

(No Model.)

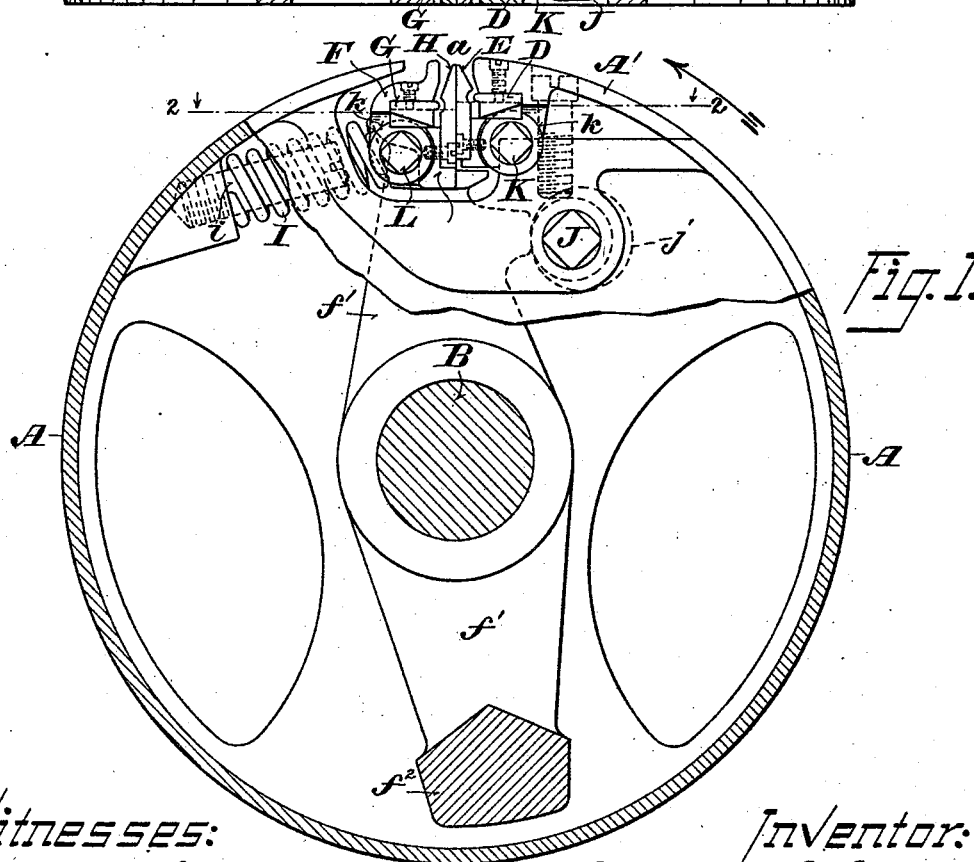
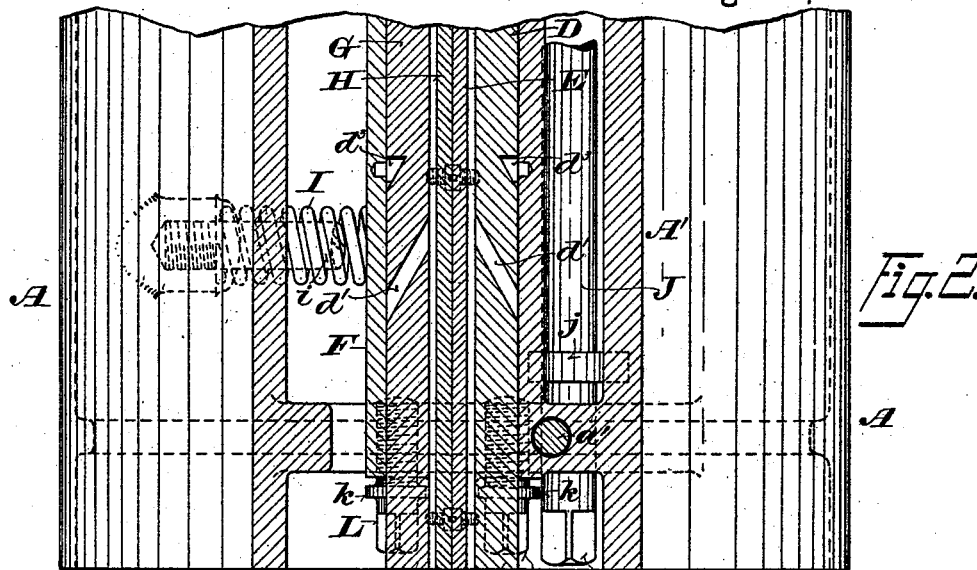
2 Sheets—Sheet 1.

F. E. SCHMITT.

POLISHING CYLINDER FOR SANDPAPERING MACHINES.

No. 525,087.

Patented Aug. 28, 1894.



Witnesses:

Chas. L. Coar.
Frank H. Mehl.

Inventor:

Frederick E. Schmitt,
By Wm. H. Bond & South Western
Attorneys.

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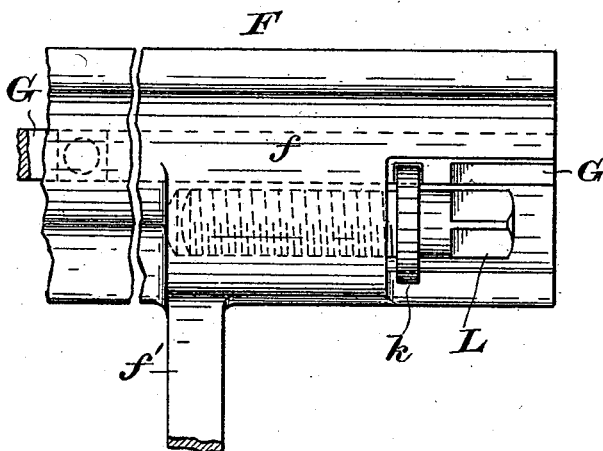
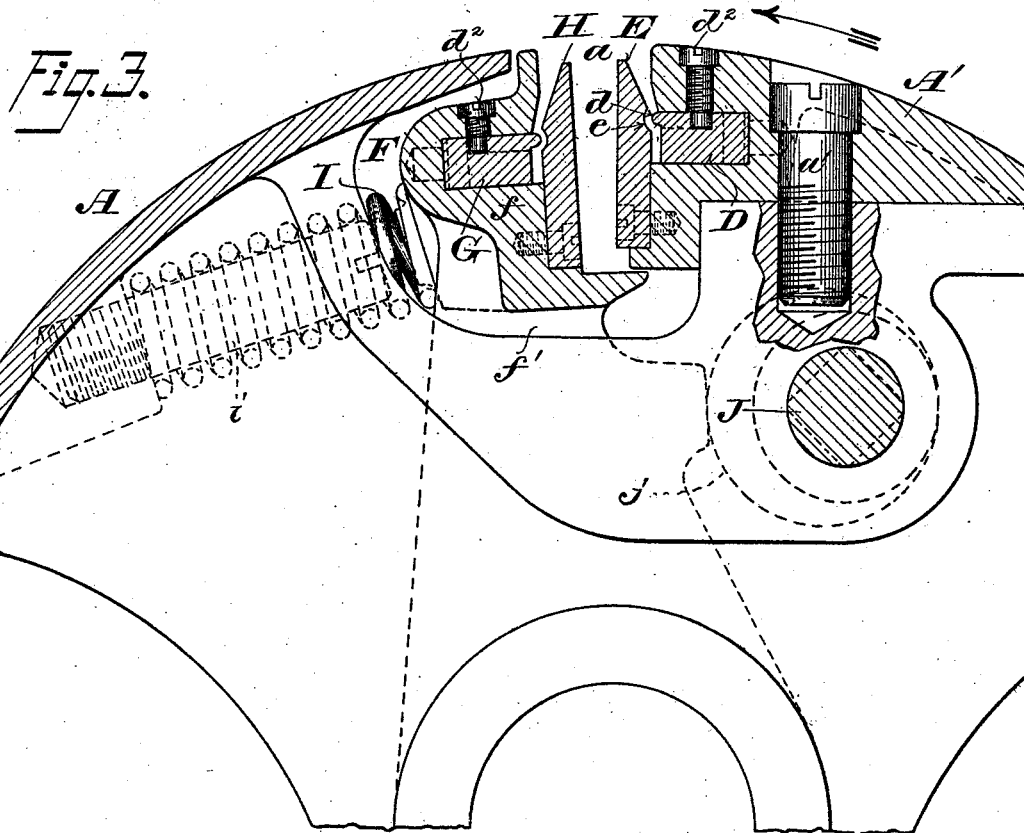
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By Wm. H. Ponder & Co. Attorneys.

UNITED STATES PATENT OFFICE.

FREDERICK E. SCHMITT, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE MILWAUKEE SANDER MANUFACTURING COMPANY, OF SAME PLACE.

POLISHING-CYLINDER FOR SANDPAPERING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 525,087, dated August 28, 1894.

Application filed May 17, 1894. Serial No. 511,516. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK E. SCHMITT, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Polishing-Cylinders for Sandpapering-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The main objects of my invention are to automatically take up slack in the sand-paper while the machine is in operation; to facilitate placing and securing the sand-paper upon the cylinder; and generally, to improve the construction and operation of the devices of this class.

It consists essentially of a cylinder provided with two longitudinal clamping or sand-paper fastening devices adjacent to a longitudinal slot or opening in its periphery, one being relatively fixed and the other movable and forced with yielding pressure toward it, and of certain novel features in the construction and arrangement of the component parts of the cylinder, particularly of the sand-paper holding and stretching devices, hereinafter particularly described and pointed out in the claims.

In the accompanying drawings, like letters designate the same parts in the several figures.

Figure 1 is a partial end elevation and cross section of a cylinder embodying my invention. Fig. 2 is a longitudinal section on the line 2, 2, Fig. 1, in a plane parallel with the axis of the cylinder. Fig. 3 is a cross section on an enlarged scale of the sand paper clamping and stretching devices and of the associated parts of the cylinder; and Fig. 4 is a detail view on an enlarged scale of the device for operating one of the clamping bars.

A designates the cylinder, which may be conveniently made of cast iron and mounted in the usual manner upon a shaft B. It is formed on one side with a longitudinal slot

or opening *a*, in its periphery, through which the ends of the sand paper are passed into the clamping devices. When cast, the cylinder is formed on one side of the slot *a* with a detachable section *A'*, which affords when removed, a sufficient opening for the insertion of the clamping and stretching devices. This section is secured in place by screws *a'*, and constitutes when in place, a portion of its periphery. It is formed in its face next to the slot or opening *a*, with a longitudinal groove in which is fitted a clamping bar *D*, formed on its front or outer side with a projecting bead or lip *d*, and in its upper face, as shown in Fig. 2, with oblique grooves *d'*, which are engaged by the reduced points of screws *d''*, as shown in Figs. 1 and 3, whereby a longitudinal movement of the bar produces a simultaneous lateral movement thereof. The back of the bar is formed with inclined notches, which are engaged by inclined studs *d''*, projecting from the adjacent side of the groove in which the bar is inserted, as shown in Fig. 2. These studs co-operate with the screws *d''* to force the bar toward the opposing member of the clamp.

To the face of section *A'* is attached, parallel with the bar *D*, a strip or bar *E*, constituting the other member of the clamp. It is beveled at its outer edge adjacent to the radial face of the cylinder section *A'*, so as to facilitate the insertion of the sand-paper between it and the bar *D*, and is formed opposite the lip *d* with a corresponding groove or depression *e*.

F designates the automatic take-up or stretcher, which consists of a longitudinal bar *f*, supported adjacent to the slot or opening *a*, in the periphery of the cylinder parallel with the clamping bar *E*, by arms *f'*, which are loosely mounted upon the cylinder shaft *B*, and of clamping bars *G* and *H*, like or similar to the bars *D* and *E*. The arms *f'* are extended on the opposite side of the cylinder shaft, and are formed or provided with weights *f''*, to counterbalance the bar *f* and its attachments. The bar *f* with its clamping bars *G* and *H*, is forced with a yielding pressure toward the fixed clamping device consisting of the bars *D* and *E*, by spiral springs

I, carried by stud bolts *i*, secured in bosses on the inside of the cylinder.

J is a shaft having squared ends journaled in the cylinder heads and supported thereby parallel with the bar *f* on the opposite side thereof from the springs I. It is provided with cams *j*, arranged to engage with the arms *f'* or projections thereof and to force the take-up or stretcher against the tension of said springs away from the fixed clamp or fastening device.

K and L are screws threaded in one of the cylinder heads and formed with squared ends and annular rims or flanges *k*, which engage with transverse notches in the under sides of the bars D and G respectively. By turning these screws in or out said bars are moved longitudinally and projected from or withdrawn into the grooves in which they are inserted.

The number and arrangement of inclined studs *d*³, arms *f'* carrying the take-up or stretcher, cams *j*, and springs I, will be governed according to the length of the cylinders, and the minor details of construction and arrangement of the component parts of the device may be variously modified within the intended scope of my invention.

Sand-paper is applied to my improved cylinder as follows: One edge inserted through the slot *a*, is clamped between the bars D and E by forcing the bar D outwardly toward the bar E by means of the screw K. The clamping bars G and H of the take-up or stretcher F are moved as far as they can be from the bars D and E, against the tension of springs I, by means of the cams *j*. The paper is then wrapped around the cylinder, and the opposite end or edge is tucked through the slot *a* and secured between the bars G and H by means of the screw L. The cams *j* are now turned out of engagement with the arms *f'* and the take-up or stretcher is allowed to be forced by the springs I toward the fixed clamping device as far as the sand-paper will permit. The cylinder being revolved against the work in the direction indicated by the arrows in Figs. 1 and 3, tends to carry the slack in the paper around the periphery in the opposite direction toward the stretcher F, which automatically takes it up, the springs I operating to keep the paper stretched constantly taut around the cylinder without attention on the part of the operator.

By the construction and arrangement of the paper fastening and stretching devices hereinbefore described, the sand-paper is quickly and easily applied and secured to the cylinder, all slack therein is immediately and automatically taken up while the machine is in operation, and the entire surface of the cylinder with the exception of the narrow slot or opening *a*, is utilized.

I claim—

1. A polishing cylinder for sandpapering machines, having a longitudinal slot or opening in its periphery, and provided adjacent

thereto within the periphery with a relatively fixed fastening device for one end of the paper, and with an automatic take up and fastening device for the other end of the paper, constructed and arranged to take up slack in the paper while the cylinder is in operation, substantially as and for the purposes set forth.

2. A polishing cylinder for sandpapering machines, having a longitudinal slot in its periphery and provided adjacent thereto with a spring actuated automatic take up and fastening device for one end of the sand paper, whereby slack in the paper is automatically taken up, substantially as and for the purposes set forth.

3. A polishing cylinder for sandpapering machines, having a longitudinal slot or opening in one side, a fastening device on one side of said slot or opening, and an automatic take-up movable toward and from said fastening device and provided with a fastening device for the opposite end or edge of the paper, substantially as and for the purposes set forth.

4. In a polishing cylinder for sandpapering machines, the combination with the cylinder shell, having a longitudinal slot or opening in one side, of a clamping or fastening device on one side of said slot or opening, an automatic take-up or stretcher pivotally supported inside of the cylinder and provided with a clamping or fastening device for the opposite end or edge of the paper, and a spring acting on said take-up or stretcher and tending to move it toward the other fastening or clamping device, substantially as and for the purposes set forth.

5. In a polishing cylinder for sandpapering machines, the combination with the cylinder shell, having a longitudinal slot or opening in one side, of an automatic take-up or stretcher pivotally supported inside of the cylinder, two parallel clamping devices attached adjacent to said slot or opening, one to the cylinder and the other to the stretcher, a cam and a spring arranged to act in opposite directions upon said stretcher, substantially as and for the purposes set forth.

6. In a polishing cylinder for sandpapering machines, the combination with the cylinder shell, having a longitudinal slot or opening in one side, of an automatic stretcher placed within the cylinder parallel to said slot and movable transversely thereto, two paper clamping or fastening devices, one attached to the cylinder on one side of said slot or opening and the other to said take-up, and means of yieldingly forcing said take-up toward the opposite fastening device, substantially as and for the purposes set forth.

7. In a polishing cylinder for sandpapering machines, the combination with the cylinder shell, having a longitudinal slot or opening in one side, of an automatic paper stretcher or take-up supported inside of the cylinder parallel with said slot and movable transversely thereto, two parallel clamping de-

vices, one attached to the cylinder and the other to said stretcher or take-up, and each consisting of two parallel bars, one of which has inclined guides and a screw engaging
5 therewith and arranged to move it longitudinally and at the same time laterally toward and from the opposing bar, and one or more springs tending to move said stretcher or take-up toward the opposite clamping de-

vice, substantially as and for the purposes to set forth.

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

FREDERICK E. SCHMITT.

Witnesses:

JAMES A. SKIBA,
CHAS. L. GOSS.