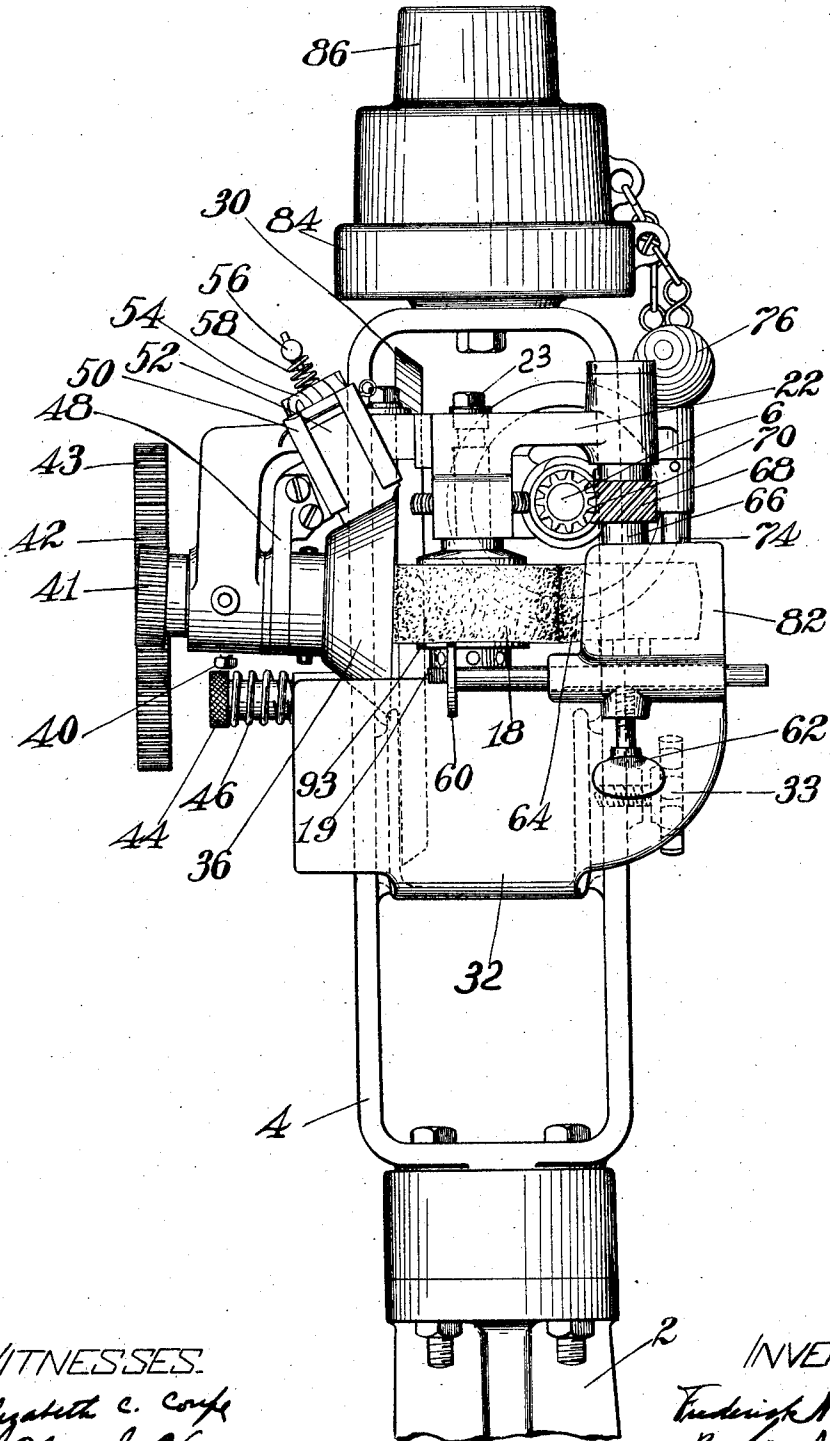


F. M. FURBER.
BLACKING MACHINE.
APPLICATION FILED DEC. 31, 1910.

1,025,523.

Patented May 7, 1912.

4 SHEETS—SHEET 1.



WITNESSES:

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Fig. 1.

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4 SHEETS—SHEET 2.

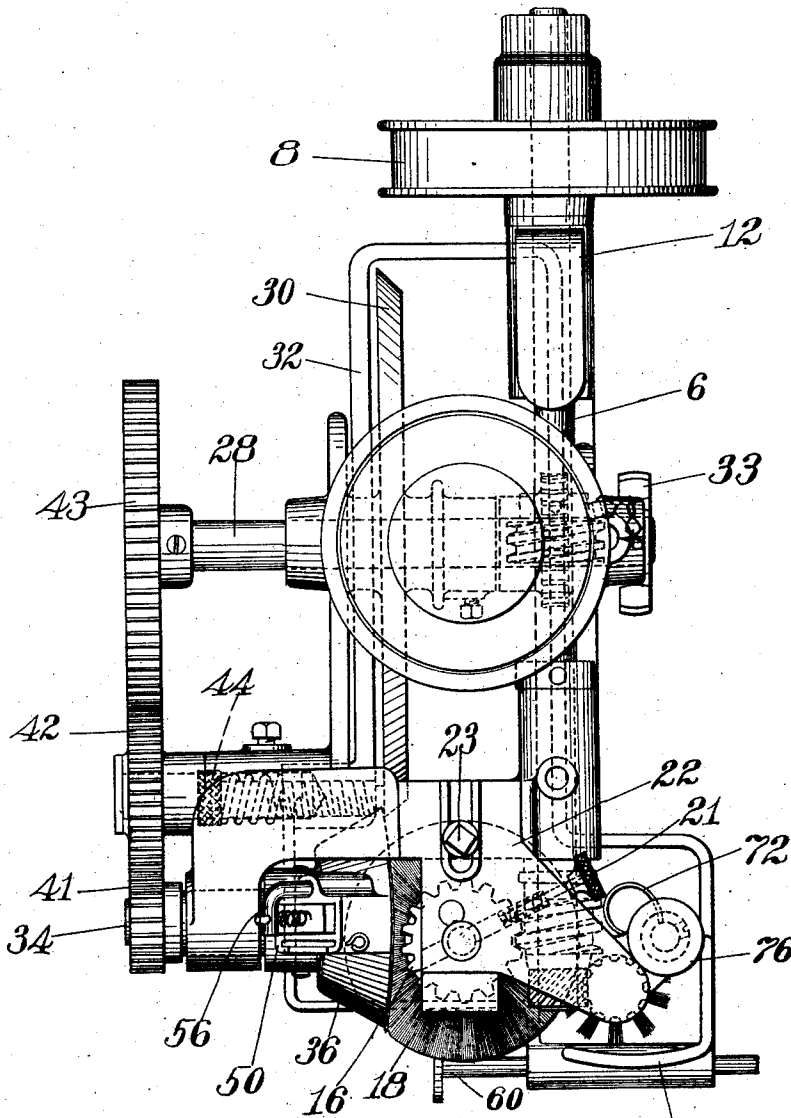


Fig. 2.

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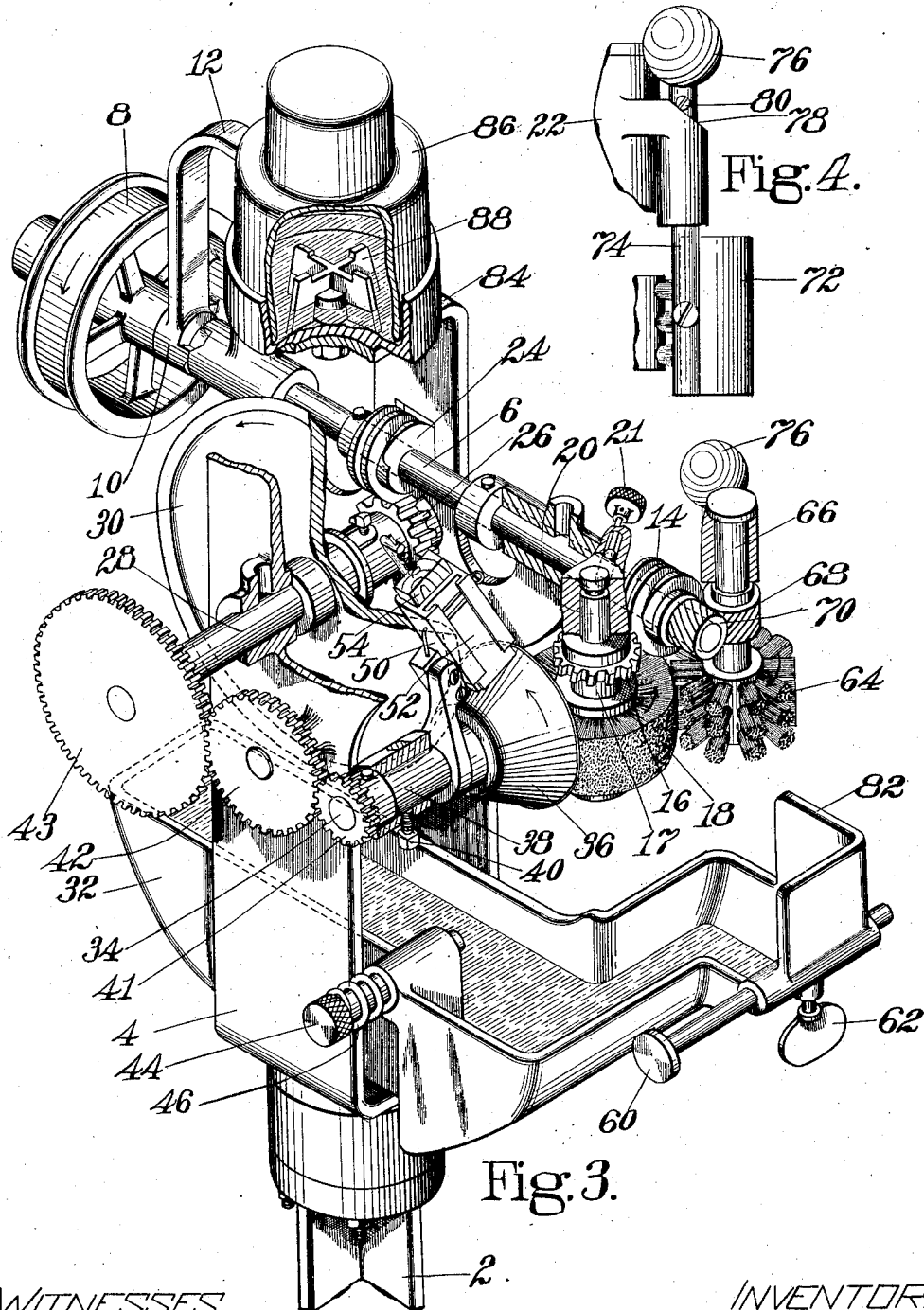
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

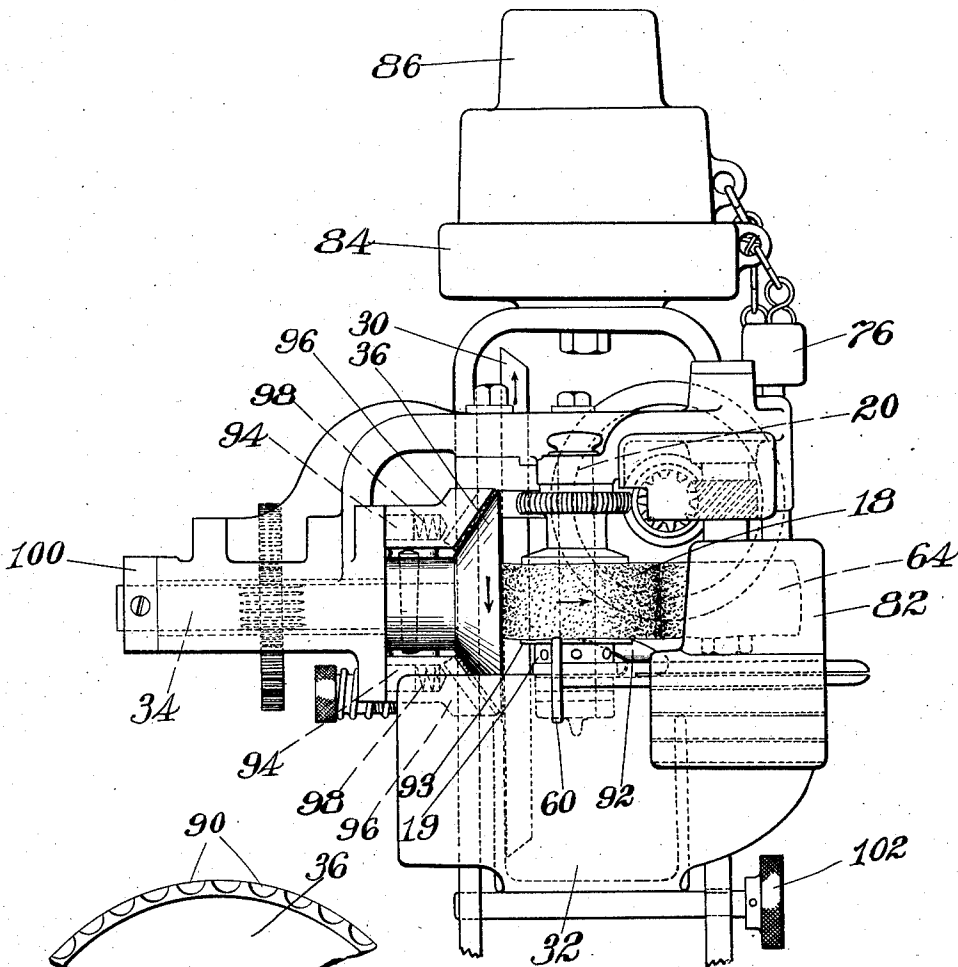


Fig. 5.

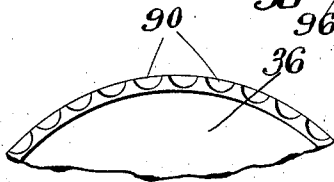


Fig. 7.

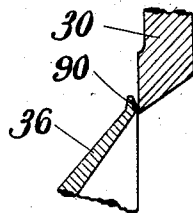


Fig. 6.

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UNITED STATES PATENT OFFICE.

FREDERICK M. FURBER, OF REVERE, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

BLACKING-MACHINE.

1,025,523.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed December 31, 1910. Serial No. 600,263.

To all whom it may concern:

Be it known that I, FREDERICK M. FURBER, a citizen of the United States, residing at Revere, in the county of Essex and State of Massachusetts, have invented certain Improvements in Blacking-Machines, 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 finishing machines for boots and shoes and particularly to machines for applying blacking, stain or other finishing material, hereinafter referred to generically as blacking, to the heels or soles of boots and shoes. For convenience, the work will hereinafter be referred to as the "heel", it being understood that except as obviously required by the context, the term is used in a broad sense to designate the heel, sole or other part of the shoe being treated.

The general objects of the invention are to provide a heel blacking machine with the aid of which the edge of the heel and preferably also the exposed surfaces of the rand may be thoroughly blacked without spattering or smearing blacking upon the other parts of the shoe; which shall perform its operations rapidly and uniformly; which shall be capable of handling a wide range of work without change or adjustment of the parts, and which generally shall be an improvement on the machines of this character heretofore proposed.

With these ends in view and with reference particularly to the thorough coating of the heel edge and rand with blacking, an important feature of this invention consists in the provision of driven means for applying blacking to the heel edge and independently driven means for applying blacking to the rand crease.

In the preferred embodiment of the invention the blacking is applied to the heel edge by means of a rotary brush, and a device, hereinafter designated the "rand guide", operates simultaneously therewith to apply blacking to the rand crease. This device performs the functions both of a rand crease guide and a rand blacking device,

having one face that runs in contact with the counter of the shoe and another face that runs in contact with the upper exposed surface of the rand, the latter face being supplied with blacking. The face that engages the counter is kept clean by means of scrapers of novel construction.

In machines of this class that have been proposed heretofore, the blacking applying brushes have, so far as I am aware, been constructed to wipe blacking along the heel edge in a direction parallel to the top lift. These constructions have required various adjustments or changes of parts to accommodate different styles and heights of heels. In the preferred embodiment of this invention, however, a guiding means is arranged to position the shoe to the blacking applying brush so that the brush will wipe across the heel preferably from the rand crease to the tread face. This machine, therefore, will accommodate without adjustment a great variety of styles and heights of heels, the brush being sufficiently flexible to fit into the curves of heels differing widely in shape. I regard this as an important feature of my invention.

In the illustrated construction, the applying brush is arranged to revolve in a substantially horizontal plane while the rand crease guide revolves in a substantially vertical plane. I prefer to form the guide concave in shape and locate it so that it encircles part of the brush and has its guiding edge running in contact with the periphery of the brush at the forward portion of the latter. This arrangement enables me to feed blacking to the brush in a novel manner, consisting in conveying it to that face of the guide that runs in contact with the rand, from which face the brush picks it up.

A further important feature of this invention consists in providing novel means for removing the surplus blacking from the applying brush and for straightening out the bristles of the same. For applying blacking to the heel edge, I prefer to use a brush having soft bristles, since such a brush fits better into the curves of different styles and heights of heels than does a stiffer bristled brush. When such a brush becomes loaded with blacking, however, the bristles tend to

pack or mat down, and for the purpose of straightening up the bristles and at the same time maintaining a uniform quantity of blacking on the brush, I use a rotary stiff
 5 bristled brush arranged to run in peripheral contact with the applying brush and at a greater speed than the applying brush. This stiff bristled brush takes the blacking from the applying brush and because of its greater
 10 speed it picks up the bristles of the soft brush and straightens them out. The blacking is then removed from the stiff bristled brush by a stationary scraper preferably held in yielding contact with the periphery
 15 of this brush.

The invention is directed also to the provision of adjustments to compensate for wear, a novel receptacle for holding the brush to keep it from drying out when not
 20 in use, an adjustable edge rest, and to various other features including certain details of construction and arrangements of parts that will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a view in front elevation of a heel blacking machine embodying this invention; Fig. 2 is a plan view of the same; Fig. 3 is a perspective view of the machine with certain parts broken away; Fig. 4 is a front
 30 elevation of the scraper device; Fig. 5 is a front elevation of a modified form of the invention; Fig. 6 is a sectional view showing a detail of the construction of the machine shown in Fig. 5; and Fig. 7 is a fragmentary view in front elevation of the rand guide.

The frame of the machine comprises a post 2 and a head 4 generally rectangular in
 40 shape and having suitable bearings for a main shaft 6. This shaft has loosely mounted thereon a pulley 8 that may be thrown into or out of driving connection with the shaft by means of a clutch 10 having an
 45 operating handle 12. Fast on the driving shaft 6 near its forward end is a worm gear 14 that meshes with and drives a gear wheel 16 secured fast to a bushing 17 on to which also the edge blacking brush 18 is clamped
 50 by a nut 19. This bushing with the gear and brush revolves on a vertical spindle 20 that is removably held in operative position in the frame by a spring pressed pin 21 arranged to slide through a hole in the frame
 55 into a groove formed in the spindle 20 near its upper end, as best shown in Fig. 3. A hole is drilled into the spindle from the bottom of the groove into which the pin can slide and hold the spindle against rotation.
 60 The spindle 20 is mounted in a portion 22 of the frame that is adjustable on the frame head in a direction parallel with the shaft 6. A bolt 23 threaded into the frame and projecting through a slot in the part 22 serves
 65 to hold this part in adjusted position. The

shaft 6 has fast thereon another worm gear 24 that meshes with a gear wheel 26 fixed on a shaft 28 lying at right angles to and supported below the shaft 6. This shaft carries
 70 a large blacking conveying disk 30 that normally dips into a body of blacking held in the tank 32. In Fig. 3 the tank is shown in its lowered or inoperative position, but it normally occupies the position in which it is shown in Fig. 1, in which position it is held
 75 by a set screw 33.

Supported substantially parallel to the shaft 28 but inclined slightly to the horizontal is a shaft 34 that carries the rand guiding and blacking device 36. This shaft is rota-
 80 tably mounted in a bushing 38 that is slightly adjustable axially in the frame and is held in adjusted position by a set screw 40. The shaft 34 is driven by means of gears
 85 41, 42, 43 connecting it with the shaft 28.

The rand guide 36 preferably is deeply concave or bowl shaped as shown in the drawings and is so positioned with reference to the brush 18 that it encircles a segment of
 90 the brush and at its forward edge runs in contact with the periphery of the same. A lip of appropriate shape to run in the rand crease is formed at the edge of the rand guide.

When power is applied to the machine the
 95 brush 18, rand guide 36 and disk 30 will be rotated in the directions indicated by the arrows in Fig. 3. The rand guide is adjusted so that its rand engaging face runs very close to the face of the disk 30 as indicated in the drawings. As the disk lifts
 100 blacking from the tank 32 it is taken off by the rand engaging face of the guide 36 and since the brush 18 wipes across this face of the guide it receives its supply of blacking
 105 therefrom. The rand guide is inclined somewhat to the disk 30 as shown so that its edge comes in contact with the blacking on the disk only at one point. The adjustability of
 110 the bushing 38 in the frame affords a means for varying the position of the rand guide relative to the disk and consequently one means for regulating the quantity of blacking taken up by the rand guide. A further
 115 means for regulating the supply of blacking is afforded by a scraper consisting of a screw threaded bolt 44 received in a threaded hole formed in the tank 32 and having a spring
 120 46 positioned between the side of the tank and the head of the bolt to hold the bolt in adjusted position. The end of this bolt lies close to that surface of the disk 30 that delivers blacking to the rand guide and it may be adjusted toward or from said surface to
 125 scrape more or less of the blacking therefrom.

For the purpose of keeping clean the surface of the rand guide that runs in contact with the counter of the shoe, suitable scraping
 130 devices are provided. The scraper shown

in Figs. 1, 2 and 3 comprises a bracket 48 secured on the bushing 38 which bracket supports a casing 50 in an inclined position above the rand guide. The casing preferably has two slideways, one to receive a metal scraper 52 and the other to receive a piece of softer material 54, such as cork, felt or the like. The scraping faces of these members are shaped to conform to the surface of the rand guide on which they bear. The metal scraper serves to break up and remove any blacking that may become dried on the rand guide. The weight of this scraper usually is sufficient to cause it to operate effectively. The other scraper preferably is pressed against the rand guide and for this purpose the casing carries a rod 56 that is bent at its upper end to overlie the scraper 54 and a spring 58 interposed between the part 54 and the bent end of the rod applies the necessary pressure to the scraper. The tank 32 carries adjustably an edge rest 60 and a thumb screw 62 by which the rest may be secured in adjusted position.

In using the machine the workman rests the edge of the heel against the device 60 and presents the shoe to the members 18 and 36 so that the lip of the rand guide is inserted in the rand crease. The face of the guide 36 that engages the rand is the face that receives the blacking from the disk 30 and as this guide revolves it deposits blacking on the upper exposed surface of the rand. At the same time the brush 18 wipes blacking across the heel from the rand crease to the top lift. The workman usually starts with the toe of the shoe held upward so that the part of the heel edge near one breast corner is blacked first. He then swings the shoe downward while keeping the lip of the guide in the rand crease thus causing the entire heel edge from one breast corner around the end to the other breast corner to pass in contact with the brush and therefore to be blacked.

The brush 18 preferably has soft bristles to enable it to fit better into the curves of heels of the more exaggerated shapes. The bristles of such a brush are packed down by the work and being heavily loaded with blacking are not able of their own resiliency to straighten out. For the purpose of maintaining the brush in proper operative condition and for the further purpose of removing the surplus blacking therefrom there is positioned beside the brush 18 and running in peripheral contact therewith a stiff bristled brush 64. This brush is carried on a vertical spindle 66 rotatably mounted in the frame piece 22 and the spindle is driven by a gear 68 thereon meshing with a gear 70 on the main shaft 6. The ratio of these gears is such as compared with the ratio of the gears 14 and 16 that the brush 64 is driven at a much greater speed than

the brush 18. Since the brushes revolve in opposite directions, the effect of the brush 64 when it engages the brush 18 is to sweep forward the bristles of the latter and to straighten them out. At the same time, the brush 64 picks off the surplus blacking from the applying brush 18 thus maintaining a uniform supply on the applying brush.

It is necessary to remove the blacking from the brush 64 and for this purpose I have provided a stationary scraper comprising a sheet metal apron 72 preferably of greater height than the brush 64 and curved to a C-shape in cross section. The apron is secured at one edge to an upright stem or rod 74 held loosely in a socket or bearing formed in the frame piece 22. The opposite edge of the apron bears against the periphery of the brush 64 so that its open or concave side is toward the brush. In order to press the edge of the apron against the brush a weight 76 is mounted on the top of the stem 74 and an inclined cam face is formed on the upper edge of the stem bearing against which face a screw 80 threaded into the stem bears. It will be clear from an inspection of Fig. 4 that the effect of this arrangement is to impart to the stem 74 a constant tendency to turn on its axis in a direction to press the edge of the apron against the brush 64. The bristles of this brush therefore when they come in contact with the edge of the apron are bent thereby and as they leave the edge they straighten out with a "snap" that throws off the blacking. The concave surface of the apron is in the path of the blacking so thrown and serves to collect it. The tank 32 has an extension at its forward right hand corner, as seen in the drawings, over which the apron 72 and brush 64 are located, and the blacking collected by the apron therefore drips into this portion of the tank. In order to avoid all possibility of the brush 64 throwing blacking on to the workman, the extension of the tank is provided with a shield 82 that partly incloses the brush.

If the brush 18 is allowed to stand idle for any great length of time, as for instance, over night, the blacking that it holds will be dried out and the brush thus will be rendered unfit for use until it has been softened up again. To obviate this difficulty I have provided the machine with a receptacle in which the brush may be placed and kept moist when not in use. This receptacle comprises a water tight basin 84 molded on to the top of the frame head 4 and a tall cover 86 therefor. The basin has a spider 88 attached to its bottom to support the lower end of the bushing 17 on which the brush 18 is mounted. When the machine is to remain idle for several hours, the workman retracts the pin 21 that normally holds the brush in operative position, then removes the brush 18,

bushing 17, gear 16 and spindle 20 as a unit, places them in an upright position in the basin 84 and covers them with the device 86. The basin is designed to be kept partially filled with water to keep the air in the receptacle moist and thus keep the brush from drying out. The spider 88 is of such height relatively to the walls of the basin that even when the basin is filled with water the brush cannot come in contact with the water.

In Figs. 5, 6 and 7 I have shown a machine of the same general organization as that above described but differing therefrom in certain details. In this machine the rand guide 36 is supported on a horizontal shaft and the guide lies substantially parallel with the disk 30. The rand engaging face of this guide is beveled as shown in Fig. 6 and has shallow pockets 90 formed in said beveled face. The shaft 34 on which the guide is mounted is geared to the shaft supporting the disk 30 as in the machine previously described, but in this machine the shaft 34 is revolved in a direction opposite to the direction of rotation of the disk 30. When the machine is running, a small quantity of blacking remains constantly at the point where the guide 36 leaves the disk 30 and this blacking is picked up by the rand engaging face of the guide 36 and the pockets 90 formed therein.

The downward movement of the rand guide at the point where it engages the brush 18 tends to bend down the bristles at the lower portion of the brush and in order to counteract this action, I have secured to the spindle 20 below the brush one end of a flat metal strip 92. This strip is bent sharply at about its middle and its free end is turned backwardly to present an inclined face to the lower side of the brush.

It will be clear from an inspection of Fig. 5 that as the brush 18 revolves the bristles at its lower side will ride up over the inclined portion of the strip 92 and will be pressed up to the main body of the brush. The bristles on the lower side of the brush are supported also by a collar 93, shown in Figs. 1 and 5, which preferably is integral with the nut 19. The machine shown in Fig. 5 also includes a modified scraping device for operating on the rand guide 36. According to this arrangement the bracket that supports the shaft 34 carries two pins 94 extending substantially parallel with the shaft and positioned one above and one below the shaft. The scraper comprises a semi-circular yoke having at each end a holder 96 that is recessed to receive one of the pins 94. Springs 98 are interposed between the ends of the pins and the bottoms of the recesses and operate to press the hold-

ers 96 toward the surface of the rand guide 36. Each of the holders is slotted to receive a piece of felt, cork, leather or similar material to bear against the rand guide and scrape off any blacking that may adhere to its outer surface. This arrangement affords the advantage of subjecting opposite sides of the rand guide to the same pressures, thereby avoiding any tendency to crowd the shaft 34 against one side or the other of its bearing. The thrust of the scrapers on the rand guide is resisted by a collar 100 secured on the end of the shaft 34.

The edge rest 60 shown in Fig. 5 is provided with a split stem that may be inserted in any one of a plurality of holes drilled through a boss formed on the forward end of the tank 32. The tank in this construction is supported by a pin 102 which extends through both standards of the frame head, the pin being shouldered where it passes through one or both of these standards so that it can not be displaced accidentally.

An important advantage of the construction disclosed in this application is that the brush 18 will fit any heel from a spring heel or the style used on a man's heavy shoe to the French heels of women's shoes. No adjustment, except possibly that of the edge rest, is necessary in order to treat different sizes and styles of heels. Consequently, when the machine has been installed and once adjusted it is always ready for any kind of work and need be adjusted only to compensate for wear.

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

1. A machine of the class described comprising in combination, means movable across the heel edge to apply blacking thereto and additional means operating simultaneously therewith for applying blacking to the rand crease.

2. A machine of the class described comprising in combination, means movable across the heel edge to apply blacking thereto, additional means operating simultaneously therewith for applying blacking to the rand crease, and provision whereby relative adjustment of said means may be effected.

3. A machine of the class described comprising in combination means movable across the heel edge to apply blacking thereto, and rotatably mounted means for protecting the upper of the shoe from contact with said applying means during the blacking operation.

4. A machine of the class described comprising in combination a driven device for applying blacking to the heel edge of a shoe and driven guiding means to aid in

presenting the shoe to said device so that the latter will wipe across the heel edge transversely of the lifts.

5. A machine of the class described comprising in combination a rotary blacking applying brush, a rand crease guide rotatable in a plane substantially perpendicular to the plane of rotation of the brush, and means for supplying blacking to said guide.

6. A machine of the class described comprising in combination a rotary brush for applying blacking to the heel edge of the shoe, an independently movable device for applying blacking to the rand crease, and means for delivering blacking to one of said devices only, the other device being arranged to receive blacking from the one so supplied.

7. A machine of the class described comprising in combination a rotary brush for applying blacking to the heel edge of a shoe, an independently rotatable device for applying blacking to the rand crease, means for delivering blacking directly to one of said devices only, the other device being arranged to receive blacking from the one so supplied and provision whereby one of said devices may be adjusted relative to the other.

8. A machine of the class described comprising in combination a rotary blacking applying brush and a rand crease guide rotatable in a plane substantially perpendicular to the plane of rotation of the brush.

9. A machine of the class described comprising in combination a rotary rand crease guide, means for supplying blacking to the rand engaging face of said guide and a rotatable brush arranged to take blacking from said guide and deliver it to the work.

10. A machine of the class described comprising in combination a rotary rand crease guide, means for supplying blacking to the rand engaging face of said guide, a rotatable brush arranged to take blacking from said guide and deliver it to the work, and means for wiping the upper engaging face of said guide to keep it clean.

11. A machine of the class described comprising in combination a rotary brush, a concave rand guide rotatable in a plane substantially perpendicular to the plane of rotation of the brush, arranged to encircle a portion of said brush and running in contact with the periphery of the brush at one side and means for delivering blacking to the face of the guide that runs in contact with the brush.

12. A machine of the class described comprising in combination a blacking applying brush rotatable about a substantially vertical axis and a rand blacking device rotatable about a substantially horizontal axis.

13. A machine of the class described com-

prising in combination a blacking applying brush rotatable about a substantially vertical axis and a rand guide encircling part of said brush and mounted for rotation about a substantially horizontal axis.

14. A machine of the class described comprising in combination a blacking applying brush mounted for rotation about a substantially vertical axis, a rand guiding and blacking device encircling part of said brush and mounted for rotative movement about a substantially horizontal axis, said parts being arranged to run in contact with each other, and means for directly supplying blacking to one of said devices.

15. A machine of the class described comprising in combination a blacking applying brush rotatable about a substantially vertical axis, a rand guiding and blacking device encircling part of said brush and mounted for rotative movement about a substantially horizontal axis, said devices running in contact at the forward edge of the brush and means for delivering blacking directly to the rand guiding and blacking device.

16. A machine of the class described comprising in combination a blacking applying brush mounted for rotation about a substantially vertical axis, a rand guiding and blacking device encircling part of said brush and mounted for rotative movement about a substantially horizontal axis, said parts being arranged to run in contact with each other, means for supplying blacking to one of said devices, and provision for regulating the quantity of blacking delivered to said device.

17. A machine of the class described comprising in combination a blacking applying brush rotatable about a substantially vertical axis, a rand guide rotatable about a substantially horizontal axis and arranged to encircle part of the brush, a blacking reservoir, a disk for conveying blacking from said reservoir to the rand engaging face of said guide and provision for effecting relative adjustment of said disk and guide.

18. A machine of the class described comprising in combination a rotary brush, a concave rand guide rotatable in a plane substantially perpendicular to the plane of rotation of the brush arranged to encircle a segment of said brush and to run in contact with the periphery of the brush, means for delivering blacking to that portion of the guide that runs in contact with the brush, and provision whereby said brush may be adjusted toward or from the guide.

19. A machine of the class described comprising in combination a blacking applying brush rotatable about a substantially vertical axis, a bowl-shaped rand guide rotatable about a substantially horizontal axis and

arranged to encircle a segment of the brush, a blacking reservoir, a disk for conveying blacking from said reservoir to the rand engaging face of said guide, means for rotating said disk, guide and brush, and provision whereby the brush may be adjusted relative to the guiding portion of the rand guide.

20. A machine of the class described comprising in combination means movable across the heel edge to apply blacking thereto, a rotatable rand crease guide for guiding the shoe during the blacking operation and a scraper arranged to engage said guide.

21. A machine of the class described comprising, in combination, a rotary blacking applying brush, a concave rand guide rotatable in a plane substantially perpendicular to the plane of rotation of the brush, said guide having a beveled rand engaging face and pockets formed in said face, and means for delivering blacking to said face.

22. In a machine of the class described the combination of a blacking applying brush, means for supplying blacking thereto and means for straightening out the bristles of the applying brush substantially throughout its body portion.

23. In a machine of the class described, the combination of a blacking applying brush, means for delivering blacking thereto and driven means for straightening out the bristles of the applying brush.

24. A machine of the class described comprising, in combination, a rotary blacking applying brush, means for supplying blacking to said brush, a second brush mounted for rotation in peripheral contact with the first mentioned brush and means for removing surplus blacking from said second brush.

25. A machine of the class described comprising in combination a device for applying blacking to a shoe bottom, means for supplying blacking to said device, driven means for removing surplus blacking from said applying device, and means for removing blacking from said driven means.

26. A machine of the class described comprising the combination with a rotary blacking applying brush, of a second brush rotating in the opposite direction to and at a greater peripheral speed than the applying brush and in peripheral contact with the applying brush whereby it straightens out the bristles of the applying brush.

27. A machine of the class described comprising in combination a rotary blacking applying brush, a blacking reservoir, means for conveying blacking from said reservoir to said brush, a second brush mounted for peripheral contact with the applying brush, means for driving the second brush at a greater speed than and in a direction oppo-

site to the first brush, and a scraper arranged to remove the blacking from the second brush and return it to said reservoir.

28. A machine of the class described comprising in combination, a machine frame, a main shaft supported therein, a blacking applying brush mounted for rotation about a substantially vertical axis and having geared connection with said shaft, a tank for liquid blacking, a blacking conveying disk arranged to run in contact with the body of blacking in said tank, a shaft supporting said disk, gears connecting said shaft with the main shaft, a rand crease guide supported for rotation about a substantially horizontal axis, said guide being arranged to take blacking from said disk and convey it to said brush, and driving connections between said guide and said disk shaft.

29. A machine of the class described comprising, in combination, a machine frame, a main shaft supported therein, a blacking applying brush mounted for rotation about a substantially vertical axis and having geared connection with said shaft, a tank for liquid blacking, a blacking conveying disk arranged to run in contact with the body of blacking in said tank, a shaft supporting said disk, gears connecting said shaft with the main shaft, a rand crease guide supported for rotation about a substantially horizontal axis, said guide being arranged to take blacking from said disk and convey it to said brush, driving connections between said guide and said disk shaft, scraper devices engaging said rand guide, a second brush revolving in peripheral contact with the applying brush, and at a greater speed than the applying brush, and a scraper device for removing blacking from the second brush.

30. In a machine of the class described the combination with a brush carrying blacking, of a device for removing blacking therefrom comprising a part engaging the periphery of the brush to bend the bristles as they are moved past it and a part to receive the blacking as it is thrown from the bristles when they pass out of contact with the first named part.

31. In a machine of the class described the combination with a brush carrying blacking, of a device for removing blacking therefrom comprising a part in contact with the periphery of the brush to bend the bristles as they are moved past it, a part to receive the blacking as it is thrown from the bristles when they pass the first named part, and means operating to press the first named part yielding against the periphery of the brush.

32. In a machine of the class described the combination with a brush carrying

blackening, of mechanism for removing blackening therefrom comprising an apron substantially C-shaped in cross section extending parallel to the axis of the brush and having its open side toward the brush and means for pressing the forward edge of the apron yielding against the periphery of the brush.

33. In a machine of the class described the combination with a brush carrying blackening, of mechanism for removing blackening therefrom comprising an apron substantially C-shaped in cross section extending in a direction parallel to the axis of the brush with its open side toward the brush and having its forward edge in contact with the periphery of the brush, a stem attached to the apron at its other edge, a bearing for said stem having a cam face, a weight on the stem and a device carried by the stem to cooperate with said cam face whereby the forward edge of the apron is held in yielding contact with the periphery of the brush.

34. In a machine of the class described the combination of a blackening applying brush, a rand guide mounted for movement about an axis and a plurality of scrapers engaging said guide at points so disposed that the pressure of the scrapers on the guide is distributed uniformly about said axis.

35. In a machine of the class described the combination of a blackening applying brush, a rand guide, a shaft supporting the guide and a pair of scrapers pressed yielding against said guide at opposite sides of said shaft.

36. In a machine of the class described the combination of a blackening applying brush, a rand guide, a shaft supporting the guide, a yoke supported for movement in a direction parallel to said shaft, means for pressing the yoke toward the rand guide, and a plurality of holders supported by the yoke, each of said holders carrying material to engage the surface of the rand guide.

37. In a machine of the class described the combination of a blackening applying brush, a rand guide, a horizontal shaft supporting said guide, a bearing for the shaft, said bearing being provided with two pins one above and one below the shaft extending parallel to the shaft, a semi-circular yoke having at each end thereof a holder recessed to receive one of the pins, springs interposed between the ends of the pins and bottoms of the recesses and a device carried by each of said holders to engage the surface of the rand guide.

38. In a machine of the class described the combination of a rotary brush, means for supplying blackening to said brush, and a stationary device supported at one end of

the brush presenting an inclined resilient surface to the end face of the brush whereby the bristles of the brush as they come in contact with said face are forced toward the body of the brush.

39. In a machine of the class described the combination of a brush, a gear rigid with the brush, a spindle supporting the gear and brush for rotative movement, means for driving the gear, and a latch for holding the gear in operative relationship to said driving means whereby upon the tripping of the latch the gear and brush may be removed from the machine.

40. In a machine of the class described the combination of a brush, a gear rigid therewith, a spindle on which said gear and brush are rotatably mounted and a latch carried by the frame arranged to hold the brush, gear and spindle in operative position.

41. In a machine of the class described the combination with a work engaging tool, of a stationary member having a plurality of holes formed therein at different heights and an edge rest comprising a part designed to be engaged by the work and a stem projecting from said part, said stem being split longitudinally to engage frictionally the walls of any one of said holes.

42. A machine of the class described comprising, in combination, a brush mounted for operative movement, means for driving the brush, means for supplying blackening to the brush, and guiding means to engage the shoe during the blackening operation, said guiding means being so positioned with relation to the brush that the brush will move across the lifts of the shoe heel toward the tread face of the heel.

43. A machine of the class described comprising, in combination, a brush mounted for rotation, means for driving the brush, means for supplying blackening to the brush, and guiding means for entering the rand crease of the shoe during the blackening operation to so guide the shoe that the brush will move across the heel edge toward the tread face, said guiding means acting also to protect the counter of the shoe from contact with said brush.

44. A machine of the class described comprising in combination a brush mounted for rotation, means for driving the brush, means for supplying blackening to the brush, and a guide for entering the rand crease of the shoe during the blackening operation to so guide the shoe that the brush will move across the heel edge, said brush being positioned to run in contact with the guide near the point where the guide engages the shoe.

45. A machine of the class described comprising, in combination, a brush mounted for rotation, means for driving the brush,

means for supplying blacking to the brush,
and a rand guide mounted for rotation and
arranged to position the shoe during the
blackening operation so that said brush will
5 move across the heel edge, said guide being
positioned to engage the periphery of the
brush.

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

FREDERICK M. FURBER.

Witnesses:

JOHN H. MCCREADY,

JAMES R. HODDER.

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