(No Model.)

J. S. KENYON.

SANDPAPERING ROLLER.

No. 414,115. Patented Oct. 29, 1889.

Fig. 1.

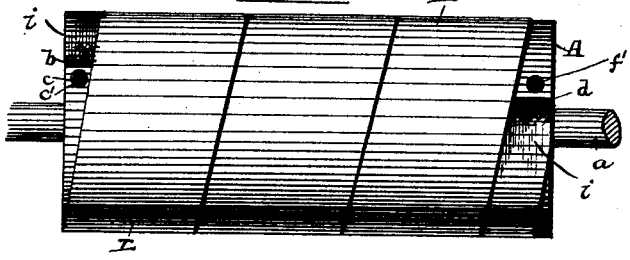


Fig. 4.

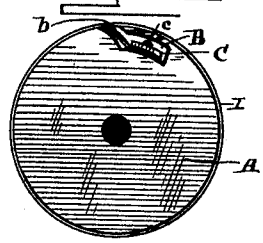


Fig. 2.

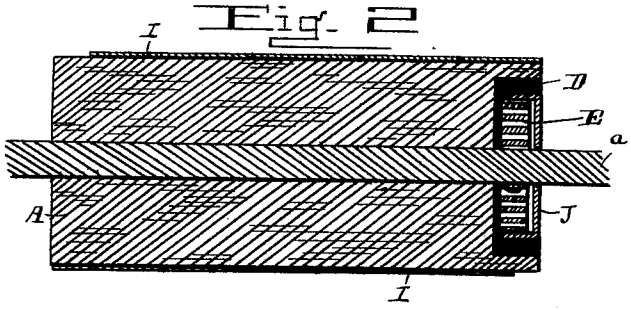


Fig. 3.

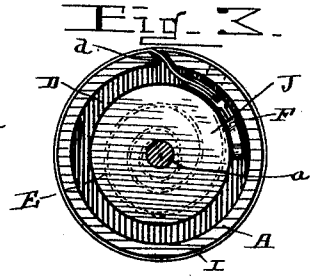


Fig. 5.

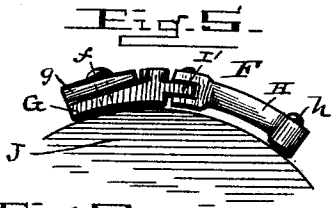


Fig. 6.

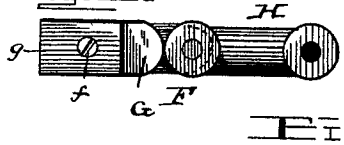


Fig. 8.

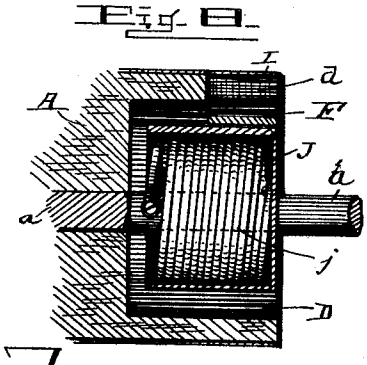
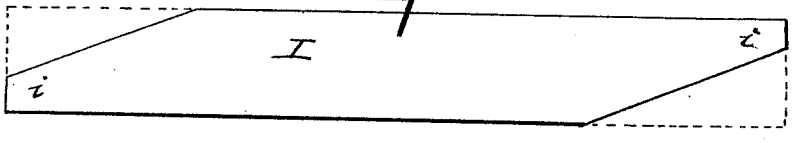


Fig. 7.



Witnesses
A. E. Dowell.
P. L. Brooks

Inventor
Jos. S. Kenyon
By his Attorney W. Alexander

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH S. KENYON, OF SOUTH BEND, INDIANA.

SANDPAPERING-ROLLER.

SPECIFICATION forming part of Letters Patent No. 414,115, dated October 29, 1889.

Application filed January 17, 1889. Serial No. 296,612. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH S. KENYON, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Sandpapering-Rollers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side view of my improved polisher or sandpapering-drum. Fig. 2 is a vertical central section through the same; Fig. 3, an end view showing the spring; Fig. 4, a view of the opposite end; Fig. 5, an enlarged side view of the jointed gripper; Fig. 6, a top view of the same; Fig. 7, a view of the paper or abrading strip detached. Fig. 8 is a detail sectional view of a modification.

This invention is an improvement in sandpapering rollers or burnishers for wood-working more especially; and its objects are to provide a smooth unbroken abrading-surface on the cylinder by winding a strip of abrading material spirally around the same and to provide means for securing the paper to the cylinder and for automatically taking up any expansion of the paper caused by wear; and to these ends the invention consists in the novel construction of the cylinder and the devices attached thereto and in certain other novel details hereinafter described and claimed.

Referring by letter to the drawings, A designates a cylinder or roll of convenient size and having an unbroken smooth peripheral surface, except at two points near its opposite ends, where are formed narrow and short longitudinal slots *b* and *d*, hereinafter referred to. This cylinder is mounted on a shaft *a*, by which it is journaled in suitable bearings of a polishing-machine. (Not shown.) In the end of cylinder A adjoining slot *b* is formed a recess B, communicating with slot *b*, and in this recess is a clamping-plate C, secured by a screw *c*, that can be manipulated through a perforation in cylinder A, as indicated at *c'*. In the opposite end of the cylinder is formed an annular chamber D, which communicates with slot *d*.

E is a convolute spring slipped on shaft *a* within chamber D, one end of the spring being secured to said shaft.

J is a metal cap over spring E, to which the outer end of the spring is connected.

F designates a gripper, consisting of a pair of plates G *g*, united by a screw *f*, and between which articles may be clamped. Plate G is provided with an eye I', by which it is pivotally connected to a link H, which is in turn connected by a screw or stud *h* to cap J or to the outer end of spring C within chamber D, so that the spring and gripper lie and move in said chamber.

I designates an abrading-strip, which may be of emery or sand paper, which is narrow and long, and its diagonally-opposite corners may be cut away, as shown, forming bias ends *i i*. One of these ends is slipped through slot *b* under plate C and securely clamped thereby. The strip is then wound spirally around the drum, as shown, without overlapping of its edges, and its length is such that its opposite end will come in position to pass through slot *d*, and is there engaged by gripper F by clamping it between plates G and *g*, as shown, screw *f* being manipulated through a perforation *f'* in the cylinder. The strip, it will be seen, is only secured at its ends to the cylinder. Previous to attaching the strip to gripper F spring C is turned and tensioned, so that when gripped the paper will be drawn through slot *d* by the tension of the spring. The spring is tensioned opposite to the rotation of the cylinder, and if during the operation of the machine the paper should be stretched by abrasion the spring C, which exerts a longitudinal strain on the strip, will draw the end of the strip into chamber D, and thus take up any elongation of the latter. Should the strip wear unequally by blistering or expand slightly more on one edge than the other, the pivotal joint between plate G and link H permits the former to move right or left and automatically adjust itself to the condition of the paper and preserve a smooth abrading-surface on the cylinder.

In Fig. 8 I employ a coiled spring *j*, one end of which is secured to shaft *a* and the other end to cap J; but I prefer using the convolute flat spring E, as it requires a much shallower chamber D than the coiled spring. Cap J protects the spring from dust and guides the

movements of clamp F more accurately. Obviously either form of spring shown, or others which will answer the purpose of said springs, may be employed in the connection stated. By these means I am enabled to use a narrow strip of material for large drums, which is economical. The abrading-surface of the drum is unbroken, and there are no bent edges of the paper which would wear more quickly than another portion, as is the case where the paper is secured by grooves and slats. The paper is prevented from blistering, and all expansion thereof is immediately taken up automatically by the spring-controlled clamp F.

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

1. The combination of the cylinder and spring-controlled gripper at one end thereof with the continuous abrading-strip secured to one end of the cylinder, wrapped loosely and spirally around the same, and having its opposite end attached to said gripper, substantially as and for the purpose described.

2. The combination of the cylinder having a fixed clamp in one end and a spring carrying a gripper in its opposite end with an abrading-strip secured at one end to the fixed clamp, wrapped spirally around the cylinder, and secured by its other end to the gripper, substantially as set forth.

3. The combination of the cylinder and the convolute spring in one end thereof with a jointed gripper connected to said spring and an abrading-strip connected to the cylinder at one end, wrapped spirally around the same, and connected at its other end to said gripper, all substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOSEPH S. KENYON.

Witnesses:
JAMES DUSHANE,
JEANIE ANDERSON.