No. 610,759. Patented Sept. 13, 1898.

T. E. KEAVY.

BUFFING MACHINE.

(Application filed June 3, 1897.)

(No Model.) 2 Sheets—Sheet 1.

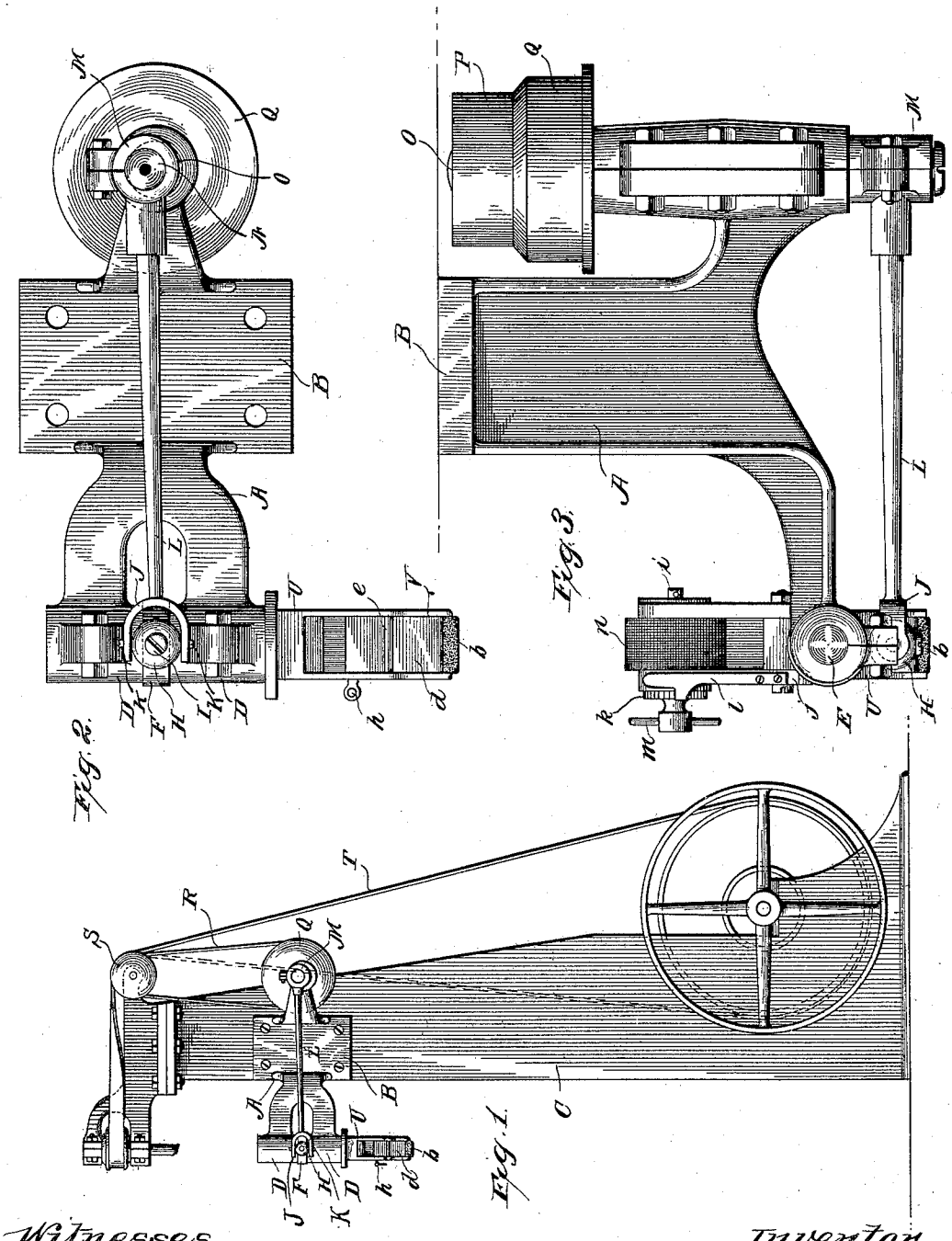


Fig. 2.

Fig. 3.

Fig. 1.

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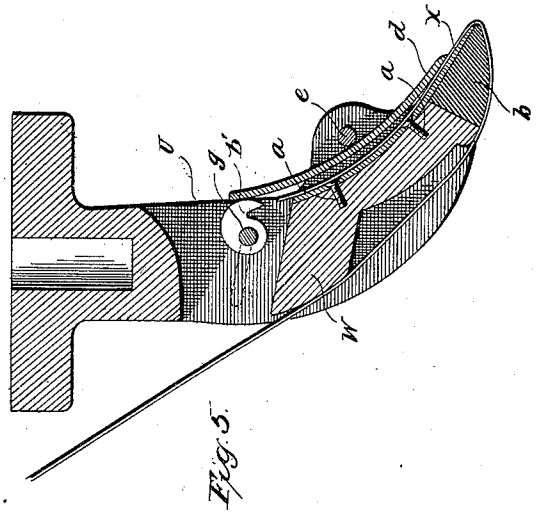


Fig. 5.

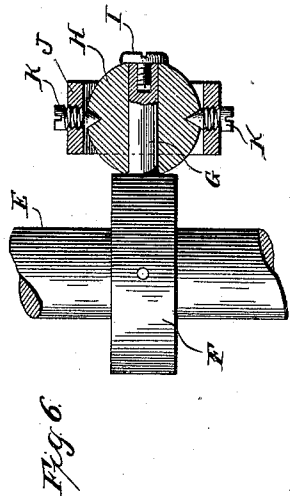


Fig. 6.

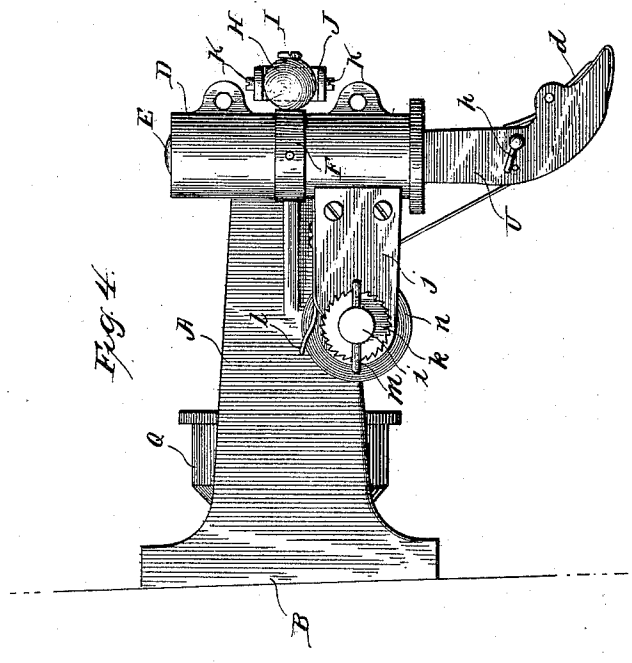


Fig. 4.

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UNITED STATES PATENT OFFICE.

THOMAS E. KEAVY, OF PHILADELPHIA, PENNSYLVANIA.

BUFFING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 610,759, dated September 13, 1898.

Application filed June 3, 1897. Serial No. 639,263. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. KEAVY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Buffing-Machines, of which the following is a specification.

The present invention relates to sandpapering and buffing machines, and more particularly to an improved buffing-machine for buffing the soles of boots and shoes.

The object of the present invention is to produce a buffing-tool of improved form and arrangement which shall be capable of quickly buffing the soles of boots and shoes and particularly effective in its action upon the shank portions of the sole, it being of such form and so actuated that all parts of the shank can be brought under the action of the buffing-tool and said tool will be capable of buffing the shank close to the breast of a gouged heel.

Another object of the invention is to produce a buffing-machine which shall be so constructed that it shall be economical in use and accomplish a great amount of work with a small consumption of abrading material.

To the above end the present invention consists of the devices and combination of devices which will be hereinafter described and claimed.

The present invention is illustrated in the accompanying drawings, in which—

Figure 1 shows the machine in side elevation. Fig. 2 shows a side view of the parts, enlarged, removed from the supporting-standard. Fig. 3 shows a plan view of the parts shown in Fig. 2. Fig. 4 shows the same parts looking from the left of Fig. 2. Fig. 5 shows a longitudinal sectional view through the buffing-tool. Fig. 6 shows details of the oscillating mechanism of the buffing-tool.

Similar letters of reference represent corresponding parts throughout the several views.

In the drawings, C represents a supporting frame or standard, which may be of any suitable or preferred form and arrangement capable of supporting the active parts of the machine. Upon the side of the frame or standard C is secured a bracket A by means of screws or bolts passing through the base B thereof. The bracket A extends outwardly from the base B and at one side is provided with the bifurcated bearing D, in which is mounted the oscillating shaft E of the buffing-tool U, which is secured to the lower end of the said shaft in any suitable manner, said shaft being supported in the bearing D by means of a collar F, secured to said shaft.

The buffing-tool U is preferably formed and arranged as shown in the drawings, it being substantially J-shaped or curved downwardly and outwardly, forming a foot which extends to one side of the axis of motion, and at its lower end said foot has a comparatively sharp edge, whereby said tool is enabled to act upon the shank of the shoe-sole close up to the breast of the heel. The lower end or toe of the foot of the tool U is preferably bifurcated, as indicated in Fig. 2, and upon its upper surface is secured a plate X, preferably by means of screws *a*, said plate X extending to the end of the tool, as clearly shown in the drawings.

Beneath the plate X and abutting against the core W is secured a pad *b*, of felt or any other suitable material, said pad *b* having a rounded or curved working face over which the abrading material, such as sandpaper or emery-cloth, is drawn and by which such abrading material is supported in use.

The abrading material *n* may be secured in position upon the working face of the tool U in any suitable manner; but the arrangement shown in the drawings is preferred.

In the machine of the drawings the abrading material *n* is in the form of a long and narrow strip which is rolled upon a spindle *i*, journaled in an offset bracket *j*, secured to the lower bearing D, and the spindle *i* has secured thereon a ratchet-wheel *k*, with which engages the spring-pawl *l*, so arranged that the spindle may be revolved in one direction, but will be prevented from revolving in the opposite direction, except when the pawl is disengaged from the ratchet, the spindle *i* at its outer end being provided with a cross-pin *m*, whereby it may be turned when desired. The free end of the abrading material *n* leads from the spindle *i* downward and over the

pad *b* and is turned up over the end of said pad upon the plate X, against which it is clamped by the clamp-plate *d*, which is fulcrumed upon the pin *e*, passed through the sides of the tool U, the lower end of the clamp-plate *d* being arranged to bear against the plate X, while the upper end thereof is acted upon by a cam *b'*, mounted upon a pin *g*, the pin *g* being provided with a hand-knob *h* for its manipulation, whereby the cam *b'* may be caused to engage the upper end of the clamp-plate *d* and move it outwardly, causing the lower end thereof to forcibly clamp the end of the abrading-strip *n* against the plate X. After the end of the abrading-strip *n* has been clamped as desired the spindle *i* may be revolved backwardly to take up the slack and draw the same tightly across the pad *b*, the pawl and ratchet holding the strip *n* in its adjusted position.

The tool U is secured to the lower end of the shaft E, as before explained, and, as shown, the foot of said tool extends laterally to one side of the axis of said shaft. In operation the shaft E is designed to be rapidly oscillated in its bearings D and impart to the tool U a rapid oscillating or vibrating movement, causing the foot of said tool to have a rapid movement from said shaft in a curved path of short radius, whereby it will effectually buff off the shank portion of the insole close up to the breast of a curved or gouged heel.

Any suitable mechanism may be employed to oscillate the tool U, that shown in the drawings comprising a wrist-pin G, which projects from the collar F of the spindle E, upon which is mounted the ball H, arranged to turn thereon, said ball being secured in position upon the pin G by a screw I, as clearly shown in Fig. 6. A connecting-rod L has at one end a yoke J, which embraces the ball H and is connected thereto by the conical pointed screws K, which are threaded through the ends of the yoke J and seated in suitable bearings formed in the ball H, this construction producing a universal joint. Upon the other end of the connecting-rod L is carried an eccentric-strap M, which engages the eccentric N, mounted upon the outer end of a shaft O, which is mounted to rotate in a bearing *t*, carried by the bracket A upon the end opposite to the bearing D, and said shaft O at its opposite end is provided with a pulley P and Q, preferably a step-pulley, as shown, in order that when the belt is running upon the pulley P it may be slack, while when running upon the pulley Q it will be sufficiently taut to drive the shaft O.

Motion is imparted to the shaft O in the machine of the drawings by a belt R, which is driven by a pulley S, which is secured to or formed with one of the idle-pulleys over which the main belt T of the machine passes.

In the operation of the present invention power being applied to the shaft O the eccentric N thereon will by means of the connecting-rod L impart a rapid oscillation to the spindle E and cause the tool U to have a rapid swinging or vibrating movement in a curved path of short radius, and this rapid motion of the tool U will cause the abrading material *n* to rapidly buff and scour the bottom of the shoe-sole which may be presented thereto.

It will be noted that by the peculiar formation of the buffing-tool U and the oscillation thereof in a curved path of short radius the buffing of the shank of the sole may be performed up to a close line and within the curve of a gouged heel-breast.

I do not consider the present invention as limited to the details of construction herein shown and described; but,

Having described the construction and mode of operation of my invention, I claim as new and desire to secure by Letters Patent of the United States—

1. In a sandpapering and buffing machine, the combination with a buffing-tool having a working face extended to one side of its axis of motion, of a clamp for securing a continuous strip of abrading material to the working face of said tool and means to oscillate said tool, substantially as described.

2. In a sandpapering and buffing machine, the combination with an oscillating buffing-tool having a working face disposed at an angle to the axis of motion of the tool, of a strip of abrading material secured to the working face of said tool, and means to oscillate said tool, substantially as described.

3. In a sandpapering and buffing machine, the combination with a buffing-tool having a foot extended to one side of its axis of motion, of a pad carried by said tool, a strip of abrading material drawn across said pad, and a clamp for clamping the abrading material in position on said tool, substantially as described.

4. In a sandpapering and buffing machine, the combination with an oscillating buffing-tool having a foot extended to one side of its axis of motion, of a pad mounted upon the under face of said foot, a clamp-plate fulcrumed upon the upper surface of the foot, means for operating said plate and a roll of abrading material having its free end passed across the pad and clamped by the clamping-plate, substantially as described.

5. The herein-described combination of a frame, an oscillating spindle journaled therein, a buffing-tool carried by the lower end of said spindle, said buffing-tool having an outturned foot, a clamp carried by the buffing-tool, a reel upon which may be wound a continuous strip of abrading material for passage around the pad and to the clamp, means for manipulating the reel, a pawl, a ratchet for holding said reel against reverse rotation, an eccentric-rod coupled to the spindle, a shaft

journaled in the frame, an eccentric carried by said shaft, an eccentric-strap embracing the eccentric and connected with the eccentric-rod, and a pulley carried by the shaft for transmitting power thereto from a suitable belt, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

THOMAS E. KEAVY.

Witnesses:
E. C. WURDEMAN,
ALLISON W. MCCURDY.