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DAMPENING ROLLER FOR LITHOGRAPHIC PRESSES

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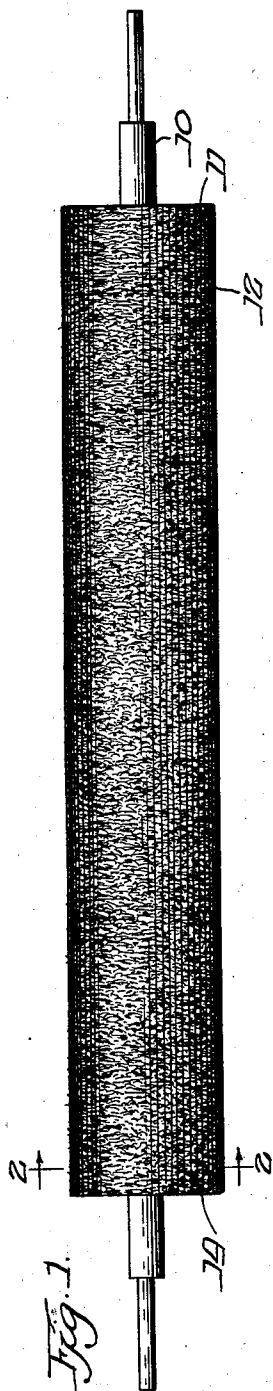


Fig. 2.

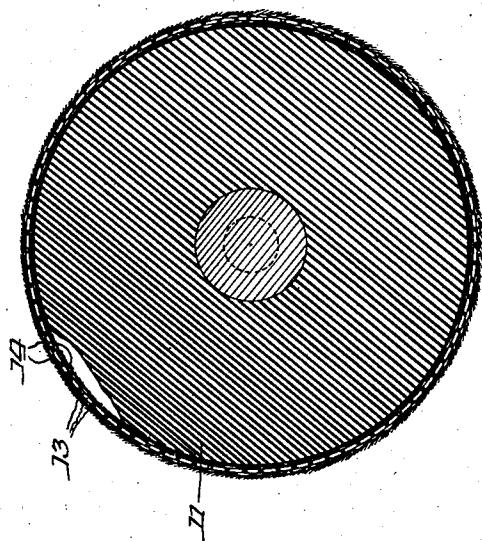
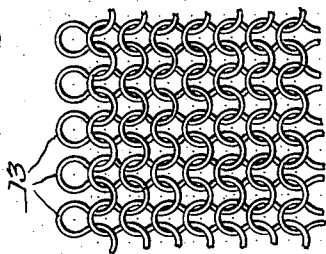


Fig. 3.



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DAMPENING ROLLER FOR LITHOGRAPHIC PRESSES

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6 Claims. (Cl. 91—67.8)

My invention relates to dampening rollers for lithographic presses, and has particular reference to a dampening roller having a seamless, knitted molleton cover thereon, with the nap on the cover extending in a circumferential direction around the roller instead of parallel to the longitudinal axis of the roller as has been common heretofore.

The primary object of my invention is to provide a dampening roller for use in lithographic presses which presents a smooth external surface without a seam, as distinguished from the usual seamed cover for dampening rollers which in effect causes a ridge to extend longitudinally of the roll with a corresponding uneven surface of the dampening roller of this type, and which is adapted to dampen the plates used in lithograph work properly and evenly, so that the proper amount of moisture is applied to the surface of the plate to prevent the ink from adhering thereto and to secure proper resilience from the use of these rollers.

Another and further object of my invention is the provision of a dampening roller in which the nap of the covering extends in a direction circumferentially of the roller surface and therefore in alignment with the movement of the roller, thereby assuring that the surface of the roller is smooth and unbroken, of a uniform texture to secure proper dampening of the plates, and providing a structure in which the nap will not become bunched or ridge-like as is common with rollers of the present type.

In the present type of dampening rollers it is the common practice to provide a covering of molleton cloth napped on both sides, this cloth being woven in the manner common to the weaving of cloths with the usual warp and cross threads, this cloth being produced in lengths of 35 or 40 yards. After being woven the cloth is napped, usually on both sides, and due to the cloth being made in long lengths the napping process of necessity is performed in a direction parallel to the long direction of the cloth, thereby causing the nap of the cloth to extend in the same direction as the warp threads. Thereafter, sections of the cloth are cut, folded and stitched along their abutting edges in sleeve-like form to fit over a composition or rubber roller of the usual form. In order to provide sufficient strength to the cover the sewing operation must extend in a line parallel to the warp thread which, in effect, produces a sleeve in which the warp threads of the cloth extend in a direction parallel to the longitudinal axis of the roller with

the result that the nap on the cloth extends in the same direction so that when the sleeve of this type is placed upon the roller, the roller in service is rotating crosswise of the nap of the goods, thereby causing the nap to gather together or bunch in service, producing irregular ridges on the surface of the dampening roller. These ridges, in addition to the seam, prevent the roller from functioning properly and dampening the surface of the plate in an even and satisfactory manner.

In my improved construction I prefer to form a sleeve of molleton cloth of knitted threads, thereby eliminating the usual longitudinal seam, these sleeves being knitted to proper diameter of various sizes to fit over miscellaneous sizes of rollers, and thereafter napping the surface of the cloth with the nap on the cover extending in a direction circumferentially around the roller so that when the roll is put in service its reciprocating motion over the surface of the plate is in alignment with the direction of the nap on the molleton cover, thereby lessening the tendency of the nap to bunch up on the surface of the roller to form an irregular surface. The napping may be performed only on the outside of the sleeve which is adapted to contact with the plate or in order to enable the cloth to have an added cushioning effect and an equal distribution of moisture throughout the roller it may be napped upon both sides of the cloth, with one napped surface being in contact with the body of the roll while the other or outer side is adapted to contact with the engraving or lithographing plate.

These and other objects of my invention will be more fully and better understood by reference to the accompanying sheet of drawings, in which—

Figure 1 is an elevational view of a lithographing roller embodying my invention;

Figure 2 is a sectional view on line 2—2 of Figure 1; and

Figure 3 is a fragmentary elevational view of a section of the knitted sleeve shown in Figures 1 and 2.

Referring now specifically to the drawing and in which like reference characters refer to like parts throughout, the usual lithographing roll is shown having a metallic shaft 10 extending therethrough and a cylindrical supporting body 11 of any suitable material such as composition, rubber, fabric, or the like, as may be desired, with a smooth outer surface and upon which a knitted molleton sleeve 12 is placed. The molleton cover 12 is knitted and as shown in Figure 2 presents a thread having a loop 13 formed in the usual

fashion of knitted fabrics of the type commonly called the chain loop, the sleeves being originally knitted of appropriate size and length to fit various sizes and types of rolls. The thread may be made of a plurality of strands to secure the proper thickness of the cover. Thereafter the molle-
 5 ton cover 12 is napped, with the nap 14 extending in a circumferential direction around the surface of the sleeve 12. As hereinabove explained, both
 10 sides of the molleton cover 12 may be napped, but in any event the napping operation is performed in the same manner on each side of the cloth by having the nap extend in a radial direc-
 15 tion around the cloth so that when the roller is put in service its reciprocal movement is parallel with the direction of the nap on the molleton cover.

In operation, the sleeves are first preferably knitted to suitable lengths and sizes, but may be
 20 made of woven fabrics produced in the form of sleeves, and thereafter napped with the nap extending in a circumferential direction around the roller, and are then slipped over the rolls either
 25 directly or by being turned inside out and forced over the roll in such manner that the molleton cover is stretched taut over the surface of the roll, the roll being slightly resilient so that the molleton cover is drawn taut around the surface
 30 of the roll and remains in this position during the life of the sleeve. If desired, of course, the covering can be removed after being worn, and the roller recovered with sleeves produced as herein described.

While I have described more or less precisely
 35 the details of construction, I do not wish to be understood as limiting myself thereto, as I con-

template changes in form and the proportion of parts and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit or scope of my invention.

I claim:

1. In combination with a printing roller, a knitted seamless cover therefor having a napped surface, the nap extending in a direction parallel to the rotational movement of the roller.

2. In combination, a roller and a knitted fabric cover therefor having a napped surface the nap extending in a circumferential direction around the roller.

3. In combination, a dampening roller including a metallic shaft, a resilient body portion mounted thereon, and a seamless fabric cover for said body portion having a napped surface the nap extending in a circumferential direction around the surface of said body portion.

4. In combination, a dampening roller including a metallic shaft, a resilient body portion mounted thereon, and a fabric cover for said body portion having a napped surface the nap extending in a circumferential direction around the surface of said body portion.

5. In combination, a roller and a fabric cover therefor having a napped surface the nap extending in a circumferential direction around the roller.

6. In combination, a roller and a molleton cover therefor having a napped outer surface, the said nap on the cover extending in a circumferential direction on said roller.

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