June 6, 1933. A. COCOZELLA, JR., ET AL 1,912,825

APPARATUS FOR FINISHING BOOTS AND SHOES

Filed June 6, 1929

Fig 1

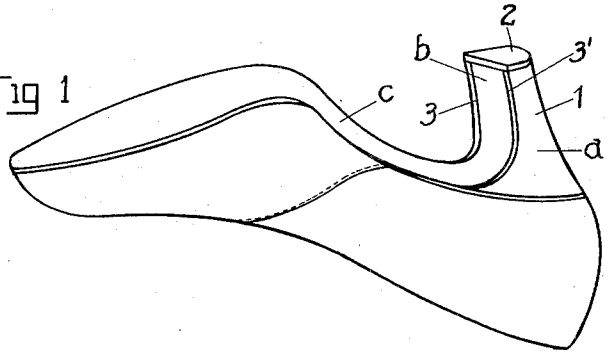



Fig 2

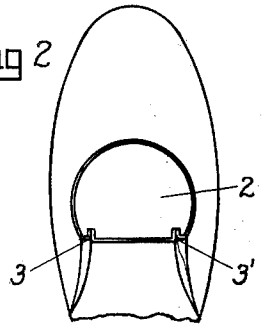



Fig 3

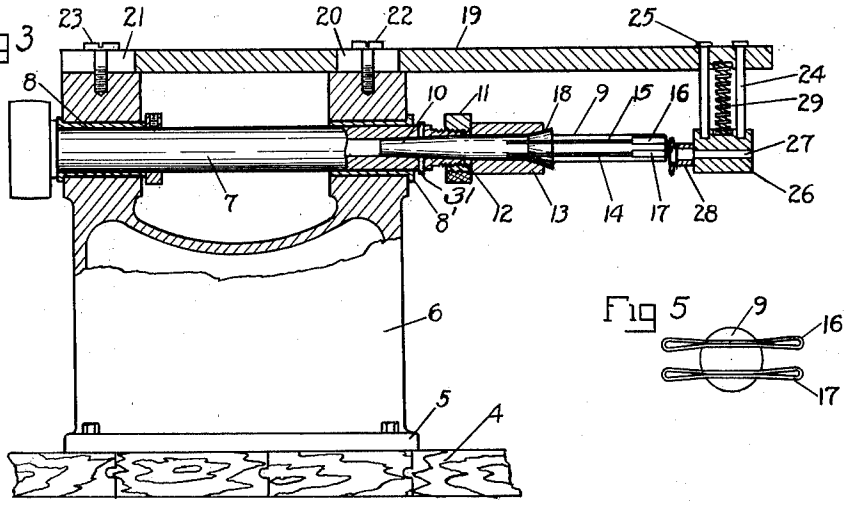



Fig 5




Fig 4

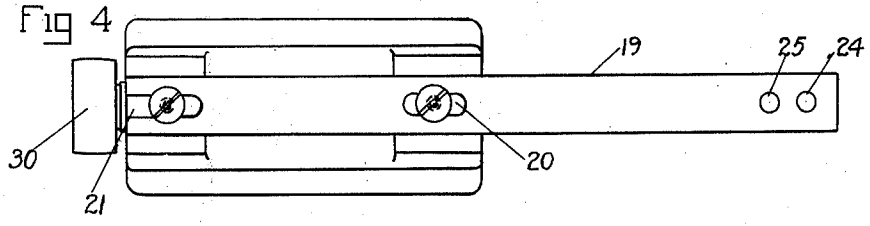



Fig 6

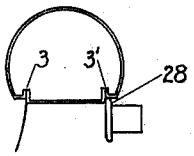
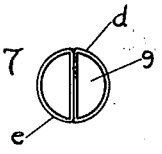



Fig 7




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# UNITED STATES PATENT OFFICE

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## APPARATUS FOR FINISHING BOOTS AND SHOES

Application filed June 6, 1929. Serial No. 368,798.

This invention relates to buffing machines and is herein illustrated as embodied in a machine especially adapted for performing a buffing operation upon a particular type of heel breast covering. For an example of a heel breast covering of the type referred to, reference may be had to U. S. Letters Patent No. 1,704,204 granted March 5, 1929, upon the application of W. H. Nutt, in which Letters Patent there is disclosed a wooden heel having formed in the breast surface thereof a pair of grooves. A covering for the side and rear surfaces of the heel has its marginal portions respectively tucked into two grooves above-mentioned and a heel breast covering has its marginal portions respectively also tucked into these two grooves. It is an object of the present invention to provide a machine for buffing the exposed surface of the heel breast cover of heel of the type above referred to without damaging the marginal portions of the covering for the side and rear surfaces of the heel.

In accordance with this object, one feature of the invention consists in providing a rotary guide wheel in cooperation with a buffing member to retain a shoe in such relation to the buffing member as to prevent undesired contact of certain portions of the heel with the buffing member while the heel breast is being buffed. In the illustrated machine the buffing member consists of a plurality of members composed of sandpaper having rounded corners, which members are secured in slots respectively in a spindle in such a manner as to enable the sandpaper to adapt itself to follow the irregular contour of the work.

These and other features of the invention will be more fully described and pointed out in the accompanying specification and drawings, in which,

Fig. 1 represents a perspective view of the shoe provided with wooden Louis heels hereinabove mentioned;

Fig. 2 is a plan view thereof with top lift removed;

Fig. 3 is an elevation in partial section illustrating a machine for properly buffing the heel breast of a Louis heel of the type referred to;

Fig. 4 represents a plan view of the machine shown in Fig. 3;

Fig. 5 represents an end view of the spindle of the machine shown in Fig. 3, and the method of mounting the flying sandpaper for buffing the heel breast;

Fig. 6 represents a plan view of the heel with top lift removed, and illustrates the relation of the guide which operates in one of the recesses of the heel breast of the shoe shown in Fig. 1; and

Fig. 7 represents a modification of the spindle and an alternative means for mounting the sandpaper for buffing the heel breast which is mounted in said spindle.

Referring more particularly to Fig. 1, 1 represents the wooden Louis heel of the shoe, 2 represents the heel top-lift thereof, 3 and 3′ represent the recesses into which are tucked both the heel covering *a* and the breast flap *b* which extends from the sole covering *c* of the shoe.

In Fig. 3, 4 represents a suitable foundation upon which is bolted the bed plate 5 of a pedestal 6 of our improved buffing machine. The shaft 7 is mounted in suitable bearings 8 and 8′, and in this shaft is carried a spindle 9 having a tapered end 10 which fits into an opening of the shaft 7 and is held therein by a set screw or pin 31. At a suitable distance from the outer end of the spindle 9, and forming a part of said spindle, is an enlarged tapered shoulder 18. 13 represents a loose collar having a tapered mouth fitting the tapered shoulder 18 of spindle 9. Opposite the tapered end of collar 13 is a collar 11 which is threaded on the shaft 7 and which serves two purposes; first and mainly, it acts on the collar 13 pressing it outward and onto the tapered shoulder 18 of the spindle 9, causing the split members of 9 to contract and hold the flying sandpaper 16 and 17 firmly in position; and secondly, it is used to remove the spindle 9 from the shaft 7 after the set-screw or pin 31 has been removed.

Fig. 5 illustrates the manner in which

the flying sandpaper 16, 17 is folded in the saw-cuts or split members of spindle 9. This construction permits flexibility of the rounded corners of the sandpaper or other abrasive sheet and enables it to follow the irregularities of the heel breast during the buffing operation. The width of the sandpaper is such that it will not be greater than the width of the breast flap of the heel. However, it would be impracticable to attempt to match the exact width of the exposed area of any particular heel breast flap, because the width of this area varies in shoes of different types and sizes and also because in most types of shoes the grooves 3 and 3′ are not parallel. For these reasons it is desirable to provide sandpaper which is narrower than the maximum width of the area to be treated on the average shoe. With sandpaper of such width the position of the shoe may be so determined, by gage means presently to be described, that the portion of the exposed area of the flap adjacent to the groove 3 may be finished without damaging the heel cover *a* where the latter is tucked into the groove 3; and since the width of the sandpaper is less than that of the space between the grooves, there will be no danger of the sandpaper damaging the heel cover *a* where the latter is tucked into the groove 3′. This operation may be repeated on the portion of the exposed area of the flap adjacent to the groove 3′; and as the sandpaper may conveniently be more than half as wide as the area to be treated, the entire area can be finished in these two operations.

Suitably bolted to the top of the machine is a flat bar 19 provided with slots 20 and 21 through which extend the bolts 22 and 23 for tightening the bar to the top of the machine. The slot 21 is open at the left-hand end in order that when the bar is loosened it may be swung around to the left or right out of the way when it is desired to remove the spindle 9. At the right-hand end of the bar 19 and supported therefrom by means of bolts or studs 24 and 25 extending through the bar, is a guide block 26 provided with a spindle 27 upon which is mounted to move rotatably a guide wheel 28. The guide block 26 is provided with a suitable seat for a spring 29 and there is a complementary seat in the bar 19 for this spring. The bolts 24 and 25 are free to have vertical movement in the bar 19. Thus there is provided suitable flexibility for the guide wheel 28 enabling it to yield in a direction substantially transverse to the axis of the spindle when the guide wheel runs in either of the recesses 3 or 3′ of the heel breast. Fig. 6 shows how the guide wheel 28 is located with reference to the recesses in the heel breast while the heel breast is undergoing the buffing operation. 30 represents a suitable pulley for driving the machine which may be connected by belt or any suitable means to a source of power supply.

In operation, the shoe is held with the back of the heel facing the operator and with the guide wheel 28 engaging the recess or "crease" between the heel cover *a* and the flap *b* where both are tucked into the groove 3. The guide wheel 28 should first have been so adjusted that when the shoe is held in the above-described position, the flying sandpaper 16 and 17 will engage the breast flap *b* almost up to the line where it is tucked into the recess 3 without, however, touching any portion of the heel covering *a* adjacent to the recess 3. Such adjustment of the guide wheel 28 is effected by loosening the bolts 22 and 23, sliding the bar 19 lengthwise until the desired position of the guide wheel 28 has been reached, and then tightening the bolts 22 and 23. Now, holding the shoe in the position above described, and with the guide wheel 28 properly adjusted, the operator can manipulate the shoe in such a way, with the guide wheel running along the entire length of the groove 3, that the flying sandpaper will operate upon an area of the heel breast flap which is as wide as the flying sandpaper and which extends the entire height of the heel breast. The flexibility of the flying sandpaper, by virtue of its peculiar arrangement, is such as to enable the sandpaper to accommodate itself to any variations in contour of the surface of the work, and thereby to impart a uniform finish to all portions of the heel breast surface which it engages. With the sandpaper narrower than the area to be finished, any danger of damaging the heel covering *a* beyond the opposite groove 3′ will be avoided. Having thus finished an area extending from the groove 3 more than half-way to the groove 3′, the operator then steps to the opposite side of the machine and repeats the above-described operation, this time presenting the "crease" overlying the groove 3′ to the guide wheel. The remaining unfinished portion of the exposed surface of the breast flap is thus presented to the sandpaper, and the finishing operation is completed. In order to render unnecessary any change of position on the part of the operator, a second machine may be positioned to the left of the above-described machine, as the latter is shown in Fig. 3. In that case, the spindle of the second machine would extend toward the left instead of the right.

In Fig. 7 a modification of my invention is shown wherein instead of the flying sandpaper the spindle 9 is split and two pieces of sandpaper *d* and *e* are shown which may be adjusted in the usual manner. Instead of flying, as in the construction shown in Fig. 5, this sandpaper would be fastened rigidly to the spindle. Of course, it would

be of such a width that it would not extend beyond the recesses 3 and 3′, as before described, but this construction would not be as flexible as the one shown in Fig. 5.

Whereas the invention is more particularly designed to buff a heel panel of the character above described, it is also possible by suitably arranging the guide or guard for the buffing paper to buff a panel of a heel of the type shown in the patent to Anthony Cocozella, No. 1,691,149, of Nov. 13, 1928.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:—

1. In combination, a shoe buffing machine provided with a spindle driven from a suitable source of power, a buffing member carried in said spindle comprising an abrasive sheet polisher with rounded or folded edges and the sheet having a predetermined width not greater than the width of the breast flap of a heel having a heel cover with overlapping marginal edges adjacent the breast flap of the heel, and a suitable guide for preventing the polisher from overrunning the width of the breast flap and thereby injuring the heel cover.

2. In combination, a shoe buffing machine provided with a spindle driven from a suitable source of power, a buffing member carried in said spindle, slots in the buffing member, flying sandpaper polishers adjustably held in the slots and folded to have rounded corners whereby the sandpaper will adapt itself to follow the irregular contour of a heel breast flap to be buffed or polished, and a rotary guide wheel whereby the operator may guide the movements of the shoe during polishing in a manner to effectively polish the breast flap without injury to the remaining portions of the heel.

3. In apparatus for buffing or polishing shoe heels the combination of a pedestal, a rotary spindle carried in said pedestal, means for driving the spindle, a holder in the spindle, a flexible abrasive polisher in the holder designed to polish the breast flap of a shoe heel manipulated by the operator, a guide for the shoe in cooperative relation with the polisher to prevent the polisher from overrunning the marginal edges of said breast flap of the heel, and resilient supporting means for said guide constructed and arranged to enable said guide to yield in a direction substantially transverse to the axis of the spindle as the operator manipulates the shoe.

4. In combination, a shoe buffing machine provided with a spindle driven from a suitable source of power, a buffing member carried in said spindle having an abrasive polisher mounted therein, and a rotary guide wheel in cooperative relation with the polisher whereby the shoe may be retained in such relation with the polisher as not to injure the heel of the shoe while the heel breast of the latter is being buffed.

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