(No Model.) 2 Sheets—Sheet 1.

A. B. FOWLER & G. E. WARREN.

BURNISHING OR TRIMMING TOOL.

No. 384,902. Patented June 19, 1888.

Fig. 1.

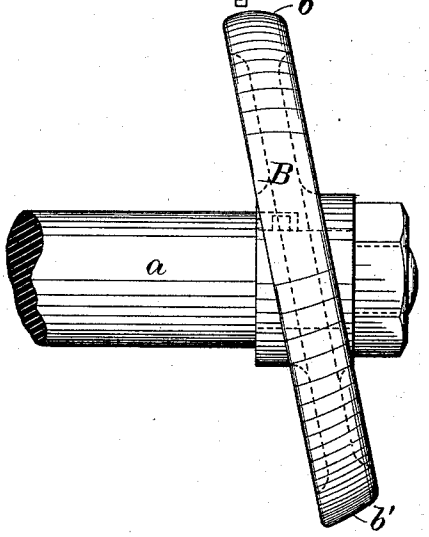


Fig. 2.

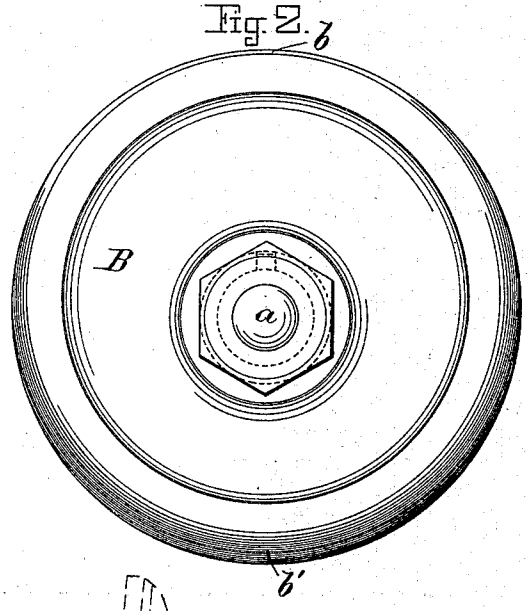
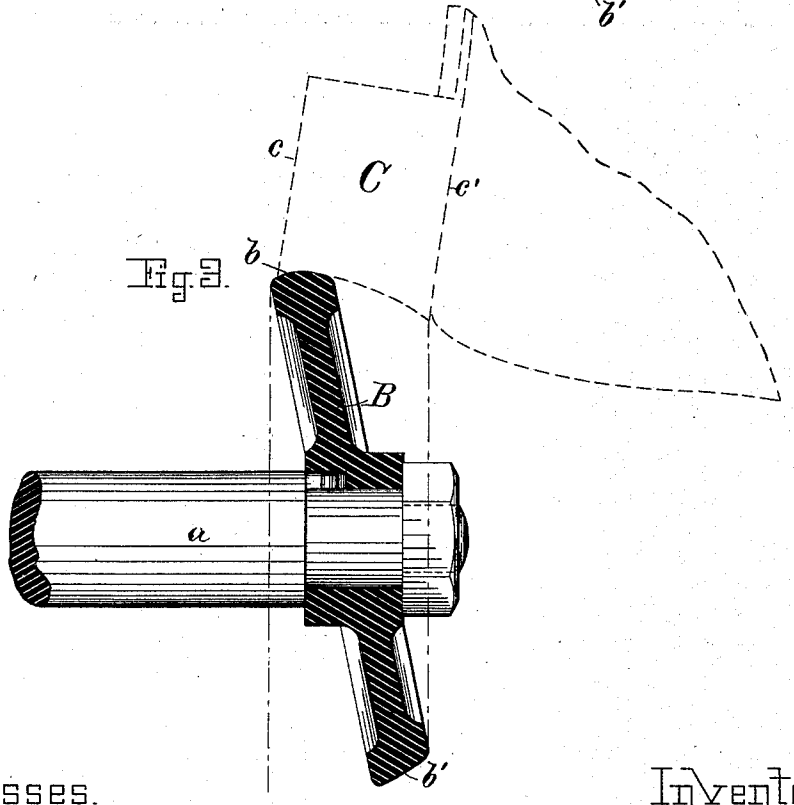


Fig. 3.



Witnesses.

Henry Chadbourn.

Charles H. Figg.

Inventors.

Alfred B. Fowler.

and George E. Warren.

by Albert Andrén their atty.

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

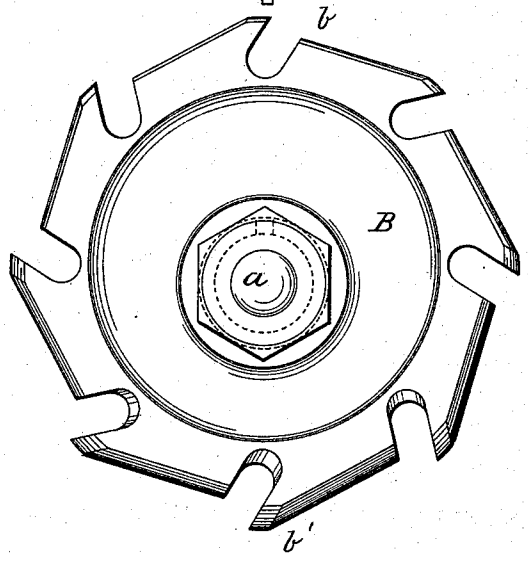
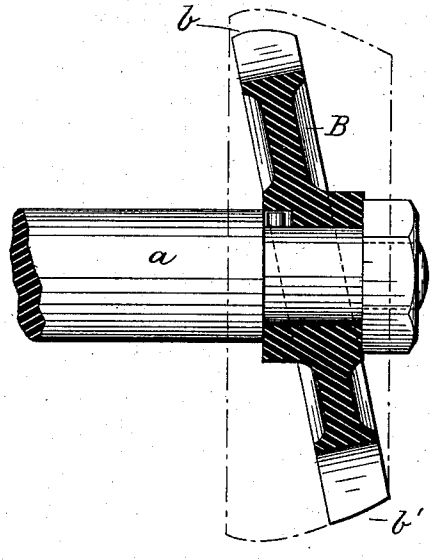


Fig. 5.



Witnesses

Henry Chadbourn.

Charles H. Pogg.

Inventors.

Alfred B. Fowler.

and George E. Warren.

by Albert Gudrén, their atty

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

ALFRED B. FOWLER AND GEORGE E. WARREN, OF EXETER, NEW HAMPSHIRE, ASSIGNORS TO THE ROCKINGHAM MACHINE COMPANY, OF NEW HAMPSHIRE.

BURNISHING OR TRIMMING TOOL.

SPECIFICATION forming part of Letters Patent No. 384,902, dated June 19, 1888.

Application filed September 14, 1887. Serial No. 249,638. (No model.)

To all whom it may concern:

Be it known that we, ALFRED B. FOWLER and GEORGE E. WARREN, both citizens of the United States, and residents of Exeter, in the county of Rockingham and State of New Hampshire, have jointly invented new and useful Improvements in Burnishing or Trimming Tools, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in burnishing or trimming tools for burnishing or trimming boot and shoe heels or similar articles, and it is carried out as follows, reference being had to the accompanying drawings, where—

Figure 1 represents a side elevation of the improved tool shown as mounted upon a rotary shaft. Fig. 2 represents an end elevation of it, and Fig. 3 represents a central longitudinal section of the device. Fig. 4 represents an end elevation of the tool provided with circumferential teeth for trimming purposes, and Fig. 5 represents a central longitudinal section of the trimming-tool shown in Fig. 4.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In burnishing a boot or shoe heel by means of a rotary tool it is essential that the tool should come in contact with all parts of the heel, from breast to breast as well as from top-lift to heel-seat, and to accomplish this the heel is turned around while the tool revolves, or the heel is held stationary and the revolving tool is carried around the heel from breast to breast, and thus the tool is brought in contact with the curved part of the heel from breast to breast. To enable the tool to burnish every portion of the heel from top-lift to heel-seat, it has been customary either to reciprocate the heel in a direction parallel to the burnisher-shaft or to impart a longitudinal reciprocating motion to the burnisher-shaft and its burnisher. To dispense with such reciprocating motion of the heel or corresponding motion of the burnisher-shaft and its burnisher is the object of our invention, and to this end our invention is constructed, arranged, and made to operate as follows:

a is a rotary burnisher-shaft that is adapted to revolve rapidly around its axis by means of any suitable mechanism well known in the art. Such mechanism not forming subject-matter of our invention, it is not represented in the drawings. To the burnisher-shaft *a* is secured in any suitable manner the improved burnisher-tool B, said tool being mounted obliquely and eccentrically on the shaft *a*, as shown in the drawings. *b* on said burnisher-tool is that portion on its circumference that is farthest away from the axis of the shaft *a*, and said part *b* projects backward from the front of the burnisher-tool sufficiently to reach and burnish the curved part of the heel C adjoining the top-lift *c*, as shown in Fig. 3. *b'* on said burnisher-tool is that portion of its circumference that is nearest to the axis of the shaft *a*, and said part *b'* projects forward sufficiently to reach and burnish the curved part of the heel C adjoining the heel-seat *c'*, as shown in Fig. 3. In other words, the obliquity of the tool B from front to rear is relative and corresponding to the height of the heel C that is being burnished, and the eccentricity of it—that is, the difference between its largest and smallest radius—is made relative and corresponding to the relative difference in size of heel seat and top-lift, respectively—that is, the curvature of the heel from heel-seat to top-lift.

In using this our improved tool its shaft *a* is set in a rapid rotary motion around its axis, and the heel of the boot or shoe is held in position by any suitable means, as shown in Fig. 3, and rocked from breast to breast without moving it to and from the burnisher-tool; or the shoe is jacked firmly in position and the rotary burnisher-tool is oscillated to follow the curve of the heel from breast to breast, without, however, moving forward and back in the direction of its axis. It is immaterial in which of the two above-described ways the manner of burnishing the heel is accomplished as long

as neither the tool nor the heel is moved in and out—that is, in the direction of the axis of the shaft.

During every revolution of the tool its oblique and eccentric circumference rubs up and down from top-lift to heel-seat of any portion of the heel that for the time being is held in contact with the improved tool, and by alternately oscillating the heel or the tool from breast to breast every portion of the heel is burnished with a compound motion in the direction from top to bottom of the heel and at a right angle thereto, in the same manner as if a non-oblique disk or tool were rotated around its axis, longitudinally moved forward and back in the direction of its axis, and made to yield to the curvature of the heel from its top to bottom. In fact, by the use of this our obliquely and eccentrically mounted tool we obtain a compound burnishing property of the tool by a rotary motion around its axis only, which, by the use of the ordinary tools, could not be obtained except by means of a rotary and longitudinally reciprocating motion imparted to such tool.

The improved tool is to be made with a smooth and polished periphery when used for burnishing shoe-heels, as shown in Figs. 1, 2, and 3 of the drawings. If used for trimming purposes, such periphery will be made toothed, as shown in Figs. 4 and 5 of the drawings, without otherwise changing its obliquity and eccentricity.

What we wish to secure by Letters Patent, and claim, is—

The herein-described rotary burnisher or trimmer-tool B, arranged obliquely and eccentrically upon the rotary shaft *a*, as and for the purpose set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, on this 12th day of September, A. D. 1887.

ALFRED B. FOWLER.
GEO. E. WARREN.

Witnesses:
JOHN E. GARDNER,
GEORGE W. WESTON.