

Machines for Burnishing the Edges of Boot and Shoe Soles.

Patented May 26, 1874.

fig. 1.

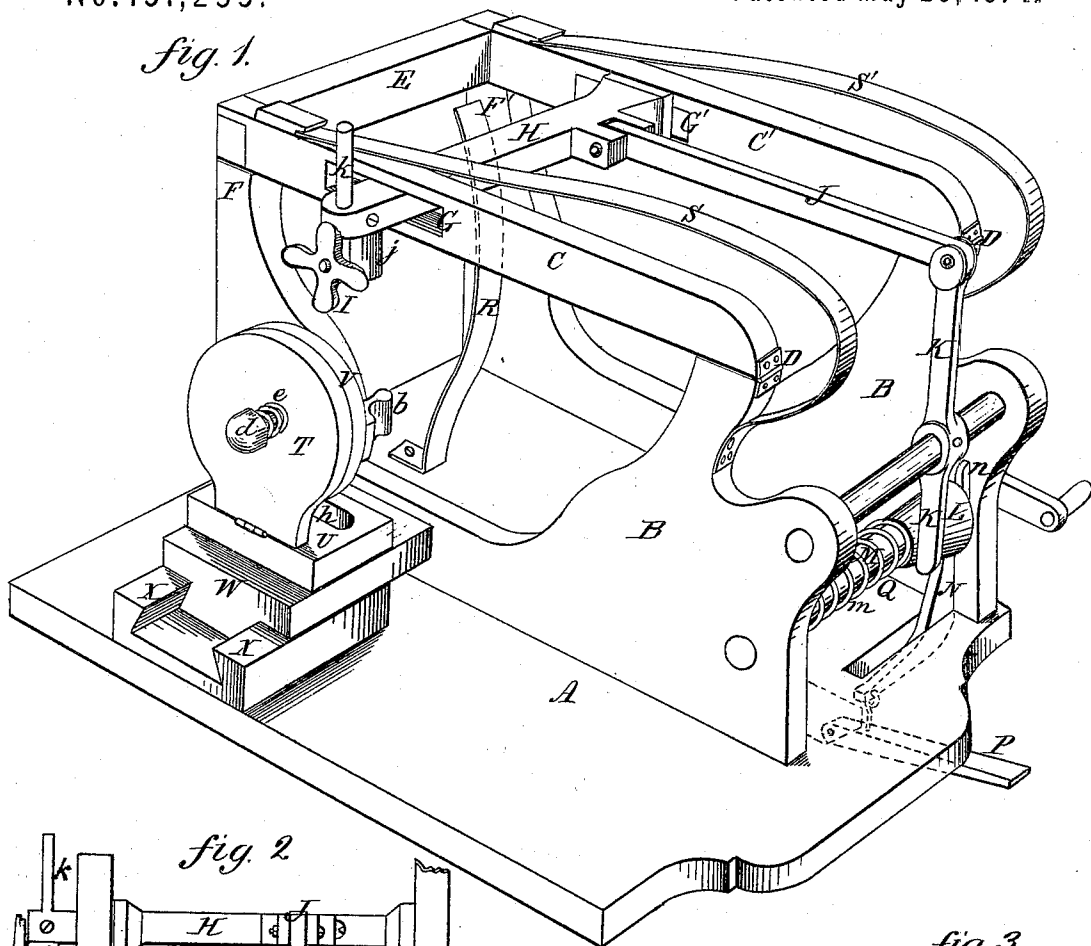


fig. 2

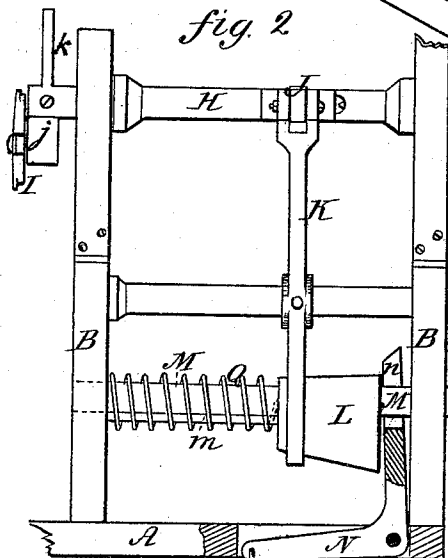


fig. 4.

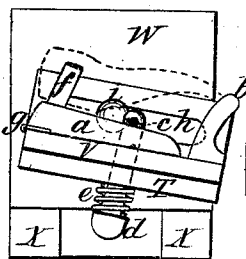
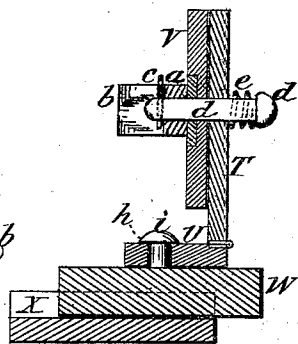


fig. 3.



Witnesses:

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By H. Shier, His attorney

UNITED STATES PATENT OFFICE.

ISAIE E. TREPANIER, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN MACHINES FOR BURNISHING THE EDGES OF BOOT AND SHOE SOLES.

Specification forming part of Letters Patent No. **151,255**, dated May 26, 1874; application filed November 10, 1873.

To all whom it may concern:

Be it known that I, ISAIE E. TREPANIER, a subject of the Queen of Great Britain, in her Dominion of Canada, but now residing at Baltimore city, in the State of Maryland, have invented certain new and useful Improvements in Machines for Burnishing the Edges of Boot and Shoe Soles, of which the following is a specification:

My invention is designed for burnishing the edges of boot and shoe soles, including the shank; and it consists, first, in the combination of a cone-cam, having a compound rotary and axial movement, with a burnishing-tool, whereby the stroke of the burnisher is varied at the will of the attendant; second, in the combination of the cone-cam and its axis-spring with the treadle, the burnishing-tool, and their connecting devices, as a means for imparting to the burnishing-tool a variable reciprocating movement; third, in the combination of the hinged carrying-frame for the burnisher with springs for pressing the said frame down, and a spring for forcing the reciprocating cross-head of the burnisher back to maintain the connecting device in contact with the operating cone-cam; fourth, in the combination of the hinged carrying-frame and the burnisher, with stops for limiting the descent of said carrying-frame and the burnishing-tool.

In the accompanying drawings, Figure 1 represents a view in perspective of a machine embracing my invention; Fig. 2, an end elevation; Fig. 3, a vertical section of the pivoted adjustable jack, and Fig. 4 a top view of the same.

From a bed-plate, A, rise two side frames, B B, and upon these are mounted a hinged frame for carrying the burnishing-tool and a cone-cam, by which the burnishing-tool is reciprocated. The tool-carrying frame consists of two horizontal arms, C C', each connected at one of their ends by hinges D D' to the side frames B B, and having their free ends united together by a bar, E, so as to form an open rigid frame, capable of rising and falling at its tool-carrying end, the descent whereof being limited by the side frames, which form stops F F' for that purpose. Within horizontal slots G G', formed in these hinged arms near their free ends, is arranged a cross-head, H. Upon

one end, which projects beyond the arm C, is mounted the burnishing-tool I, and the cross-head, with its tool, is made to have a reciprocating movement in the direction of the length of the arms, and within their slots G, for working the tool over and upon the edge of the sole of the boot or shoe, which is held in position beneath the tool by a jack mounted upon the bed-plate. The reciprocating movement of the cross-head H is effected by a connecting-rod, J, with a lever, K, the free end of which projects contiguous to and bears upon a cone-cam, L, mounted upon a horizontal axis, M, in the fixed frame. This cam L is of peculiar construction and arrangement, being a frustum of a cone placed eccentrically upon its axis, with its greatest projection at the base of the frustum, and each revolution of this cam imparts to the burnishing-tool I and its cross-head H a back-and-forth movement. To increase or diminish this movement, the cone-cam L is also made to have an axial movement simultaneously with its revolutions, so that during the operation it has a compound movement, to obtain both a reciprocating movement of the burnishing-tool and a variable stroke thereof, to adapt the burnisher to boots and shoes of varying lengths. This feature is of very great importance, as it gives to the tool an automatic stroke adjustment, so desirable in burnishing sole-edges, and without interfering with its automatic movement in passing over the sole-edge. The conical cam has a feather-connection, m, with its shaft M, to admit of its compound movement, and it is brought into action lengthwise by means of a bell-crank lever, N, pivoted to the fixed frame, with its branched end n bearing against the base of the cone-cam L, and connected at its other end to a treadle, P, the depression of which forces the conical surface lengthwise against the lever K, bringing into action the increasing diameter and projection of the cone, and in proportion to its movement by the treadle will be that of the stroke of the burnisher. A spiral spring, Q, on the axis M, bears against the apex of the cone L, and forces the latter back, with the lever K in position at its apex when the treadle is relieved. This lever K is caused to maintain its bearing upon the cone-cam L by a spring,

R, which, pressing upon the cross-head H, constantly tends to force it back; while springs S S', pressing upon the cross-head arms C C', constantly tend to force down the burnisher.

The jack consists of a vertical plate, T, hinged to a base-piece, U, to allow it to be turned back, and a pivoted disk, V, to the inner face of which are attached the heel-pin arms *a* and toe-block *b*, for securing the last in place. The heel-pin arm *a* is hinged at its outer end, and its inner end is secured by a pin, *c*, to the projecting end of the axis *d* of the disk V, which axis *d* passes through the plate T, and by a spring, *e*, allows the arm *a*, with its heel-pin *f*, to turn upon the hinge *g*, to draw back the pin *f* in placing the last over it, and drawing and holding the last tight against and upon the toe-block *b*, and thereby secure it, with the boot or shoe, in place upon the jack, so that it can be turned with the disk upon its axis-pin *d*, to bring into action the edge of the sole from and including the shank. The base U of the jack has a slot, *h*, through which a holding-pin, *i*, passes, which serves as a pivot, upon which the jack may not only be turned but moved in directions to conform to the curve of the edge. In addition to this adjustment, the jack is mounted upon a slide, W, which is moved upon ways X on the bed-plate A, so as to give a direct movement of the jack toward and from the burnisher, so that it has a universal adjustment in presenting and holding the edge of the sole up to the tool; such adjustment being horizontally upon the swiveling pivot *i*, and a compound sliding movement in addition to the vertically revolving adjustment of the last-holding pivoted disk V, whereby the jack is capable of every required movement for the

sole-edges of boots and shoes of different sizes, and in this respect affords every facility in the manipulation of the work.

The burnisher may be of any suitable construction. In the example shown it has four arms, with tools of different sizes, and is pivoted to a stock, *j*, so as to be clamped to bring the proper tool into action, while the stock is secured by a stem, *k*, to the cross-head H, and may be adjusted vertically and secured by a clamp-screw.

I claim—

1. A cone-cam having both a rotary and an axial movement, as described, in combination with a burnishing-tool for boots and shoes, to produce and to vary at will the stroke of the reciprocating burnisher.

2. The cone-cam L and its spring Q, in combination with the treadle P, the burnishing-tool I, and their connecting devices, as described.

3. The combination of the springs R S S' with the hinged frame C C' and the reciprocating cross-head H of the burnishing-tool, as described.

4. The stops F F', in combination with the hinged tool-carrying frame C C', as and for the purpose described.

5. The base U, having a slot, *h*, in combination with the pivot *i*, slide W, and last-holding head T V, as and for the purpose described.

In testimony whereof, I have hereunto set my hand this 7th day of November, A. D. 1873.

ISAIE E. TREPANIER.

Witnesses:

WM. H. BAYZAUD,
C. H. SLICER.