June 8, 1926. 1,587,523

C. HENDERSON

LITHOGRAPHIC ROLLER

Filed Sept. 29, 1922

Fig. 1.

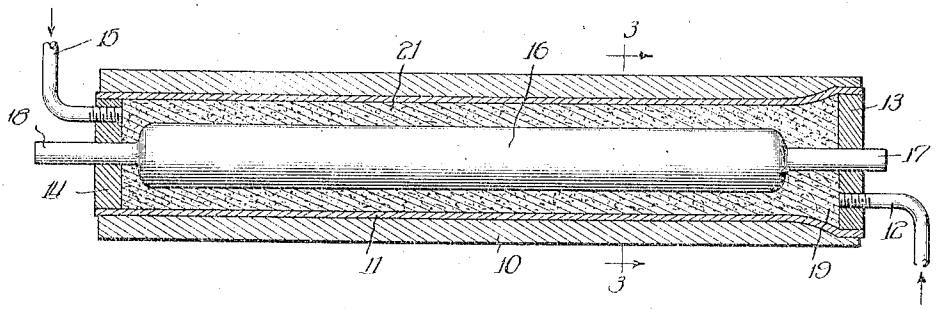


Fig. 3.

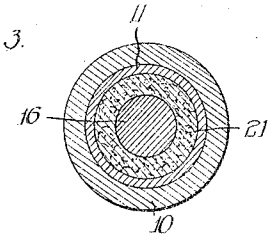
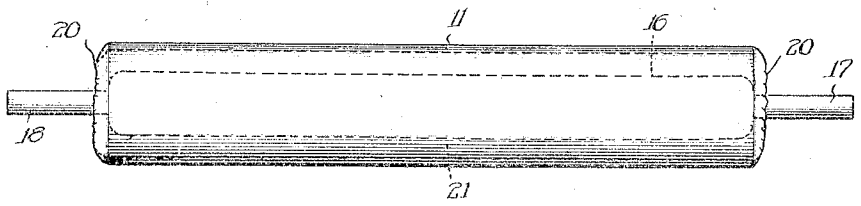


Fig. 2.



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UNITED STATES PATENT OFFICE.

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LITHOGRAPHIC ROLLER.

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This invention relates to lithographic rollers.

As is well known, a lithographic roller must present a smooth and true outer surface to properly perform the function of distributing ink. For the most part such rollers heretofore have been made by mounting felt and leather layers over roller stock. The leather at best varies in thickness and while some of the irregularities of the leather are taken up by the felt layer, the uniformity of the operative surface of the leather layer can be improved.

One object is to provide, as an article of manufacture, a simple lithographic roller having a smooth and true outer surface by means of which improved results can be accomplished.

Another object of this invention is to provide a simple and improved method of making lithographic rollers in a manner to present a smooth, true and uniform operating surface.

Another object is to provide a method for making lithographic rollers adapted to meet the requirements for successful commercial operation.

These and other objects are accomplished by means of the method disclosed on the accompanying sheet of drawings, in which—

Figure 1 is a vertical longitudinal sectional view through a mold and disclosing my method;

Figure 2 is an elevational view of the completed roller; and

Figure 3 is a sectional view taken in the plane of line 3—3 of Figure 1.

The various novel features of my invention will be apparent from the following description and drawings and will be particularly pointed out in the appended claims.

Referring to the figures of the drawings, it will be noted that I have provided a mold in the form of a cylindrical casing 10 preferably made of steel. A layer of leather 11 is inserted within the mold and is to form the outer layer of the completed lithographic roller. This cylinder of leather 11, which is sewed longitudinally thereof, is forced outwardly against the inner smooth surface of the mold 10 so that the leather cylinder will present a smooth and true operating surface. Preferably the leather cylinder 11 is forced outwardly into engagement with the mold by compressed air which may be supplied through a pipe 12 which extends through one head 13 which closes one end of the mold. The other head 14 closes the other end of the mold and is provided with a pipe 15 through which a composition, to be referred to later, is forced under pressure into the mold.

After the leather cylinder 11 is set in place within the mold 10 the roller stock 16 is placed within the mold and centered with respect thereto by having its ends or trunnions 17 and 18 passed through apertures in the end heads 13 and 14. It will be noted that the end heads 13 and 14 clamp the ends of the leather cylinder against the cylindrical mold 10. After the leather cylinder 11 is pressed outwardly into engagement with the interior surface of the steel mold 10 by compressed air, or by any other suitable medium, any suitable composition is forced through the pipe 15 into the mold under a pressure sufficient to overcome the pressure of the air passing through the pipe 12. Preferably the mold is set on its left-hand end during the time that the composition is forced into the mold. When the entire space between the roller stock 16 and the leather cylinder 11 and between the end heads 13 and 14 is completely filled with composition, the composition is permitted to solidify. After it has solidified the end heads 13 and 14 and the mold 10 may be removed whereupon the enlarged head portion, as indicated at 19, may be trimmed and the ends of the leather cylinder drawn in as shown at 20 for completing the lithographic roller.

By thus making the lithographic roller, a smooth, true and even operative surface is provided and any irregularities such as in the variable thickness of the leather, will not appear or affect the operative surfaces of the roller, for such irregularities will be compensated for by the composition material 21 which is forced into the mold under pressure through the pipe 15.

By means of this method lithographic rollers may be made adapted to meet all the requirements for successful commercial use.

It is my intention to cover all modifications of the invention falling within the spirit and scope of the following claims.

I claim:—

1. As an article of manufacture, a lithographic roller including a layer of leather of variable thickness and composition backing therefor shaped with respect to said leather and compensating for the variable thickness thereof so that the outer surface thereof which otherwise would be relatively uneven is presented in a smooth and true condition.

2. As an article of manufacture, a lithographic roller including roller stock, a layer of leather of variable thickness having an operating surface, a composition interposed between said roller stock and layer of leather and shaped with respect to the latter and compensating for the variable thickness thereof so that the operating surface of said leather which otherwise would be relatively uneven is presented in a smooth and true condition.

Signed at Chicago, Illinois, this 22nd day of September, 1922.

CARL HENDERSON.