

W. B. LAMBERT.
HEEL-BURNISHING MACHINE.

No. 173,971.

Patented Feb. 22, 1876.

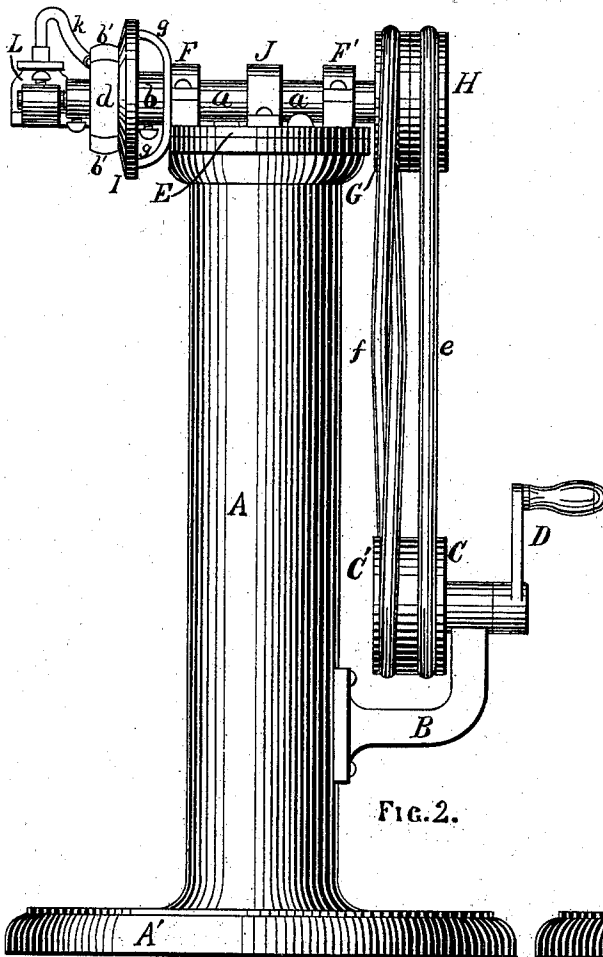


FIG. 2.

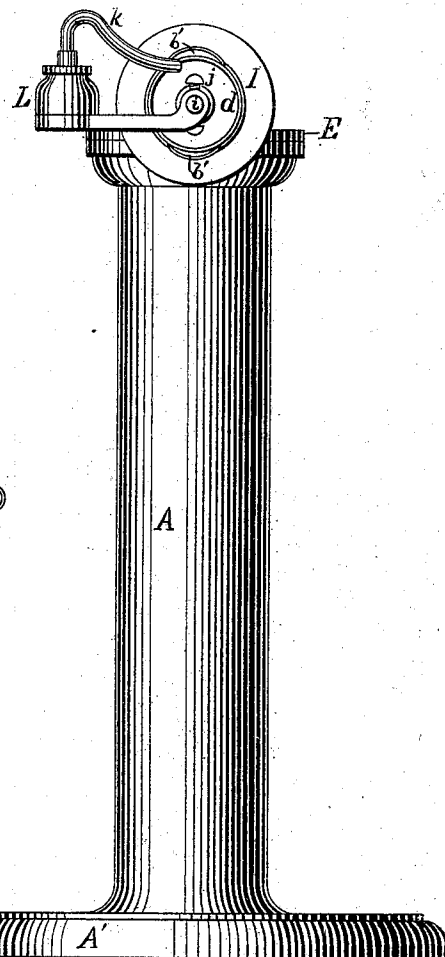


FIG. 3.

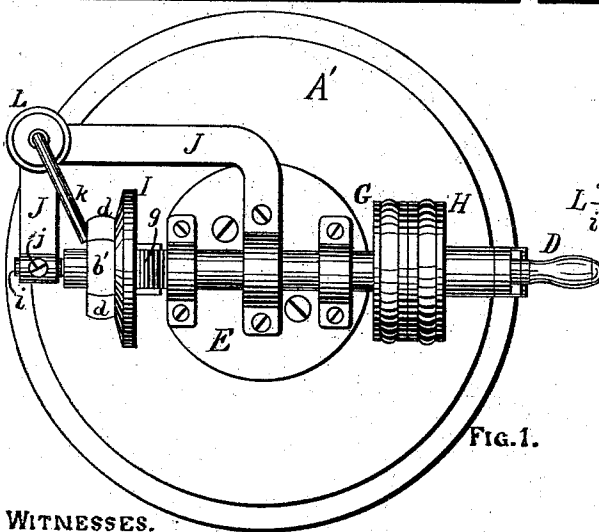


FIG. 1.

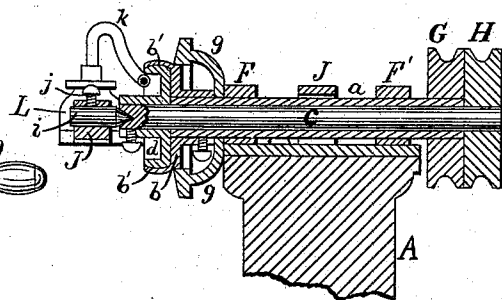


FIG. 4.

WITNESSES.

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN HEEL-BURNISHING MACHINES.

Specification forming part of Letters Patent No. **173,971**, dated February 22, 1876; application filed
January 31, 1876.

To all whom it may concern:

Be it known that I, WILLIAM B. LAMBERT, of Weymouth, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Machines for Burnishing the Edges of Boot and Shoe Heels and Soles, of which the following, taken in connection with the accompanying drawings, is a specification:

My invention relates to the construction and operation of the burnishing-tools; and it consists in the use of two burnishing-tools or wheels, placed one within the other, and adapted to be revolved in opposite directions about a common axis, and to act alternately upon the heel or sole-edge, as will be more fully described.

My invention further consists in the use, in combination with two burnishing-tools adapted to be revolved in opposite directions about a common axis, and in the same vertical plane of revolution, of a fixed or stationary rest or gage arranged concentric with the axes of said tools, and projecting beyond them to receive the tread of the heel or sole while the edge is being acted upon by the burnishing-tools.

Figure 1 of the drawings is a plan of a machine having my improvement applied thereto. Fig. 2 is a front elevation. Fig. 3 is a side elevation. Fig. 4 is a vertical section of the head or upper part of the machine, and Fig. 5 is a detail of a part of a jack to hold the shoe.

A is the column or supporting-frame, held in an upright position by the base-flange A', and having secured thereto the stand B, which supports the driving-shaft, upon which are mounted the driving-pulleys C C'. Motion may be imparted to the pulleys C C' by the crank D, or by means of a pulley occupying the place of said crank and a belt leading thereto from a revolving shaft. To the top of the column A is secured the plate or disk E, to the upper side of which are secured the boxes F F', in which is mounted the sleeve or hollow shaft a, to one end of which is firmly secured the pulley G, and to the other end the burnishing-wheel b. H is another pulley of the same diameter as G, secured firmly to

one end of a shaft, c, which passes through and has its bearing in the hollow or sleeve-shaft a, and has firmly secured to its other end the burnishing-wheel d. Motion is imparted to the shaft c and its burnishing-tool d, causing them to revolve in one direction by means of the open belt e, leading from the pulley C to the pulley H, while a corresponding motion in the opposite direction is imparted to the sleeve-shaft a and its burnishing-tool, b, by means of the crossed belt f, leading from the pulley C' to the pulley G. I is an annular ring supported in a position concentric with the axes of the burnishing-tools b and d by the arms g g, secured to the bearing F, as shown in Fig. 2, said ring projecting beyond the periphery of the burnishing-tools, and serving as a rest for the tread of the heel or sole while its edge is being presented to the action of the burnishing-tools. The burnishing-wheel d consists of a hub, a radial web, and an annular rib projecting from the outer face of said web toward the end of the shaft, to which it is secured, the outer periphery of said wheel being made convex in the direction of the length of its shaft, as shown in Figs. 1 and 2. The burnishing-tool b is made similar to d, except that the burnishing-surface on the periphery of the wheel is cut away upon two opposite sides, as shown in Fig. 3, so as to leave two short sections, b', of the projecting rib standing out from the web and fitting closely over the periphery of the inner wheel d, as shown. These projecting sections of wheel b are made as thin as practical, in order to make the difference in the diameters of the two tools as little as possible, and their ends are rounded down to knife-edges, closely hugging the periphery of the inner burnishing-tool d, as shown in Fig. 3. J is a stand secured to the plate E, extending around the ring I and burnishing-tools b and d, to a point opposite the end of the shaft c, and has fitted thereto the center i, which is also fitted to a countersink in the end of the shaft c, and held in position by the set-screw j. L is a lamp secured to stand J, and provided with a bent wick-tube, k, of such a form and placed in such a position that a flame therefrom will impinge upon the under side of the

upper portion of the rim of the burnishing-tool *d*.

The operation of my invention is as follows: Power being applied to the crank *D*, the burnishing-tools *b* and *d* will be made to revolve in opposite directions at the same rate of speed.

If, now, a shoe be placed with its heel against the radial face of the ring *I*, and the edge of the heel be pressed against the periphery of the burnishing-tools, it will be alternately acted upon by the two tools, each rubbing the stock in a direction different from the other, and producing the same effect thereon, as is produced by the reciprocating tool, without the objectionable features thereof, viz, the sudden starting and stopping of said tool, while under pressure, from five hundred to fifteen hundred times in a minute.

Each of the burnishing-wheels *b* and *d* comes in contact with and acts upon the edge of the heel or sole twice at each revolution thereof, and as their motions are continuous, each moving always in the same direction, it

follows that they may be operated at a much greater speed than a reciprocating tool can.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The two burnishing-wheels *b* and *d*, constructed and arranged as set forth, and adapted to be revolved in opposite directions about a common axis, and moving in the same plane of revolution, and acting alternately upon the edge of a heel or sole presented thereto, as and for the purposes described.

2. The two burnishing-wheels *b* and *d*, arranged one within the other, and adapted to be revolved in opposite directions about a common axis, and in the same plane of revolution, in combination with the annular-ring tread rest or gage, *I*, projecting radially beyond the periphery of said burnishing-wheels, as and for the purpose described.

Executed this 26th day of January, 1876.

WILLIAM B. LAMBERT.

Witnesses:

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