M. V. B. ETHRIDGE.

Machine for Smoothing and Finishing Boot-Legs.

No. 204,662. Patented June 11, 1878.

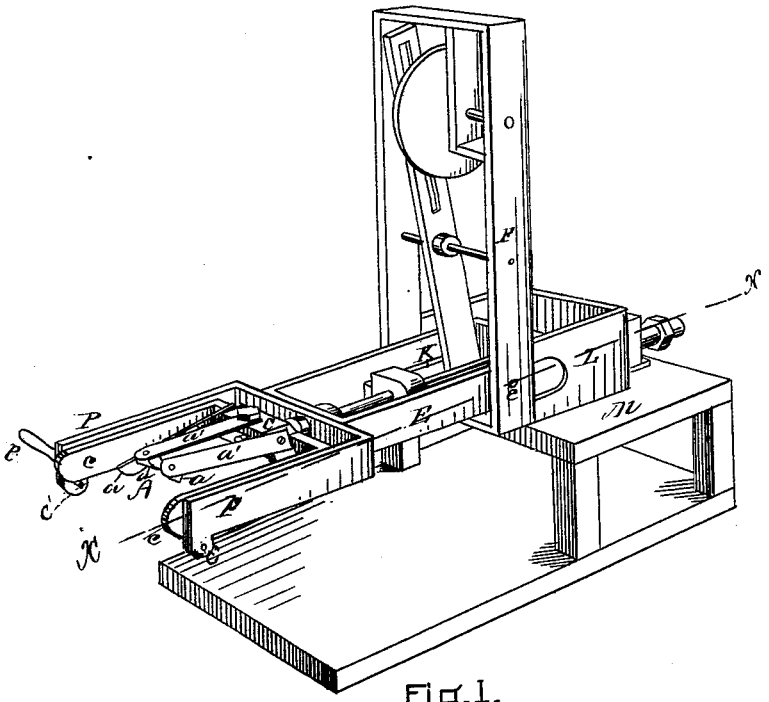

Fig. 1.

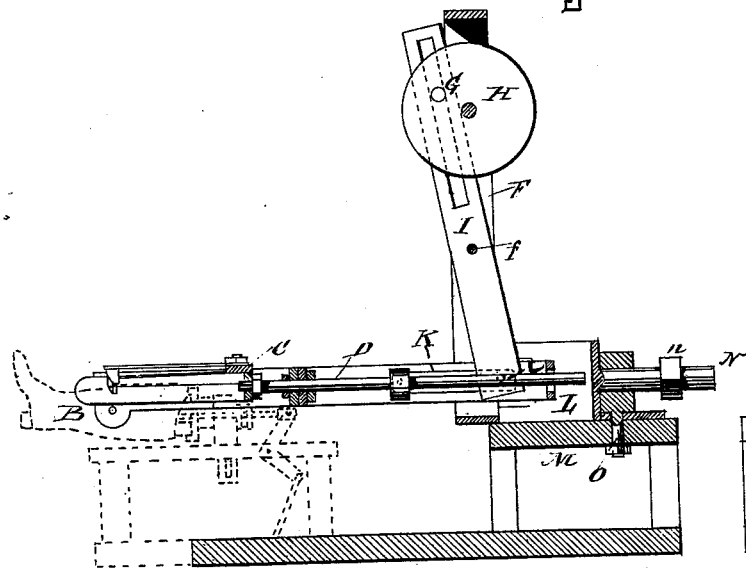

Fig. 2

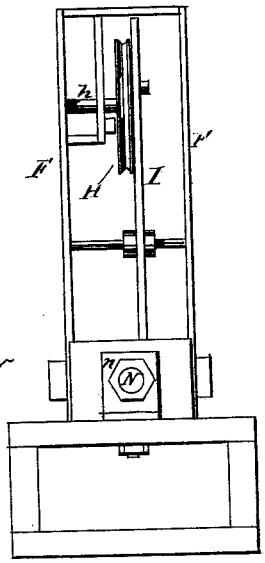

Fig. 3.

WITNESSES

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MARTIN V. B. ETHRIDGE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR SMOOTHING AND FINISHING BOOT-LEGS.

Specification forming part of Letters Patent No. **204,662**, dated June 11, 1878; application filed February 11, 1878.

To all whom it may concern:

Be it known that I, M. V. B. ETHRIDGE, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Machines for Smoothing and Finishing a Boot-Leg on a Boot-Tree, of which the following is a specification:

The object of this invention consists in a reciprocating smoothing and finishing device, in means for operating the same, and in providing it with proper adjustment in relation to a boot tree or jack preferably arranged to turn in presenting the boot-leg to the action of the said device.

In the drawings, Figure 1 is a perspective view of my machine. Fig. 2 is a vertical section on the line *x x* of Fig. 1, and Fig. 3 is an end elevation of the same.

The boot-tree used with my device as a jack is the one patented to R. L. Lewis, and known as the "Howe Machine," though others, either with or without means for turning, may be employed in presenting the boot-leg to the manipulation of the smoothing and finishing device.

My invention is represented as a bench tool, or one operating upon or from a bench; but it may be operated in a hanging frame as well.

The smoothing and finishing device A consists of two or more wooden blocks, *a*, rounded on their under surfaces, each supported at the end of a yielding arm, *a'*, and arranged in a concave form in relation to each other, to better correspond to the convex surface of the boot tree or jack B, upon which they operate in smoothing out the wrinkles and in rubbing in the filling employed in finishing a boot-leg. The yielding arms *a'* are fastened to a swiveling cross-bar, C, at the end of the shaft D, which is reciprocated in the tilting frame E, pivoted at *e* to the uprights F, by means of an eccentric, G, on the driving-pulley H, the slotted lever I pivoted at *f* to the upright F, (one of which also furnishes a bearing for the driving-pulley at *h*,) and the connecting-rod K. Projecting backward from the base of the upright F is a box, L, adapted to sit on the bench M, and provided with the stud N, which passes through the pivot O, by means of which and a nut, *n*, on the stud, the box and actuating mechanism may be swung to any desired position on the bench, and may be moved to and from its pivotal point.

The swiveling cross-bar C is provided with the arms *c*, which contact with the pins or stops *c'* on the frame P, carrying the handles *p*, and arranged to swivel on the reciprocating shaft D when it is desired to turn the smoothing and finishing device in its operation.

The operation of the machine is as follows: The boot, being adjusted on the boot-tree, is presented to the reciprocating action of the smoothing and finishing device, which moves with automatic motion to and fro on the boot-leg, supported by the boot-tree, and accommodates itself to all the variations in the contour of the tree with regularity and precision in smoothing out the wrinkles, in rubbing in the filling material, and in otherwise fitting the boot-leg to the tree and finishing it.

The advantage of employing a machine to do the work heretofore done by hand is the result of this invention, and, as is very generally the case when such substitution is made, the work is done very much quicker and considerably better than when done by hand.

Of course, the smoothing and finishing device may have a short or long stroke, and may operate upon any portion of the tree by virtue of the peculiar adjustments provided it from the construction of the supporting-frame and operating mechanism. For instance, it may be operated at the foot of the boot-tree or at the top of the same, at will, by the movement of box L in and out on the bench and the vertical movement of the tilting frame E on the standard F; or it may be worked on the side of the tree by turning the swiveling frame P, which causes the pin *c'* to contact with arms *c*, and turn or oscillate the smoothing device in that direction; or it may be moved laterally in relation to the tree by swinging on the pivot O. In fact, all necessary adjustments are provided the smoothing and finishing device, so that it may be said to possess universal adjustability in relation to the surface upon which it operates.

I am aware that various patents have been granted for burnishing the edges and shanks

of a sole, for rubbing down seams, and for leather-dressing. I am also aware that a large number or machines employed for this purpose show reciprocating tools of one kind or another in combination with supports both stationary and movable, and that they are admirably adapted for the purposes for which they were designed; but I am not aware that one of the so-called sole-burnishing patents, or one of the leather-dressing patents, or one of the patents describing machines for rubbing down boot-seams shows and describes a reciprocating tool conversely shaped to the surface of a boot-tree or other support of a like shape arranged to reciprocate upon the surface of a boot-tree, or said support provided with means for revolving at right angles to the line of said reciprocating tool in smoothing out wrinkles, fitting the leg of the boot to the boot-tree, and in rubbing in a filling and finishing composition, arranged in relation to each other, and intended to operate as herein set forth.

It will be observed that in this device all the operative mechanism is located beyond the reciprocating finishing-tool, so that the reciprocating finishing-tool constitutes the front of the machine, and is entirely removed from any connection therewith, except that which is necessary for operating the same.

It will also be seen that, in smoothing and finishing the boot-leg upon the boot-tree, it will be necessary for the operator to grasp the handles *p* and guide the same in relation to the surface upon which it is intended the smoothing device shall be operated as the work may require. Consequently, without rotating the boot-tree, he can bring the finishing-tool to bear upon almost all surfaces of the boot-tree, and perhaps the entire surface; and it is for this purpose that the finishing-tool has been supplied with a vertical adjustability in relation to the boot-tree, a lateral adjustability in relation to the same, an oscillating adjustment in connection therewith, and, in fact, it may be said universal ajustability in relation thereto.

Of course, the readiness with which the work can be done is facilitated by employing a boot-tree which can be rotated; but it is possible to use a stationary boot-tree, and cause the finishing-tool, by its extreme adjustability, to do all the requisite work.

I claim and desire to secure by Letters Patent of the United States—

1. In a boot-leg smoothing and finishing machine, a reciprocating yielding smoothing and finishing device, consisting of two or more blocks, *a*, arranged upon yielding arms *a'* to correspond in curvature with the surface of the boot-tree provided with the adjustments described, having suitable handles *p* for guiding said device and actuated by mechanism entirely back of the same, in connection with a boot-tree or other support adapted to rotate at right angles to the line of movement of said smoothing and finishing device, substantially as and for the purpose set forth.

2. The combination of a swiveling cross-bar, C, provided with the arms *c*, with the swiveling frame P, provided with a handle, *p*, and the stops *c'*, substantially as described, and for the purpose set forth.

3. The combination of the eccentric G or other driving mechanism, slotted lever I, and connecting-rod K, or its equivalent, reciprocating shaft D, and the smoothing and finishing device described, substantially as set forth.

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Witnesses:

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