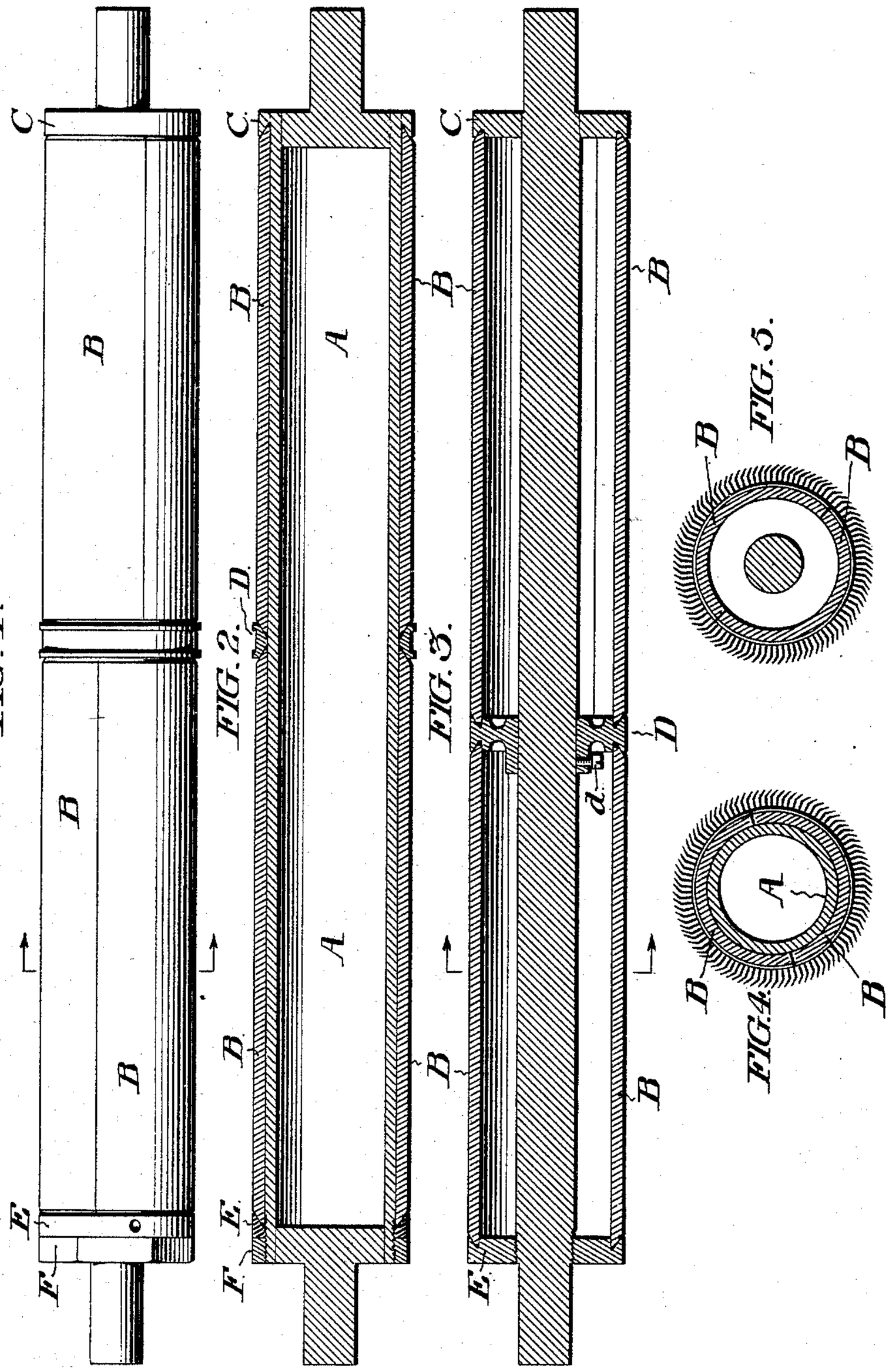
(No Model.)

L. CLARENBACH, Jr.

CLOTH NAPPING AND BRUSHING ROLLER.

No. 522,728. Patented July 10, 1894.



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CLOTH NAPPING AND BRUSHING ROLLER.

SPECIFICATION forming part of Letters Patent No. 522,728, dated July 10, 1894.

Application filed September 7, 1893. Serial No. 484,991. (No model.)

To all whom it may concern:

Be it known that I, LOUIS CLARENBACH, Jr., a citizen of the United States, residing in the city of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Cloth Napping and Brushing Rollers, of which the following is a specification.

My invention has reference to an improvement in the construction of cloth napping and brushing rollers whereby the unequal wear of their surfaces may be prevented.

As napping and brushing rollers are usually constructed they consist of cylindrical cores, usually of metal or wood, covered by "clothing," (card wire.) This clothing consists of a leather or cotton backing in which are mounted the small metal hooks, bristles or other suitable agents, which are the active elements for performing the function for which the roller is designed. The clothing is usually cut in long strips, wound spirally around the cylinder and secured thereto by cement or glue. It is found in practice that after use for a short time the hooks or bristles of these rollers invariably wear away more quickly in the center than at the extremities, becoming shorter and blunter, and, consequently, of diminished efficiency, so that the fabric is unequally napped or brushed, the edges receiving more efficient treatment than the center. The causes of this unequal wear are various, but it is generally due to two facts namely: first, the goods lie more heavily and firmly upon the middle of the rollers, and, secondly, the rollers are necessarily constructed somewhat wider than the fabric on account of the impossibility of guiding the latter through the machine in a perfectly straight line, without more or less swerving, the consequence of which is that the edges of the rollers in the long run do less work than the center and are therefore less worn. To do away with the bad effect of this unequal wear it has been customary heretofore, sometimes to grind the entire roller to an even level, thereby destroying valuable material, and sometimes to remove the napping rollers at intervals and rewrap them, either with new clothing, or with the old clothing so cut and pieced that what was previously the center has become the edge, and vice versa, both operations entailing a waste of time and expense. It has also been proposed to obviate this difficulty by mounting the clothing upon two or more tubes or sleeves, the position of which upon the roller shaft may be transposed. It is, however, obvious that this transposition cannot be effected without removing the roller from the machine.

The object of my invention is to so construct the roller that without removing it from the machine, the center and extremities of the clothing may at any time be quickly transposed and thereby the equal wear of each insured and the even operation of the machine be obtained.

To this end my invention consists in furnishing the surface of the rollers with a series of plates, upon the surface of which the clothing is affixed. The plates are so affixed to the roller that they may be readily transposed in position and thereby their relative position with reference to the length of the roller varied.

In the accompanying drawings I have illustrated two convenient forms of rollers in which my invention is embodied.

Figure 1 shows a roller representing the first of these forms. Fig. 2 is a longitudinal, and Fig. 4 a transverse section of the same. Fig. 3 shows a roller representing the second form. Fig. 5 is a transverse section of the same.

Taking up the first of the forms, A, A, represents a hollow, cylindrical, metal roller, of the usual construction.

B, B, represent a series of plates, of equal convexity with and fitting closely against the surface of the cylinder. These plates as shown are semi-cylindrical and of approximately half the length of the roller, but it is obvious that if desired they may be so formed as to present three or four or more of them alongside of each other, both in transverse section and lengthwise upon the roller, it only being necessary that they completely cover the surface of the roller. As there are always at least two of these plates alongside of each other, on any given section of the roller, they may be termed longitudinal plates to distinguish them from cylindrical plates, or sleeves, which, if used, could only be removed from the roller when it is taken off from the ma-

chine. Both ends of these plates are beveled off toward the center of the roller.

At one extremity of the roller there is situated the fixed collar, C, which carries upon the side toward the roller a groove into which the tapered ends of the plates fit accurately.

D, is a sliding collar, similarly grooved upon both sides, and E is a collar similar in shape to C, having its groove presented toward the center of the roller and fitted interiorly with a thread whereby it may be longitudinally adjusted by a screw formed around the corresponding end of the roller. F is a nut whereby the position of the collar, E, may be more securely fixed.

The outer surface of all the plates, B, B, is covered with clothing, as is also the surface of the collar, D.

After the rollers which are thus constructed have been used for a short time the position of the plates, B, B, may readily be transposed longitudinally, it being only necessary to loosen the collar, E, which may be done without removing the roller from the machine. The effect of this transposition is that those portions of the clothing which were formerly in the center of the roller, now occupy the extremities, and vice versa. The amount of clothing which remains stationary upon the collar, D, is so insignificant that its effect may be neglected, especially as its position in the different rollers upon the same machine may be varied by a few inches.

The advantage of this particular form which I have thus described is that rollers of the ordinary description may be readily utilized by me and adapted to embody my invention.

Another form is, however, shown in Figs. 3 and 5, in which the plates, B, B, are of the same shape as in Figs. 1 and 2, but the central roller is very much smaller in diameter, while the collars C, D and E, are correspondingly increased in size. The collar, D, is here adapted to be fixed in position by the set screw, *d*. In operation this form is precisely similar to the form first described.

It will readily be understood that in case the plates, B, B, are of such length that three or more of them are required to fill the length of the roller, the number of central collars, D, must be proportionately increased. The advantages of transposition, however, are no greater in such case and, therefore, I prefer to have the plates of such length that two of them cover the roller.

I have described this invention as especially applicable to napping and brushing rollers, but it is obvious that in principle it is applicable to revolving rollers of any description, in which the surface of the roller is covered by a clothing, or whatever is analogous to it, which becomes more worn at one point than at others.

I do not wish to confine myself to any particular method of fastening the adjustable plates to the roller, the grooved collars which I have shown being only one of many different devices which may be devised for this purpose.

Having thus described my invention, I claim—

A napping or similar roller furnished with a series of reversible longitudinal plates, B, B, upon each of which a corresponding portion of the clothing is mounted, in combination with means whereby the said plates may be readily affixed to, or detached from, the rollers, substantially as set forth.

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