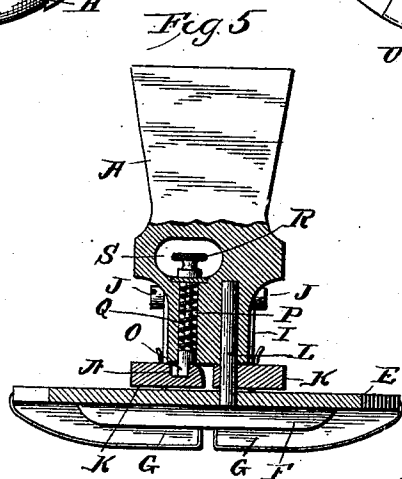
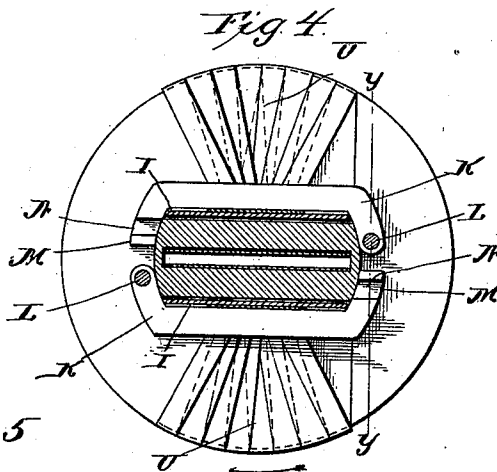
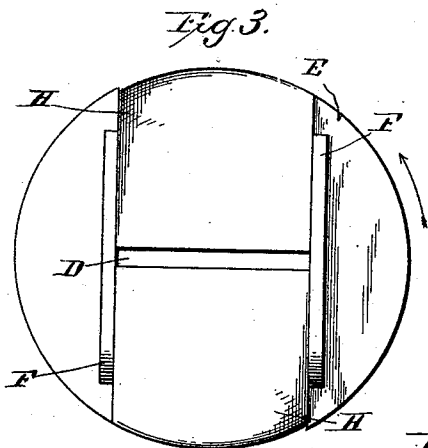
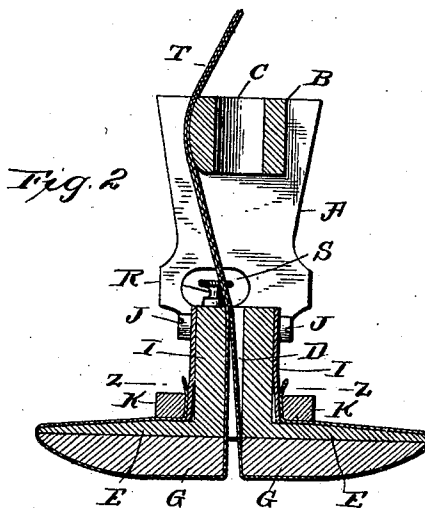
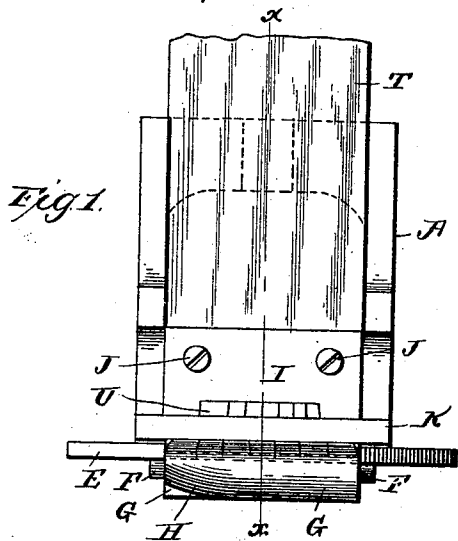


(No Model.)

T. E. KEAVY. SANDPAPERING AND BUFFING MACHINE.

No. 578,214.

Patented Mar. 2, 1897.



Witnesses
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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. 578,214, dated March 2, 1897.

Application filed May 7, 1896. Serial No. 590,602. (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 Chucks for Sandpapering and Buffing Machines, of which the following is a specification.

My invention relates to a new and useful improvement in chucks for sandpapering and buffing machines, and has for its object to provide a device of this description for use in connection with that class of buffing-machines having a rotary spindle, and especially for use in connection with the design of buffing-machine shown and described in a certain application for Letters Patent filed by me on the 16th day of July, 1895, and allowed on the 18th day of November, 1895, bearing Serial No. 556,178.

With these and other objects in view my invention consists in the novel details of construction and combination of elements hereinafter set forth, and specifically designated by the claims.

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

Figure 1 is a side view of my improved chuck; Fig. 2, a section at the line $x x$ of Fig. 1; Fig. 3, a bottom view; Fig. 4, a section at the line $z z$ of Fig. 2, and Fig. 5 a section at the line $y y$ of Fig. 4.

Referring to the drawings in detail, A represents the body of the chuck, which is provided with a cross-bar B, having a hole C formed therethrough, by means which it may be attached to the spindle of a buffing-machine of the character before mentioned, and D represents a passage which extends from the interior of the chuck through the bottom thereof. Formed with or secured to this body is a circular disk E, the size of which is sufficient to hold a proper amount of abrading material, as hereinafter set forth. Formed upon the under surface of the disk are two ribs F, which lie at right angles to the pas-

sage D, and these ribs serve as housings between which the compressible pads G are held, the latter being preferably of felt, or they may be of any well-known or suitable material. These pads are so curved upon their under surfaces as to cause their edges to blend with the edge of the disk without presenting abrupt lines, as clearly shown in Figs. 2 and 5, and also have one of their edges beveled in cross-section, as indicated at H, for the purpose hereinafter set forth.

Secured to each of the flattened sides of the body of the chuck is a plate I, held in place by means of the screws J, and these plates are so bent as to project slightly outward at their lower edges and are of spring material, so that when compressed and again released they will assume their original position. The clamps K, which are two in number, are pivoted at L, one upon either side of the chuck, and extend across the face of the plates I, terminating in noses M, each of which latter is provided with a notch N, adapted to be engaged with one of the eccentric-pins O.

The pins O are formed with the latch-rods P, which are held in suitable bearings so as to be moved vertically, and each of said rods is surrounded by a coil-spring Q, adapted to normally hold it in a lowered position. The upper ends of the rods P are provided with knobs R, by means of which they may be moved upward against the action of their springs, and said knobs are located within the openings S formed for their reception.

From this description the operation of my improvement will be as follows: The abrading material T, which is preferably in long lengths, may be coiled upon a suitable spool or spindle and is passed downward through the passage D and each strip thereof turned outward against the under surface of one of the pads and then upward over the edge of the disk, at which point the perimeter of said disk is slightly cut away, so as to compensate for the thickness of the abrading material, and these cut-away portions are formed eccentrically with said perimeter, as clearly shown in Fig. 3, so that when the chuck revolves in the direction of the arrow the leading edge of the abrading material will be

slightly below the true circle of the perimeter of the disk, while the following edge of each of the strips of the abrading material will be slightly above said circle. The object of this arrangement is to prevent the catching of the edges of either the abrading material or the cut-away portions of the disk upon the object which is being buffed, which, as will be readily understood, would seriously interfere with the proper workings of the device. After the abrading material has been turned upward over the edge of the disk its ends are split lengthwise in one or more places, as indicated at U, so that by the overlapping of these strip portions of the abrading material that portion thereof which lies in contact with the edge of the disk will be caused to assume the general curve of the perimeter of said disk. Now by carrying these stripped ends inward and turning them upward against the outer surfaces of the spring-plates I the clamps K may be swung thereagainst, so as to prevent the withdrawal of said ends, and when the clamps are sufficiently forced into place against the action of the spring-plates the eccentric-pins O will snap into the notches N by the action of the coil-springs Q. After this has been accomplished the abrading material may be drawn tightly against the pads and over the edges of the disk by the turning of the latch-rods upon their axes, which will cause the eccentric-pins to swing inward, thereby drawing therewith the clamps. When the abrading material has thus been secured in place, it will be seen that the chuck may be rotated without the liability of said material becoming in any wise displaced, and a chuck of this construction, when the abrading material has been clamped thereto, will permit of the buffing of all parts of the sole of a shoe in one operation, in that the disk forms a true wheel, and when rapidly revolved will cause the abrading material to quickly cut away the surface of the fore part and shank of a shoe, and also admit of buffing said shank up to the breast, which has heretofore not been possible by any buffing-machine, the usual method being to rough out the fore part upon one class of machine and finish said fore part and the shank upon another class of machine, and in very fine work it often became necessary to finally finish the shoe by hand.

By the use of a large disk the cutting capacity of the abrading material is largely increased, in that the greater the distance of said material from the center of rotation the faster will be its speed and consequently its cutting capacity. In practice I have found that by the use of my improved chuck a given surface of abrading material will do a much larger amount of work than is possible when used in connection with any other device.

To renew the surface of the abrading material which has become worn by use, it is only necessary to draw the latch-rods upward, thereby disengaging the eccentric-pins from the notches in the clamps, and swing said

clamps outward, when new material may be drawn through the passage D and again clamped to the body of the chuck, as before described; and it is to be noted that the pads will be firmly held in place by the strips of abrading material being drawn therethrough.

While my chuck is especially adapted for using abrading material when formed in long lengths, it is obvious that short lengths of such material may be also used in connection therewith, the only essential being that the length of such material shall be sufficient to pass from one clamp to the other beneath the disk and pads, as in which case each end of said material would be stripped, as before described, and drawn tightly in place by the clamps.

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

1. In a chuck of the character described, a disk having cut-away portions in its perimeter in which strips of abrading material are adapted to be held as and for the purpose described.

2. In a chuck of the character described, a disk having eccentric cut-away portions in its perimeter in which split strips of abrading material are adapted to be held as and for the purpose described.

3. In a chuck of the character described, a body having a passage therethrough, a disk carried by said body said disk having cut-away portions in its perimeter, pads carried upon the under side of said disk, clamps pivoted to the chuck, spring-plates against which the clamps are adapted to bear, and latches for securing said clamps against said plates, substantially as shown and described.

4. In a chuck, a disk having cut-away portions in its perimeter, said cut-away portions being slightly eccentric with relation to said disk, pads secured upon the under surface of said disk, and clamps pivoted to the chuck whereby strips of abrading material may be secured in place and the edges thereof prevented from catching upon the object being buffed, as specified.

5. A chuck consisting of a body having formed therewith a disk, ribs upon the bottom of the disk, said disk having a central slot and portions of its perimeter cut away eccentrically, pads held between the ribs on either side of the slot, spring-plates secured to the body of the chuck, clamps pivoted to said body and provided with notched ends, latch-rods slidable in suitable bearings in the body, eccentric-pins on the latch-rods to engage the notched ends, springs forcing the rods downward, means for turning the rods whereby the clamps are forced against the spring-plates and strips of abrading material passed through the slot and over the pads having their ends split longitudinally to fit the cut-away portion, said split ends secured between the spring-plates and clamps, as and for the purpose described.

6. The herein-described combination of a body having formed therewith a disk, ribs

upon the bottom of said disk, said disk having portions of its perimeter cut away eccentrically, pads held by said ribs, plates I secured to the body of the chuck, clamps K pivoted to said chuck and provided with noses M, in which are notches N, latch-rods held in suitable bearings, springs for forcing said rods downward, and eccentric-pins projecting from the lower ends of said rods adapted to enter the notches N, whereby when the rods are turned upon their axes the clamps are forced against the action of the plates I, substantially as and for the purposes set forth.

7. In a chuck, a disk having a passage there-
15 through, and provided with a cut-away portion in its perimeter, strips of abrading material projecting through the passage and

having their ends split longitudinally, as and for the purpose described.

8. A buffing-tool consisting of a disk, an opening therethrough, two sections of abra-
sive material passed through said opening
and drawn over the edges of the disk and so
split longitudinally as to approximately con-
form to the periphery of said disk, substan-
tially as described.

In testimony whereof I have hereunto af-
fixed my signature in the presence of two sub-
scribing witnesses.

THOMAS E. KEAVY.

Witnesses:

S. S. WILLIAMSON,
MARK BUFORD.