G. H. BLISS.

Heel and Sole Trimming Machine.

No. 161,858. Patented April 13, 1875.

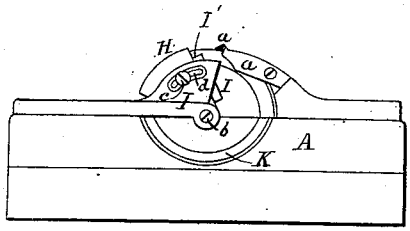

Fig. 2.

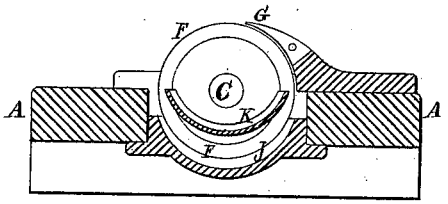

Fig. 4.

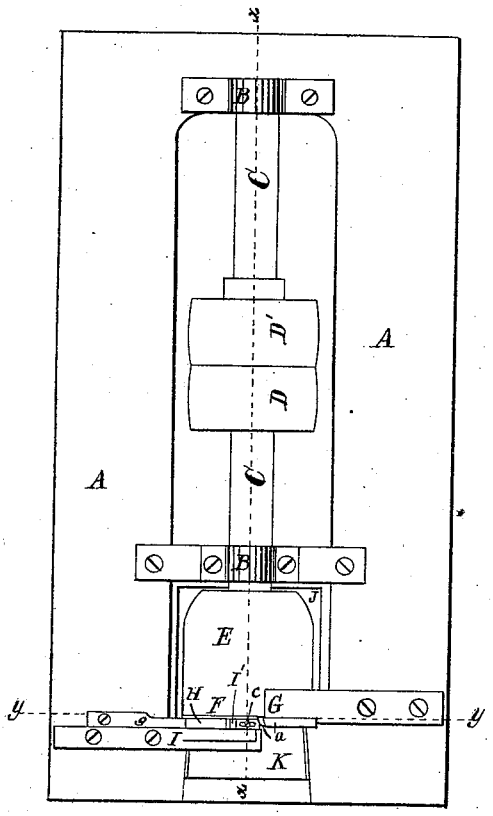

Fig. 1.

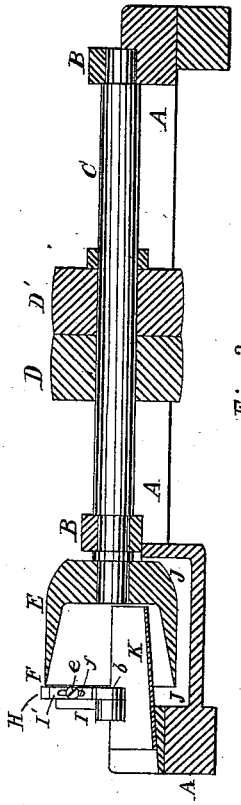

Fig. 3.

WITNESSES.

Wm. P. Edwards

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INVENTOR.

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UNITED STATES PATENT OFFICE.

GEORGE H. BLISS, OF WEST STOCKBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN HEEL AND SOLE TRIMMING MACHINES.

Specification forming part of Letters Patent No. **161,858**, dated April 13, 1875; application filed February 6, 1875.

CASE A.

To all whom it may concern:

Be it known that I, GEORGE H. BLISS, of West Stockbridge, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Heel and Sole Trimming and Burnishing Machines, of which the following, taken in connection with the accompanying drawings, is a specification:

My invention relates to a machine for trimming and burnishing the edges of the heels and soles of boots and shoes in which a rotary cutter is used, and in which the heel or sole of the boot or shoe is presented to the action of the cutter and burnishing-tool in such a manner that the line of cut and the motion of the burnisher, as they pass the heel or sole, shall be in the direction of the thickness of said heel or sole, instead of in the direction of the length of the same, the trimming and burnishing being accomplished at the same time; and it consists, first, in the combination, with a vibrating tread-guide, of a spring to hold said guide against the tread-surface of the heel or sole, and allow it to move to adapt its position to the varying thickness of the heel or sole. It further consists in combining, with said vibrating tread-guide, a rest to receive the edge of the heel or sole, made adjustable radially to or from the axis of the cutter, for the purpose of gaging the depth of the cut or the thickness of the shaving to be taken from the heel or sole, and to vary the size of the tread.

My invention further consists in the combination, with a revolving cutter or burnishing-tool, of a receptacle to contain oil or other liquid to serve as a lubricant for the cutter, and aid in the operation of burnishing, or blacking or other coloring material to color the heel or sole, and assist in the burnishing operation, said receptacle being so arranged, relative to the cutter-head or burnisher-tool, that they shall come in contact with the liquid contained therein, and transfer a portion thereof to the surface of the heel or sole at each revolution of the cutting or burnishing tools.

My invention further consists in filling said receptacle with sponge, felt, or other suitable absorbent material, holding in suspension or saturated with oil, blacking, or other lubricating material, said packing being in contact with the cutter, cutter-head, or burnishing-tool, or all combined, the object of said packing being to prevent the blacking or lubricating material from being thrown out of the receptacle by the rapid motion of the tools, and to limit the amount of liquid carried up by said tools.

My invention further consists in the employment of a curved shield attached to some portion of the stationary frame of the machine, and extending into the open end of the ring-knife, in such a position as to prevent the chips and dust made in trimming the heel or sole from dropping into the oil or blacking reservoir.

My invention further consists in constructing the ring or hoop knife and its cylinder or hub with a smooth highly-polished exterior surface, and arranged to trim and burnish or polish the edge of a heel or sole at the same time.

In the drawings, Figure 1 is a plan of a machine embodying my improvements. Fig. 2 is an end elevation, looking toward the cutting-edge of the ring-knife. Fig. 3 is a longitudinal section on line *x x* on Fig. 1, and Fig. 4 is a transverse section on line *y y* on Fig. 1.

A is the frame or bed of the machine, which may be supported upon a bench or table, or upon legs at a suitable height for convenient operation, and provided with the bearings B B, in which is mounted the horizontal shaft C, provided with a driving-pulley, D, firmly secured thereto, and the pulley D′ arranged to revolve freely thereon. The shaft C also has mounted thereon the cutter-cylinder E, carrying thereon the ring or hoop knife F. The knife F has formed on its outer edge an endless cutting-edge, of equal exterior diameter with the cylinder on which it is formed, or to which it is secured, and may be formed in one piece with its supporting-cylinder E, or separately, and secured thereto by screws or otherwise. G is a fixed rand-guide, having formed on its forward side the fixed knife *a*, for trimming the upper outer corner of the heel or sole, as the shoe is fed forward toward the edge of the knife F. H is a guide, pivoted to the stand I at a point, *b*, in line with

the axis of the shaft C, and arranged to be adjusted about the point *b*, and secured in any desired position by means of the screw *c*, working in the slot *d*. The guide H is also provided with the adjustable gage-rest I′, secured thereto by the screw *e* passing through the slot *f*, and it also rests against the spring *g*, by means of which the guide may be made self-adjusting to the different thicknesses of heel or sole, if the screw *c* is slackened. J is a receptacle to be filled with oil or other suitable liquid to lubricate the knife, and prevent it from heating when run at a high rate of speed, or with blacking to serve the same purpose, and at the same time to color the edge of the heel or sole, and assist in the process of burnishing the heel or sole, said receptacle being so arranged, relative to the cutter-head or burnishing-tool, that a portion of them shall revolve in the oil or other liquid contained therein, or in contact with the packing of sponge, felt, or other suitable absorbent material placed therein, and saturated with the lubricating or coloring material. K is a sheet-metal shield, secured to the frame A, and projecting into the interior of the knife F and its cylinder E, for the purpose of preventing the chips and dust formed in trimming the heel or sole from falling into the oil-reservoir.

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

1. The combination of the tread-guide H and spring *g*, arranged to operate as and for the purposes described.

2. The combination of the guide H, arranged to be adjusted parallel to the cutting-edge of the knife, and the gage-rest I, arranged to be adjusted in a radial direction toward or from the cutting-edge of the knife, as and for the purposes described.

3. In combination with a rotary cutter for trimming the edges of heels or soles, or a revolving burnishing-wheel, a receptacle for oil, blacking, or other suitable lubricating or coloring material, in which said cutter or burnishing-wheel revolves, as and for the purposes described.

4. The combination of a revolving cutter-head or burnishing-wheel, a receptacle in which a portion of said cutter-head or burnishing-wheel revolves, and a packing of sponge or other absorbent material, which may be saturated with oil, blacking, or other suitable lubricating or coloring material, all as and for the purposes described.

5. The combination of the ring or hoop knife F, receptacle J, and shield or guard-plate K, all arranged as and for the purposes described.

6. A combined rotary cutter and burnishing-tool, having a smooth and polished exterior surface, arranged to revolve in a suitable lubricating-receptacle, and to trim, to form, and polish at the same time the edge of a boot or shoe heel or sole by revolving past it in the direction of its thickness, while the heel or sole is being fed toward said tools in the direction of its length, and parallel to the axis of motion of said cutters, substantially as described.

Executed at Boston this 2d day of February, 1875.

GEORGE H. BLISS.

Witnesses:
WM. P. EDWARDS,
E. A. HEMMENWAY.