M. V. B. ETHRIDGE.

Machine for Finishing Boot-Legs.

No. 211,623. Patented Jan. 28, 1879.

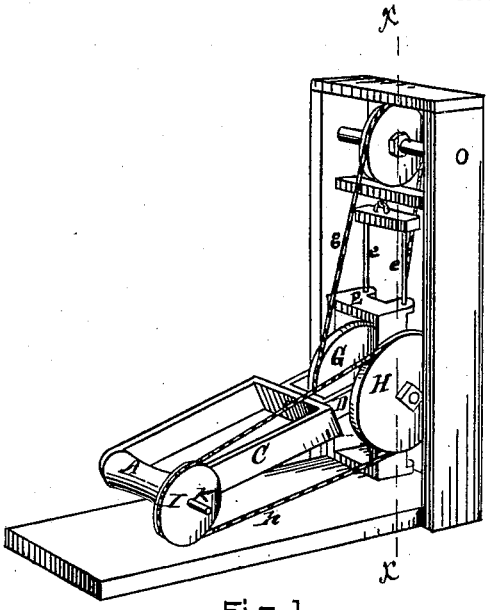

Fig. 1.

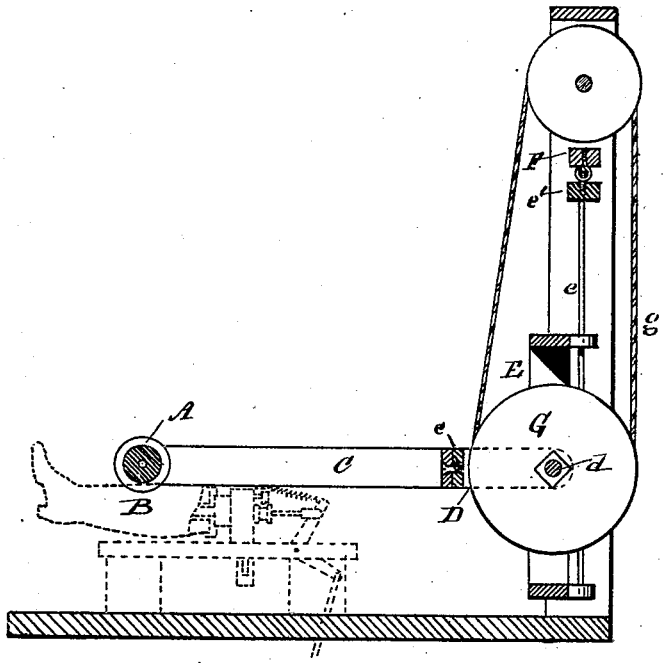

Fig. 2.

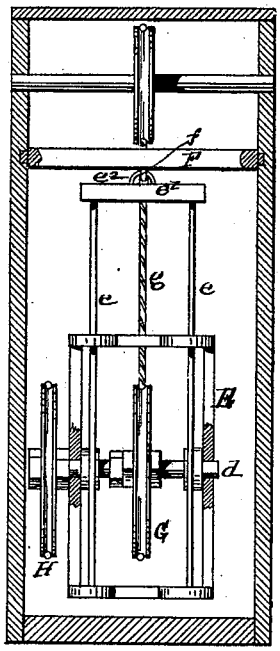

Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

MARTIN V. B. ETHRIDGE, OF BOSTON, ASSIGNOR, BY MESNE ASSIGNMENT, TO GEORGE W. COPELAND, OF MALDEN, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR FINISHING BOOT-LEGS.

Specification forming part of Letters Patent No. **211,623**, dated January 28, 1879; 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 Fitting, Smoothing, and Finishing the Leg of a Boot on a Boot-Tree, of which the following is a specification:

This invention consists in a revolving smoothing and finishing tool provided with means for vertical, horizontal, and lateral adjustment in relation to a boot-tree, in means for operating said tool, in means for providing said tool with the adjustments above named, and in means for oscillating said tool.

In the drawings, Figure 1 is a perspective view of the machine. Fig. 2 is a vertical section on the line *x x* of Fig. 1; and Fig. 3 is a vertical cross-section of the upright portion of Fig. 1.

Heretofore the work which my revolving smoothing and finishing tool accomplishes was done, after the boot was treed, with a smoothing-stick of hard wood properly rounded on the surface contacting with the leg of the boot. With this tool operated by hand it was possible to smooth out the wrinkles, to perfectly fit the boot-leg to the tree, and to rub in the filling material used in finishing the leather; but it was a tedious operation, and very wearing on the strength of the persons performing it.

In my machine the boot is treed in the ordinary way, so far as the insertion of the stretching-blocks is concerned, after which the treeing mechanism performs the duty of a jack in presenting the boot-leg to the operation of the smoothing and finishing tool.

There are quite a number of treeing-machines that can be used with my mechanism; but I prefer to use that described in the patent granted to R. L. Lewis, and known as the "Howe machine," although any tree may serve as a jack when provided with means at its end for turning the same to the operation of the tool.

The smoothing and finishing tool A, preferably made of hard wood, is represented in Fig. 2 as suspended over a jack, B, provided with means for the adjustment above named, in the horizontal or substantially horizontal frame C, which extends backward from the tool, and is pivoted at *c* to the swinging yoke D. This swinging yoke projects from the short shaft *d*, which is provided with bearings in the swinging frame E, itself suspended by the rods *e*, cross-bar e^1, and staple e^2 from a hook, *f*, at the center of cross-bar F.

The shaft *d* communicates the power from the driven pulley G, operated by the belt *g*, to the pulley H, operating, through pulley I and the belt *h*, to revolve the smoothing and finishing tool. The tool or frame C is provided with the handles K.

Of course I do not confine myself to the exact construction and operation shown and described, but may use any mechanical substitute or equivalent for the parts named which will serve as they do in providing the smoothing and finishing tool with a revolving movement, with a horizontal adjustment in relation to the boot tree or jack, with a vertical adjustment in relation to the same, with a lateral movement in connection therewith, and with a vertical rocking, swiveling, or tipping movement at the center of its length, or with either of said movements or adjustments, or with combinations of two or more of them, as the case may be, in connection with a boot tree or jack provided with means for turning or partially turning the boot-leg in presenting it to the action of the tool. I prefer to make my tool somewhat concave in order to better adapt it for operation on the convex surfaces of a boot-tree.

Operation: The boot having been adjusted on the boot-tree in the ordinary way is subjected to the action of the revolving tool, which, by the adjustments above named, can be brought to act on any portion of the boot-leg in removing wrinkles, in smoothing it on the tree, in rubbing in the filling material, and in otherwise finishing the leg.

The advantage of the machine is the ease and facility with which the boot-leg can be smoothed, fitted, and finished, as compared with the same manipulation when done by hand.

I am aware that the patent to White, granted March 12, 1872, Reissue No. 4,805, shows and describes a machine for rubbing out and rolling boot and shoe seams; also, that the patent to

Thompson of May 6, 1873, No. 138,713, shows and describes a device for rubbing down and rolling boot and shoe seams, in combination with a device for stretching a boot-leg. The first-named apparatus has a reversible support for the boot or shoe, but this tool is provided only with a vertical yielding adjustment against the pressure of a spring. The other contrivance does not claim any special adjustability of either the tool or the support presenting the seam to the tool, and neither device shows a tool positively actuated. I do not claim anything elaborated in said patents, for my machine is intended to be used in smoothing out wrinkles in a boot-leg, in fitting the same upon the boot-tree, and in rubbing in a filling and finishing composition, which is accomplished by a tool of a peculiar shape given peculiar adjustments in relation to a peculiar support or jack, and having a constant movement or rotation.

It will be seen that in this machine the smoothing and finishing of the boot-leg upon the boot-tree is accomplished by the rolling action of the tool upon the boot-tree. It will also be seen that said tool is positively actuated and constantly revolves when in operation. It will be observed, further, that said tool is provided with a variety of adjustments in relation to the boot-tree, in order that it may work with uniformity and precision thereon when guided by the operator; that by said adjustments the tool can be caused to operate upon the upper surface of the boot-tree, upon the side of the boot-tree, upon the end portion thereof—in fact, upon any section where it may be desirable to smooth out wrinkles and rub in a filling composition—without causing the said boot-tree to rotate; but in some cases it is desirable that the said boot-tree be adapted to rotate in relation to the line of action of the tool. It will be noticed that in operating this tool the same is guided upon the work by the handles, which enable the operator to turn the tool in almost any direction in relation to the bolt-tree in performing its work.

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

1. In a machine for smoothing and finishing a boot-leg upon a boot-tree or other support having a revolving movement at right angle to the line of action of said tool, a concave revolving smoothing and finishing tool, positively actuated by mechanism entirely behind said tool, in combination with said boot tree or support, substantially as and for the purpose described.

2. In a machine for smoothing and finishing a boot-leg upon a boot-tree or other suitable support adapted to revolve at right angles to the line of action of the smoothing and finishing tool, a positively-actuated concave revolving smoothing and finishing tool, operated by mechanism entirely behind the same, and provided with means for the various adjustments described in relation to said boot-tree, and with the handles K for guiding the same in relation to said boot-tree, in combination with said boot-tree, substantially as and for the purpose described.

3. In a machine for smoothing and finishing a boot-leg upon a boot-tree or other support having rotation at right angles to the line of action of the tool, the combination of a swinging frame, suspended by a universal or other suitable joint carrying driving and driven operating mechanism, and supporting a swinging yoke, with the swiveling frame C, furnishing a bearing for the positively-actuated revolving tool A, and the tool-driving mechanism, all arranged to operate substantially as described.

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Witnesses:

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