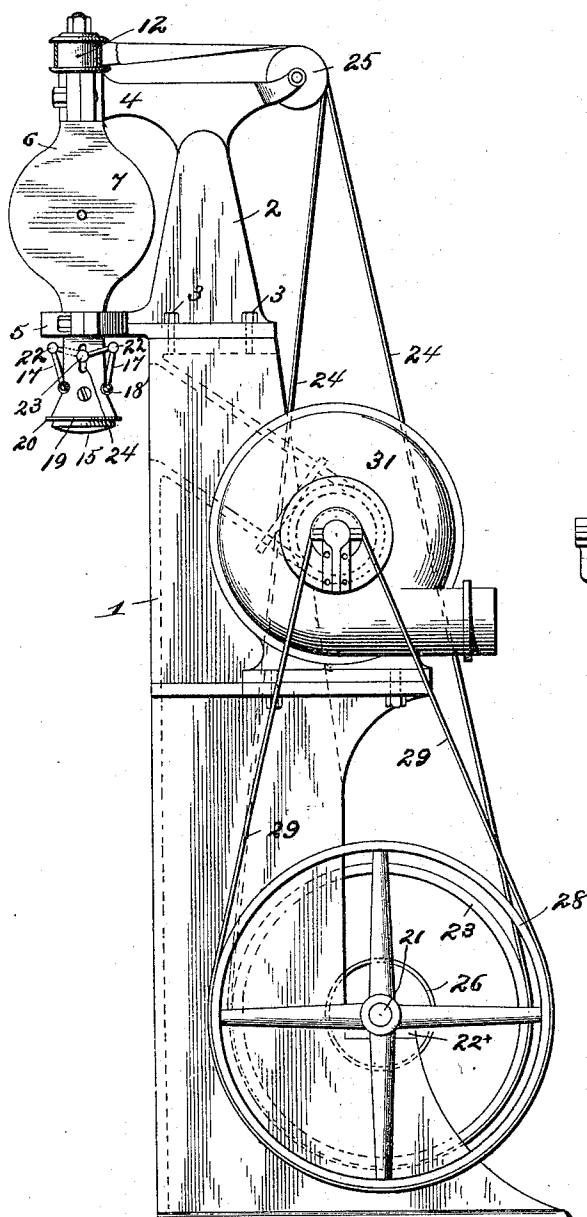


T. E. KEAVY.
SANDPAPERING AND BUFFING MACHINE.

No. 559,491.

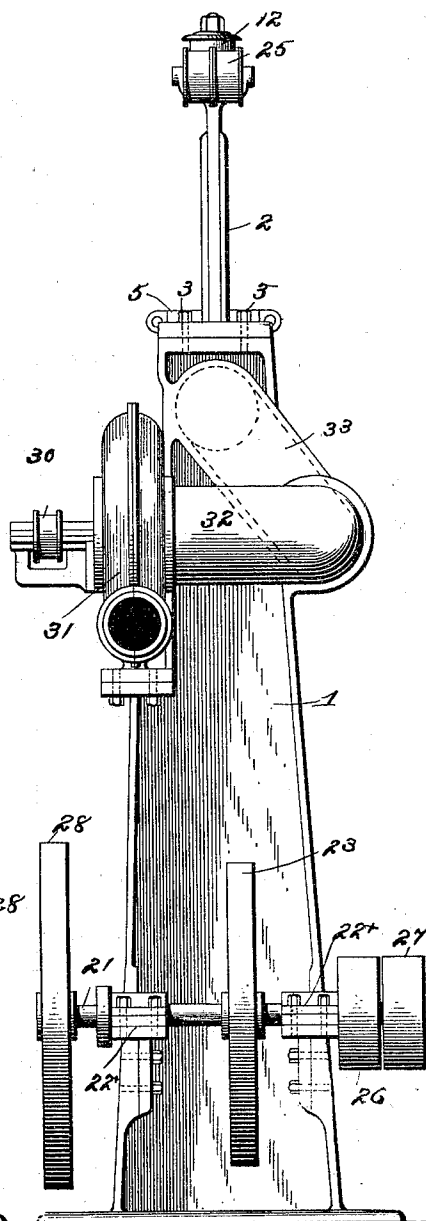
Patented May 5, 1896.

Fig. 1.



Witnesses
E. W. Wurdeman
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Fig. 2.



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(No Model.)

2 Sheets—Sheet 2.

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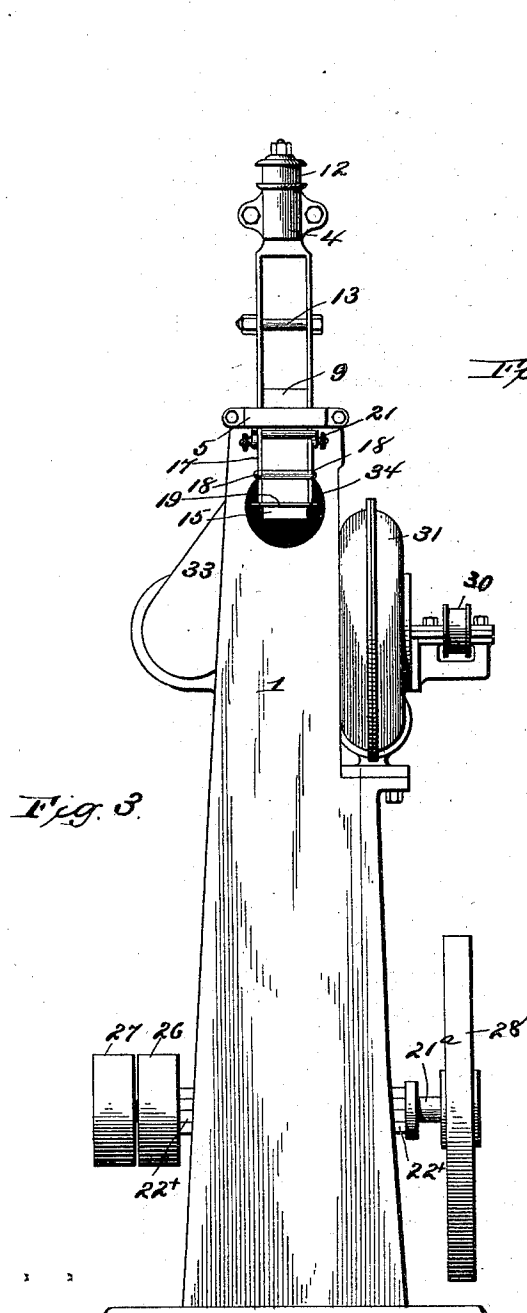


Fig. 3.

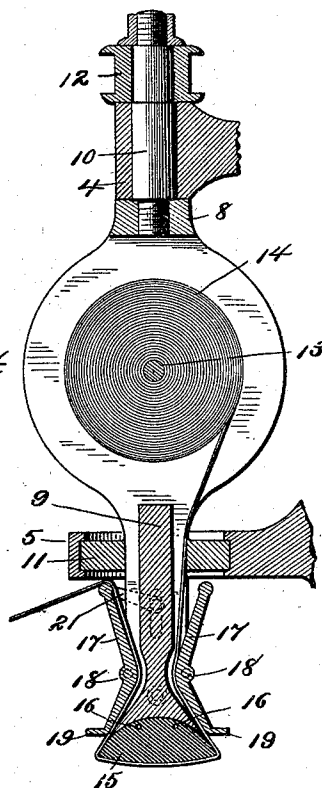


Fig. 4.

Fig. 5.

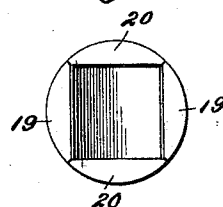
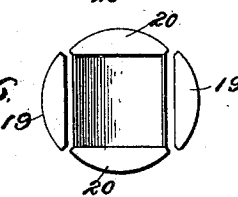


Fig. 6.



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UNITED STATES PATENT OFFICE.

THOMAS E. KEAVY, OF PHILADELPHIA, PENNSYLVANIA.

SANDPAPERING AND BUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,491, dated May 5, 1896.

Application filed July 16, 1895. Serial No. 556,178. (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 certain new and useful Improvements in Sandpapering and Buffing Machines, of which the following is a full, clear, and exact specification.

My invention relates to a new and useful improvement in sandpapering and buffing machines, and has for its object to provide such a device by the use of which sandpapering or buffing may be accomplished by the use of a roll of sandpaper or emery-cloth without wasting any of said paper or cloth in the process of clamping or securing to the buffing-pad, and, further, to so simplify the construction of such machine as to render it highly efficient in the performance of its functions; and with these ends in view the invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claims.

In order that those skilled in the art to which my invention appertains may understand how to make and use the same, I will describe its construction and operation in detail, referring by numbers to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation of my improved buffing-machine; Fig. 2, a rear view thereof; Fig. 3, a front view; Fig. 4, an enlarged central vertical section of the buffing-spindle and mechanism carried thereby; Fig. 5, a bottom plan of the pad-holder and clamp, showing the latter in its closed position; and Fig. 6, a similar view showing the clamp open.

Similar numbers denote like parts in all the views of the drawings.

1 represents the standard, preferably made in the form of a hollow column and adapted to support the several operating parts of the machine, and 2 is the head, secured by bolts 3 upon the upper end of this column.

4 and 5 are arms formed with the head 2, in which are provided bearings for the buffing-spindle 6, which latter is composed of two side plates 7, united at the top by the cross-bar 8 and at their lower portion by the core 9.

Secured to the bar 8 is an extension 10, which turns in the bearing in the arm 4, and 11 is an annular collar secured around the lower portion of the side plates and core and adapted to turn in the bearing in the arm 5. Secured to the upper end of the extension 10 is a flanged pulley 12, by which power is transmitted to the spindle, as hereinafter set forth.

The center portions of the side plates 7 are circular, and a bolt 13 passes through the center thereof for the purpose of supporting the coil or roll 14 of abrading material. The lower end of the core is cylindrical in shape, and fitted therein is the pad 15, which may be secured between the side plates 7 by the pins 16.

17 are clamp-plates pivoted at 18 between the side plates 7 and provided at their lower ends with flanges 19, which form segments of a circle, the remainder of which is composed of the flanges 20, formed upon the bottom edges of the side plates.

21 are links pivoted at 22 to the upper ends of the clamp-plates and connected to the thumb-screws 23, which latter slide and are adapted to be secured in the slot 24, whereby the clamps may be opened or closed and held in either position by the binding of said thumb-screws within said slot. From this description it will be seen that when the end of the abrading material is passed down from the roll between the side plates, core, and one of the clamping-plates, around the pad, and up between the core and remaining clamping-plate, over the upper edge thereof, it is only necessary to move the thumb-screws in the proper direction in the slot to cause the links to close the lower ends of the clamping-plates, thereby binding said abrading material between said clamping-plates and the flared lower portion of the core, and when the surface of the portion of the abrading material which is held against the under side of the pad has been worn away by use it is only necessary to open the clamps by the reverse motion of the thumb-screws and draw said abrading material from the roll sufficiently to present a new surface thereof upon the pad, when it may be again clamped, as before described. It will therefore be seen that no waste is occasioned by the securing of the abrading material to the pad, and this is of

great advantage in this class of machine, in that great quantities of abrading material are necessary to be used for the proper production of the work acted upon and a small loss upon each section used upon the pad would greatly increase the running expenses of the machine.

21^a is the driving-shaft, journaled in the boxes 22^x, arranged upon the lower portion of the clamp, and 23 is a belt-wheel carried by said shaft and from which runs the belt 24 up and over the idlers 25, after making a quarter-turn around the flanged pulley 12.

26 is a tight pulley secured to the outer end of the shaft 21^a, by which power is imparted to said shaft, and 27 is a loose pulley placed in juxtaposition to the pulley 26, by which a power-belt may be shifted, so as to stop or start the machine, as is well understood.

28 is also a belt-wheel secured upon the inner end of the shaft 21, and from which the belt 29 passes to the pulley 30 of an ordinary exhaust-fan 31, whose induction 32 is connected by suitable tube 33 with the opening 34, formed in the standard immediately in the rear of the buffing-pad. Thus it will be seen that when the machine is started by shifting the power-belt onto the tight pulley 26 the buffing-spindle will be caused to revolve by the belt 24 and the exhaust-fan by the belt 29, and the object of this exhaust-fan is to draw in and convey to a suitable place all dust or particles of material during the operation of buffing.

While my invention is applicable to all classes of buffing or polishing in which a vertical spindle may be used, such as woodwork and the like, the construction shown is especially adapted for use in finishing the soles and shanks of shoes, and when so used it will be seen that the sole proper may be readily buffed by its proper manipulation against the abrading material held against the pad, as before described, and also the shank of the shoe may be operated upon with great facility, in that the effect of the abrading material held against the pad will be that of a circular buffing-wheel, from the fact that the spindle is turned at such a high rate of speed (say six thousand revolutions a minute) as

to preclude the work being brought closer to its center than the corners of the square section of abrading material; and these corners will give a special advantage to the action of the abrading material, in that they will more effectually act upon the portion of the shank which is in proximity to the breast of the heel after the manner of saw-teeth.

The pad 15 may be composed of a rubber or any other suitable material that may afford a suitable elastic bearing for the abrading material, or it may be composed of a hollow compartment into which air may be forced or which may be made and filled with air, so as to provide the yielding action necessary to a fine finish upon the work.

It is obvious that many slight modifications might be made in the construction and arrangement of parts shown and described without departing from the spirit of my invention, which rests in the broad idea of providing a buffing-pad and means for carrying the roll of abrading material adapted to be clamped upon said pad, and I therefore do not wish to be limited to said construction.

Having thus fully described my invention, what I claim as new and useful is—

1. In combination a spindle composed of two side plates and a core, clamps pivoted to the side plates, a roll of abrading material adapted to turn upon a bolt held by said plates, links connected to the clamps and means for holding same in their adjusted position, as and for the purpose described.

2. In combination with a machine of the character described, a spindle composed of two side plates and a core, a pad secured against said core, two clamps pivoted to said side plates, a roll of abrading material adapted to turn upon a bolt held by said plates and means for opening and closing the clamps, substantially as and for the purposes set forth.

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

THOMAS E. KEAVY.

Witnesses:

S. S. WILLIAMSON,
SAMUEL L. TAYLOR.