

No. 714,244.

Patented Nov. 25, 1902.

F. E. SCHMITT.

PAPER FASTENING FOR POLISHING CYLINDERS.

(Application filed Jan. 10, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 2.

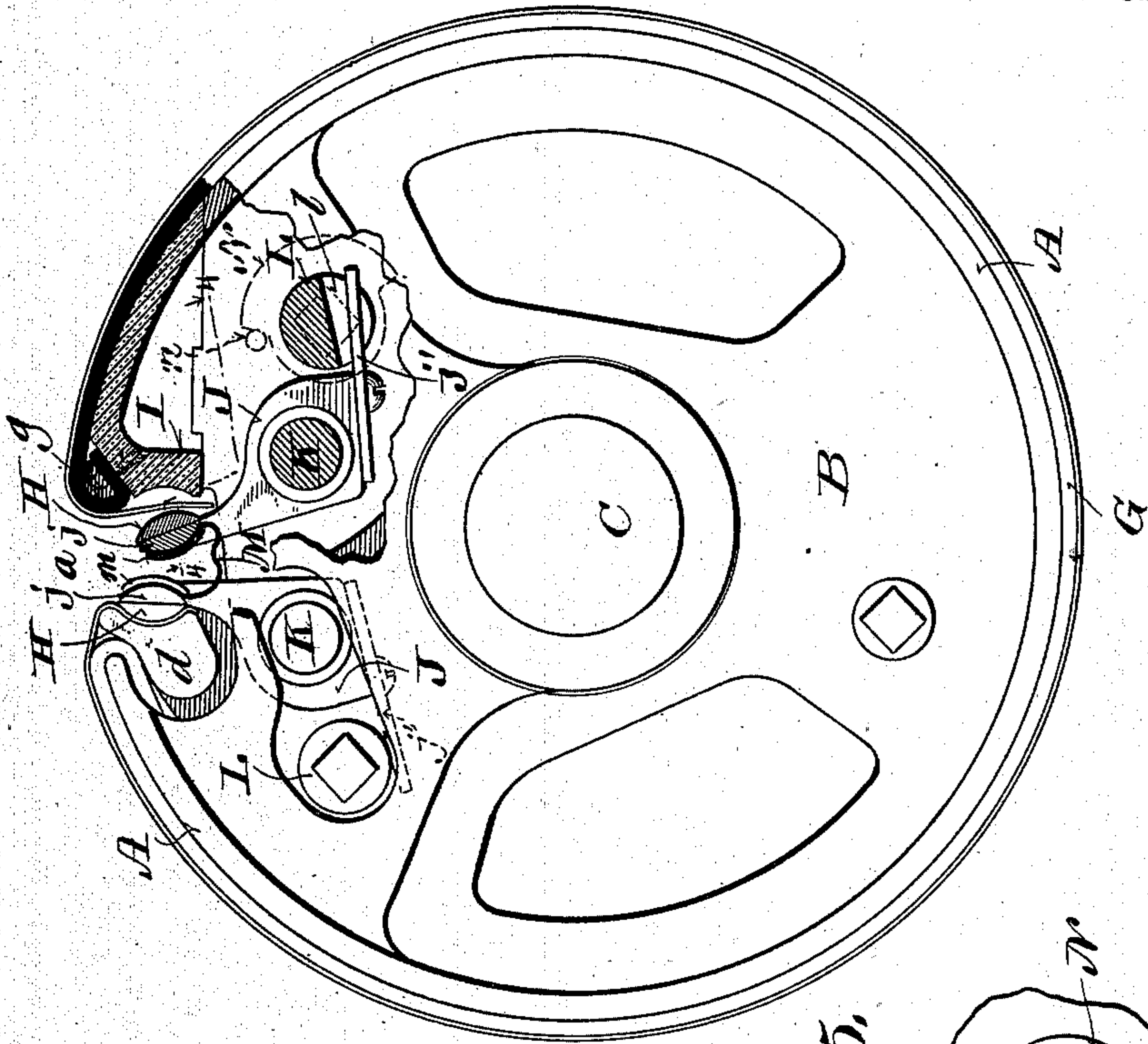


Fig. 1.

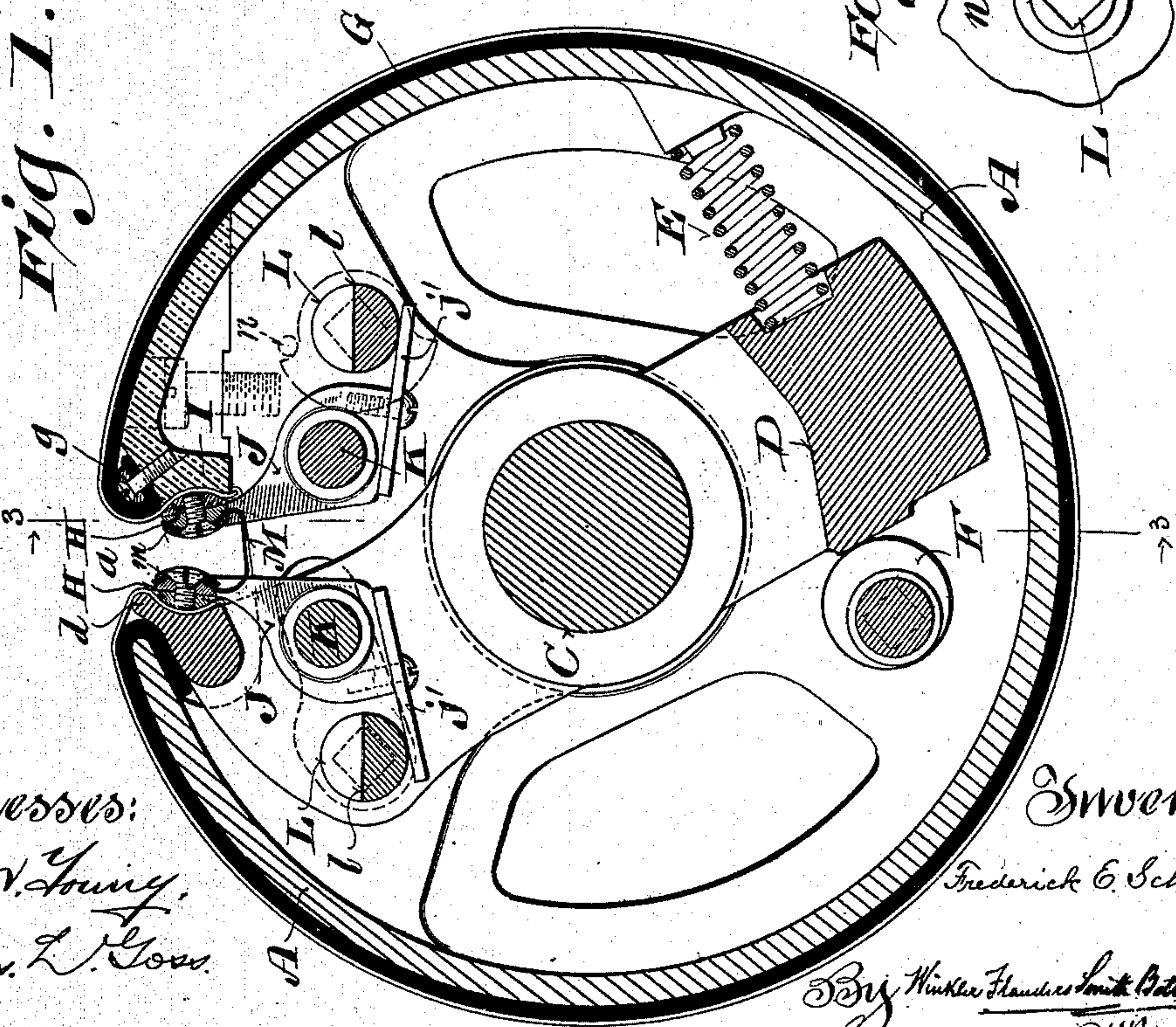
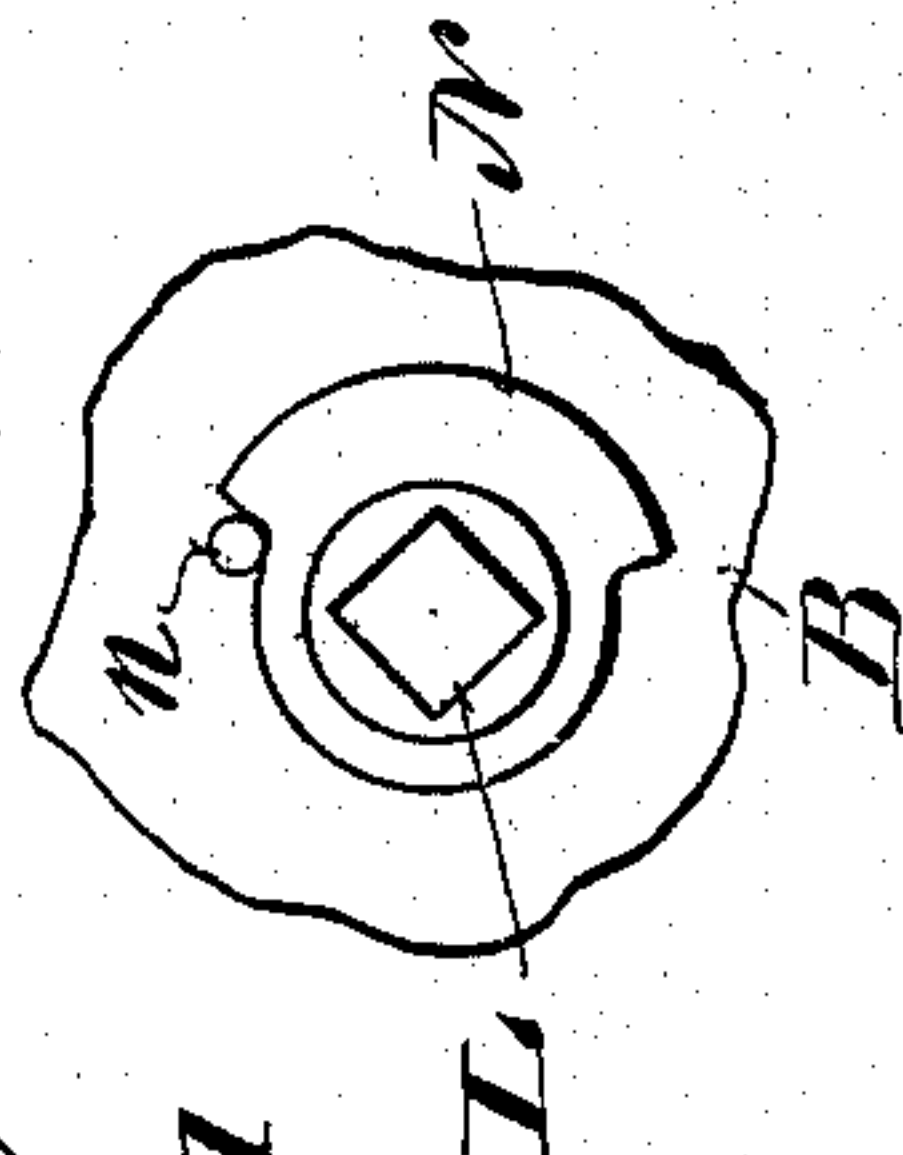


Fig. 5.



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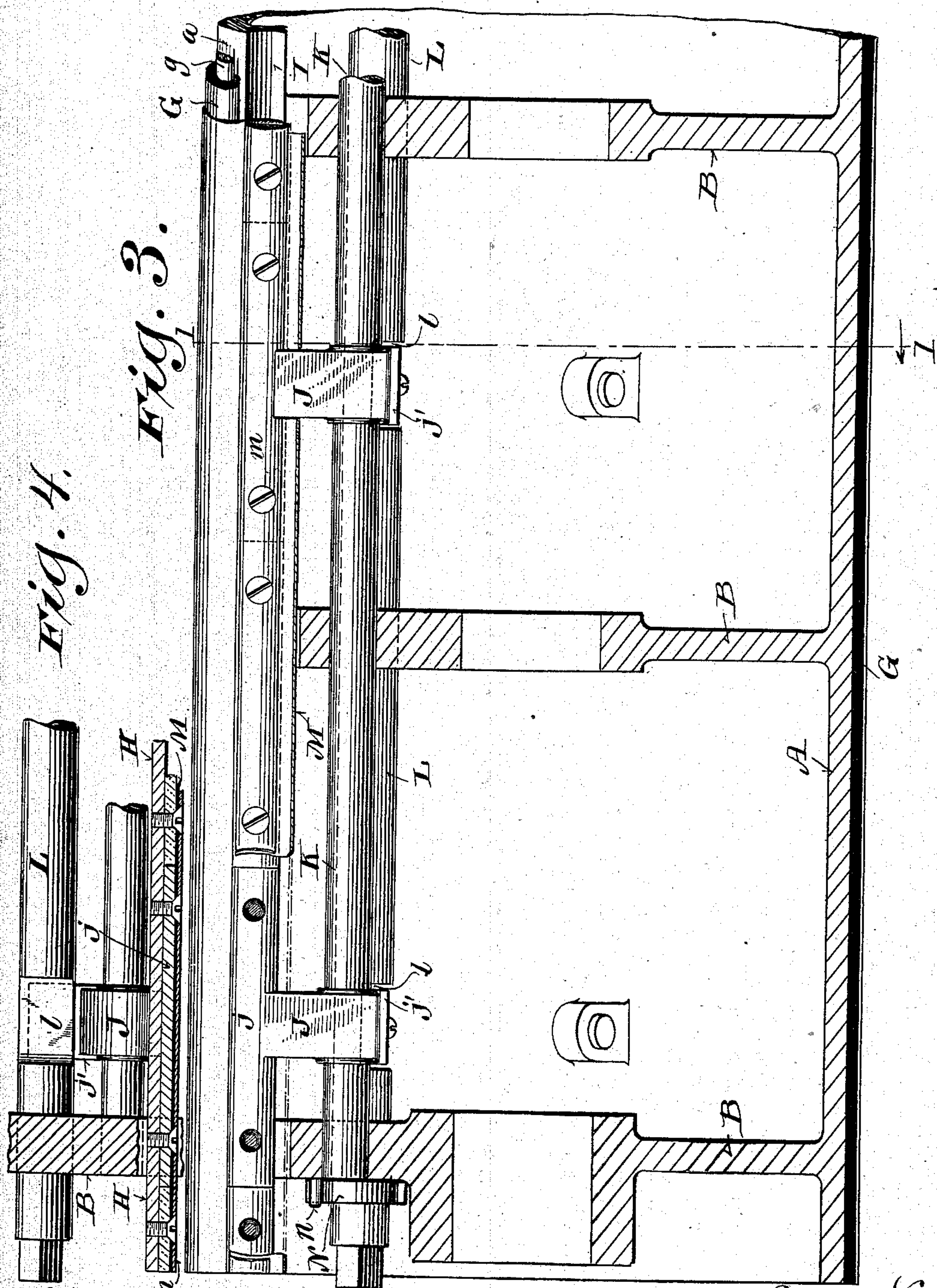
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UNITED STATES PATENT OFFICE.

FREDERICK E. SCHMITT, OF GREENBAY, WISCONSIN.

PAPER-FASTENING FOR POLISHING-CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 714,244, dated November 25, 1902.

Application filed January 10, 1902. Serial No. 89,230. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK E. SCHMITT, a citizen of the United States, residing at Greenbay, in the county of Brown and State of Wisconsin, have invented certain new and useful Improvements in Paper-Fastenings for Polishing-Cylinders, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The main objects of this invention are to facilitate fastening the paper or abrading-sheets at the ends to the cylinder and to securely hold them thereon.

It consists in certain novel features of construction and in the arrangement and combinations of parts 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 cross-section on the line 1 1, Fig. 3, of a polishing-cylinder provided with paper-fastenings embodying the present invention. Fig. 2 is an end view of the cylinder, a portion of one of its webs being broken away adjacent to one of the paper-fastenings, which is shown in section. Fig. 3 is a longitudinal section of a portion of the cylinder on the line 3 3, Fig. 1, showing a part of one of the paper-fastenings in side elevation. Fig. 4 is a horizontal section and plan view on the broken line 4 4, Fig. 2, of a portion of the cylinder and of one of the paper-fastenings; and Fig. 5 is an end view of a stop for limiting the movement of the cams for opening and closing the paper-fastenings.

A designates the cylinder, which is formed in one side, as shown in Figs. 1 and 2, with a longitudinal slot *a*, through which the ends of the paper or sheets of abrading material pass to the fastenings located inside of the cylinder. The cylinder is also formed or provided in the usual way at suitable intervals with webs B B, in which the shaft C is secured. The cylinder is preferably provided, as shown in Fig. 1, with an automatic take-up similar to that shown in United States Letters Patent No. 525,087, issued to me August 28, 1894, for taking up slack in the sandpaper and keeping it wrapped smoothly around the cylinder. This take-up consists of arms D, loosely mounted upon the cylinder-shaft C and con-

nected at one end by a bar *d* adjacent to and parallel with the slot *a*, springs E, interposed between the opposite ends of said arms and lugs inside of the cylinder, and cams F, arranged to compress said springs and to hold said arms in position for fastening the paper to the cross-bar *d*.

G designates a sheet of felt or other elastic material with which cylinders are usually covered to afford a slightly-yielding foundation for the sandpaper or abrading-sheets. It is folded at one end underneath the inside of the shell of the cylinder on one side of the slot *a* and is attached at the opposite end to the shell of the cylinder on the other side of said slot by a clamping-bar *g*, which is secured to the cylinder by screws, as shown in Fig. 1.

As thus far described the cylinder and take-up are like or similar to those heretofore used.

For fastening the ends of the sandpaper or sheets of abrading material and holding the same in place upon the cylinder longitudinal clamping-bars H H are provided, one opposite the bar *d* on the take-up and the other opposite an intumed flange or extension I on the shell of the cylinder next to the slot *a*. The clamping-faces of the bars H are preferably rounded, and the opposing faces of the bar *d* and of the flange I are correspondingly concaved to more firmly grip and hold the paper. The bars H are attached to similarly-shaped cross-pieces *j* of levers J, pivoted or fulcrumed on longitudinal rods K, one of which is carried by the arms D of the take-up, while the other is supported parallel therewith in the webs B of the cylinder. The levers J are provided with springs or elastic arms *j'*, which are arranged to be engaged by cams or eccentrics *l*, formed or provided on rods L, which are arranged parallel with the rods K, one in the webs B of the cylinder and the other in the arms D of the take-up. These rods extend at one or both ends through the end webs of the cylinder and are squared to receive and be turned by a key or wrench. The webs B of the cylinder are formed with elongated openings, as shown in Fig. 2, to allow for the movement of the rods K and L, which are carried by the take-up and pass through them.

To exclude dust from the cylinder, the space between the clamping-bars H H is closed by a shield M, of canvas or other flexible material, attached to the cross-pieces *j* by thin metal plates *m*, which may be conveniently clamped to said cross-pieces by the same screws which fasten the bars H thereto, as shown in Fig. 1.

Each of the cam-rods L is provided, as shown in Figs. 3 and 5, adjacent to one of the cylinder-webs B with a stop-collar N, formed with offsets or shoulders, which by engaging with a pin or projection *n* on the adjacent web limit the turning of the cams to the proper positions for opening and closing the fastenings.

To fasten the sandpaper upon the cylinder, the clamping-bar opposite the flange I is released by turning the cams *l* into the position in which they are shown at the right in Fig. 2. This allows said clamping-bar to be moved away from the opposing clamping-face of flange I. The end of the sandpaper is then inserted between said flange and clamping-bar and the cams are turned back into their original positions, as shown at the right in Fig. 1, thereby forcing said clamping-bar, with the paper, firmly against the opposing face of the flange I throughout the entire width of the paper, the springs *j'* yielding more or less to allow for any inaccuracy in workmanship and fitting and for any variation in the thickness of the paper. The paper is then wrapped around the cylinder and secured at the opposite end in like manner by the fastening of the take-up, which is held back during the operation, as shown in Fig. 1, against the tension of the springs E by the cams F. In this position of the take-up the cross-bar *d* serves to press the intumed edge of the cylinder-covering G against and stick it to the inside of the cylinder. After both ends of the sandpaper are thus secured between the bars H and the opposing faces the take-up is released by turning the cams F out of engagement with the arms D, and the springs E then act to take up any slack in the paper and keep it stretched smooth around the face of the cylinder.

Various changes in minor details of construction may be made without departing from the spirit and intended scope of the invention.

I claim—

1. A paper-fastening for polishing-cylinders consisting of a clamping-bar supported parallel with the axis of the cylinder opposite a clamping-face in the cylinder by levers, and cams adapted when turned into engagement with said levers to force and hold said bar against the opposing face, substantially as described.

2. In a paper-fastening for polishing-cylinders the combination with a longitudinal clamping-face in the cylinder of a clamping-bar movably supported opposite and parallel with said face by levers which are fulcrumed

in the cylinder and have elastic sections, and cams adapted by engagement with said levers to force and hold said bar against the opposing face with yielding pressure, substantially as described.

3. In a polishing-cylinder the combination of a concave clamping-face arranged lengthwise of the cylinder, a laterally-movable clamping-bar having an opposing rounded face, levers fulcrumed in the cylinder and supporting said bar parallel with said face, and cams arranged by engagement with said levers to force said bar toward said face, substantially as described.

4. In a polishing-cylinder the combination of a clamping-face arranged adjacent to and parallel with a longitudinal slot in said cylinder, levers fulcrumed in said cylinder in a line parallel with said clamping-face and provided with spring-arms, a clamping-bar attached to and carried by said levers parallel with said clamping-face, and a rod arranged to turn in bearings parallel with said clamping-bar and provided with cams which are adapted to engage with said spring-arms and to yieldingly press said bar against the opposing clamping-face, substantially as described.

5. In a polishing-cylinder the combination of a clamping-face arranged lengthwise of the cylinder adjacent to a slot therein, levers fulcrumed in said cylinder on a line parallel with said clamping-face, a clamping-bar mounted on said levers opposite and parallel with said clamping-face, and a rod provided with cams for forcing said clamping-bar toward the opposing face and with a stop for arresting the cams in proper positions to release said bars or hold them against the opposing face, substantially as described.

6. In a polishing-cylinder provided with an automatic take-up, the combination of paper-fastening devices arranged within and on opposite sides of a longitudinal slot in said cylinder and each consisting of a clamping-face and an opposing clamping-bar which is mounted upon and carried by levers parallel with said face, and cams for forcing said bar against the opposing face, one of said fastening devices being applied to and movable with the take-up, substantially as described.

7. In a polishing-cylinder having a longitudinal slot therein and clamping-faces adjacent to and parallel with said slot, of clamping-bars arranged parallel with said faces and movable toward and from the same, means for moving and holding said clamping-bars against said faces, and a flexible shield attached to said clamping-bars and closing the space between them, substantially as described.

In witness whereof I hereto affix my signature in presence of two witnesses.

FREDERICK E. SCHMITT.

Witnesses:

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A. B. MCDUGALL.