2 Sheets--Sheet 1.

G. H. BLISS.

Machine for Trimming and Burnishing the Edges of Boot and Shoe Heels, &c.

No. 161,857. Patented April 13, 1875.

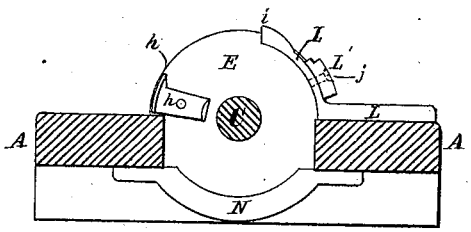

Fig. 3.

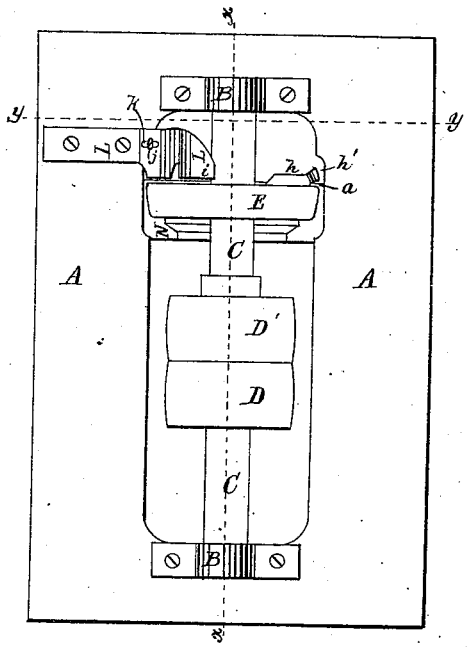

Fig. 1.

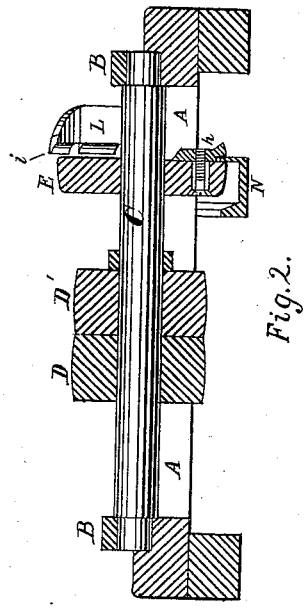

Fig. 2.

WITNESSES.

Wm. P. Edwards

E. A. Hemmenway.

INVENTOR.

George H. Bliss.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

G. H. BLISS.

Machine for Trimming and Burnishing the Edges of Boot and Shoe Heels, &c.

No. 161,857. Patented April 13, 1875.

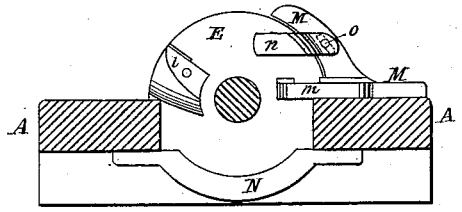

Fig. 6.

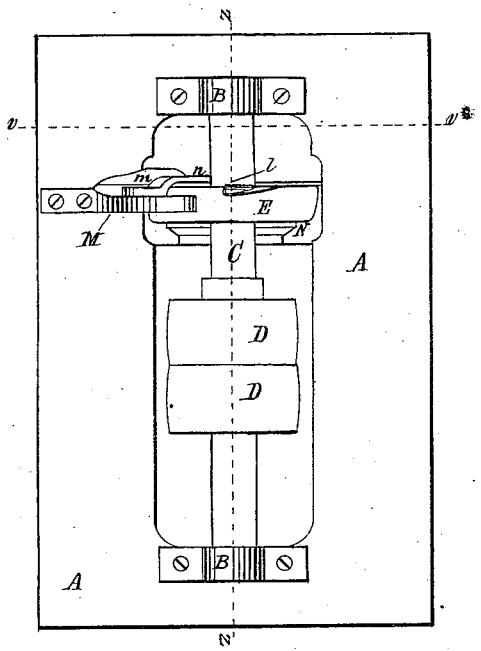

Fig. 4.

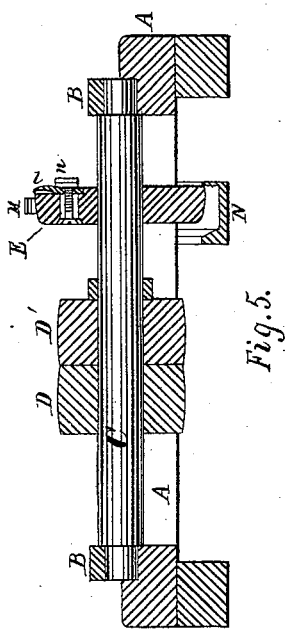

Fig. 5.

WITNESSES.

Wm. P. Edwards

E. A. Hemmenway.

INVENTOR.

George H. Bliss

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

GEORGE H. BLISS, OF WEST STOCKBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR TRIMMING AND BURNISHING THE EDGES OF BOOT AND SHOE HEELS, &c.

Specification forming part of Letters Patent No. **161,857**, dated April 13, 1875; application filed February 6, 1875.

CASE B.

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 Machines for Trimming and 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 a machine for trimming and burnishing the edges of heels or soles in which a rotary cutter or burnishing-tool, or both combined, are arranged to operate upon a heel or sole by revolving past the same in the direction of its thickness; and it consists, first, in the employment of a cutter-head in the form of a plain circular disk or wheel, having a smooth periphery, and having formed upon or secured to the outer radial face thereof one or more cutters projecting from said radial face, with their cutting-edges, as viewed in a radial direction, parallel to the axis of revolution, but beveled or curved as viewed in the direction of their motion, in such a manner that the outer extremity of said cutters shall be nearer the axis than that portion nearest to the cutter-head, said inner portion being equidistant from the axis around which they revolve with the periphery of the cutter-head upon which they are formed, or to which they are secured.

My invention further consists in the combination, with a cutter-head or burnishing-wheel arranged to operate to trim or burnish a heel or sole, as above described, of a fixed curved guide-rest to support the heel or sole during the process of trimming or burnishing, or both, having its bearing-surface for said heel or sole parallel to, but a short distance inside of, the path of the cutting-edges of the cutters, and provided with a thin raised lip, projecting over the cutters, to protect or guard the upper from injury, and an adjustable-gage tread-rest to bear against the tread-surface of the heel or sole.

It further consists in the combination, with a cutter-head arranged as above described, of one or more detachable and adjustable cutters secured to said head, with their cutting-edges radial to the axis of the wheel, and curved outward from the radial face of said wheel, so that while the two ends of the cutters are sunk to or below the level of said surface, the middle portion shall project beyond said radial surface a distance equal to the thickness of the shaving it is desired to take from the heel, the heel being held against said radial surface of the cutter-head, with its tread-surface resting upon a suitable guide provided for the purpose in a horizontal position at one side of the axis of the cutter-head, so that the heel or sole will be trimmed by a series of successive cuts in a vertical or perpendicular direction across the heel or sole in a straight line in the direction of its thickness. This latter arrangement is peculiarly adapted to trimming heels or soles whose edges are straight in the direction of their thickness, as distinguished from heels and soles whose edges are curved in the same direction.

In the drawings, Figure 1 is a plan of a machine embodying my improvements. Fig. 2 is a longitudinal section on line *x x* on Fig 1; and Fig. 3 is a transverse section on line *y y*, looking toward the cutter-head. Figs. 4, 5, and 6 are, respectively, a plan, longitudinal, and transverse sections of a similar machine, illustrating a modification adapted to trimming heels or soles in a straight line across their edges, the longitudinal section being taken on line *z z* on Fig. 4, and the transverse section on line *v v* on Fig. 4, looking toward the cutter-head.

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-head and burnishing-disk E, having formed thereon or secured thereto one or more cutters, *h*, projecting from the outer radial face thereof, with the cutting-edge *h′* parallel, or nearly so, with

the axis of the shaft C, when seen at right angles to its axis of motion, but curved or beveled when viewed in the direction of its motion, so that that portion of the cutter farthest from the radial face of the cutter-head upon which it is formed or to which it is secured shall be nearer to the axis of motion about which it revolves than that portion next to said wheel or cutter-head, as seen in Figs. 1 and 2. The outer portion of the cutter *h* is so formed as to stand away from wheel E, so as to form a groove or channel, *a*, between said cutter and the wheel E, through which passes the wall of the tank or reservoir N, placed below said cutter-head, to contain oil or blacking, or other lubricating or coloring material, as described in another application of even date herewith, so that while the edge of the wheel E revolves in the oil or blacking the cutters *h* will revolve outside of the tank, as seen in Fig. 2. L is a curved gage-stand secured to the frame A, and provided with the thin lip *i*, projecting over the path of the cutter *h*, to protect the "upper" from injury, and also provided with the adjustable guide-rest L′, attached thereto by the screw *j* passing through the slot *k*, against which the tread-surface of the heel or sole is placed, with its edge resting upon the gage-stand L, said heel or sole being fed toward the cutter in the direction of its length, and parallel to the axis, of said cutters.

In the modification illustrated in Figs. 4, 5, and 6, one or more cutters, *l*, are secured to the outer radial surface of the cutter-head E, with their cutting-edges radial to the axis of the wheel, said cutters being fitted to recesses formed in the radial face of said wheel for the purpose, so as to be flush with said surface, except at the point where the cutting is to be done, which part of the cutters *l* is made convex to said radial surface of the wheel, so as to project therefrom a distance equal to the thickness of the shaving to be cut from the heel or sole, the stock of the cutter-head being cut away behind said cutters sufficiently to permit a free passage of the shavings.

M is a guide-stand secured to the frame A, and provided with the arm *m*, upon which the tread-surface of the heel or sole rests, with the edge pressed against the face of the cutter-head E as the heel or sole is moved along and rotated in a direction toward or from the axis of the cutter-head. The stand M also has adjustably attached thereto the rand-guide *n*, held in position by the screw *o* passing through a slot in said stand, (not shown,) by means of which said rand-guide may be adjusted to different thicknesses of heels or soles.

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

1. In a machine for trimming or burnishing the edges of boot and shoe heels or soles, the burnishing and trimming cylinder or disk E, provided with a smooth periphery, and one or more curved cutters, *h*, projecting from its outer radial or end surface, all substantially as and for the purposes described.

2. In combination with the cutter-head E and one or more cutters, *h*, the curved gage-stand L, provided with the guard-lip *i*, all arranged and operating as and for the purposes described.

3. In combination with the cutter-head E, having a smooth periphery, and one or more cutters, *h*, formed upon or secured to its radial surface, with that portion of their cutting-edges next to the head equidistant with its periphery from the axis of said head, and their points or outer ends curved toward the axis, as set forth, the stand L, provided with the guard-lip *i*, and the adjustable guide-rest L′, all adapted to operate as and for the purposes described.

4. In a machine for trimming the edges of boot or shoe heels or soles, the combination of the cutter-head E and one or more cutters, *l*, fitted to recesses formed in the outer radial or end surface of said head, with the outer surface of the cutting portion thereof convex to the radial face of said cutter-head, and the cutting-edge thereof radial to the axis of revolution, substantially as described.

5. In combination with the cutter-head E and one or more cutters, *l*, constructed and applied thereto as described, the guide-stand M, provided with the rest-arm *m* and the adjustable rand-guide *n*, all arranged and operating substantially as herein set forth.

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

GEORGE H. BLISS.

Witnesses:

WM. P. EDWARDS,

E. A. HEMMENWAY.