

F. L. ALLEY.
MACHINE FOR FINISHING BOOTS AND SHOES.
APPLICATION FILED OCT. 2, 1909.

1,015,866.

Patented Jan. 30, 1912.

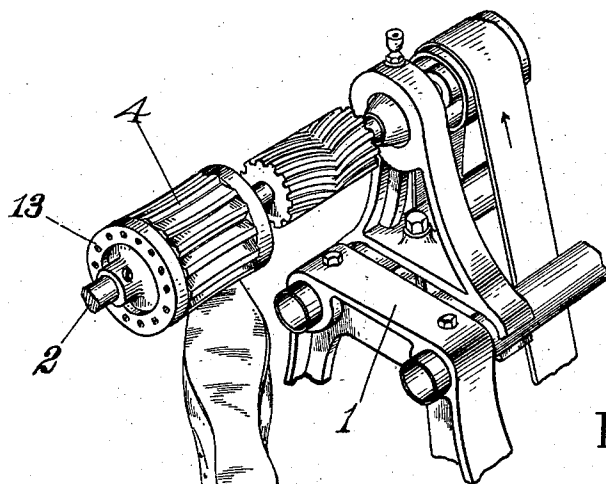


Fig. 1

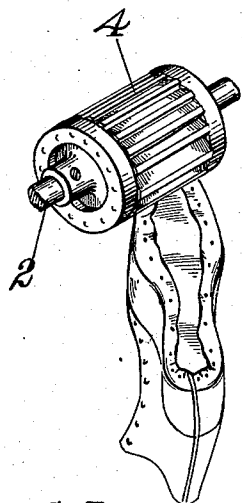


Fig. 2

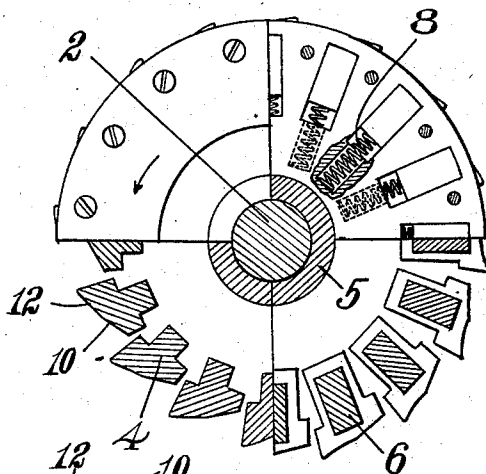


Fig. 3

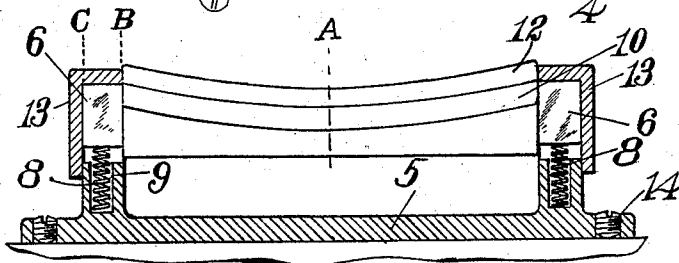


Fig. 4

WITNESSES.

Mary E. Mendum.
Bertha M. Hutchinson.

INVENTOR.

Frederick L. Alley
By his Attorney,
Nelson W. K. Howard

UNITED STATES PATENT OFFICE.

FREDERICK L. ALLEY, OF FITZROY, NEAR MELBOURNE, VICTORIA, AUSTRALIA, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MACHINE FOR FINISHING BOOTS AND SHOES.

1,015,866.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed October 2, 1909. Serial No. 520,699.

To all whom it may concern:

Be it known that I, FREDERICK L. ALLEY, a citizen of the United States, residing at 186 Brunswick street, Fitzroy, near Melbourne, in the State of Victoria and country of Australia, have invented certain new and useful Improvements in Machines for Finishing Boots and Shoes, of which the following is a specification.

10 This invention relates to machines for finishing boots and shoes, and more particularly to machines of the type employing hammering and rubbing members for treating the bottoms and adjacent parts of boots and shoes.

15 An important object of the invention is to provide a machine of this type employing a finishing roll which comprises work-engaging members supported yieldingly in a rotatory carrier for movements toward and from the work, said members being so constructed as to deliver a series of blows in rapid succession to level, smooth out, and otherwise finish the surface of the shoe being treated, in a highly efficient manner.

20 Preferably, the work-engaging members are arranged longitudinally of the shaft which supports the carrier and applies rotatory motion thereto, and such members have their faces so shaped that the pressure due to their impact with the work increases progressively from the point of engagement to the point of disengagement of each of said members with the work. This characteristic renders the machine very efficient in the operation of pounding-up, or smoothing and ironing down the upper and lining upon the shoe bottom following the lasting operation, as well as for breaking down, and leveling the counter, and in smoothing out the wrinkled portions of the leather at the heel seat. It also operates in a highly effective manner upon the outsoles of turn and other shoes, enabling the operator to very rapidly shape the sole to the bottom of the last without injury to the stitches, and to finish the surface of the sole by imparting thereto that high polish which is due to laying down, smoothing, and compacting the fibers of the leather.

25 In order that the work-engaging members may be made to act upon the work with progressively increasing pressures as above described, I preferably construct the work-

ing face of each member in the form of a plurality of surfaces, angularly disposed to each other, the first of said surfaces to engage the work being arranged at a greater angle to a plane tangent to the circle described by the rotatory carrier, than the angle of the adjacent or subsequently-engaging surface, or surfaces, to such plane. From this arrangement it follows that the loose, wrinkled, and up-standing parts of leather, such, for instance, as the upper and lining material of a lasted McKay or Good-year shoe, or any projections or irregularities on the surface of the out-sole of a turn shoe, which are to be beaten down and leveled, are first engaged by the surfaces presenting the greater angle and receive a preliminary laying and compacting, which action is followed immediately by that of the surfaces presenting the lesser angle, which apply to the already partially compacted and leveled leather an increased and final pressure, to highly polish and completely finish the surface thereof.

30 The novel features of the invention will be hereinafter more particularly described and claimed.

Figure 1 is a perspective view of a machine embodying one form of the invention, and showing a shoe in position for the operation of the roll upon its outsole. Fig. 2 is a perspective view illustrating a slightly modified form of roll, a lasted shoe being shown in position for operation thereon by the roll. Fig. 3 is a view of the roll, partly in end elevation, and partly in cross-section, on the lines A, B, and C, respectively, Fig. 4, looking toward the right. Fig. 4 is a longitudinal sectional view through the upper half of the roll showing one of the work-engaging members and its springs in side elevation.

35 The numeral 1 indicates the frame of the machine which, in suitable bearings provided therefor, supports the shaft 2 to be driven by a belt, connected with a source of power and engaging a pulley on said shaft, as shown. The drum or carrier 5, which supports the work-engaging members, is fastened to the shaft 2 by any suitable means, as, for instance, by the set screws 14, and said carrier is constructed with a plurality of pairs of guideways, preferably extending radially therein, to receive and

guide the work-engaging members. The work-engaging members 4 are preferably in the form of elongated bars, terminating at their ends in lugs 6, which fit snugly within and are truly guided by the radial guide-ways in the carrier. The working face of each of these members is formed as shown in Fig. 3, to present a plurality of separate surfaces, 10, 12, angularly arranged to each other and each surface presenting a different angle to a plane tangent to the circle described by the rotatory carrier 5. Referring to Fig. 3, it will be seen that the roll rotates contra-clockwise, and that the surfaces 10 will present a greater angle to said tangential plane than the surfaces 12.

Suitably disposed in the carrier below the guideways for the lugs 6, are recesses 9 to contain yielding devices, such as spiral springs 8, which are confined between such recesses and the lower surfaces of the lugs 6, such springs being under tension and hence normally exerting a pressure upon the lugs to force the work-engaging members outwardly. Flanged rings, or keepers, 13, each provided with a wall to engage an end of the carrier, and with another wall, angularly disposed thereto, to form an abutting surface for the lugs 6, are secured by screws, or other suitable devices, to the carrier, and serve to confine the work-engaging members 4 thereto and to limit their outward movements due to the pressure exerted by the springs 8.

The outer extremities of the members 4, and hence the working face of the roll, may be concave, as shown in Fig. 1, and Fig. 4, or may be straight, as shown in Fig. 2.

In operation, the shaft 2 carrying the roll being rapidly rotated through the connections described, the shoe to be operated upon is presented to the roll in the manner shown in Fig. 1, or Fig. 2, with the median line of the shoe preferably obliquely disposed to the axis of the roll. The shoe is pressed by the operator upward sufficiently to cause the members 4 to yield, thereby compressing the springs 8 an amount necessary to give the desired pressure as the work-engaging members deliver a series of rapid blows to gradually hammer out, level, and smooth the surface of the leather, the disposition of the surfaces 10, 12, being such as to subject the leather to gradually increasing pressures in the operation of each work-engaging member.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a machine of the class described, a rotatory carrier, and work-engaging members comprising longitudinal rubbing bars, yieldingly mounted therein, said machine having provision for restraining the bars from movement about their own axes.

2. In a machine of the class described, a rotatory carrier, and longitudinally arranged members movably mounted therein, said members having surfaces arranged to engage and rub the work and coöperating guiding means on said carrier and work members to restrain the latter from turning about their own axes.

3. In a machine of the class described, a rotatory carrier, longitudinal rubbing bars arranged for movements therein toward and from the periphery of the carrier, yielding means for actuating said bars and means for holding the bars against tipping movement in the carrier.

4. In a machine of the class described, a carrier, a plurality of rigid, rubbing bars, longitudinally arranged therein for movements toward and from the work, means for maintaining the bars with a predetermined face constantly outermost, and yielding means acting to move said bars outwardly.

5. In a machine of the class described, a carrier, and work-engaging members yieldingly mounted therein, each of said members being constructed and arranged to apply to the work progressively increasing pressures.

6. A finishing roll for boots and shoes comprising a carrier and work-engaging members each having a plurality of dissimilar angular rubbing faces.

7. A finishing roll for boots and shoes, comprising a carrier, and yieldingly mounted work-engaging members therein having rubbing faces each composed of a plurality of dissimilar angularly disposed work rubbing surfaces.

8. A finishing roll for boots and shoes, comprising a carrier, and longitudinal work-engaging members yieldingly mounted therein and each having work rubbing faces composed of dissimilar angularly disposed surfaces.

9. A finishing roll for boots and shoes, comprising a carrier and work-engaging members mounted therein and having faces composed of a plurality of angularly disposed work rubbing surfaces arranged to apply to the work progressively increasing pressures.

10. A finishing roll for boots and shoes, comprising a carrier, and work-engaging members mounted therein and having faces composed of a plurality of work rubbing surfaces presenting respectively different angles to a plane tangent to the circle described by said carrier.

11. A finishing roll for boots and shoes whose working face is composed of a plurality of members which individually have work-engaging surfaces which respectively present varying angles to a plane tangent to the circle described by said roll, said sur-

faces being arranged to impart to the work progressively increasing pressures.

12. A finishing roll for boots and shoes, comprising a rotary carrier having in its 5 peripheral face a series of guideways facing outwardly, and work-engaging members yieldingly mounted therein and having curved work-rubbing faces extending lengthwise of the axis of rotation of the roll.

10 13. A finishing roll for boots and shoes, comprising a carrier, and work-engaging members yieldingly supported at their two ends therein and having longitudinally curved faces presenting angularly disposed 15 surfaces.

14. A finishing roll for boots and shoes having, in combination, a rotary carrier

comprising connected disks having guideways permitting inward and outward movement of the work-engaging members, angular faced work members mounted in said 20 guideways, springs pressing said members normally outwardly, and an annular plate having an inturned flange embracing the edge of each disk and confining said members in said guideways. 25

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FREDERICK L. ALLEY.

Witnesses:

N. L. SUTUR,
J. WOODARD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."