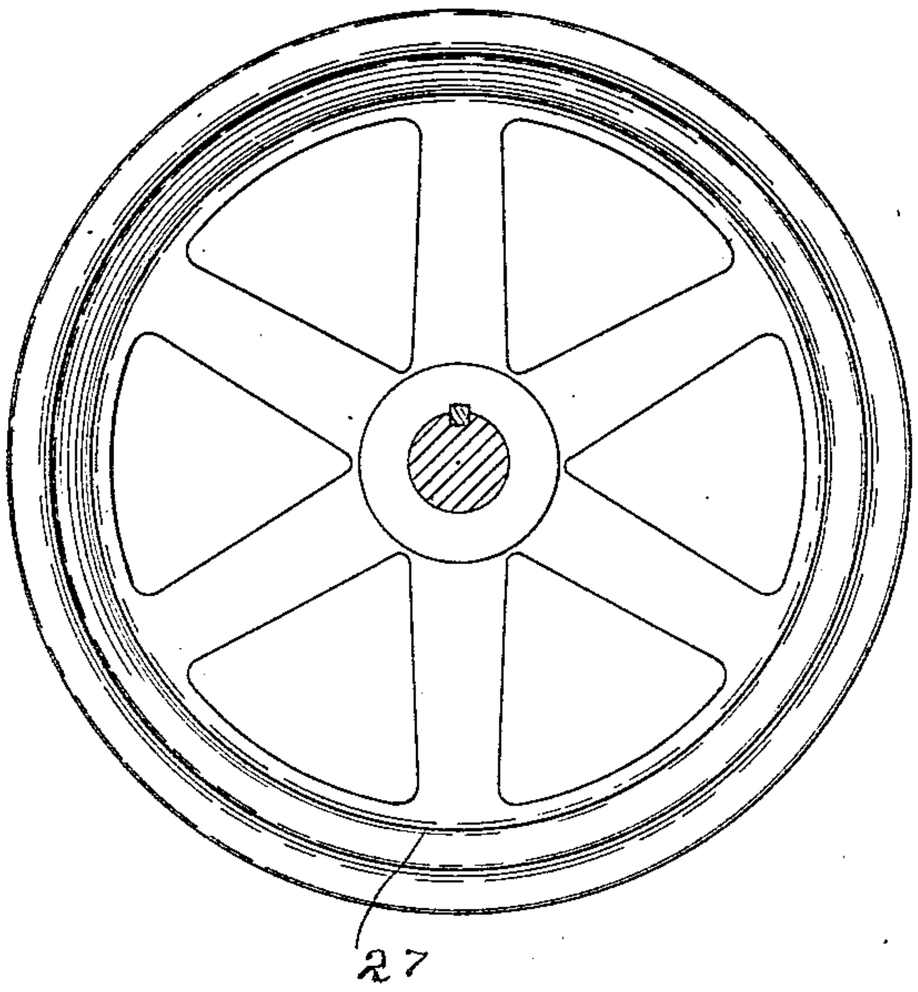


FIG. 7

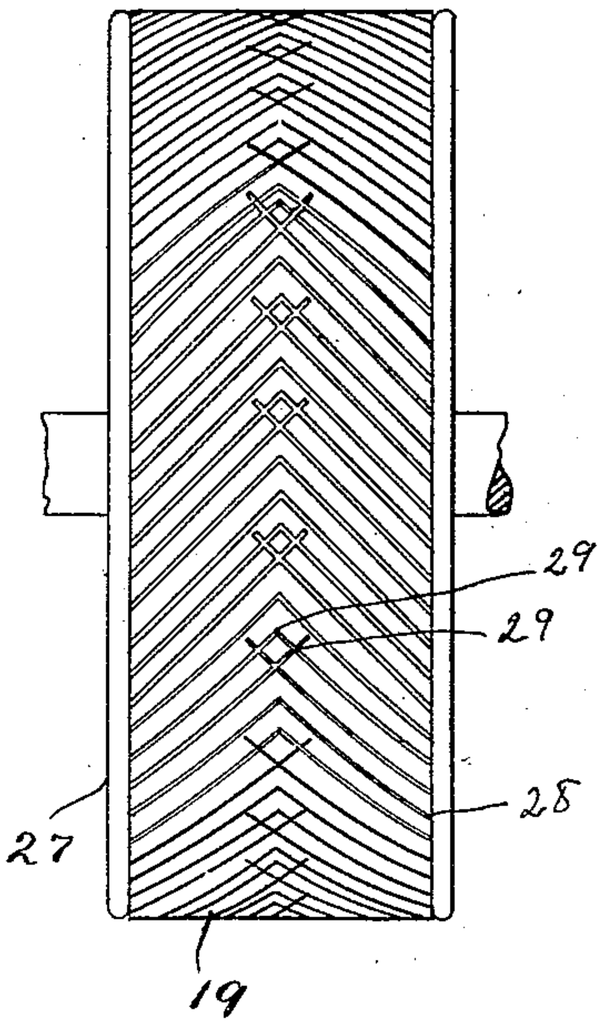
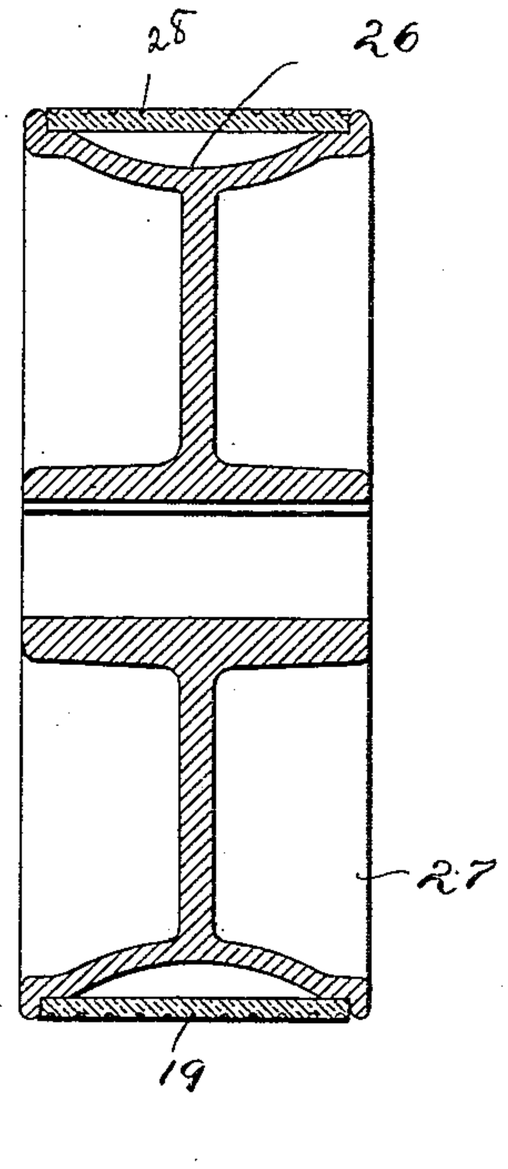


FIG. 8.



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UNITED STATES PATENT OFFICE.

HAROLD A. WEBSTER, OF HAVERHILL, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO WEBSTER SHOE MACHINE COMPANY, OF HAVERHILL, MASSACHUSETTS, A CORPORATION OF MAINE.

APPARATUS FOR LEVELING BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 745,980, dated December 1, 1903.

Application filed August 9, 1899. Serial No. 726,685. (No model.)

To all whom it may concern:

Be it known that I, HAROLD A. WEBSTER, of Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Methods and Apparatus for Leveling Boots or Shoes, of which the following is a specification.

The present invention relates generally to sole-leveling machines, and more particularly to machines for leveling the soles of turned shoes.

There are in commercial use three types of sole-leveling machines, which may be broadly designated and are commonly known in the art as "roller-pressure machines," "direct-pressure machines," and "vibrating-roll machines." The first of the above types is illustrated in the machine commercially known as the "Tripp" giant leveler, the second in the "Cutcheon and Johnson" leveler, and the third in the "Goodyear" automatic leveler. The first two types are more commonly used on pegged, metallic-fastened, and McKay sewed shoes, and the last type on welted work. The conditions, however, existing in connection with leveling turned shoes are different from those existing in connection with leveling other classes of work. The soles of turned shoes are very light and require little pressure to bring them into shape, the most important feature in leveling a turned shoe being to properly rub down the seam which is located in the margin of the sole and to bring the edge of the sole into proper relation to the upper. The old "rub-stick," so called, has been found most suitable for this purpose, and even at the present time the rub-stick and hammer are generally used for leveling turned shoes, although both the direct pressure and vibrating-roll machines are to a limited extent used in this class of work.

The object of the present invention is to produce a machine by means of which an operation resembling the rub-stick operation may be secured and which shall reduce the time required for and resulting cost of leveling this class of work.

The preferred forms of the present invention are illustrated in the accompanying drawings, in which—

Figure 1 shows in rear elevation a leveling-machine constructed in accordance with my invention. Fig. 2 represents a side elevation of the same. Fig. 3 is a detail view of the leveling-band and its supporting-rolls. Fig. 4 is a detail view of the leveling-band. Fig. 5 is a detail view of the leveling-band and the leveling-band support or roll shown in Fig. 1. Figs. 6, 7, and 8 are detail views showing a modified form of leveling-band support.

Referring to the drawings, 1 represents a leveling-machine constructed in accordance with my invention. The framework of the machine comprises vertical standards 2 2, bound together by cross-rods 3 3 3. A counter-shaft 4 is suitably mounted in the standards 2 2, and to this counter-shaft are secured a pulley 5, arranged to be driven by a belt (not shown) in the usual way, and a pulley 6, that drives a belt 7. A stationary shaft 8 is mounted in the standards 2 2 at the upper and rear of the machine, and upon the projecting ends of this shaft are mounted at either side of the machine a swing-arm 9. These arms 9 at their upper ends are forked, as at 10. In each of the forks 10 10 is mounted a counter-shaft 11. A band support or pulley 12 is rigidly mounted upon each of the shafts 11 between the forks 10 10, of each of the swinging arms 9 9. A spring 13 is connected at one end to each of the swinging arms 9 9 and at its opposite end to an adjusting-screw 14 14, whereby the swinging arms have a yielding movement.

A counter-shaft 15 is mounted in suitable bearings carried by standards 16, projecting from the upper front part of the machine. Upon this counter-shaft is rigidly mounted a pulley 17, driven by the belt 7. A band support or pulley 18 is also rigidly mounted upon said shaft on either side of the pulley 17 and in alinement with the band-supports 12 12. In Figs. 1 and 2 I have shown two rub-stick bands and a pair of band-supports for each band; but this arrangement and the number of bands and band-supports may be varied.

19 represents a rub-stick band mounted upon each pair of the band-supports 12 18 and arranged to be supported thereby and driven by the band-support 18.

20 represents a reciprocating jack or last-support upon which is placed the last carrying the boot or shoe 21 to be "leveled."

22 represents a lever pivoted midway its ends to the standard 2. A pitman 23 is pivoted at one of its ends to the jack or last-support 20 and at its other end to the rear arm of the lever 22. A treadle 24 is pivoted at its rear end to the standard 2 and is connected to the front arm of the lever 22 by a rod 25.

A jack-support and connected treadle mechanism are shown for each rub-stick band. I have not shown all the details of the jack-and-treadle mechanism, since these are well-known adjuncts of a "leveling-machine," and any preferred style may be employed.

It will be noted that as shown in the drawings the rub-stick band is wider than the shoe-sole and is constructed to act simultaneously on opposite margins thereof, and while this feature is not essential to my invention, considered in its most generic sense, I consider it preferable, because it secures more uniform and rapid work. It will be also noted that my improved rubbing-band is intended to be applied lengthwise of a shoe on the jack and to travel longitudinally thereof, this feature rendering it particularly suitable for leveling and forming one of the important points of difference between the present machine and machines for laying channel-flaps, which because the band is arranged to travel across the shoe would not be suitable for leveling purposes.

The band-supports are centrally depressed, as at 26, in order to permit the rub-stick band to automatically conform to the shape of the shoe-sole pressed against it when on the support and to facilitate such action at other points. The band-support may comprise a pair of pulleys, as in Figs. 1, 2, and 3, or a single pulley 27, as in Figs. 6, 7, and 8, or any other desired form of support.

The rub-stick band 19 may be composed of a band of leather having angle-grooves 28 with staggered apices 29 formed in its working face, as in Figs. 1, 2, 3, 5, 7, and 8. In place of the angled grooves 28 and the staggered apices 29 I may employ wires 280, secured to the leather band and arranged at an angle to said band, said wires being disposed to form staggered apices 290. (See Fig. 4.) The staggering of the apices prevents the band forming ridges on the sole. In each of the forms just mentioned the rubbing-surfaces, which are at an angle to each other or inclined to the path of motion of the device, meet at the center of the latter, and some of them cross beyond their meeting points, so as to intersect the ribs or grooves beyond them, as shown in Fig. 7. The result is that while there is a straight line of apices along the center of the device or band there are other angular meeting points or bases at intervals on either side of said straight lines, thus resulting in a series of staggered apices, as above described.

The operation of the machine is as follows: The sole of the shoe is pressed against the interrupted surface of the rub-stick band, and the latter moving over the surface rubs down, not abrades, and presses the surface of the shoe to a uniform and polished surface, the rub-stick band automatically conforming to the general contour of the sole as determined by the last upon which it is held.

By the term "rub-stick band" I wish to be understood as implying any band having an interrupted surface, whether such interruption is caused by grooves, projections, ridges, or other desired rough members.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all the forms in which it may be made or all the modes of its use, what I claim, and desire to secure by Letters Patent, is—

A sole-leveling machine, having, in combination, a flexible rub-stick band comprising a plurality of rubbing-surfaces oppositely inclined to the path of motion of the band and arranged with staggered apices adjacent to the medial line of the band, and mechanism for actuating the band, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

HAROLD A. WEBSTER.

Witnesses:
E. BATCHELDER,
P. W. PEZZETTI.