DAMPENING ROLLER

Filed April 14, 1958

Fig. 1

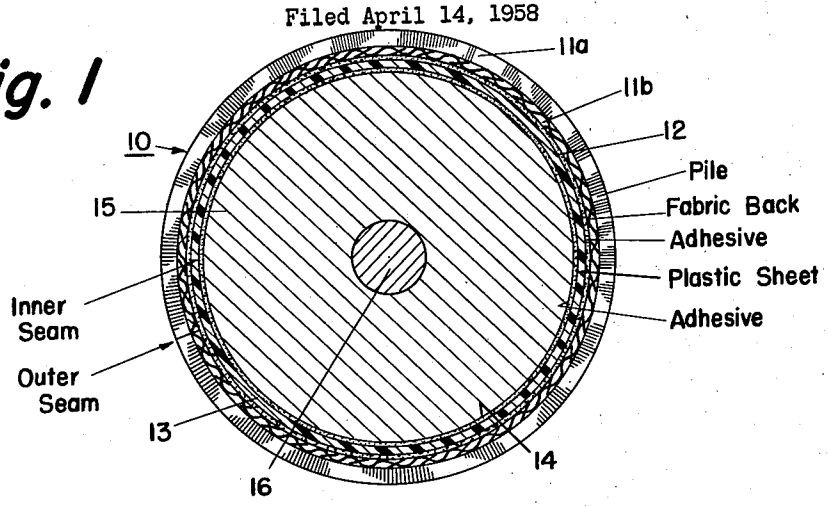
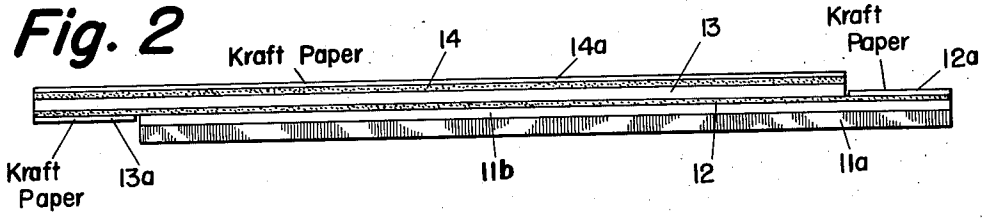


Fig. 2



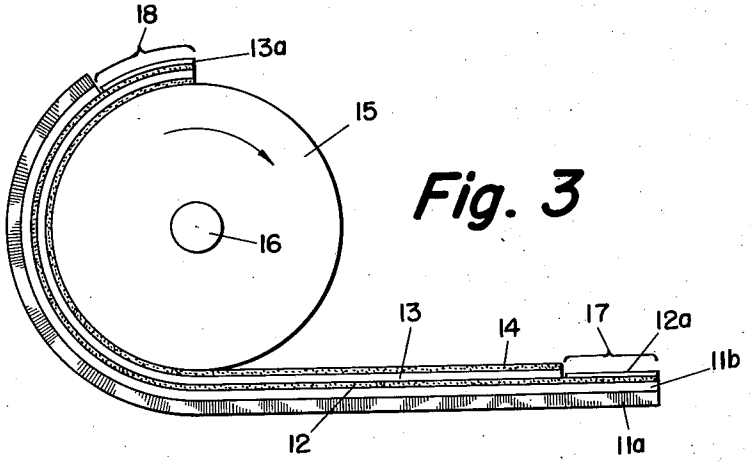
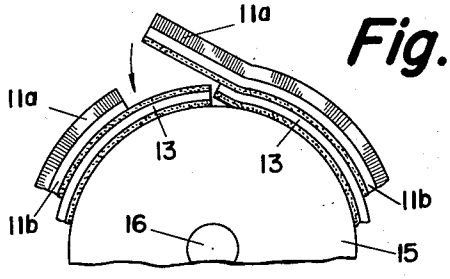


Fig. 3

Fig. 4



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DAMPENING ROLLER

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2 Claims. (Cl. 29—120)

This invention relates to dampening rollers of the type used in lithography for carrying moisture to the stone or lithographic plate.

In lithography, it is important to provide a suitable means of dampening the stone or plate in connection with the printing process. This has been done in the past by rollers to which a layer of molleton or pile fabric has been suitably secured, as by adhesive, and sewing.

When adhesively-coated pile fabric has been utilized, it has been necessary for the workmen to measure the circumference of each roller and to cut from a supply roll the necessary length of the pile fabric in order to provide the moisture-carrying covering. Besides the accuracy required in measurement in order that the ends of the covering material shall meet along a line, there is always the possibility the fabric may be cut too long. If cut too short, the covering may have to be discarded.

It is an object of the present invention to provide coverings for dampening rollers pre-cut to size and which not only have pressure-sensitive adhesive for securement of the covering to the roll but in addition provides adhesive coatings which are pressed together in the final bonding operation tightly to secure the covering on the roller and to provide a greater strength in the region of the seam. In addition, the present invention provides a moisture barrier between the moisture-carrying pile fabric and the roller itself with a meeting seam displaced from the meeting seam of the outer layer. The moisture barrier-layer protects the roll from deterioration due to constant water contact. With the barrier-layer the roll will neither rot nor become fatigued.

For further objects and advantages of the invention and for a more detailed description thereof, reference is to be had to the accompanying drawing in which:

Fig. 1 is a sectional view of a dampening roller **10** embodying the present invention;

Fig. 2 is a side elevation of the prefabricated dampening cover for the roller of Fig. 1; and

Figs. 3 and 4 illustrate successive stages in the application of the dampening cover to the roller.

Referring first to Fig. 2, it will be noted that there is provided a dampening cover for a roller which comprises a pile fabric, the pile **11***a* of which is secured to a fabric back **11***b* in manner well understood by those skilled in the art. The exposed surface of the fabric back **11***b* is coated with a pressure-sensitive adhesive **12**. This adhesive layer in the region beyond the end of a layer **13** has thereon a separable covering material as indicated at **12***a*. The covering material **12***a*, which may be of kraft paper or the like, is of the type which can be readily stripped away from the adhesive. This exposes the adhesive for purposes later described.

A moisture-barrier layer **13**, preferably of a thin plastic material such as polyvinyl chloride, polyethylene, cellophane, cellulose acetate, or thin rubber-like sheeting, either natural or synthetic, is adhesively secured as at **12** to the fabric back **11***b*. Upon the upper layer of the

moisture-barrier **13**, there is a layer **14** of adhesive of the pressure-sensitive type. To the layer **14** there is secured a covering material **14***a*, such as wax-coated or silicone-coated crepe or kraft paper, and of the type which can be stripped from the pressure-sensitive adhesive.

The dampening cover of Fig. 2 is characterized by the fact that a portion of the assembly including the moisture-barrier **13** extends outwardly from one end of the outermost moisture-carrying layer **11***a* while that layer, **11***a*, extends outwardly of the moisture-barrier layer **13** at the opposite end of the moisture-carrying assembly.

It will be understood that there will be provided a moisture-carrying cover of the correct length for each dampening roller of different diameter. For the roller **15**, made of rubber, the cover of Fig. 2 will be suitable. In order to apply the covering of Fig. 2 to the roller **15** of Fig. 3, the protective layer **14***a* is stripped from the pressure-sensitive adhesive **14**. The roller **15**, generally of rubber or rubber-like material, is then placed upon the adhesive coating so that an edge of the covering extends along a line parallel to the axis of the roller **15**. The roller can then be rotated by its stub shafts **16** in a direction indicated by the arrow and over the covering material. As the roller **15** is rotated, the pressure-sensitive adhesive **14** adheres to the surface of the roller. As the roller **15** approaches the right-hand end of the covering, as viewed in Fig. 3, there will be attained the position illustrated in Fig. 4 in which the respective ends of the moisture-barrier **13** will be brought into meeting relationship. At this time, the protective materials or panels **12***a* and **13***a* will have been stripped from the pressure-sensitive surfaces preparatory to the final operation.

After removing the covering materials **12***a* and **13***a* from the adhesive, the final securing operation is accomplished by moving downwardly the upwardly extending end of the pile **11***a* to bring into engagement the two adhesively-coated surfaces. These surfaces form a double-strength bond between a narrow face portion of the moisture-barrier layer and the adhesively coated fabric backing. The end result is the covering of the damping roller **10** with a moisture-carrying material which is lacking in any substantial separation at the seams. The covering assembly is securely and tightly bonded to the roller **15**. A portion of the covering partially overlaps another portion. These portions **17** and **18** are securely bonded together by the action of their adhesively-coated surfaces.

While cotton pile fabric **11***a*, **11***b* is preferred for the moisture-carrying covering, it is to be understood that the water-carrying layer may be of foam rubber, molleton or polyurethane foam. These may be taken as exemplary of water-carrying materials which have moisture-retaining properties and yet are resistant to attack by inks, solvents and other materials used in the printing and lithographic arts. Any of the pressure-sensitive adhesives on the market may be utilized, though a pressure-sensitive adhesive of the rubber latex type is preferred. An example of the latter type is one available on the market under the designation #387 from the Polymer Industries Company. The water-carrying layer may also be a wet-strength paper, that is, a resin-treated paper which has high wet strength and which is wettable by the moisture it is to carry to the lithographic plates.

What is claimed is:

1. A dampening roller assembly characterized by a roller covering comprising a pile fabric of width corresponding with that of the roller and of length substantially equal to the circumference of the roller, a thin polyvinyl chloride sheet of width corresponding with that of the roller and of length equal to the circumfer-

ence of the roller, said polyvinyl chloride sheet being adhesively secured to the back of said pile fabric from a position spaced from one edge thereof so as to overlap the other edge thereof, and the face of said polyvinyl chloride sheet opposite said pile fabric, the opposite face of said sheet in the region extending beyond said other edge, and the back of said pile fabric from its edge to the edge of said sheet, all being coated by a pressure-sensitive adhesive coating, said polyvinyl chloride sheet being secured to the roller through the action of said pressure-sensitive adhesive, the opposite end portions of said polyvinyl chloride sheet meeting each other in close proximity, the extending end portion of said pile fabric being disposed with its pressure-sensitive coating in face-to-face relationship with the pressure-sensitive coating of the extending end portion of said polyvinyl chloride sheet to establish a strong joint and in which the meeting edges of said fabric are displaced circumferentially of the roller from the meeting edges of said polyvinyl chloride sheet.

2. A roller covering comprising an outer layer of pile fabric of width corresponding with the length of the roller to be covered and of a length equal to the circumference of the roller, an inner layer comprising a thin polyvinyl chloride sheet of width corresponding with the length of the roller and of length equal to the circumference of the roller, said polyvinyl chloride sheet being adhesively secured to the back of said pile fabric from a position spaced from one edge thereof so as to overlap the other edge thereof, a pressure-sensitive adhesive coating the overlapping end portion of said polyvinyl chloride on one side of the assembly and the overlapping end portion of said pile fabric on the other side of the assembly for the bonding together of said end portions, and panel means covering said pressure-sensitive coatings and separable therefrom to expose said pressure-sensitive coatings for application to said roller, removal of said panels exposing the adhesively coated faces of said end portions whereby the adhesive coatings thereon are brought into face-to-face relationship for establishment of a strong joint in the region where opposite edges of the pile fabric are brought into face-to-face relationship on a roller.

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