

E. DE JOURNO.
 APPARATUS FOR IMPREGNATING FABRICS.
 APPLICATION FILED APR. 14, 1909.

969,041.

Patented Aug. 30, 1910.

Fig. 1,

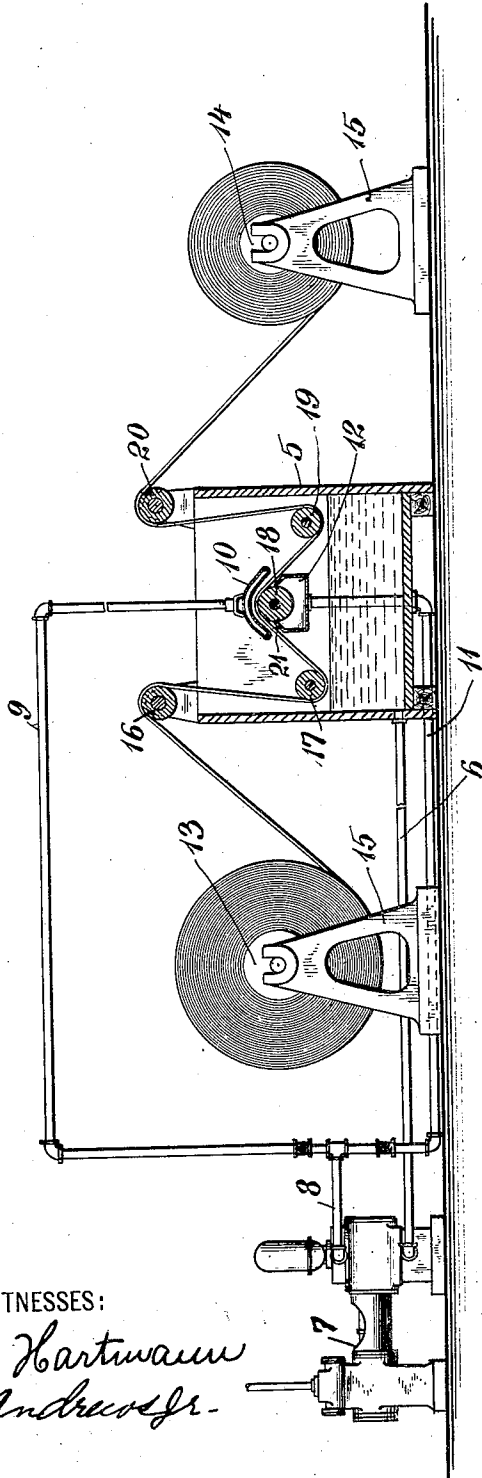


Fig. 3,

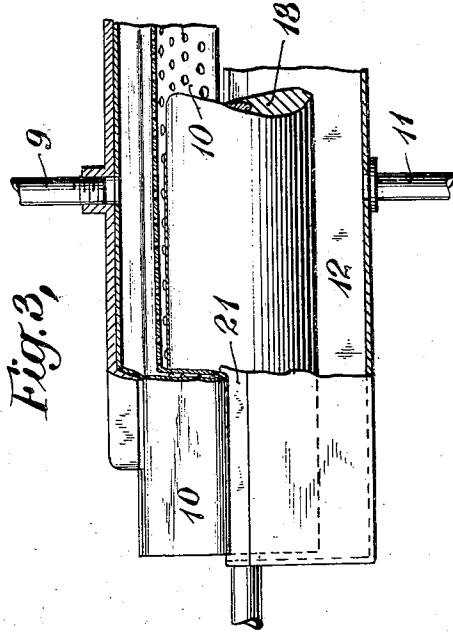
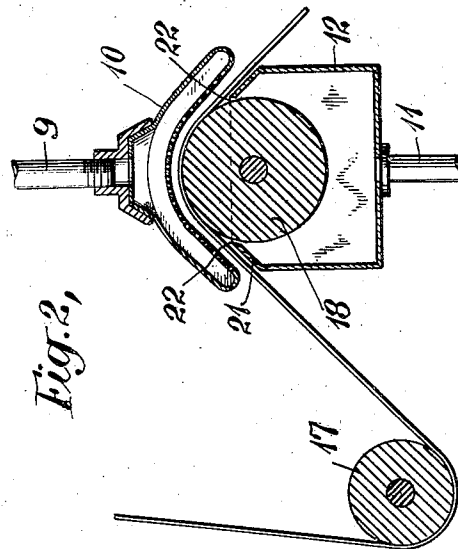


Fig. 2,



WITNESSES:

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APPARATUS FOR IMPREGNATING FABRICS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERNEST DE JOURNO, a citizen of the United States of America, and a resident of Allentown, county of Lehigh, and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Impregnating Fabrics, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in means for impregnating fabrics, and consists in a certain novel means for forcing the liquid with which it is desired to impregnate the fabric, against the lower surface thereof, and in the combination therewith of means for simultaneously applying liquid to the upper surface of the fabric.

The main objects of my invention are to increase the thoroughness with which the fabric is impregnated so that every particle of the fibers of which the fabric is composed will be treated with the liquid, and at the same time to increase the speed at which the fabric can be run through the apparatus.

My apparatus is particularly adapted to the applying of a dyeing liquid to fabrics, whereby they will be dyed thoroughly, evenly and uniformly,—but other forms of liquids, such as finishing, dressing, sizing liquids may also be employed in the apparatus and similarly applied to the fabric to be treated.

My invention also consists in certain novel features of construction and combinations of parts, such as will be fully pointed out hereinafter, and in order that my invention may be thoroughly understood, I will now proceed to describe an embodiment thereof, having reference to the accompanying drawings illustrating the same and will then point out the novel features in claims.

In the drawings: Figure 1 is a view partially in side elevation and partially in central transverse section of an apparatus constituting an embodiment of my invention. Fig. 2 is a detail view in transverse section, upon an enlarged scale, of that part of the apparatus at which the liquid is applied. Fig. 3 is a detail view at right angles thereto of the same parts, showing portions thereof in elevation and other portions in central longitudinal section.

The dyeing or other liquid is contained in a tank 5, and the said tank is conveniently open at the top so that the contents thereof

may be always under the direct observation of the attendant, who from time to time will replenish the same. A pipe 6 leads from the tank to a circulating means such as a pump 7, the delivery 8 from the said pump having two branches, the upper one 9 of which leads to an upper spray head 10, and the lower one 11 of which leads to a box 12, both located within the said tank 5, the former above the latter.

Two rollers 13 and 14 are provided, one for holding the fabric to be treated, and the other for receiving the fabric after it has been treated. Either roll may constitute either the supply or the take up roll, but for simplicity, I will refer to the roll 13 as the supply roll and the roll 14 as the take up roll. Both said rolls are journaled in suitable standards 15, and both or either may be rotated by any suitable driving means (not shown).

Fabric to be treated passes from the roller 13 over and under suitable direction rollers 16—17, thence over a roller 18 which is located immediately beneath the spray head 10, thence under and over other direction pulleys 19 and 20, and thence to the take-up roll 14. The direction rollers 16 and 20 are located above the tank while the direction rollers 17 and 19 are located in the tank but preferably above the normal level of the liquid contained therein. The roller 18 is disposed partially within the chamber inclosed by the box 12, the edges of the upper walls 21 of the said box terminating in close proximity to the periphery of the said roller, whereby a narrow space 22 is formed between the said edges and the periphery of the roller. This construction is shown more fully in detail in Fig. 2 of the drawings.

In operation the pump 7 will force the dyeing or other liquid through the narrow spaces 22 thereby forming flat streams which are projected substantially toward the angle formed by the fabric and the periphery of the roller 18. This liquid will not only impinge with considerable force against the under side of the fabric, but will also tend to work through the fabric, any portion of the said liquid which works through the fabric having a tendency to then be distributed over the upper face so as to fully impregnate all the fibers. In order, however, to insure further impregnation, I preferably also employ the upper head 10, the pump forcing the same kind of liquid in

a spray over the upper face of the fabric as it passes over the roller and thereby assisting to distribute any liquid that has been forced through the fabric and also supplying further liquid for the purpose of insuring a complete and thorough application.

What I claim is:

1. Apparatus for impregnating fabrics comprising a roller over which a fabric is arranged to be drawn, a pressure box inclosing a chamber in which the lower portion of the roller is contained, the walls of the said chamber terminating upon either side of the periphery of the said roller in close proximity thereto and in proximity to the lower surface of the said fabric as it passes over the roller, and means for forcing liquid into the said pressure box whereby it will be projected between the edges of the said walls and the periphery of the roller against the under surface of the said fabric.

2. Apparatus for applying liquid to fab-

rics comprising a roller over which the fabric is arranged to be drawn, a pressure box inclosing a chamber in which the lower portion of the roller is contained, the walls of the said chamber terminating upon either side of the periphery of the said roller in close proximity thereto and in proximity to the under surface of the said fabric, a spray head located above the said roller in proximity to the upper surface of the said fabric, and means for forcing liquid into the said pressure box whereby it will be projected between the edges of the said walls and the periphery of the roller against the under surface of the fabric, and for forcing liquid through the said spray head, whereby liquid will be simultaneously projected therefrom upon the upper surface of the fabric.

ERNEST DE JOURNO.

Witnesses:

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