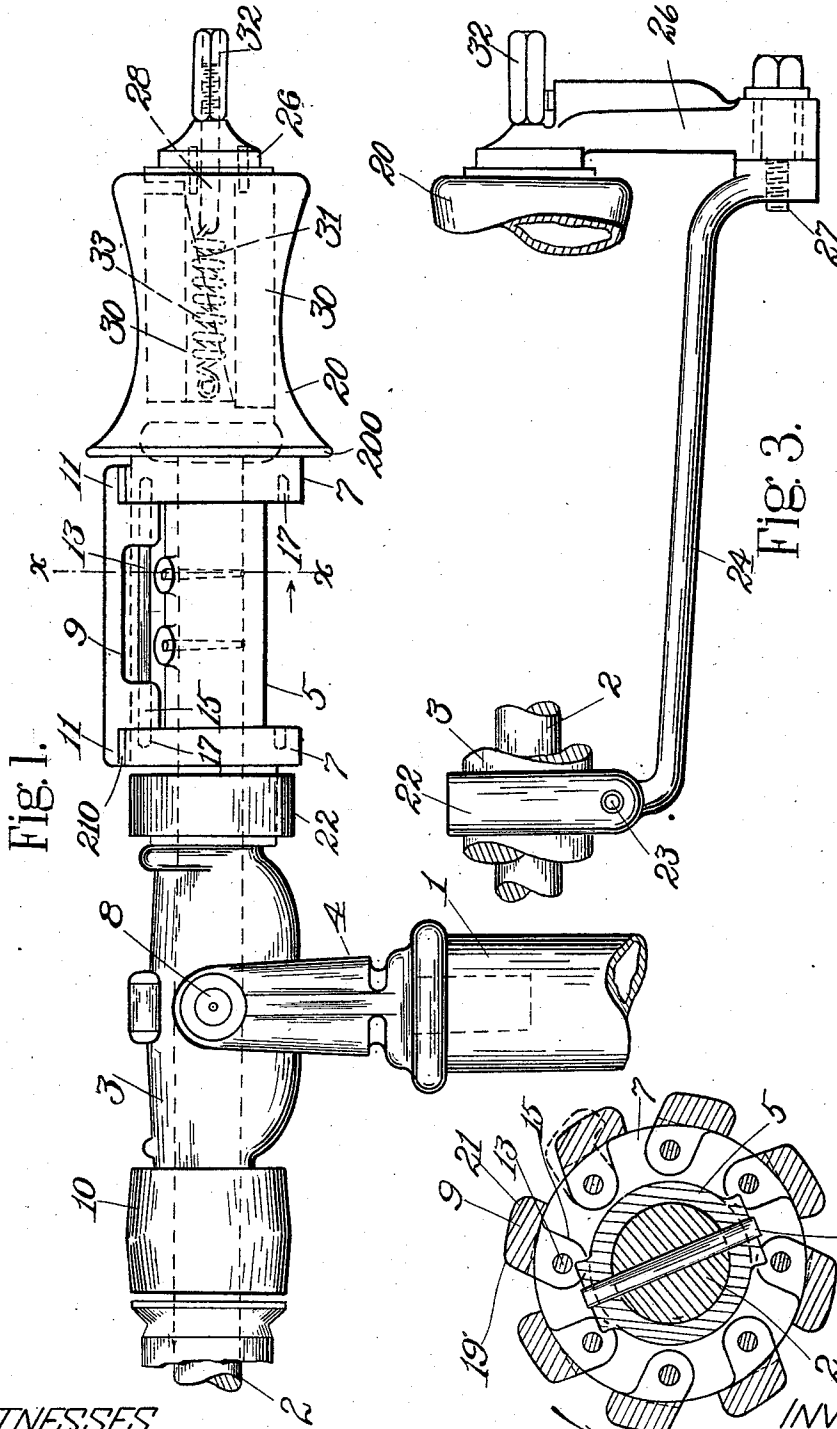


A. BATES.
 POUNDING UP, LEVELING, OR SMOOTHING ROLL.
 APPLICATION FILED JUNE 23, 1910.

1,015,776.

Patented Jan. 30, 1912.



WITNESSES.

Elizabeth C. Couper
 Melvin Steinmann

Fig. 2.

Fig. 3.

INVENTOR.

Arthur Bates
 By his Attorney,
 Nelson & Howard

UNITED STATES PATENT OFFICE.

ARTHUR BATES, OF LEICESTER, ENGLAND, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

POUNDING-UP, LEVELING, OR SMOOTHING ROLL.

1,015,776.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed June 23, 1910. Serial No. 568,463.

To all whom it may concern:

Be it known that I, ARTHUR BATES, a subject of the King of England, residing at Leicester, Leicestershire, England, have invented certain Improvements in Pounding-Up, Leveling, or Smoothing Rolls, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to tools for use in pounding-up, leveling, or smoothing and finishing the parts of boots and shoes, and in particular to certain improvements in the construction of such tools which adapts them to perform more efficiently than heretofore the operation of re-forming the bottoms of turn shoes.

The invention comprises as an important feature a rotatory tool composed of a body portion and a plurality of beating and smoothing members pivoted to the body and having their work-engaging faces so curved as to form collectively a cylindrical roll. In its preferred form, the beating and smoothing members are pivotally connected with abutments carried by the body of the roll and their work-engaging portions are so shaped and arranged that they will present a cylindrical surface only when the members have been forced inward by contact with the work so as to engage the abutments. As the roll rotates the beating and smoothing members are caused to swing outwardly by the centrifugal force due to the rotation of the roll, and when the work is moved against the members they will yield, more or less, in proportion to the amount of pressure imparted to them by the work, and will likewise act upon the work with a pounding and reducing force which will solidify its surface and impart a finish thereto, according to such pressure. By this means, a predetermined pounding, leveling, and finishing action may be obtained upon any work presented to the roll, and as the degree of solidification of the work will be dependent upon its pressure against the movable roll members, the operator may vary the same by merely moving the work appropriately toward or from said members.

Preferably, the pivoted members referred

to are so disposed around the roll body as to provide spaces between their adjacent edges, so that said members collectively form a ribbed cylindrical roll.

Other features of the invention, including important details of construction and combinations of parts, will be hereinafter more particularly described and claimed.

In the drawings: Figure 1 is a side elevation of a roll embodying the present invention, together with its operating shaft, and a shoe-ironing or shaping tool associated therewith, several of the beating members of the roll being omitted with a view to clearness of illustration; Fig. 2 is a view in cross-section on the line $x-x$, Fig. 1, and Fig. 3 is a detail view showing, in inverted plan, certain parts which do not appear in Fig. 1.

A suitable support or pedestal 1, sustains a yoke 4, which is provided with trunnions 8 to pivotally support a sleeve 3, constituting a bearing for the driving shaft 2. The shaft 2 is shown as having on one side of the sleeve a fast pulley 10 to receive power through a belt from any suitable source. On the other side of the bearing 3 a sleeve 5 surrounds the shaft and is secured thereto by pins 6, or any other suitable means, said sleeve having at its ends, the flanges 7, which constitute abutments for the work engaging members 9 of the roll. The work engaging members are shown as being in the form of bars having inwardly extending lugs 15 which fit against the inner opposed surfaces of the abutments 7, to which they are pivotally connected by pins 13 whose ends pass through holes in the lugs 15 and enter sockets 17 formed in the abutments 7. The members 9 are also provided with end portions 11 extending beyond the lugs 15 and overlapping the perimeters of the abutments upon which said end portions rest when the members 9 occupy their outermost positions. Each pivot pin 15 is located below the "leading" edge 19 of the member 9 with which it is associated so that during the rotation of the roll in the direction indicated by the arrow in Fig. 2 the following edge 21 of each member will be raised from the abutments by centrifugal force and the members will engage the work when the same is presented to the roll. After the members have engaged the work they will

be forced inwardly by the pressure of the work against them until their ends 11 approach and rest upon the abutments 7, when their work engaging portions will act to smooth and finish the surface of the work.

To provide a sufficient amount of clearance for permitting the pivoted members to move outward and rise from the abutments the under surfaces of the ends 11 are slightly cut away or beveled, as at 210, Fig. 1, and these cut away portions form stops to limit the extent of the outward movements of said members. In order to facilitate the assembling of the parts constituting the roll, the body part 5 may be formed in two semi-cylindrical portions each of which may carry one of the flanges or abutments 7, and said portions be secured to the shaft 2 by the pins 6, or other suitable means.

In connection with the beating and finishing roll I have shown an ironing tool 20, which may be advantageously employed for ironing and smoothing out the upper of a shoe, to remove the wrinkles and to impart a finish to certain portions of the shoe, as for instance along the shank and in the crease formed between the upper and sole, where, by reason of its shape, the beating tool is not adapted for operation. The tool 20 is shown as being curved appropriately for fitting the convex portions of the upper, and terminates at the rear in a relatively thin edge 200 which is shaped to enter the rand crease, or the crease formed between the upper and sole at the shank. The inner end of the ironing tool is supported from the flange 7 of the beater roll nearest the right hand end of the shaft 2, as seen in Fig. 1. A collar 22, secured to the shaft bearing 3, supports through a pivot 23 one end of a bent rod 24, and the opposite end of this rod is attached to a bracket 26 by a screw 27. The upper part of the bracket 26 is arranged to fit against the outer end of the tool 20, and is perforated to receive a rod 28. The tool 20 is provided with a cavity to receive two friction members 30 which are formed with wedge-shaped engaging faces 31. A coil spring 33 is located in a recess between the friction members 30, and has its inner end attached to one of said members and its outer end attached to the inner extremity of the pin 28, as shown by dotted lines in Fig. 1. The outer end portion of the pin 28 is provided with a screw thread to which is applied an adjusting nut 32, which bears against the bracket 26 and acts to control the tension of the spring 33. By turning the nut more or less, the friction members are caused to expand and grip the inner surface of the tool 20 to the extent desired.

The devices just described serve to support the outer end of the ironing tool and

particularly the friction heating devices 30 which are restrained from rotation with the ironing tool 20 by the pins 35 which extend from the bracket 26 into the thick outer end of the lower member 30.

The novel feature of this invention which consists in an improved construction for supporting an ironing tool and heating it is not herein claimed but forms the subject-matter of a divisional application Serial No. 618,335, filed April 1, 1911.

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

1. A rotatory tool for treating boots and shoes having, in combination, a body portion, and a plurality of beaters pivoted to said body portion and having their work-engaging faces shaped to present a cylindrical roll when moved inwardly by engagement with the work.

2. A rotatory tool for treating boots and shoes, comprising a body portion, and a plurality of beaters pivoted to said body portion and arranged for outward movement by centrifugal force, the work-engaging portions of said beaters being shaped to present a ribbed cylindrical roll when the beaters are moved inwardly by engagement with the work.

3. A tool for treating boots and shoes comprising a body portion, and beaters having pivotal connection with said body portion at points located below their leading edges and having their work engaging faces shaped to present a cylindrical roll.

4. A tool for treating boots and shoes comprising a body portion, and beaters pivoted to said body portion and having their work engaging faces extended rearwardly from their pivotal connection therewith and shaped to present a cylindrical roll.

5. A tool for treating boots and shoes comprising a body portion, and beaters pivoted to said body portion at points located below their leading edges, said beaters having their work engaging faces shaped to present a cylindrical roll and extended rearwardly from their pivotal connection with said body portion.

6. A tool for treating boots and shoes comprising a body portion, spaced abutments carried thereby, work engaging members having lugs fitting against the inner sides of said abutments and extended portions arranged to engage the peripheries of said abutments and limit the outward movement of said members, and means for pivotally connecting said lugs and abutments.

7. A tool for treating boots and shoes comprising a body portion, spaced abutments carried thereby, and work engaging members pivoted to said abutments and having extensions overlapping the abut-

70

75

80

85

90

95

100

105

110

115

120

125

130

ments and acting to limit the outward movement of said members.

5 8. A tool for treating boots and shoes comprising a body portion, spaced abutments carried thereby, and beating members pivoted to said abutments and having their work engaging faces extended rearwardly from their pivotal connection therewith, said members having extensions over-

lapping the abutments and acting to limit 10 their outward movement.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR BATES.

Witnesses:

KATHERINE PEXTON,
ARTHUR ERNEST JERRAM.

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