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DAMPING ROLL FOR LITHOGRAPHING PRESSES

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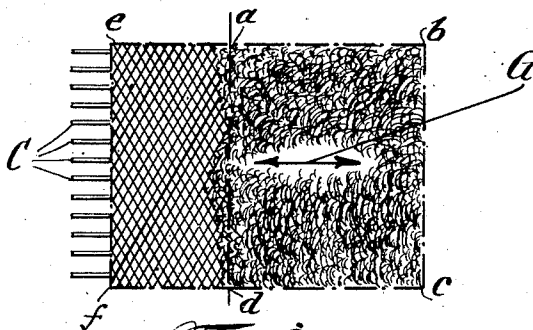
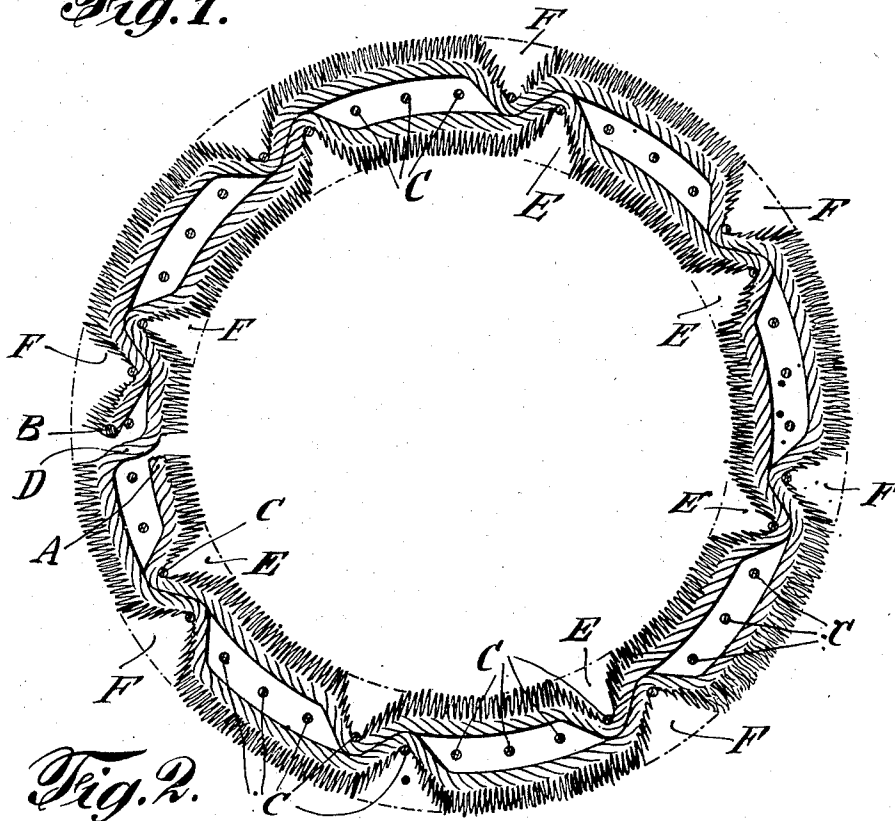
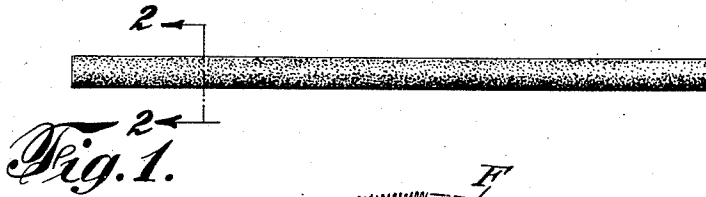


Fig. 3.

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DAMPING ROLL FOR LITHOGRAPHING PRESSES

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1 Claim. (Cl. 91—67.8)

This invention relates to an improved damping roll and has for its object to overcome serious disadvantages attendant upon the damping rolls used at the present time. These rolls as made today are made up in roll form from flat pieces of material known as Molleton. A manufacturer of this material supplies the lithographer with sheets or rolls thereof, which are cut into separate pieces by the lithographer, the length corresponding to the lithographer's roll and the width corresponding to the circumference of said roll. These pieces are then sewed together by a stitching process, are then turned inside out and thereafter the stitching is subjected to a hammering operation in order to make the stitched abutting ends with their stitches somewhat thinner in depth or thickness than the remaining part of the tube of this material. Such a tube is then slipped over a lithographing roll which has been provided with a felt covering, as well known. The portion of the tube hammered down is somewhat of less depth or thickness than the remaining part of the tube of material, therefore the stitched portion has no effect upon the lithographing process carried out.

There are many disadvantages in the use of such tubes. First, the lithographer must cut up his blanks, as before stated, must have them sewed, and this sewing operation consumes considerable time, and the tube thus formed is not attendant with a degree of certainty that the tube will properly hug the lithographing roll.

It has also been found that certain stretching takes place when on the lithographing roll, and therefore steps have been taken to compensate for such stretching, as set forth in Patent No. 1,281,940, dated October 15, 1918, but as far as known, devices under this patent are not on the American market, because unsatisfactory.

The object of my present invention is to overcome the many disadvantages incident to tubes of this kind, and consists in making a tube for lithographing rolls woven in a manner that the entire tube is formed and the diameter of which is substantially equal to the diameter of the lithographing roll to which the tube is to be applied so as to maintain a snug fit therewith.

In this tube no stretching takes place and it is integral throughout. The tube is slipped over the lithographing roll and fits snugly thereon. The free ends of the cylinder or tube are then joined together by a series of cross-stitchings at each end of the lithographing roll by which they are held securely on the roll in a well-known manner.

The essential object of my invention is to make the tube of material, as described, integral throughout in tube or cylindrical form and free from stretching of any kind. This particular object is accomplished by a double weaving in which certain of the threads, either the warp or woof thereof, are doubled, that is, in parallelism and thereafter the exterior surface of such a woven tube or cylinder is subjected to a napping operation which imparts to the exterior of the tube a very soft texture making the same water-absorbent to a high degree, which latter feature is a highly desirable achievement in tubes of this kind. The essence of my invention, therefore, is to provide a fully napped, double woven, seamless tube integral throughout and of substantially the same size as the lithographing roll in order to obtain a snug fit, and roughened only on the exterior to form a thick nap. The lithographic plates are not marked by any ridges or any ribbed effect, when the improved tube is used.

These and additional features of the invention will be hereinafter described, with the aid of the accompanying drawing; and the invention will be finally pointed out in the appended claim.

In the accompanying drawing:

Figure 1 shows a side view in perspective of a seamless, double woven tube which is about 7 inches in diameter, and about 50 inches long;

Figure 2 is a section taken on line 2—2 of Figure 1, showing, however, the method of double weaving in greatly enlarged form, and only showing one line of thread formation, it being understood that the other threads are disposed in the same way, but set off, in the known method of weaving; and

Figure 3 is a plan view of a part of the improved tube, to show the end threads, the woven part, and the napped portion.

Similar characters of reference indicate corresponding parts throughout the various views.

Referring to the drawing, and more particularly to Figure 1, the tube there shown is about 50 inches long and 7 inches in diameter. A plan view of this tube is shown in part in Figure 3, in that part indicated by *a*, *b*, *c* and *d*; the other part on the left of the line *a—d* being cut away. A plan view of the woven part is shown in the part *a—e—f—d*, and the threads are shown by *C*. The portion *a—b—c—d* is napped or roughened, which results from the action of a series of hook-shaped devices acting on the woven portion, as shown by *a—e—f—d*. These devices go to and fro as shown by the arrow *G*.

In Figure 2 is shown the method of double weaving. The thread begins at A and ends at B. The woof threads are shown by C. The thread beginning at A passes over the first woof thread C, then under four warp threads C, then over the fifth, then under four, and so on, until it has completed one revolution, when at D it passes over three, then under one, then under four, then around the circumference to B. Thereby a double weave results. The actions described are, of course, repeated to any length of tube, and the special movement of thread under one and over four is one form of weave. The essential thing here is the double weave, in order to have the tube stand the napping, which is not possible with a single weave, since roughing it on both sides would so weaken a single thread as to break it down. With a double weave as shown for example, only one side of a thread is roughened, and thereby the strength of the thread is maintained. In the drawing, Figure 2, the spaces E—F are naturally filled by the adjacent threads. While the roughened part is only on the surfaces of the threads, nevertheless, if two or more opposite surfaces of the same thread are roughened the thread becomes so weakened as to break.

The double weaving works out a diagonal weave as shown in Figure 3. More important is the double weave of a seamless tubing for damping rolls for lithographing presses.

The threads used are a good grade of cotton. The tubes are woven any length, about 30 yards long, and are then cut off according to demand. The seamless tube saves much time and money in applying the seamless tube to the roll.

It will be seen that a double weave, seamless tube, having its exterior and interior surfaces napped or roughened has been produced, the threads of the double weave being so interconnected as to produce in effect one single structure.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiments of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claim:

What is claimed is:

A damping roll for lithographing presses, comprising a seamless double weave interconnected woven material, joined integrally throughout in tube form with a substantial nap at the exterior and interior portions thereof, and having a diameter substantially equal to the diameter of the lithographic roll to which the damping roll is to be applied and a length somewhat greater than the length of such roll, the nap being only on one side of a thread.

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