

S. H. HODGES.

Machine for Trimming and Setting the Edges of Boots and Shoes.

No. 124,744.

Patented March 19, 1872.

Fig. 4.

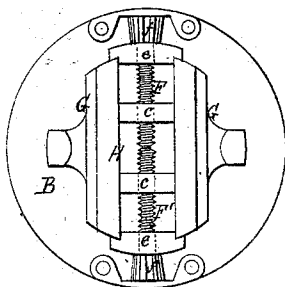
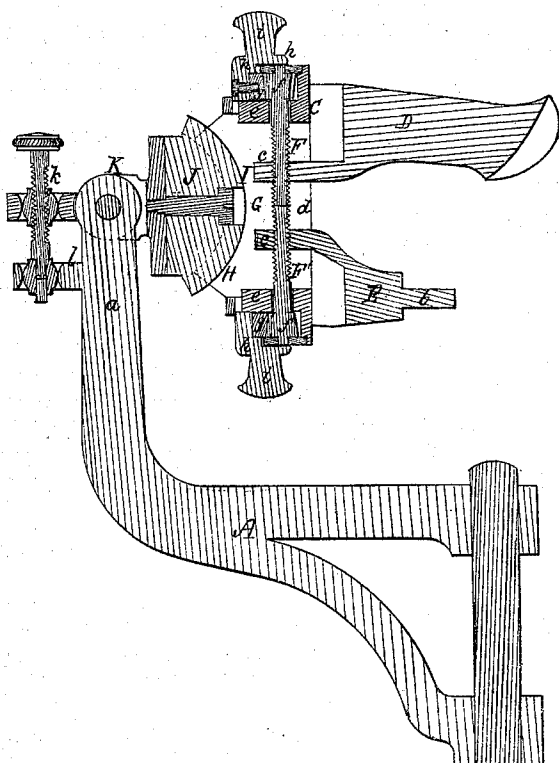


Fig. 3.



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Samuel H. Hodges.
by his Attorney.
Fred. Curtis.

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Fig. 1.

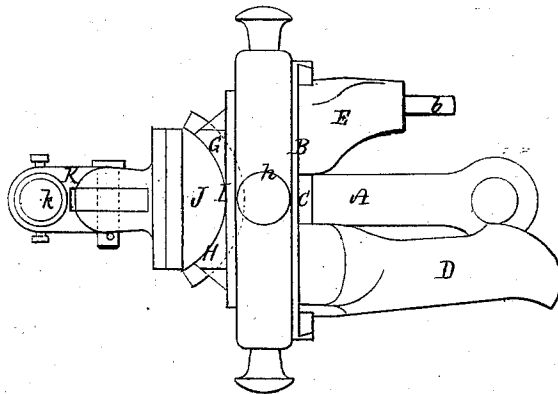
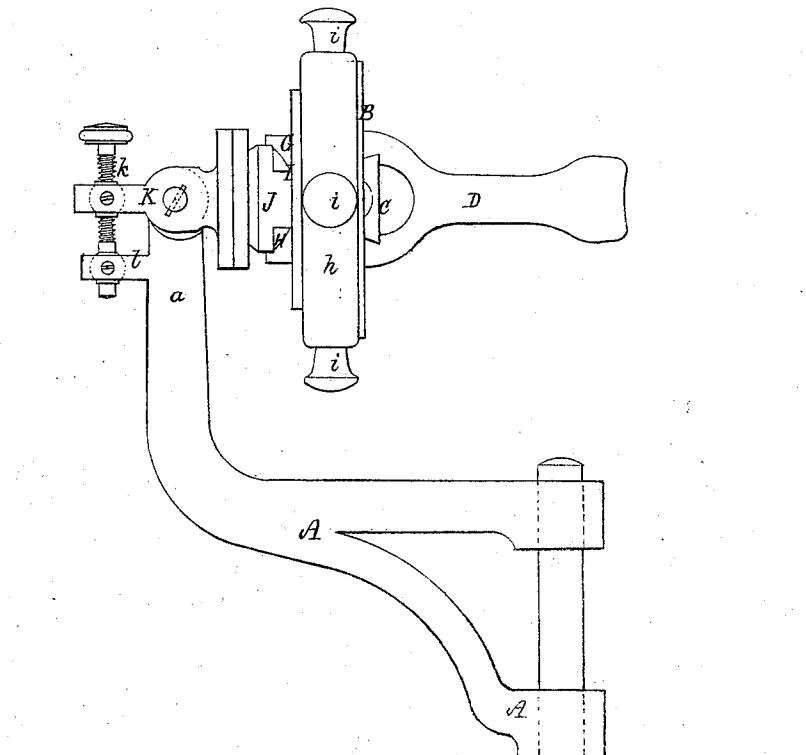


Fig. 2.



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UNITED STATES PATENT OFFICE.

SAMUEL H. HODGES, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR TRIMMING AND SETTING THE EDGES OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. 124,744, dated March 19, 1872.

To all to whom these presents shall come:

Be it known that I, SAMUEL HORATIO HODGES, of Lynn, in the county of Essex and Commonwealth of Massachusetts, have made an invention of certain Improvements in Machinery for Trimming and Setting the Edges of Boot and Shoe Soles or Heels; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawing making part of this specification, and in which—

Figure 1 is a plan; Fig. 2, a side elevation; Fig. 3, a vertical section; and Fig. 4, a rear side view of the mechanism for actuating the heel and toe rest.

The subject of my present invention is a device for supporting a boot and shoe, and presenting it to the action of the trimming or burnishing mechanism, such device being termed, in machinery of this character, a "jack." The purpose of my present invention is to provide a jack of such construction that the boot may be applied thereto and removed very expeditiously, and also enable the position of such boot to be varied with respect to the trimming or burnishing tool, as occasion requires, in order not only that such tool shall be compelled to traverse the entire sole-edge, but to vary the transverse angle or slope of the latter. The portion of my present jack which grasps the boot and supports it in position while its sole is being trimmed or burnished consists of two horizontal posts or jaws, the longer of which is the toe-rest, and supports the toe of the boot, the other being the heel-rest, which enters a socket in the last, the two supports sliding to and fro on parallel guides affixed to the outer face of an upright disk, and so operated, each by a screw which passes through it, and is supported within such disk and provided with a beveled pinion driven by a beveled annular gear, that, by the revolution of such screws traveling in opposite directions, the jaws or supports are compelled to approach or depart from each other, and either clamp the boot firmly between them or release it when the sole is finished, the ring-gear being revolved by means of an annulus which surrounds and is secured to it, and which is provided at intervals upon its periphery with handles or arms by which its rotation may be easily effected.

In order to obtain a horizontal rocking mo-

tion in the arc of a circle of the clamping device last explained, and, in so doing, vary the position of the sole-edge with respect to the trimming-tool, in order that a greater or less slope in extreme cases may be given to the toe-and-heel portion of the latter, as circumstances require, I mount the upright disk before named at its rear upon a segmental block, and unite the two by a dovetail or self-groove connection; while, in order to obtain the desired rotary freedom of the clamp, which becomes necessary in order that the cutting or burnishing tool shall travel about the sole, I pivot the segmental block horizontally to a tilting lever or beam, swiveled to the upper part of a post or curved standard, which, in turn, is swiveled vertically to the carriage which supports it, the lever or beam being controlled by an adjusting-screw in such manner as to vary the horizontal adjustment of the entire jack, with the exception of its standard, in order that, when desirable, the slope of the entire surface of the sole-edge may be varied.

The drawing accompanying this specification represents at A a curved standard, which is to be pivoted or swiveled to the carriage which supports it in the machine to which it belongs, such standard terminating at top in a vertical column, *a*. B represents a circular plate or disk, to the outside of which is applied a dove-tailed spline or way, C, upon which slide two horizontal blocks or jaws, D E, one of which, D, is formed to receive the toe of a boot in manner at once apparent to all shoe manufacturers, while the jaw E has a tenon, *b*, to enter a socket formed in the "last" near its heel-end, each jaw being formed with an ear, *c*, which enters a lateral orifice or slot, *d*, created in the center of the disk. Upon the rear side of the disk B I dispose two twin-shaped screws, F or F', these screws being in longitudinal alignment with each other, and disposed one upon each side of the center of the disk, and supported in bearings or lips *e e* formed upon such disk, while each screw carries at its outer end a beveled pinion, *f*, which engages with a beveled annular gear, *g*, which is disposed alongside of them, and so as to actuate them and compel them and the screw to rotate in opposite directions. Each screw drives its jaw, consequently, if these screws are driven at the same time in opposite directions, the jaws are compelled to approach

or recede from one another for the purposes before stated; and in order to readily rotate the annular gear *g* I inclose it within and securely attach it to an annular concentric cap-plate or angular band, *h*, which is provided upon its periphery with handles or knobs *i i*, &c.

Having thus seen the means provided for confining or "jacking" the boot, we will now explain the means of setting the jack at any vertical angle, in order that the slope of the toe-portion of the sole-edge, and also of the heel-edge, may be varied and determined at pleasure, it being understood that the play of the jaws or disk is in a path parallel to or in alignment with the longitudinal plane of the said jaws. To carry out this adjustment I affix to or form upon the inner side of the disk B a block or housing, G, and in this housing I form a segmental dovetailed or shelf-groove, H, which encompasses a segmental male tenon or spline, I, formed upon the outer face of a block, J, such block being swiveled horizontally to a tilting or oscillating lever or beam K, which surmounts and is pivoted to the upper part of the column *a*.

The vibration or partial rotation of the disk B and its jaws upon the block J enables the angle of the toe-rest to be varied as occasion requires; consequently the revolving cutter or burnisher, whose horizontal position is arbitrary, will reduce the edge of the toe-portion of the sole to an angle corresponding to that of the toe-rest. It will be observed, however, that as this adjustment or movement of the toe-rest is only in a direction coincident with the common plane of the two jaws, and affects only the toe of the sole and the heel, it has no effect in a contrary direction, or upon the sides of the sole.

To obtain the necessary rotary motion in a vertical plane of the jack, or that portion of it comprised in the disk and its jaws and adjuncts, I pivot such disk to the lever K, as stated. This pivoting of the disk enables the boot to be turned about upon an axis, which permits the rotary cutter or burnisher to travel entirely or partially around the sole, as the said cutter or burnisher is permitted a free play in a vertical direction in order that it may follow the varying outline of said sole.

In order to vary the general vertical slope of the entire jack for the purpose of determining the slope of the side edges of the sole, and, in certain cases, where not much slope is required, of the toe and heel also, without resorting to the segmental dovetailed connection before named, I pivot or fulcrum the lever K horizontally to the column *a*, as before stated; and to control and adjust the position of this lever and of the jack I employ a vertical feed-screw, *k*, the upper part of which is swiveled to the rear end of such lever, while its lower end screws through a shelf or ear, *l*, affixed to the column *a*, as shown in Fig. 3 of the drawing.

When adjusted in the desired position the disk B and its jaws are to be clamped or fixed

to the segmental block J by a clamp or set-screw, or any other proper means. By pivoting or swiveling the standard A to its supporting tablet or base I obtain a horizontal rotary or swinging motion of the boot-sole with respect to the cutting or burnishing tool, which enables such tool to follow all the curvatures of the outline of said sole with respect to the upper.

With mechanism above described a boot may be "jacked" almost instantly, as a rapid movement is imparted to the jaws by means of the gear or rack *g* and pinions *f f*.

The compound or duplex adjustment of the jack is also a matter of great importance in machinery for "trimming or setting" edges of soles or heels.

My present jack will also be found valuable as a "bench-jack," to which purpose it may be adapted with little change.

I do not confine myself to the dovetailed connection herein stated as a point of vibration of the jack, as this vibratory union of the clamping portion of the jack with the rotary portion thereof may be effected in various ways, such, for instance, as simply pivoting it to the block J.

Claims.

1. I claim as a jack for supporting a boot or shoe, the two jaws D and E, sliding upon the disk B or its equivalent, and operated by screws in manner as stated, when such jaws and disk are pivoted to a support in such manner as to rotate thereon in a plane at right angles to the axis of the trimming or burnishing tool, substantially as and for purposes stated.

2. I claim as a jack for supporting a boot or shoe, the two jaws D and E, operated by the screw and ring gear, as and for purposes stated.

3. In machinery for trimming and setting the edges of boots and shoes, I claim a jack provided with heel and toe rests, or supports arranged both to tilt together longitudinally for the purpose of varying the slope of the heel or of the toe portion of the sole-edge, and also to rotate on a horizontal axis at right angles with the plane of their rocking movement, in order to permit the tool to traverse the sole-edge, substantially as shown and set forth.

4. In machinery, substantially such as described, I claim a jack in which the heel and toe rests are combined with the means herein described, or the equivalent of the same, whereby a threefold adjustment of the jack is obtained—that is to say, a tilting or rocking motion in the direction of the length of the heel and toe rests; a rotation in a vertical plane at right angles to the plane in which the said rocking movement takes place; and an oscillating or tilting motion of the jack bodily, to vary the slope of either the side edges of the sole, or of the toe and heel, or both, substantially as shown and set forth.

5. The combination of the herein-described jack with a supporting standard arranged to swing upon a vertical axis, substantially as and for the purposes set forth.

6. I also claim, in combination with the jack and its supporting standard, the lever K pivoted to said standard, and the vertical feed-screw *k* working in swiveled or ball-sockets attached, respectively, to the lever and to the standard, substantially as herein shown and set forth.

7. I also claim the convex curved faced block J, connected by a horizontal axis or pin with

the lever K, in combination with the corresponding concave block G on the disk B, the said blocks being connected by a dovetailed joint so that the one may move upon the other, as shown and set forth.

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Witnesses:

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