

No. 703,122.

Patented June 24, 1902.

G. DE KEUKELAERE.

PROCESS OF DYEING.

(Application filed Oct. 18, 1901.)

(No Model.)

Fig. 1.

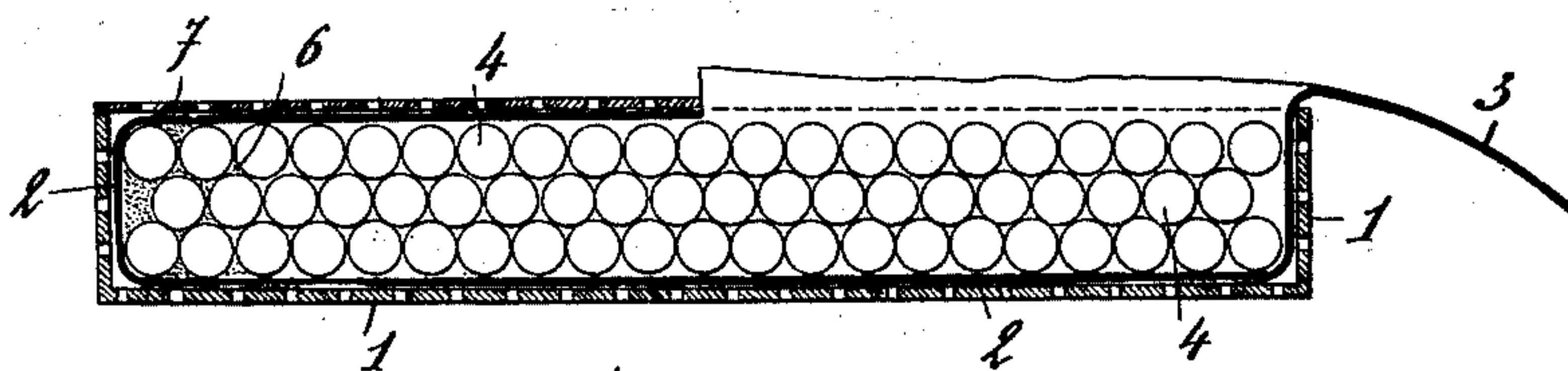
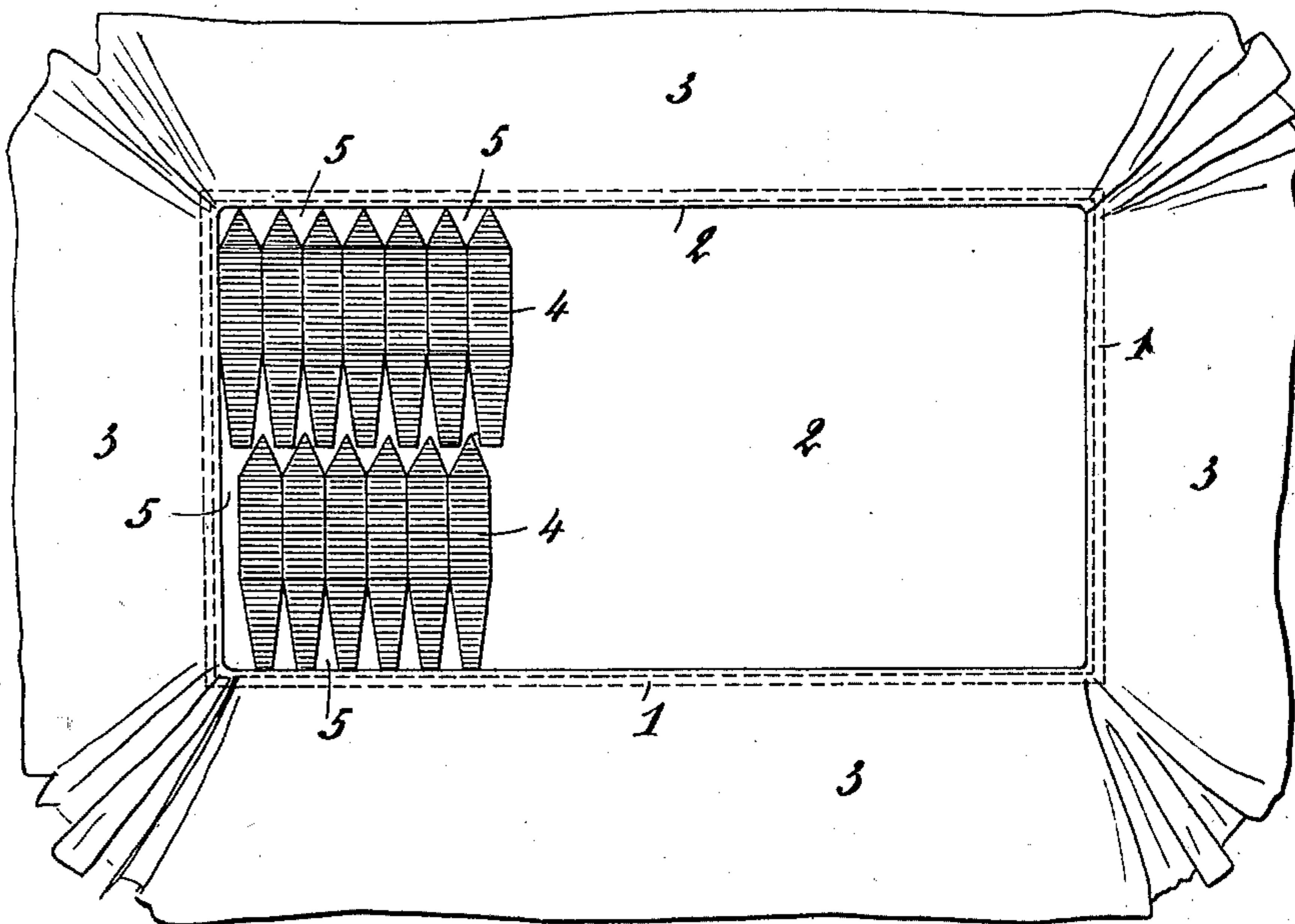


Fig. 2.



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PROCESS OF DYEING.

SPECIFICATION forming part of Letters Patent No. 703,122, dated June 24, 1902.

Application filed October 18, 1901. Serial No. 79,146. (No specimens.)

To all whom it may concern:

Be it known that I, GUSTAVE DE KEUKELAERE, chemist, a subject of the King of Belgium, residing at 3 Rue Imperiale, Brussels, in the Kingdom of Belgium, have invented certain new and useful Improvements in the Treatment of Textile Material on Cops, Bobbins, Spindles, and the Like, of which the following is a specification.

The dyeing or other similar treatment of textile material—such as cotton and wool on cops, bobbins, crossed bobbins, spindle-rolls, and the like—presents considerable difficulties, owing to the unequal passage of the dyeing or other similar liquid through the material caused by the numerous passages formed by the interstices between the cops, &c., and the spaces due to the conical ends of the latter. Several arrangements have been devised for removing these disadvantages, but with unsatisfactory results. Among others, apparatus was tried based on the arrangement of a special holder or seat for each cop; but this could only be used for dyeing one kind of cop. In other apparatus the cops or bobbins are placed in small perforated boxes in which all the interstices between the cops are carefully filled out with cotton-wadding or cotton-wool or the like by hand by a skilled workman. The small boxes are then placed into a larger perforated box which is placed in the dyeing-vat. This method has the disadvantage of necessitating the employment of as many boxes or apparatus of different size as there are different sizes of bobbins or cops to be dyed, and also of yielding only indifferent results according to the greater or less closeness of the filling material in the different parts of each box, since the dyeing or other liquid under pressure passes more readily to the places offering the least resistance, so that the dyeing or other similar treatment of the cops or bobbins in one box is not uniform.

The object of the present invention is to remove these disadvantages, and, further, to render it possible to dye cops or bobbins of all sizes in one and the same apparatus.

The invention consists, essentially, in simply arranging the cops or bobbins in the large perforated box in which formerly the separate smaller boxes were placed and in filling

the interstices and channels between the cops with pulverulent material—for instance, sand—uniformly distributed by means of a current of water or other liquid, the said material being retained in the box by means of a porous mantle, such as a covering for the inner walls of the box, which allows the water or other liquid having served to distribute the filling material to flow off, so that at the moment the perforated box is placed in the dyeing-vat the former practically consists of a solid block containing bobbins or cops cast, so to say, in a more or less plastic material, offering the same resistance to the dyeing liquid at all points.

In order to have my invention fully understood, I will now proceed to describe the same, reference being had to the annexed drawings, in which—

Figure 1 is a vertical sectional view of a perforated box as ordinarily used. Fig. 2 is a top view of the same, the cover being removed.

According to my invention a perforated box 1 is used, one of the faces of which (the cover) can be removed for the purpose of introducing the bobbins or cops carrying the material to be dyed. This box 1 is placed flat on the ground, for instance, and is covered inside with a cloth or other suitable filtering fabric 2, sufficiently large to leave pieces 3 projecting on the four sides of the box. The cops or bobbins 4 are then placed in layers in the box side by side.

When the box 1 has been filled in this manner, it is necessary to fill up the channels 6 between the cops and also the spaces 5, formed by the conical ends thereof and the sides of the box. For this purpose over the cops arranged in the box, a certain quantity of sand, for instance, is thrown, and then upon the said sand a suitable jet of water is directed. The water carries the sand with it into all the interstices between the cops, and thus causes it to fill up all the channels. After the water has thus automatically placed the filling material in position it flows off out of the box through the porous covering 2, the latter, however, retaining the sand in the box. When the sand is no longer moved by the water and forms a uniform bed on the surface of the uppermost layer of cops or bobbins, thus showing that all interstices and

spaces are suitably filled, the overlapping parts 3 of the covering are folded over the upper bed and entirely close in the sand and the cops inside the box. The latter is then
 5 closed by means of a perforated cover 7, (a part of which is shown, Fig. 1,) attached thereto in the ordinary manner. The box is placed in the dyeing-vat, and the dyeing or
 10 other treating process is executed in the ordinary manner, whereupon the box is removed from the vat and opened and the dyed bobbins or cops removed from the material in which they are embedded and simply washed to free them from any particles or grains of
 15 the said material which may have adhered to them.

Experience has shown that with this new method bobbins are always uniformly dyed, and the serious disadvantages which the dyeing processes at present in use suffer from are no longer to be feared, since the compression of sand in the interstices and channels between the bobbins or cops is always absolutely equal at all parts of the box. It is ob-
 25 vious that the method described obviates the necessity of the numerous manipulations required by working with small boxes and of the employment of an inconvenient and expensive material. Further, no relation of
 30 any kind need exist between the size of the cops or bobbins and that of the apparatus in which the latter are placed.

What I claim is—

1. The herein-described process of treating
 35 textile material such as cotton and wool on cops, bobbins, crossed bobbins, spindle-rolls and the like with a treating liquid consisting in subjecting the material to the action of the treating liquid when embedded in a suitable
 40 pulverulent material.

2. The herein-described process of treating textile material such as cotton and wool on cops, bobbins, crossed bobbins, spindle-rolls and the like with a treating liquid consisting
 45 in placing the material to be treated in a suitable pulverulent material, subjecting the textile material embedded in said pulverulent material to the action of the treating liquid, removing the textile material from the pul-
 50 verulent material and finally washing the textile material.

3. The herein-described process of treating textile material such as cotton and wool on cops, bobbins, crossed bobbins, spindle-rolls
 55 and the like with a treating liquid consisting in placing the material to be treated in a suitable box, filling up the interstices and channels between the cops or the like with suitable pulverulent material, then closing the
 60 box, causing the treating liquid to circulate through the pulverulent material and the tex-

tile material, and removing after the treatment the textile material from the pulverulent material in which it is embedded.

4. The herein-described process of treating 65 textile material such as cotton and wool on cops, bobbins, crossed bobbins, spindle-rolls and the like with a treating liquid consisting in placing the material to be treated in a suit- 70 able box, throwing a certain quantity of pulverulent material in the box, then directing a jet of water upon the said material whereby the said pulverulent material is carried into the interstices between the cops or the like, then closing the box containing the pulveru- 75 lent material and the textile material, causing the treating liquid to circulate through the pulverulent material and the textile material, removing the textile material from the pulverulent material in which it is embedded 80 and finally washing the textile material.

5. The herein-described process of dyeing textile material such as cotton and wool on cops, bobbins, crossed bobbins, spindle-rolls and the like consisting in subjecting the tex- 85 tile material to the action of the dyeing liquid when embedded in a suitable pulverulent material.

6. The herein-described process of dyeing textile material such as cotton and wool on 90 cops, bobbins, crossed bobbins, spindle-rolls and the like consisting in subjecting the textile material to the action of the dyeing fluid after having filled the interstices between the cops or the like with sand, removing the tex- 95 tile material from the sand after dyeing and finally washing the dyed material in order to free it from any particles of sand which may have adhered.

7. The herein-described process of dyeing 100 textile material such as cotton and wool on cops, bobbins, crossed bobbins, spindle-rolls and the like consisting in placing the cops or the like in a perforated box covered inside with a filtering fabric, throwing a certain 105 quantity of sand in the box, directing a jet of water upon the said sand thereby causing it to fill up all the interstices between the cops or the like while the water flows off out of the box through the filtering fabric, closing the 110 box, dyeing in the usual manner in a suitable dyeing-vat; removing the dyed cops or the like from the sand in which they are embedded and finally washing the textile material, substantially as described and for the purpose 115 set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GUSTAVE DE KEUKELAERE.

Witnesses:

GREGORY PHELAN,
 HENRI SERMON.