

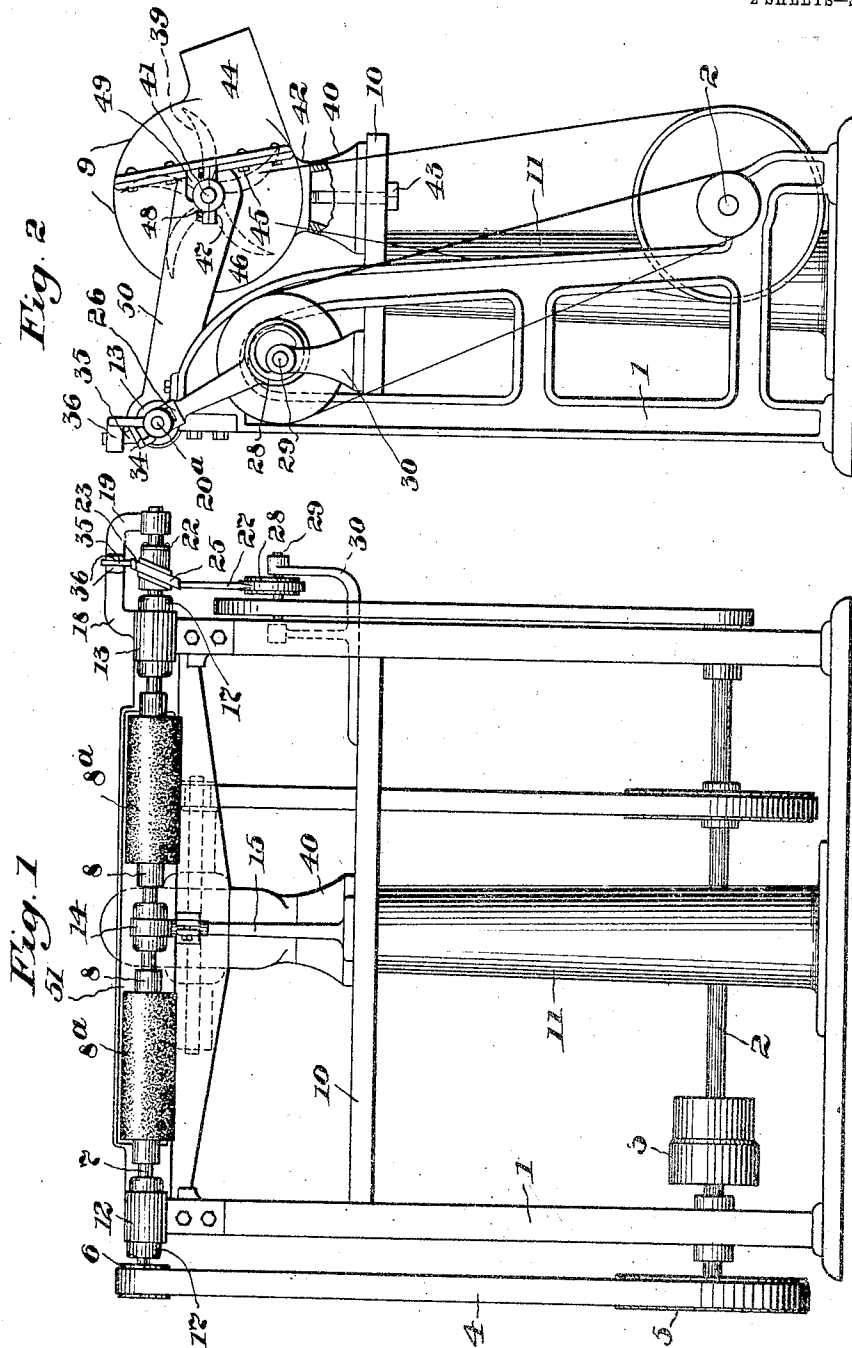
J. J. HEYS.
BUFFING MACHINE.

APPLICATION FILED OCT. 27, 1905. RENEWED APR. 14, 1909.

940,015.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.



Witnesses:
Horace A. Crossman.
Robert H. Kammeler.

Inventor:
John J. Heys
by Emery, Booth & Powell,
Attys.

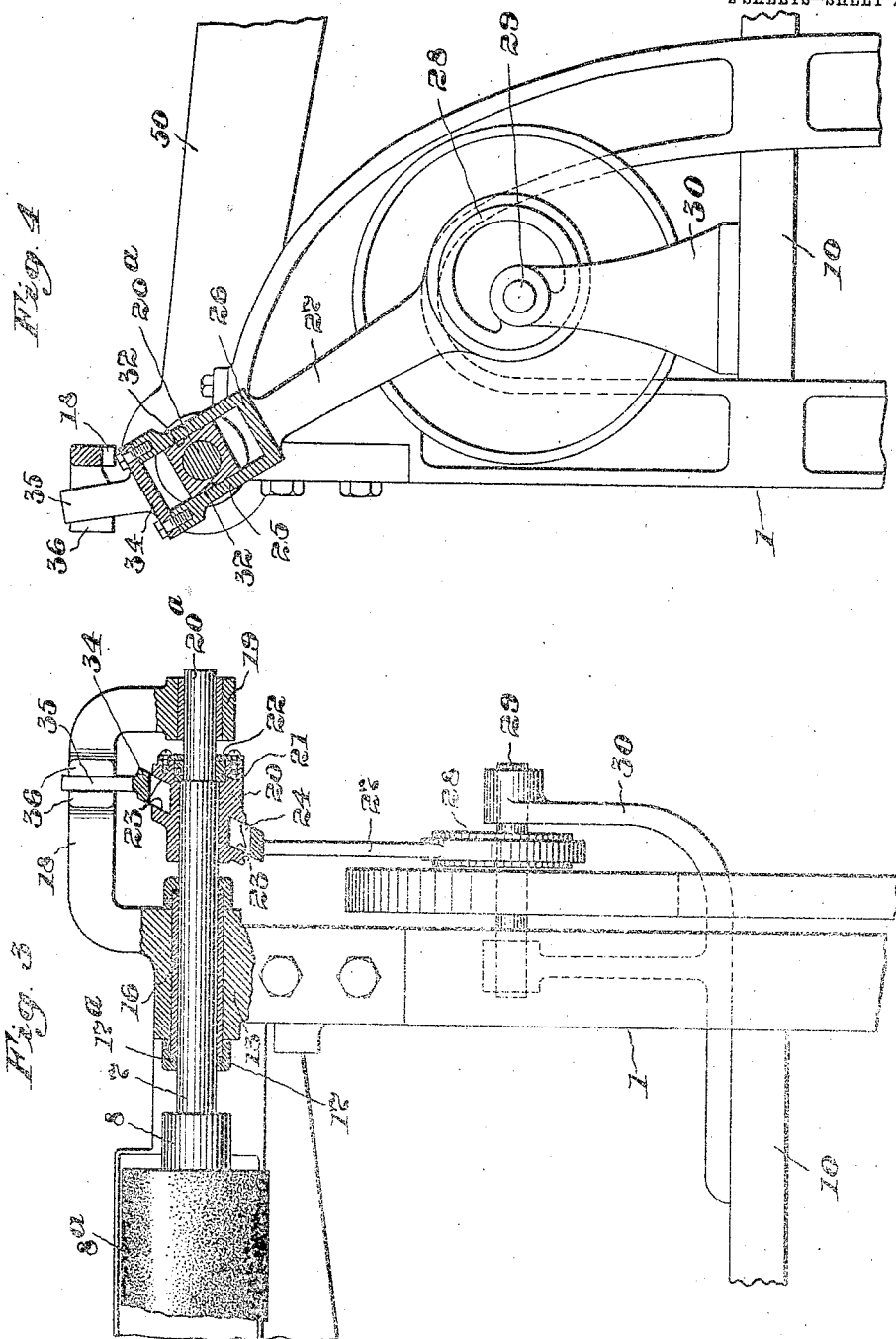
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Witnesses:
Horace H. Gussman.
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UNITED STATES PATENT OFFICE.

JOHN J. HEYS, OF LYNN, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
MANUFACTURERS MACHINE COMPANY, OF MONTCLAIR, NEW JERSEY, A CORPORATION
OF NEW JERSEY.

BUFFING-MACHINE.

940,015.

Specification of Letters Patent.

Patented Nov. 16, 1909.

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To all whom it may concern:

Be it known that I, JOHN J. HEYS, a citizen of the United States, residing at Lynn, in the county of Essex, State of Massachusetts, have invented an Improvement in Buffing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

My invention relates to machines for buffing, scouring, or cleaning the heels and soles of boots and shoes, leather, or other material, and particularly to improvements in the type of machines having a rotatable longitudinally reciprocating shaft bearing one or more buffing rolls, and to the mechanism for reciprocating the buffer shaft.

Referring to the drawings,—Figure 1 is a front elevation of a machine selected for illustration of the invention herein; Fig. 2, an elevation of the right side of the machine; Fig. 3, an enlargement of the right end of Fig. 1, showing the reciprocating mechanism partly in section; and, Fig. 4, an enlargement also partly in section of the reciprocating mechanism as shown in Fig. 2.

In the invention as illustrated the machine is provided with the usual drive shaft 2 mounted in a frame 1 and carrying pulleys 3 connected by a belt 4 and pulleys 5, 6; with the horizontal roll shaft 7. This drive shaft carries buffing rolls 8, of any well known or desired construction, to which are secured sheets of emery, sand paper or other abrading or polishing material 8^a. The shaft 7 is mounted to slide freely in tubular bearings 12, 13, secured to the frame 1 and in an intermediate bearing 14 mounted on a standard 15 on the plate 10, which is secured to the frame 1 and partially supported by a column 11. This intermediate bearing prevents the shaft 7 from lateral vibration or springing when the machine is operated. These bearings are provided with brass bushings 16 and caps 17 secured thereto, so as to provide a small space 17^a for wicking, this arrangement constituting one form of dust-proof bearing which I have found beneficial in using my machine. Projecting from the upper surface of the bearing 13 is a yoke 18, its outer arm being shaped to form a bearing 19, for an extension 20^a of the roll shaft. All of the roll shaft bearings are

constructed to permit free reciprocation of said shaft.

Intermediate the bearings 13, 19, and loosely mounted on the roll shaft, is a cam box 20, which, while free to turn on said shaft, is prevented from sliding thereon by a collar 21, secured to the roll shaft and confined in a recess formed in the outer end of the box by the ring plate 22, secured to its outer face. This cam box 20 is provided with parallel, slanting and opposed cam faces 23, which present between them an oblique groove 24, slanting longitudinally to the axis of the roll shaft. This groove receives the long arms 25, of a box yoke 26, formed at the end of an eccentric rod 27. This rod is oscillated by the eccentric 28, mounted on a shaft 29, journaled in a bracket 30, on the frame plate 10, said shaft being driven by a belted connection to the drive shaft. The box yoke is bent to one side of the eccentric rod at the same inclination as that of the cam faces, and the inner faces of its arms fit and slide upon the parallel flat sides 32 of the box and the lateral slanting faces of said yoke arms slide upon the cam faces 23, to enable the cam box to receive the gyratory motion of the eccentric rod and transmit it to the roll shaft, as will be more fully described. The yoke 26 is capped by a strap 34 secured to the end of the yoke arms and is provided with a guide stem 35 extending upwardly between the ears 36 formed upon the yoke 18. Since one end of the eccentric rod is secured to the eccentric at one side of the roll shaft and its other end is supported and guided by the ears 36, it is apparent that the said rod is free to move back and forth, or up and down, see Figs. 3 and 4, and also to oscillate about the roll shaft as a fulcrum. The yoke 26 is confined to slide in the groove by reason of the fact that its arms straddle the box and fit closely against the bearing surfaces of the groove. The oscillations of the eccentric rod about the roll shaft as a center cause the yoke which partakes of the oscillatory movement to turn or swing the box back and forth on the roll shaft but is ineffective to move the shaft, since the box is loosely mounted only for rotation. The throw of the eccentric, however, can produce but one result, namely, to cause the cam faces of the yoke to bear

upon those of the cam-box and, in sliding thereon, force the roll shaft back and forth longitudinally and transversely to the movement of the eccentric.

5 It will be observed that my eccentric rod forms a direct connection between the roll shaft and the eccentric and constitutes a sliding means that acts directly upon said shaft to produce the longitudinal reciprocation referred to.

10 To cooperate with the roll shaft and the buffing rolls mounted thereon, I provide an exhaust fan 39, mounted in a casing or hood 9, the fan being driven by the usual belted connection to the drive shaft. This hood is 15 removably supported upon the frame rearwardly of the roll shaft, the flat base portion 42 of said hood, resting upon the flat top 40 of a hollow standard, being tapped to receive the end of a bolt 43 seated against the plate 10 of said frame and passing through the said standard. This hood is divided approximately vertically into two sections, a 20 front section 46 and a rear section 44, the latter being removably secured to the front section by the bolts 45. The front section is provided with bearings 47, having caps 48 removably secured thereto, receiving between them the journals 41 of an exhaust fan 39. Formed in the side walls of the front 30 section and leading outwardly from the bearing 47, is a slot 49, providing means for removing the fan when the rear section 44 and the caps 48 have been taken off, or to give access to the interior of the hood for cleaning or other purposes. A conduit 50 extends 35 forwardly from the hood and is provided with a wide mouth 51, longitudinally arranged and partially inclosing the buffing or polishing rolls. By dividing my hood into 40 two sections in the manner described it is apparent that either or both may be removed without stopping the rotation of the buffing rolls.

45 While I have shown my hood as adapted to cooperate with an exhaust fan, I am not limited to such use.

The machine is operated by rotating the drive shaft, its power being communicated 50 to the shaft 7 to rotate the buffing rolls to drive the exhaust fan and to rotate the shaft 29. The rotation of shaft 29 causes the throw of the eccentric 28 to reciprocate the eccentric rod 27 and its yoke 26. The reciprocation of the yoke in the fixed path in 55 which it is compelled to travel, forces the cam box to reciprocate longitudinally, and in so doing move the roll shaft with it. As a result the roll shaft and the buffing rolls 60 mounted thereon are reciprocated longitudinally simultaneously with their rotation, the resulting compound motion producing all the beneficial results characterizing this type of machine.

65 The exhaust fan prevents charging the air

with dust and the accumulations of dust or abrading material on the work and from collecting about the bearings; buffs, or polishers.

Claims.

1. A buffing machine comprising, in combination, a shaft having a buffing roll 70 mounted thereon, bearings for said shaft in which it is free to rotate and move longitudinally, a cam-box mounted loosely on 75 said shaft to turn independently thereof, means connecting the cam-box with the shaft to cause said shaft and cam-box to move together in an axial direction, said cam-box having an inclined groove or way, 80 a box-yoke fitting said inclined groove or way, and means to move the box-yoke transversely of the cam-box to impart to the latter and said shaft movement in an axial direction.

2. A buffing machine comprising, in combination, a shaft having a buffing roll 85 mounted thereon, bearings for said shaft in which it is free to rotate and move longitudinally, a cam-box mounted loosely on 90 said shaft to turn independently thereof, means connecting the cam-box with the shaft to cause said shaft and cam-box to move together in an axial direction, said cam-box having an inclined groove or way, 95 a box-yoke fitting said inclined groove or way and provided with a guide stem, and means to move the box-yoke transversely of the cam-box to impart to the latter and said shaft movement in an axial direction.

3. A buffing machine comprising, in combination, a shaft, buffing rolls secured thereto, a cam-box on said shaft and having 100 an inclined groove or way, a collar connecting the cam-box to said shaft to permit relative rotative and prevent relative longitudinal movements of said shaft and cam-box, 105 a box-yoke fitting the inclined groove or way of said cam-box, a guide stem secured to said box-yoke, ears on the frame embracing said guide stem, and means to move the 110 box-yoke transversely of said cam-box to impart to the latter and said shaft movement in an axial direction.

4. A buffing machine comprising, in combination, a shaft, buffing rolls secured 115 thereto, a cam-box on said shaft and having an inclined groove or way, a collar connecting the cam-box to said shaft to permit relative rotative and prevent relative longitudinal 120 movements of said shaft and cam-box, a box-yoke fitting the inclined groove or way of said cam-box, a guide stem secured to said box-yoke, ears on the frame embracing said 125 guide stem, an eccentric, connections between said eccentric and the box-yoke, and means for operating said eccentric.

5. A buffing machine comprising a shaft, 130 a buffing tool carried thereby, means for rotating said shaft, a yoke 18 having a bearing

for the extension of said shaft, a cam-box loosely mounted on said shaft and having an inclined groove or way, means connecting the cam-box and shaft to cause them to move together in an axial direction, ears 36 carried by the yoke, a box-yoke having an inclined portion engaging the inclined groove or way in the cam-box and provided with a guide stem 35, and means for reciprocating

said box-yoke transversely of said cam-box, 10 as and for the purpose described.

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

JOHN J. HEYS.

Witnesses:

FREDERICK L. EMERY,
ROBERT H. KAMMLER.