

No. 797,551.

PATENTED AUG. 22, 1905.

H. W. BRETT.
EDGE FINISHING MACHINE.

APPLICATION FILED DEC. 31, 1900. RENEWED DEC. 10, 1904.

Fig. 1.

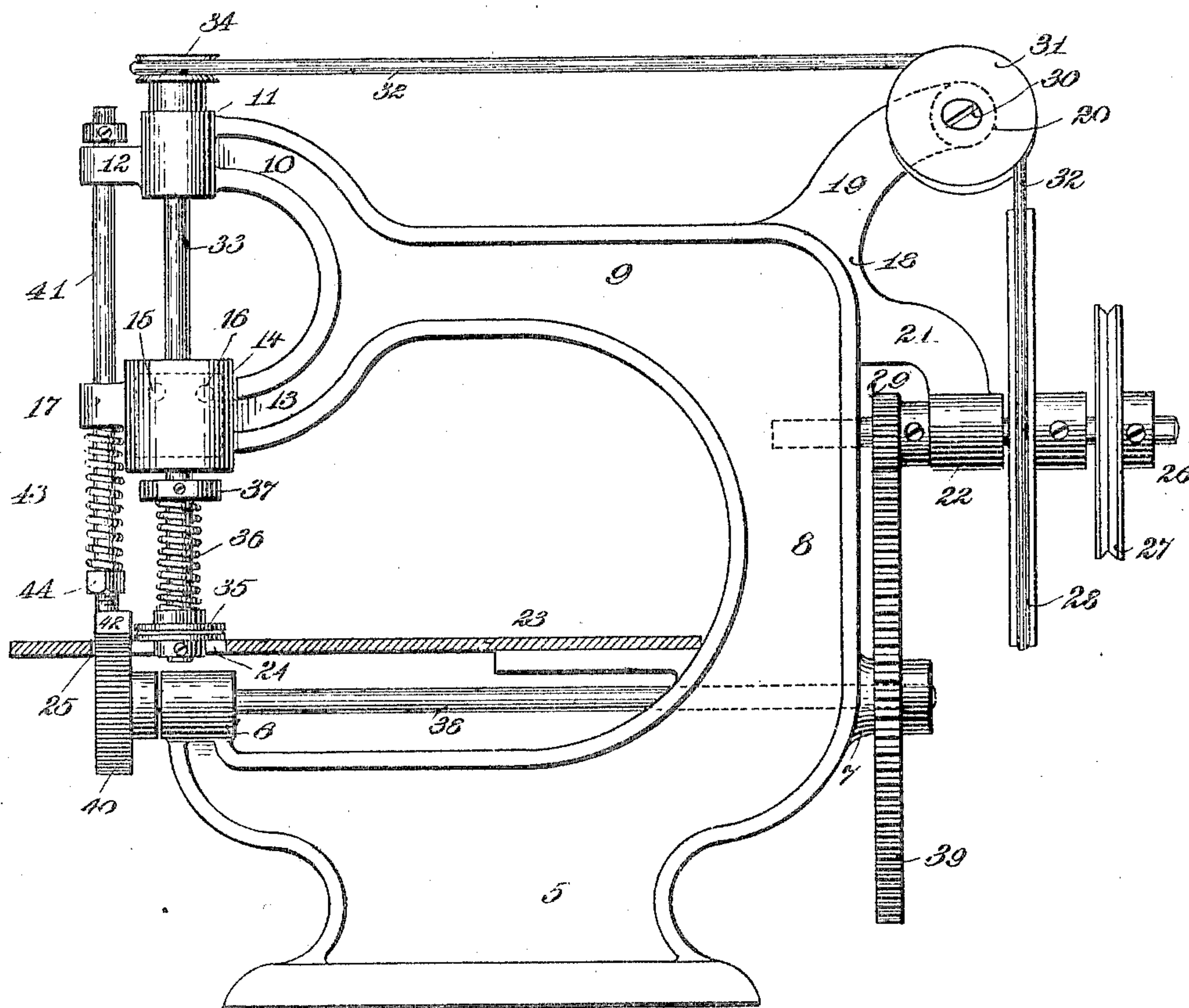


Fig. 2.

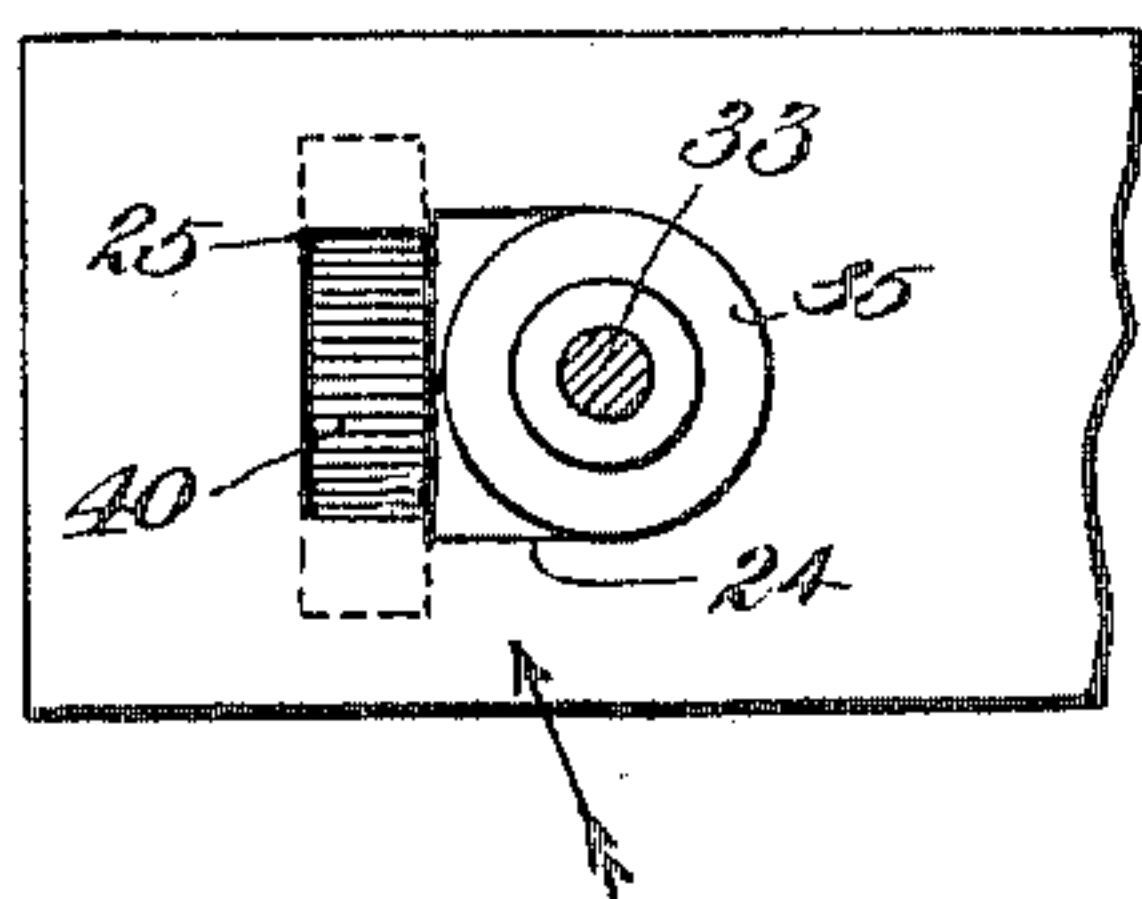


Fig. 3.

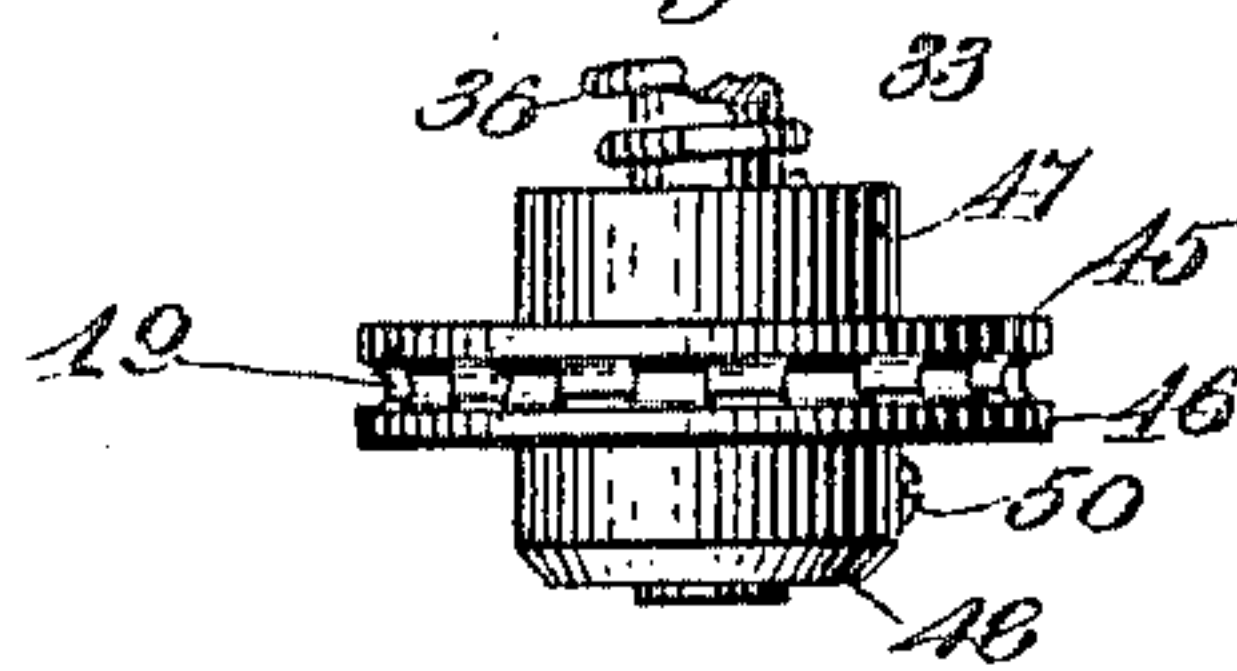
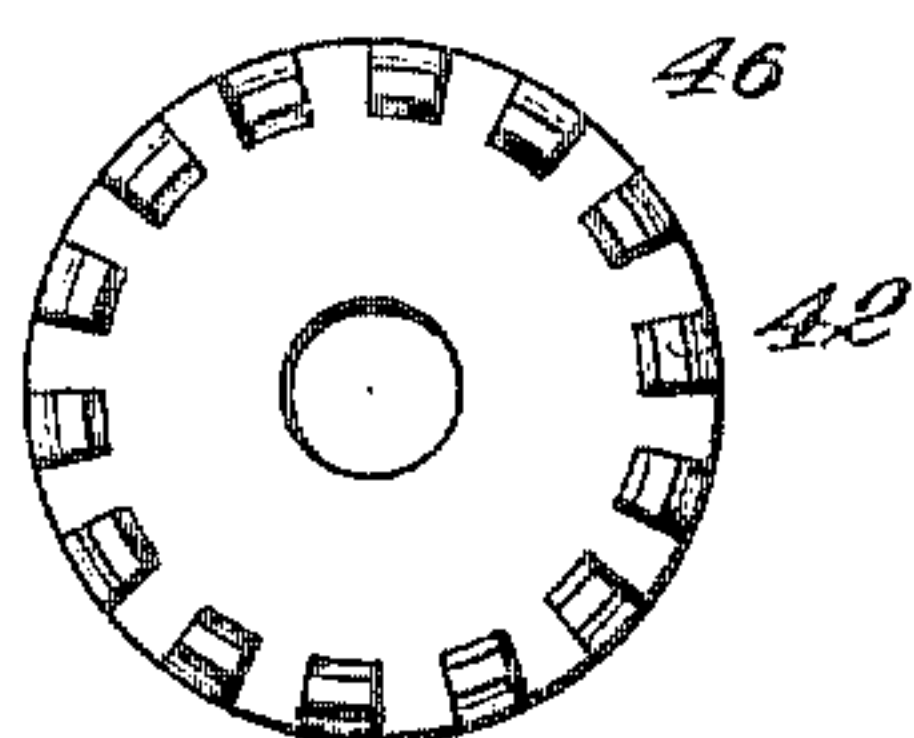


Fig. 4.



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UNITED STATES PATENT OFFICE.

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EDGE-FINISHING MACHINE.

No. 797,551.

Specification of Letters Patent

Patented Aug. 22, 1905.

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To all whom it may concern:

Be it known that I, HENRY W. BRETT, a citizen of the United States, residing at Neponset, in the city of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Edge-Finishing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has reference to improvements in machines for finishing the edges of leather.

The principal object of the invention is to provide a machine whereby the edges of leather can be finished to present burnished edges having the appearance of the finished side of the leather.

Another object of the invention is to so construct a machine of this character that the edges of very thin leather can be thus burnished without undue cost and in a practical manner. For this purpose I employ a rotary burnishing-tool provided with a grooved periphery and mechanism arranged in close proximity to and substantially tangential with said rotary burnishing-tool to feed the leather past the burnishing-tool and to firmly support or hold the leather substantially at the point of contact of said leather with the burnishing-tool, whereby thin and flexible pieces of leather, such as vici kid, having curved or straight raw edges may have their edges burnished, so as to present a finished appearance.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 represents an elevation of a machine embodying this invention, the table being shown in section to more clearly illustrate the arrangement of the burnisher and the feed-wheel; Fig. 2, a plan view of a portion of the table and the burnisher and feed-wheel; Fig. 3, a detail in elevation, on an enlarged scale, of the improved burnisher with a portion of the burnisher-shaft; and Fig. 4, a plan view of one of the burnisher members.

The vamps and caps of shoes of thin leather have heretofore been finished, as commonly practiced, by folding and securing the edge portions upon themselves to present a slightly, rounded edge of the finished surface of the leather. When enamel and patent leather is used, the edge is merely cut, leaving the raw edge exposed in the finished shoe. It is evident that the finishing of the edges of these portions exposed to view in the completed

shoe is most desirable, and particularly when this can be accomplished without the loss of material and extra work necessary to fold and cement the same.

Owing to the flexibility of the leather, particularly in the thinner kind, such as vici kid, and the irregularity in the shape of the pieces it has been found impracticable heretofore to burnish the edges of the same, it being necessary to so support the leather immediately at the edge that the portion of the leather engaged by the burnishing-tool is firmly held, so as present a substantially rigid edge for the tool to act against.

In carrying this invention into practice I construct a frame having the base 5 with the bearing 6, the limb 7 in horizontal alinement with said bearing, the vertical member 8, and the arm 9. The forward portion of the arm 9 is given somewhat of a U shape, the leg 10 of which carries the vertical bearing 11 and the vertically-perforated stud 12, while the leg 13 carries the steam-chest 14, provided with an inlet and an outlet 15 and 16 and the vertically-perforated stud 17. From the rear of the arm 9 extends a bracket 18, having the upwardly-extending member 19, carrying the lateral bearing-stud 20, the ends of which are inclined, and the depending member 21, carrying the horizontal bearing 22.

Slightly above the base 5 is mounted the table 23, having the openings 24 and 25. Journaled in the bearing 22 and in a socket in the member 8 of the frame in axial alinement with said bearing is the main drive-shaft 26, on which are secured the driving-pulley 27, the burnisher drive-pulley 28, and the feed drive-gear 29. On the inclined ends of the bearing-stud 20 are fixed stud-shafts, as 30, on each of which is journaled an idle pulley, as 31, inclined from the vertical sufficiently to lead the burnisher drive-belt 32 to and from the grooved periphery of the pulley 28.

In the bearing 11 and in suitable bearings in the ends of the steam-chest 14 is journaled the burnisher-shaft 33, having at its upper end the pulley 34, over which the belt 32 works, and being furnished at its lower end with a burnisher 35, located slightly above the surface of the table 23. For use with the improved burnisher I also provide the shaft 33 with the coiled spring 36 and with the adjustable tension-collar 37, against which the upper end of the spring bears.

A perforation is formed through the frame in alinement with the bearings 6 and 7, through

which the feed-shaft 38 works, this shaft being journaled in said bearings and furnished at one end with the gear 39, meshing with the gear 29, and at the other end with the feed-wheel 40, having a knurled or otherwise roughened surface and working through the opening 35 in the table-top. The feed-wheel 40 is located as near as is practical to the periphery of the burnisher in order that the lower wall of the burnisher-groove may be practically a continuation of the surface of the feed-wheel which is in contact with the under surface of the leather, so as to effect a continuous support for the leather.

In the perforations of the studs 12 and 17 is movably mounted the presser-rod 41, having at its lower end the presser-foot 42 and carrying the coiled spring 43 and the tension-nut 44, by the adjustment of which the degree of pressure exerted by the spring on the presser is varied. This presser-foot 42 bears against the upper surface of the portion of the leather which rests upon the feed-wheel directly opposite the groove of the burnisher and in close proximity thereto and serves to firmly hold the leather substantially close to the point at which the leather is brought against the rear wall of the burnisher-groove, thereby offering a practically rigid edge for the burnishing-tool to act upon and effect the desired finish.

To provide for burnishing leather of slightly varying thickness or for burnishing leathers of different thicknesses without changing the burnisher, the burnisher, as shown in Figs. 3 and 4, is formed of two circular plates 45 and 46, having, respectively, collars 47 and 48, the adjacent surfaces of the plates having each a series of segmental blocks 49, the peripheral edges of the blocks being concaved, so that the blocks of the respective plates may be interlocked together to form a continuous grooved burnishing-surface, while this groove may be considerably enlarged by the separation of the plates without destroying the continuity of this surface or permitting the independent action of either plate.

The collar 48 is secured to the lower end portion of the shaft 33 by the screw 50, and the spring 36 bears against the collar 47 with a pressure sufficient to hold the parts of the burnisher in burnishing relation to the leather edge inserted in the groove despite the pressure on the leather.

In use steam is supplied to the chest 14 to slightly raise the temperature of the shaft 33 and of the burnisher. The location and structure of this heater has been found to be effective in practice; but it is evident that other forms of heating devices may be used and that they may be placed nearer to the burnisher or be formed integral therewith without departing from the spirit of the invention. When the machine has been started, a piece of leather is entered under the presser-foot

with the edge to be finished forced into the groove of the burnisher, the main portion of the leather being fed in the direction indicated by the arrow in Fig. 2, thus bringing the edge of the leather into intimate burnishing contact with the rear wall of the groove of the burnisher while it is fed along and held from buckling or crimping under the pressure. This burnishing causes the compression of the leather at the surface edges, giving a convex-shaped edge corresponding to the cross-sectional shape of the burnisher-groove and at the same time burnishing the edge to present the same appearance as a folded edge at considerably less cost. In practice the grooved burnishing-tool is rotated at a greater speed than the feed of the leather.

I claim—

1. In a machine of the character described, in combination, a rotary burnisher-tool provided with a grooved periphery, means to rotate said tool, and a feed mechanism arranged in close proximity to and substantially tangential with said rotary burnishing-tool to feed the leather past the burnishing-tool and to firmly support or hold the leather substantially at the point of contact of said leather with the burnishing-tool, substantially as described.

2. In a machine of the character described, in combination, a rotary burnishing-tool comprising two members coöperating to form a peripheral groove, a shaft to which one of said members is fastened and upon which the other of said members is mounted to move longitudinally thereon, a spring to move said movable member on said shaft in one direction, means to rotate said shaft, and a feed mechanism arranged in close proximity to and substantially tangential with said rotary burnishing-tool to feed the leather past the burnishing-tool and to firmly support the leather close to its edge and substantially at the point of contact of the leather with said burnishing-tool, substantially as described.

3. In a machine of the class described, in combination, a shaft, means to rotate it, a feed-wheel fast on said shaft, means coöperating with said feed-wheel to engage the leather and between which and said feed-wheel the leather is fed, a second shaft arranged substantially at right angles to the first-mentioned shaft, means to rotate said second shaft at a greater speed than said feed-wheel, and a burnisher-tool mounted on said second shaft substantially in line with and in close proximity to the point of contact with the leather of the feed-wheel and its coöperating means, whereby the burnishing-tool acts on the edge of the leather while the latter is firmly supported substantially close to its edge and in line with the point of contact of the burnishing-tool with the edge of the leather, substantially as described.

4. An edge-finishing machine comprising a

horizontal shaft and a vertical shaft, bearings for said shafts, a feed-wheel on the horizontal shaft, a spring-depressed presser-foot bearing against the upper periphery of the feed-wheel, a burnisher member fixed on the vertical shaft and having a burnishing portion in line with the upper periphery of the feed-wheel, a second burnishing member movable on said shaft, and spring means working against said second burnisher member, whereby said presser-foot and the movable burnisher member may accommodate themselves coincidentally to the varying thicknesses of material to be fed forward and burnished.

5. In a machine of the character described, in combination, a rotary burnishing-tool pro-

vided with a grooved periphery, means to rotate said tool, and means coöperating with said burnishing-tool and arranged substantially in a radial line with and in close proximity to said burnishing-tool to support and firmly hold the leather at a point substantially in a radial line with the point of contact of the leather with said burnishing-tool, for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY W. BRETT.

Witnesses:

A. E. DENISON,
H. J. MILLER.