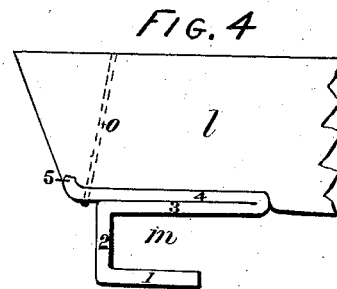
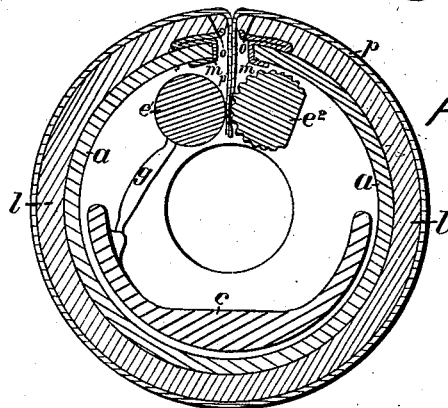
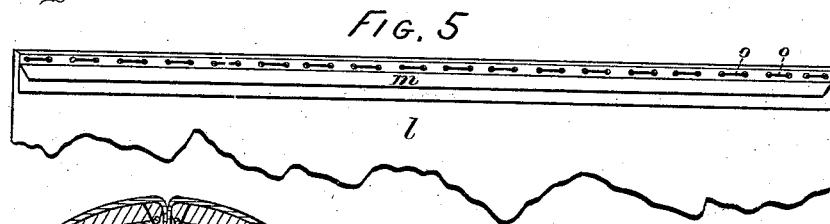
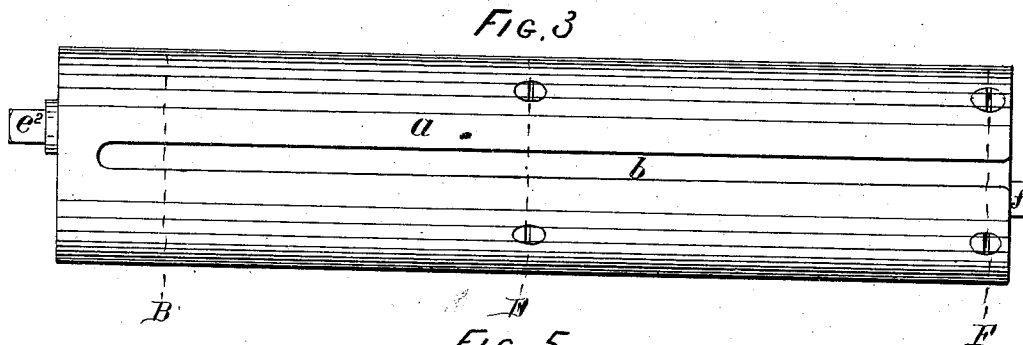
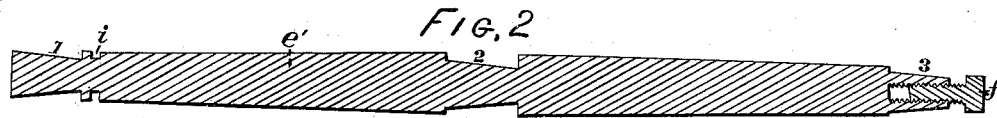
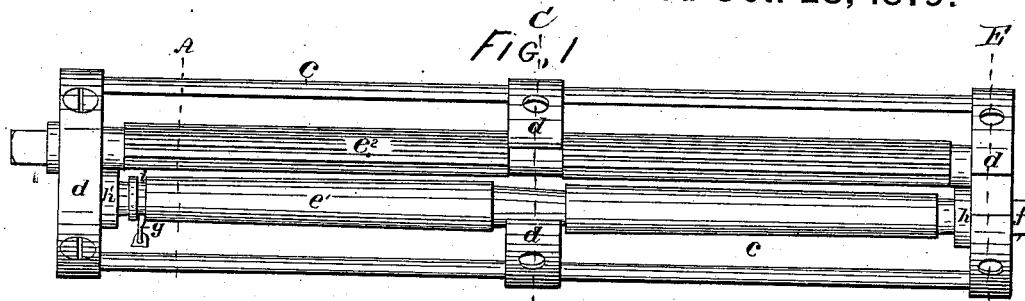


N. M. SEELYE.
Sand-Paper Roll.

No. 220,993.

Patented Oct. 28, 1879.



WITNESSES:
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D. W. G. Humphrey

INVENTOR;
Norman M. Seelye
By Porter & Hutchinson Attys.

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FIG. 7.

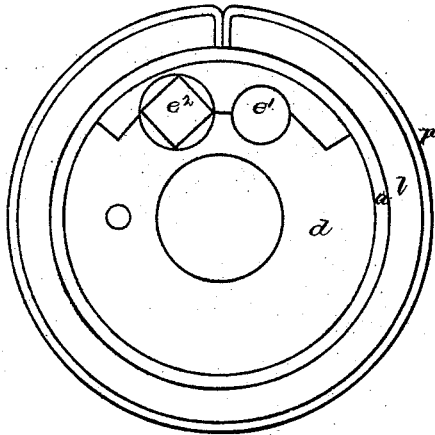


FIG. 8.

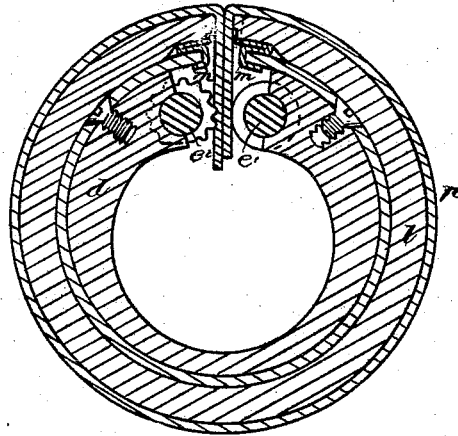
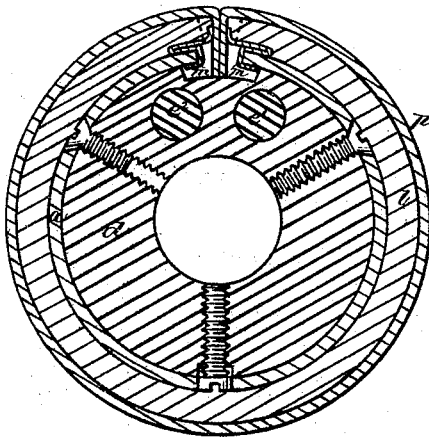


FIG. 9.



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By Arthur & Hutchinson Atty

UNITED STATES PATENT OFFICE.

NORMAN M. SEELYE, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN SAND-PAPER ROLLS.

Specification forming part of Letters Patent No. **220,993**, dated October 28, 1879; application filed October 7, 1878.

To all whom it may concern:

Be it known that I, NORMAN M. SEELYE, of Cambridge, State of Massachusetts, have invented Improvements in Sand-Paper Rolls, of which the following is a specification.

This invention relates to certain improvements in the sand-paper roll patented by me on the 30th day of January, 1877, and numbered 186,761; and the present invention consists in certain devices by which the tension-rolls which seize and tighten the sand-paper are rendered adjustable in their distance apart in order to accommodate them to the various thicknesses of sand-paper; also, in forming one of said tension-rolls smooth and the other fluted, one or both of said rolls being slightly swelled or enlarged at the center and tapering toward each end, to compensate for the effect upon the frame of the pressure exerted by these rolls.

It further consists in forming the cylindrical shell with a slot open at one end and either opened or closed at the other; also, in combining with the felt covering clamps of peculiar construction, which extend entirely across the felt, and are arranged to be attached to the shell by engaging therewith at such open end of the slot, and thence sliding them the entire length of the clamp, all as will be hereinafter, by aid of the accompanying drawings, fully described.

Figure 1 is a plan view of the interior frame and clamping-rolls. Fig. 2 is a longitudinal section of the smooth clamping-roll, the tapers being slightly exaggerated. Fig. 3 is a top or plan view of the roll assembled, but with the felt and sand-paper omitted. Fig. 4 is an enlarged end view of my improved clamp, shown as connected with the felt. Fig. 5 is a plan view of one of the clamps as attached to the felt, which latter is mainly broken away. Fig. 6 is a transverse section, showing the clamping-rolls, the slotted shell, the felt and its clamps, and the sand-paper, all in their proper relative positions, this section being taken as on line A B, Figs. 1 and 3, and as viewed from the right in said figures. Fig. 7 is an end elevation of Fig. 3, as viewed from the right hand thereof, but with the felt and sand-paper shown as in position for use. Fig. 8 is a transverse section as taken on line C D, Figs. 1 and 3, and through the center bearing of the tight-

ening-rolls, and showing the shell, the felt, and the sand-paper in position for use. Fig. 9 is a transverse section as taken on line E F, Figs. 1 and 3, and showing the shell, the felt, and the sand-paper in position for use, and also showing the end ring, *d*, cut away beneath the shell, to admit the continuous felt-clamps when the felt is slid upon or removed from the shell.

In these drawings, *a* is the shell. *b* is the slot cut therein. *c* is the bar of the frame, upon which are formed the rings *d d d*, which constitute the bearings of the clamping-rolls *e'* and *e''*, the former being formed next the center bearing somewhat larger than next the end bearings, while such bearings (marked 1 2 3) are formed tapering, as shown. The seats or bearings in rings *d* are of such size that when the roll is moved to the right as far as is admissible the said roll-bearings 1 2 3 will closely fit the seats in rings *d*. To actuate said roll *e'* in end direction, I provide the screw *f*, which is threaded axially in the shaft, as shown in Fig. 2, and passes through one of the rings *d*, as shown in Fig. 1, the screw-head bearing against such ring.

The spring *g*, secured in bar *c*, Figs. 1 and 6, bears in an annular groove, *i*, in the shaft, and tends by its action to force the shaft to the left, as viewed in Fig. 1, so that when screw *f* is released the shoulder on the left end of the shaft will bear against rim *h'*, while by turning in the screw the roll is drawn to the right to the desired extent, or until its right shoulder is in contact with rim *h*; and as this roll, by reason of its taper bearings, is loose or close in the bearings in rings *d*, it therefore may be adjusted to receive between it and roll *e''* any desired thickness of sand-paper.

Owing to the fact that in order to admit the inturned edges of the sand-paper the central ring *d* must be cut open between the rolls, when the pressure is applied thereto by turning roll *e''* the springing apart or opening of the central ring prevents the rolls from acting with a pressure at the center equal to that at the ends, and as a consequence the tension of the paper around the roll would be unequal. To obviate this I form the roll *e'* of such greater thickness in the center as will compensate for the springing apart of the ring

when such pressure is applied. I also form one of said rolls smooth, while the other is finely toothed, (See Fig. 6,) and by thus forming the rolls respectively smooth and toothed, instead of having both toothed, their action upon the paper is much more satisfactory than if constructed as heretofore.

As before stated, the slot *b* in roll *a* is formed with a free opening, as shown at the right of Fig. 3, and the clamps *m* are of a length equal to the width of the felt *l*, so that instead of having to stretch the felt in order to hook the clamps over the edges of the roll, I enter the ends of the clamps upon the shell at the open end of the slot, and then telescopically slide the felt over the shell. This is not only a great saving in labor, but leaves the felt fitting much more closely to the roll.

I also give to my clamps an improved form. I fold them from a strip of metal with the faces or members 1 2 3 4 5, as shown in Fig. 4, members 1 2 3 forming the hook which engages the edge of the shell, and member 4 the bearing against the felt. Member 5 receives and protects the corner of the felt.

The holes for the stitches *o o* are formed in member 4, close to the angle of members 2 3, as shown in Figs. 4, 5.

I claim as my invention—

1. In a sandpapering-roll having two interior clamping-rolls for tightening the sand-paper, one or both of said interior rolls formed with taper bearings, and provided with means for end adjustment, whereby, as such rolls are adjusted endwise, the taper bearings will vary the distance between such rolls, substantially as set forth.

2. In a sandpapering-roll provided with a pair of interior clamping-rolls, one or both of

said clamping-rolls formed with a longitudinal swell or enlargement in the middle thereof, to compensate for the yielding of such clamping-rolls when subjected to pressure against the sand-paper, substantially as set forth.

3. In a sandpapering-roll, the shell *a*, formed with a slot open at one or both ends, and the ring *d* of the interior frame cut away beneath the edges of the shell next to such open end of the slot, whereby the clamps may be entered upon the edges of the shell at such open end of the slot, and slid thence as upon ways the length of the covering, substantially as set forth.

4. In combination with the felt covering *l* of a sand-paper roll, the clamp *m*, formed coincident in length with and secured to the felt, and with a hook to engage the edge of the shell *a* at the open slot *b* in the recess *m* of ring *d*, whereby the clamp and felt may be entered upon the shell at the end and slid telescopically thereon, substantially as specified.

5. A felt-holding clamp formed with the members 1 2 3, constituting a hook for engagement with the edges of the shell, the member 4, with thread-holes for contact and connection with the felt, and the member 5, turned at an angle to the plane of member 4, to receive as a shoulder the edge of the felt, all substantially as described and shown.

6. In a sandpapering-roll, the combination of the actuating toothed roll *c*² and the coacting smooth roll *c*¹, substantially as and for the purposes specified.

N. M. SEELYE.

Witnesses:

EUGENE HUMPHREY,
T. W. PORTER.