A. EPPLER.

SOLE LEVELING MACHINE.

APPLICATION FILED APR. 25, 1908.

996,707.

Patented July 4, 1911.

2 SHEETS—SHEET 1.

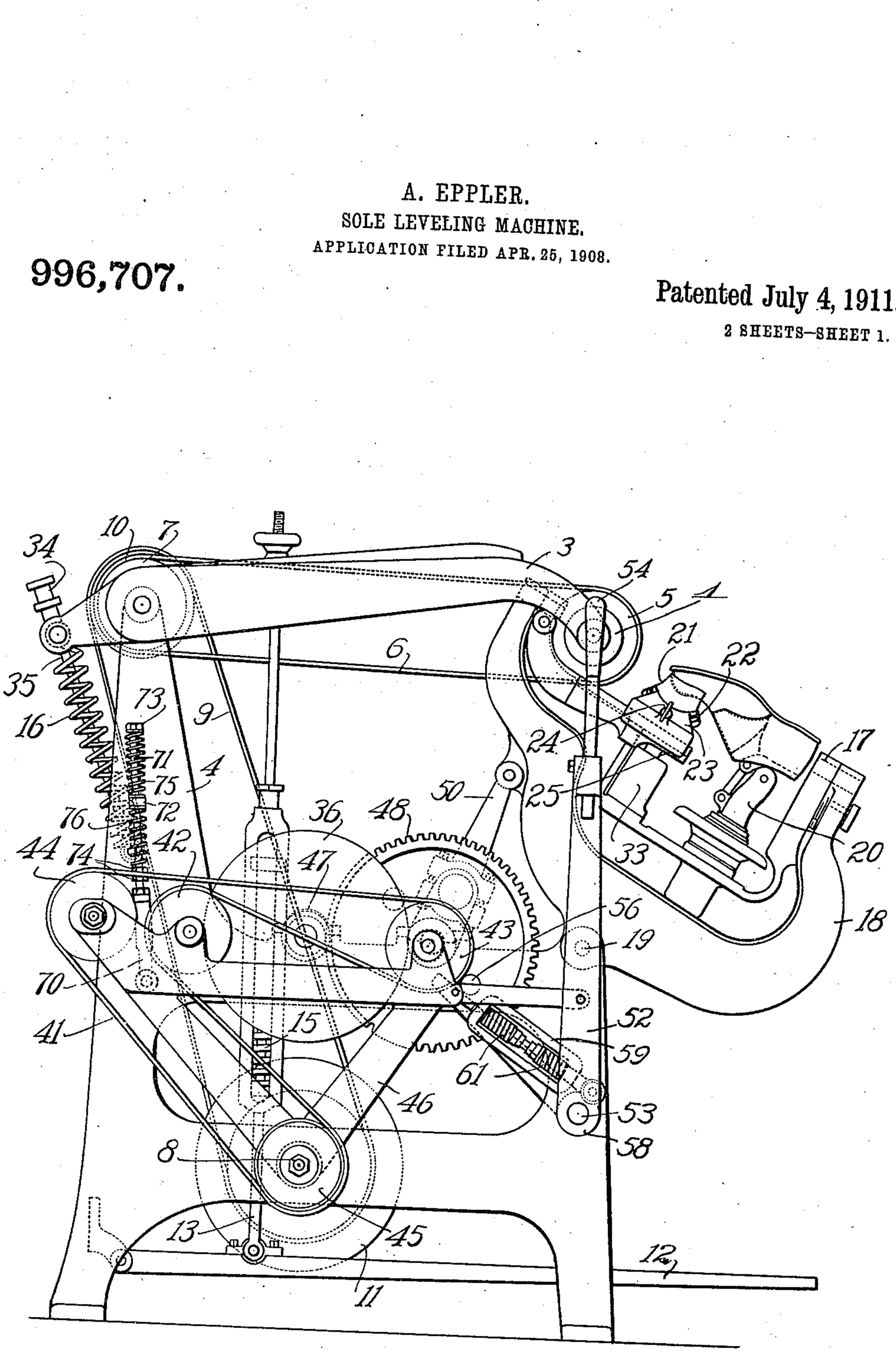

FIG. 1.

WITNESSES

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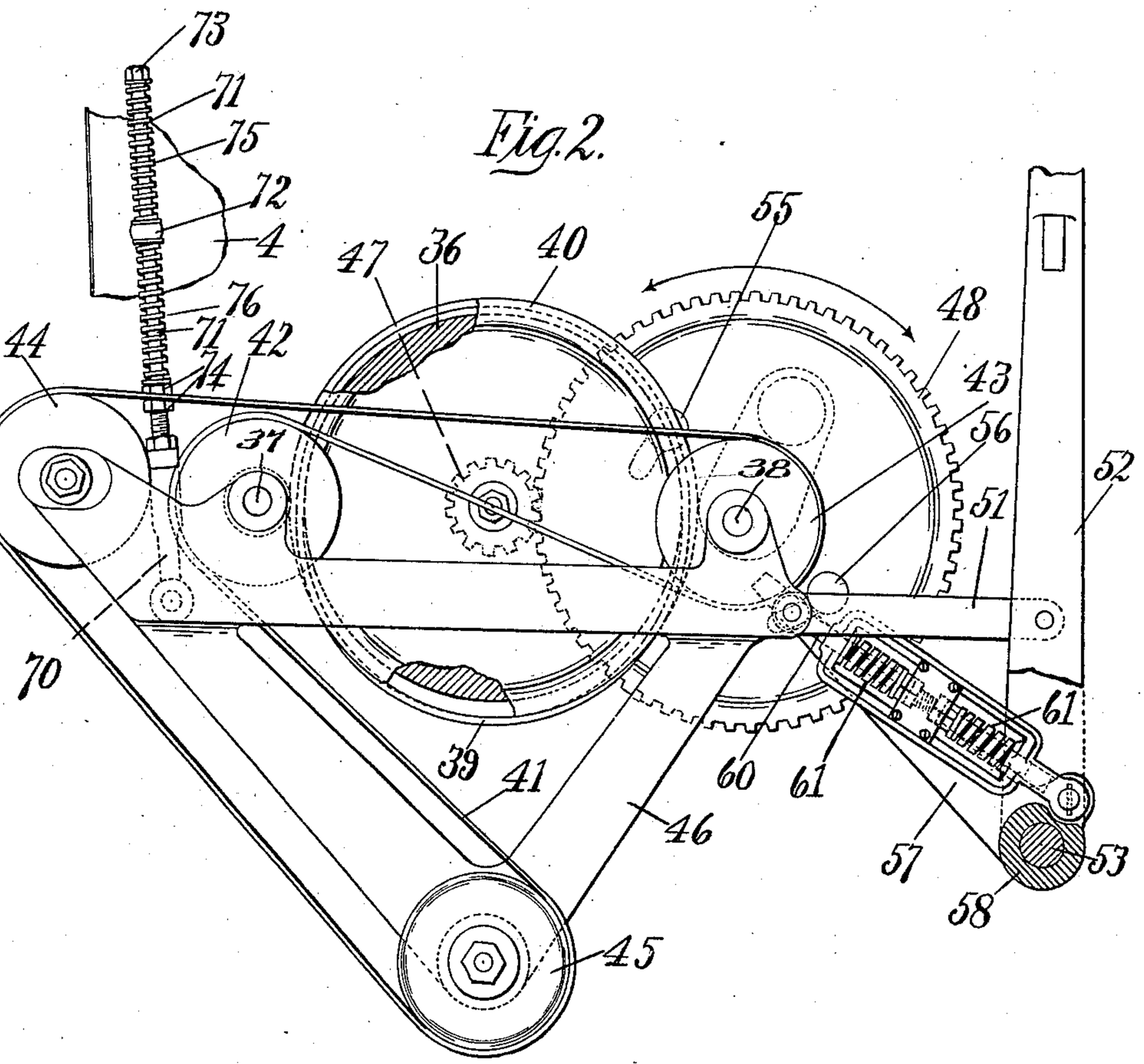
2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

ANDREW EPPLER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SOLE-LEVELING MACHINE.

996,707. Specification of Letters Patent. Patented July 4, 1911.

Application filed April 25, 1908. Serial No. 429,168.

To all whom it may concern:

Be it known that I, ANDREW EPPLER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sole-Leveling Machines, and do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to sole leveling machines and particularly to that class of sole leveling machines which are provided with a reversible driving mechanism under the control of the operator, and suitable connections between said mechanism and the jack for imparting inward and outward movements to the jack beneath a leveling roll or other sole leveling device.

The invention is intended primarily as an improvement on the sole leveling machine disclosed in applicant's prior application filed May 3, 1906, Serial No. 315,024, although it is not limited thereto but may be employed in other sole leveling machines provided with reversible driving mechanism. In the machine of said application a reversible friction driving mechanism is employed which includes a movable member or frame carrying two driving disks rotating in opposite directions, and this frame is connected to a hand lever by means of which the frame can be moved to reverse the driving mechanism and the direction of movement of the shoe supporting jack.

The primary object of the present invention is to support this movable member or frame in such a manner that it can be more readily moved by the operator and so that it will be held in a predetermined position while the hand lever is released without liability of displacement so as to actuate the jack improperly. This result is secured in accordance with the present invention by the provision of a centering device connected to the movable member or frame and arranged to hold said member yieldingly in predetermined position until moved therefrom by the actuation of the hand lever.

While the present invention is particularly applicable to the friction driving mechanism disclosed in applicant's prior application it is to be understood that, except as defined in the claims, the invention is not limited thereto but may be applied to the reversible friction driving mechanism of other sole leveling machines.

It is desirable that the jack be moved outwardly to the position in which a shoe can be removed therefrom whenever the hand lever connected to the driving mechanism is released by the operator and accordingly the centering device is preferably so arranged that when the hand lever is released it holds the movable member of the driving mechanism in a position to impart outward movement to the jack.

Other features of the invention consist in certain devices, combinations and arrangements of parts hereinafter described and claimed, the advantages of which will be obvious to those skilled in the art from the following description.

The present invention will be clearly understood from an inspection of the accompanying drawing in which—

Figure 1 is a view in side elevation of a sole leveling machine embodying the same in its preferred form and Fig. 2 is a view in side elevation on an enlarged scale of a portion of the mechanism illustrated in Fig. 1.

With the exception of the centering device which constitutes the illustrated embodiment of the present invention the machine illustrated in the drawings is the same in construction and mode of operation as the machine disclosed in applicant's prior application and comprises a rotating sole leveling roll, a shoe supporting jack, a reversible friction driving mechanism, and connections between said mechanism and the jack for imparting inward and outward movements to the jack beneath the leveling roll.

The sole leveling roll is indicated at 1 and is journaled in the forward end of a frame 3 pivotally mounted at its rear end in the upper rear portion of the machine frame 4. Upon the shaft of the leveling roll is secured a pulley 5 over which a belt 6 passes by means of which the leveling roll is constantly rotated while the machine is in operation. The belt 6 also passes over a pulley 7 mounted upon the pivotal axis of the frame 3, which pulley is driven from a main driving shaft 8 journaled in the lower portion of the machine frame by means of a belt 9 passing

over a pulley 10 connected with the belt pulley 7 and over a pulley 11 secured to the driving shaft 8. During the leveling operation the leveling roll is forced against the sole of a shoe on the shoe supporting jack by means of a foot treadle 12 which is yieldingly connected to the frame 3 by means of rods 13 and 14 and a connecting spring 15. The frame 3 is counterbalanced by a spring 16 and the downward movement of the forward end of the frame carrying the leveling roll is limited by means of a stop nut 34 upon the upper end of a rod 35 which is pivotally connected at its lower end to the frame of the machine and at its upper end passes through the rear end of the frame 3.

The shoe supporting jack comprises a frame 17 provided with suitable heel and toe supports pivotally mounted in a jack supporting frame 18, which frame is pivoted at 19 upon the main frame of the machine.

The heel support of the jack, indicated at 20, is the same in construction and mode of operation as the heel part of the jack disclosed in the patent to William C. Meyer, No. 677,550, dated July 2, 1901, to which patent reference is made for a full disclosure thereof.

The toe support of the jack is indicated at 21 and consists of a block provided with a grooved rib 22 which is received in a correspondingly shaped groove in a block 23, whereby the toe support can be angularly adjusted. The toe support is secured in position on the block 23 by means of a clamping screw 24. The block 23 is mounted upon a lever 25 so as to be adjustable toward and from the heel post, and the lever 25 is pivotally mounted at its rear end and at its forward end rests upon a vertically adjustable rod 27 mounted in a block 33 secured to the jack frame.

The reversible friction driving mechanism from which inward and outward movements are imparted to the shoe supporting jack comprises a friction disk 36 provided with a loose band of leather 39, and two friction driving disks secured respectively to shafts 37 and 38 mounted in a frame 45, which frame is pivotally mounted on the driving shaft 8 so as to be capable of moving to bring either driving disk into engagement with the friction disk 36. The friction driving disks are rotated constantly in opposite directions by means of a belt 41 passing over pulleys 42 and 43 secured to the shafts 37 and 38 and also passing over an idler pulley 44 mounted in the frame 46 and over a pulley 45 secured to the driving shaft 8. The movable frame 46 carrying the oppositely rotating driving disks is connected by means of a link 51 to a hand lever 52 pivoted at its lower end upon a rod 53 and provided at its upper end with a handle 54 in a convenient position to be grasped by the operator. By means of the hand lever 52 the frame 46 carrying the friction driving disks can be moved to bring either disk into engagement with the disk 36 and thus cause the disk 36 to rotate in either direction as may be desired.

The connections between the reversible friction driving mechanism and the shoe supporting jack which operate to reverse the movement of the jack when the direction of rotation of the disk 36 is reversed, comprise a pinion 47 mounted to rotate with the disk 36, a gear 48 meshing with the pinion 47, a crank shaft to which the gear 48 is secured and a link 50 connecting the crank shaft and jack carrying frame 18.

To prevent an overthrow of the jack carrying frame and to throw the friction driving mechanism out of operation when the jack carrying frame reaches its limit of movement in either direction the gear 48 is provided at diametrically opposite points with adjustable pins 55 and 56, which pins are arranged to engage an arm 57 projecting from a sleeve 58 mounted on the rod 53 and connected by links 59 and 60 and springs 61 to the frame 46.

The mechanism so far described is the same in construction and mode of operation as the corresponding mechanism of the machine illustrated and described in applicant's prior application.

The centering device which constitutes the illustrated embodiment of the present invention, is applied to the frame 46 carrying the oppositely rotating friction driving disks. As illustrated in the drawings this centering device comprises a rod 70 pivotally connected to the frame 46 and opposed springs 75 and 76 acting on the rod to yieldingly hold the frame 46 in predetermined position when the hand lever 52 is released by the operator or whenever the lever is moved by the operator into a position to allow the centering device to so act. The rod 70 passes through an eye or lug 72 secured to the frame 4 and the springs 75 and 76 are coiled around the rod and are interposed respectively between the lug 72 and nuts 73 and 74 on the rod. The nuts 74 can be adjusted on the rod to vary the tension of the spring 76, and if desired, the nut 73 can also be adjusted to vary the tension of the spring 75. The centering device can thus be adjusted to hold the frame 46 in a position in which both friction driving disks are out of engagement with the disk 36. It is however, preferred to adjust the centering device so that it will hold the friction driving disk on the shaft 37 lightly in engagement with the disk 36 so as to cause the jack to move to its outward position whenever the hand lever 52 is released by the operator.

The centering device above described

counterbalances the frame 46 so that it can be more readily moved by the operator. It causes the jack to be returned to its outward position as soon as the hand lever is released as above described and also facilitates the manipulation of the hand lever by the operator when it is desired to suspend momentarily the oscillation of the jack in order to subject the shank or some other particular portion of the shoe sole to the action of the leveling roll for a greater length of time proportionately than the other parts of the sole.

The nature and scope of the present invention having been indicated and the preferred embodiment of the invention having been specifically described, what is claimed is:—

1. A sole leveling machine, having, in combination, a shoe supporting jack, a sole leveling device, reversible friction driving mechanism and suitable connections for imparting inward and outward movements to the jack beneath the leveling device, a hand lever and suitable connections for reversing said driving mechanism, and yielding means acting when permitted by the operator to hold said mechanism in a position to impart outward movement to the jack.

2. A sole leveling machine, having, in combination, a shoe supporting jack, a sole leveling device, reversible friction driving mechanism for the jack including a member movable to reverse said mechanism, connections between the jack and said driving mechanism acting to reverse the movement of the jack when the driving mechanism is reversed, a hand lever connected to said movable member, and a centering device connected to said member comprising a rod connected to said member, a relatively stationary lug through which the rod passes and opposed springs coiled around the rod and interposed between the lug and abutments on the rod.

3. A sole leveling machine, having, in combination, a shoe supporting jack, a sole leveling device, a reversible friction driving mechanism for the jack, comprising a friction disk, two oppositely rotating driving disks and a frame carrying said disks movable to bring either disk into engagement with the friction disk, connections between said friction disk and the jack acting to reverse the movement of the jack when the direction of rotation of the disk is reversed, a hand lever connected to said frame, and a centering device connected to said frame and acting when permitted by the operator to hold said frame yieldingly in predetermined position.

4. A sole leveling machine, having, in combination, a shoe supporting jack, a sole leveling device, reversible friction driving mechanism for the jack, comprising a friction disk, two oppositely rotating driving disks and a frame carrying said disks movable to bring either disk into engagement with the friction disk, connections between said friction disk and the jack acting to reverse the movement of the jack when the direction of rotation of the disk is reversed, a hand lever connected to said frame, and a centering device connected to said frame comprising a rod connected to the frame, a relatively stationary lug through which the rod passes and opposed springs coiled around the rod and interposed between the lug and abutments on the rod.

In testimony whereof I affix my signature, in presence of two witnesses.

ANDREW EPPLER.

Witnesses:
FRED O. FISH,
ANNIE C. RICHARDSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."