

Oct. 6, 1931.

O. J. OBERMAIER

1,825,974

METHOD OF DYEING TEXTILE FIBER LAPS

Filed Feb. 21, 1929

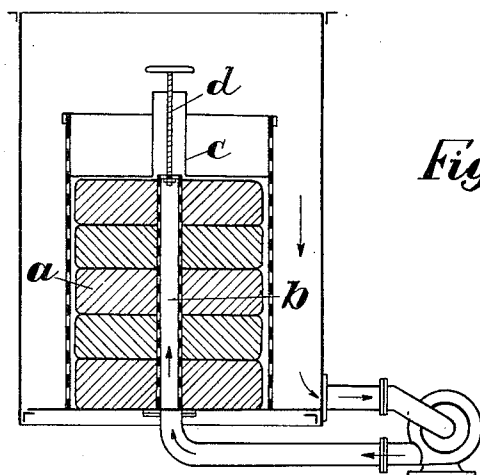


Fig. 1

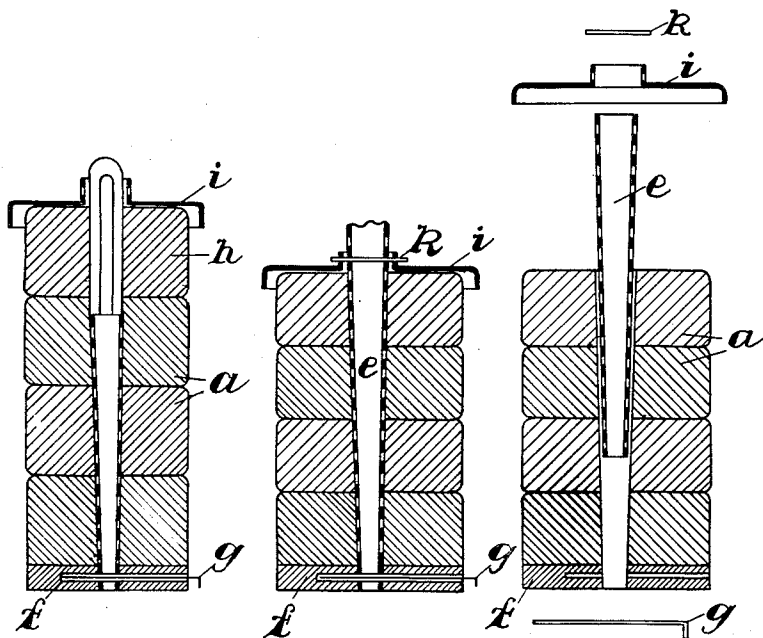


Fig. 2

Fig. 3

Fig. 4

Inventor:-
Otto Julius Obermaier
by *J. W. Cornell*
Attorney

UNITED STATES PATENT OFFICE

OTTO JULIUS OBERMAIER, OF NEUSTADT-ON-THE-HARDT, GERMANY

METHOD OF DYEING TEXTILE FIBER LAPS

Application filed February 21, 1929, Serial No. 341,677, and in Germany July 24, 1928.

The invention relates to the dyeing of textile fibers made up in the form of laps such as combers' laps, by the passing of dye liquor therethrough under pressure, and has for object a method whereby the dye liquor may be caused to penetrate evenly the whole of a fiber mass to avoid patchy dyeing.

According to the invention lap packages are charged upon a perforated tapered tube over the wider end of such tube, the narrower end of such tube being detachably fixed in a carrier plate, the whole charge of laps being then pressed together in a mass upon the carrier plate and secured in the pressed condition, and then subjected to the fluid treatment, the tube being then simply withdrawn from the carrier plate and the charge of laps.

The pressing together of the laps in the first instance ensures that no shrinking or contraction thereof can take place during wet treatment, this contraction, in ordinary practice, making it necessary to screw a cover down upon the lap mass from time to time in the dye bath. Further the use of a tapered tube in the manner above set forth, avoids disturbance of the inner parts of the lap packages when the tube and packages are to be separated, and also obviates the handling of such laps which ordinarily takes place when they are withdrawn from the usual cylindrical perforated tube used at present.

The invention will now be fully described, reference being had for full explanation to the annexed drawings wherein:—

Figure 1 is a more or less diagrammatic view of the ordinary means for dyeing laps, included herein for purposes of comparison and serving also to illustrate the method of passing the dye liquor through the lap mass. The figure shows also a pressing means for the laps and which pressing means may, conveniently modified, be employed in my invention.

Figures 2, 3, and 4 are vertical sections, not to the same scale, showing the laps at different stages of their treatment, viz. before pressing, after pressing, and after dyeing.

Referring first to Figure 1, which shows the ordinary known method of treatment, the dye vessel shown has fixed within it a perfo-

rated cylindrical tube *b* on which the laps *a* in package form as shown are charged, an outer perforated casing surrounding the lap packages. The course of dye liquor is shown by the arrows between pump and vessel. A cover *c* is screwed down from time to time by an operative, to compensate for the shrinking of the laps during the wetting out process, and as will be understood it is difficult to gauge the exact pressure to be applied. Any irregularity or insufficiency of pressure leads to patchy dyeing.

Referring now to Figures 2, 3 and 4, and describing my invention, a centrally orificed circular carrier plate *f* of metal or wood, is provided to receive the narrower end of a perforated tapered tube *e*, which is detachably secured in the plate *f* by a pin *g* passing through a hole bored radially of the carrier plate *f* as shown. The plate and tube, whilst still outside the dye vessel, are charged with packages of laps *a*, which are passed over an extension member *h* placed on top of the tube *e*, that is to say they are passed over the wider end of the tapered tube. The extension member *h* is smooth surfaced. A cover *i* having a central flange which is perforated as shown, is now placed on top of the charge of lap packages *a*, and the said charge is now pressed down to the extent to which the mass would ordinarily shrink or contract on fluid treatment. A press on the lines shown in Figure 1 is a convenient one, with suitable alterations to allow of the use of screw pressure, whilst the extension *h* of Figure 2 is still in situ. The pressing being finished, a pin *k* is passed through the holes of the flange of cover *i* and through perforations of the tube *e*—Figure 3—to maintain the lap packages in the compressed condition. Dyeing may now proceed—extension *h* being removed—by lifting the carrier plate and its lap charge into a dye vessel such as that shown in Figure 1, the central orifice of carrier plate *f* coming over a fluid pipe from the pump.

When dyeing is completed the carrier plate and its charge are lifted out of the dye vessel; the pin *k* removed, thus releasing the cover *i*; and the pin *g* also removed, thus dis-

connecting the tube *e* from the carrier plate *f*. The tube *e* is then drawn out of the lap mass as seen in Figure 4, leaving the charge of laps upon the carrier plate for removal.

I claim:

6 As a method of dyeing textile fibers in the form of laps, charging a number of lap packages upon a perforated tapered tube, detachably connected by its narrower end to a carrier plate, the lap packages being passed
10 over the wider end of the said tube; pressing the mass of lap packages downwardly upon the carrier plate the packages being compressed to the dimensions to which they
15 would ultimately shrink if wetted in their normal condition, treating the mass with fluid under pressure, disconnecting the carrier plate and the tapered perforated tube, and withdrawing the said tube from the carrier plate and from the mass of lap packages.
20

In testimony whereof I affix my signature.
OTTO JULIUS OBERMAIER.

25

30

35

40

45

50

55

60