

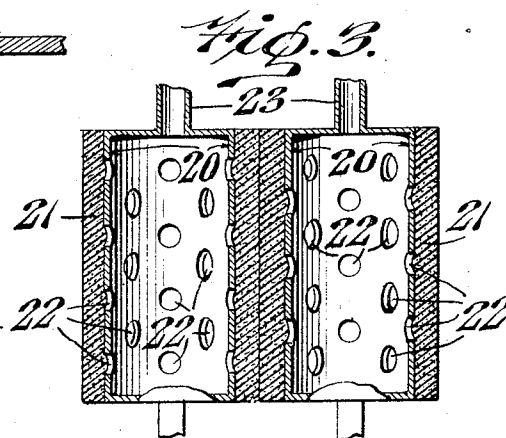
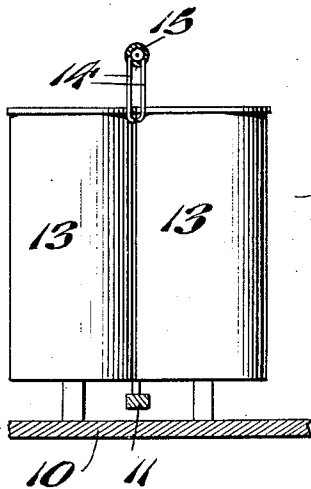
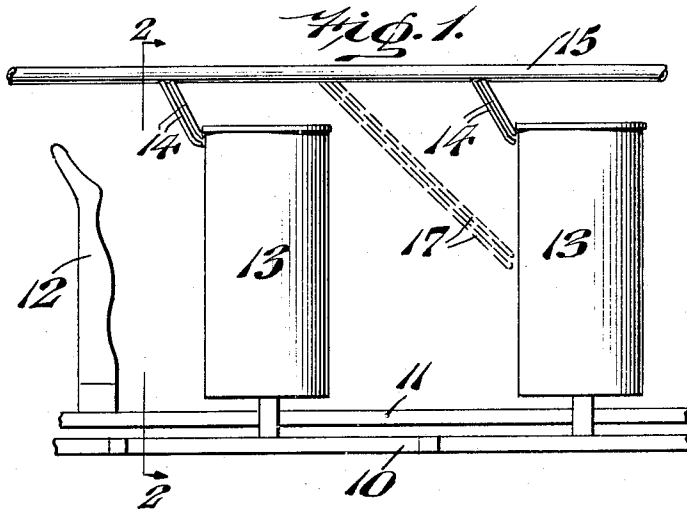
Oct. 29, 1940.

F. SCHUSTER

2,219,663

TREATMENT OF TEXTILE ARTICLES

Filed Sept. 30, 1937



INVENTOR
FRITZ SCHUSTER.
Robert M. Darr
ATTORNEY

UNITED STATES PATENT OFFICE

2,219,663

TREATMENT OF TEXTILE ARTICLES

Fritz Schuster, Chemnitz, Germany

Application September 30, 1937, Serial No. 166,602
In Great Britain October 2, 1936

2 Claims. (Cl. 8—150)

This invention relates to the treatment of textile articles, and is more particularly concerned with that phase or those phases of the treatment of stockings or the like mounted on metallic or other suitable shaping forms in which the stockings or the like are impregnated with a liquid and subsequently passed between rollers.

Heretofore (see, for example, British Patents Nos. 333,847, 384,870, 385,486 and 451,261) it has been usual to spray the desired liquid or liquor on to the stockings and then to pass the forms with the stockings mounted thereon between rollers which may be covered with a suitable coating, such as sponge rubber or the like.

Now the use of sprays for the purpose of impregnating the stockings or the like mounted on forms gives rise to certain disadvantages, for example, it is impossible, unless the speed of the conveyor carrying the forms is sufficiently slow, to ensure that enough liquid or liquor is applied to the stockings or the like to impregnate the same adequately and also the holes in the spray tubes are liable to choke up. Furthermore, unnecessarily expensive and complicated apparatus is required in order that the liquid or liquor in question shall be sprayed on to the stockings or the like with sufficient force to ensure the adequate impregnation of the same.

The chief object of the present invention is, therefore, to overcome the above-mentioned disadvantages and according thereto, instead of impregnating the stockings or the like on the forms by spraying the liquid on to the same prior to the forms being passed between the rollers, a stream of the desired liquor or liquid is created down or along the nip of the rollers between which the stockings or the like are to be passed.

Not only is it mechanically simple and cheaper to create this stream of liquid or liquor along the nip of the rollers instead of spraying the liquor or liquid on to the stockings or the like prior to their passage between the rollers but, in addition, a better impregnation can be obtained as the stockings or the like may be subjected to the action of a larger amount of liquid or liquor and, furthermore, all chance of stoppage of the apparatus due to the spray tubes choking up is avoided.

The above described method of subjecting the stockings or the like on the shaping forms to an impregnation treatment and subsequent squeezing treatment which spreads the liquid or liquor evenly and completely throughout the stockings or the like may be applied to any or all of the individual stages of the treatment, such as scour-

ing, rinsing, dyeing, dulling, softening or stiffening, to which the stocking or the like is subjected without departing from the scope of the present invention.

In order that this invention may be the more clearly understood and readily carried into effect, we will proceed to describe the same with reference to the accompanying drawing, which illustrates by way of example certain convenient embodiments of this invention, and in which:

Figure 1 is a somewhat diagrammatical side elevation of a part of a hose finishing machine embodying the present invention, and

Figure 2 is substantially a section on line 2—2 of Figure 1.

Figure 3 is a central vertical section through a pair of co-operating rollers in a hose finishing machine illustrating a further embodiment of this invention.

Referring now more particularly to Figures 1 and 2 of the accompanying drawing, 10 represents diagrammatically the under carriage of the hose finishing machine and 11 is the conveyor on which are mounted the shaping forms 12, each adapted to receive a stocking to be treated. 13, 13 are a pair of squeezing rollers by means of which the stockings or the like are to be treated in accordance with the present invention, these rollers being vertically arranged. Two small pipes 14 from a main supply pipe 15 of the desired liquid whatever it may be are arranged at the top of these rollers and are so positioned relative to the rollers, as shown in the drawing, that a stream of the desired liquid, be it dyeing, scouring, rinsing, dulling, stiffening or softening, is forced (by the pressure on the liquid) into the nip on that side of the rollers 13 which first encounters the moving shape, there being sufficient flow to ensure an excess of liquid resulting in a continuous running stream in front of the nip. Means may, of course, be provided for collecting the excess liquid and for returning the same to the main tank for re-circulation. Furthermore, an additional supply of liquid may also be provided to the nip of the rollers, if desired, as shown by the pipes 17 illustrated in broken lines in Figure 1.

It has been found that this method of impregnating and subsequently treating the stockings or the like mounted on the forms is more advantageous, at least from the commercial point of view, than spraying the liquid on to the stockings or the like. A more adequate impregnation of the stockings or the like may be easily provided and, furthermore, the apparatus may be me-

chanically simplified since it is obviously easier to provide adequate means for spraying the corresponding amount of liquid on to the stockings or the like by means of spraying tubes.

- 5 The rollers used in carrying out the present invention may be of any suitable form. Preferably, however, they are covered with a material such as sponge rubber, soft rubber, felt or the like, which is of sufficient resiliency and softness
10 adequately to press the rounded or bevelled edges of the shaping forms on which the stockings or the like are mounted. We are of the opinion, as the result of experiments carried out up to date, that it is preferable to provide the rollers with
15 a coating of sponge rubber, but we do not wish to limit the present invention to rollers so covered.

- In a further form of the present invention (shown in Figure 3), which may be used when the coating of the rollers is of sponge rubber or
20 other porous material, instead of causing a stream of the desired liquid to flow down the nip of the rollers from tubes or the like disposed outside the same, the cylinders 20 of the rollers on which the coatings of sponge or other porous rubber 21
25 are mounted are provided with perforations or apertures 22 and the desired liquid is fed, under pressure, to the interior of the rollers through the upper bearings 23. The liquor will then be forced through the pores or the like of the sponge
30 rubber or similar coating to impregnate the fibres of the stockings or the like mounted on the forms.

I have found that the above method of im-

pregnating and subsequently treating stockings or the like mounted on shaping forms is particularly applicable to the stage in which stockings or the like are subjected to the action of a dyeing liquor, but it will be clearly understood that the present invention is by no means limited to the treatment of the stockings or the like at this particular stage.

Of course, subsequent to the treatment of the stockings or the like according to the present invention, the stockings are subjected to a suitable finishing process which is preferably carried out in accordance with the prior patents granted to Fritz Schuster.

I claim:

1. The method of impregnating textile articles with a liquid which consists in causing a moving column of liquid to form along the nip of a pair of vertically disposed rollers, mounting a textile article on a shaping form so that the article is exposed at opposite sides of the form and then feeding the form in a path to divide said column longitudinally and to enter said nip, whereby the liquid uniformly and simultaneously impregnates the article from opposite sides.

2. A step in the process of treating hosiery mounted on shaping forms which consists in passing said hosiery mounted forms edgewise through a vertically flowing stream of liquid to divide said stream longitudinally, whereby the subdivided streams respectively impregnate the sides of said hosiery.

FRITZ SCHUSTER.