C. CORRON.

Improvement in Apparatus for Dyeing Fibrous and Textile Materials.

No. 130,280. Patented Aug. 6, 1872.

Fig. 1.

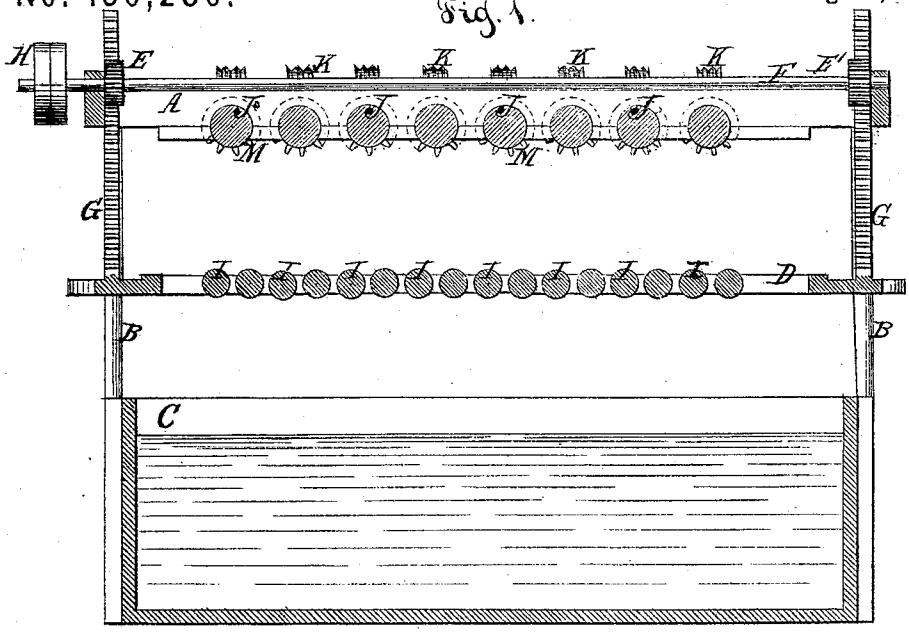


Fig. 2.

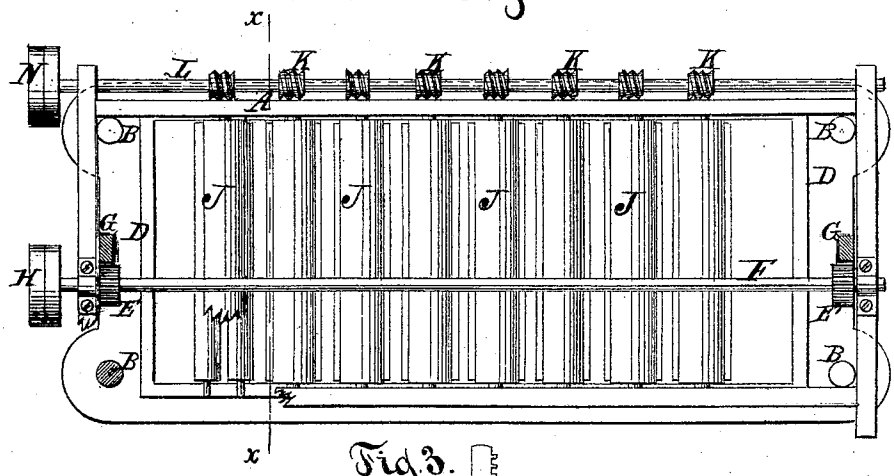
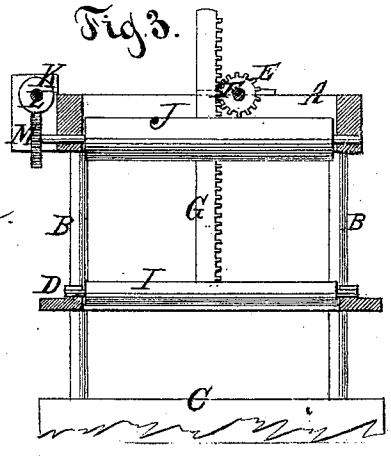


Fig. 3.



Witnesses.

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

CESAR CORRON, OF ST. ETIENNE, FRANCE.

IMPROVEMENT IN APPARATUS FOR DYEING FIBROUS AND TEXTILE MATERIALS.

Specification forming part of Letters Patent No. **130,280**, dated August 6, 1872.

To all whom it may concern:

Be it known that I, CESAR CORRON, of St. Etienne, France, have invented a new and useful Improvement in Dyeing Textiles and Fibrous Materials; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 is a longitudinal vertical section of a machine used in carrying out my invention. Fig. 2 is a sectional plan or top view of the same. Fig. 3 is a transverse section thereof taken in the line *x x*, Fig. 2.

Similar letters indicate corresponding parts.

This invention relates to a machine and method of dyeing textile and fibrous materials in skeins, whereby the numerous and repeated manipulations performed in the ordinary process of dyeing are dispensed with, and the operation is materially facilitated. My invention consists in successively and vertically immersing the skeins in and removing them from a vat containing the dyeing-liquid by means of a rising-and-falling frame, supporting and containing rods or rollers, over which the said skeins are hung, in combination with wringing-rollers, which are placed in such a position in relation to the skein-supporting rollers that they can be brought in contact therewith, and that the said rollers will wring or press out the liquid remaing in the upper portions of the skeins after having been removed from the dyer's bath, and also change the position of the skeins on their supports, while, during the dyeing operation, said skeins are neither twisted nor displaced, their fibers are always parallel, and each portion of the thread is brought in contact with the coloring-liquid, and by these means a sure and speedy impregnation with the coloring-matter is obtained.

In the drawing, the letter A designates a frame, which is supported by uprights B B rising from a vat or vessel, C, containing the coloring-liquid, the said uprights B B also forming guides for a rising-and-falling frame, D, which slides up and down on the said guides, for the purpose hereinafter described. This sliding frame D is caused to rise and descend on the guides B B by means of cog-wheels or pinions E E′ mounted on a shaft, F, on the upper part of the frame A, which, when revolved, act on racks G G rising from and secured to said frame. On the shaft E are mounted pulleys H, which connect with the driving-shaft of the machine. Transversely upon the sliding frame D are placed rods or rollers I I, which are fixed on the same, and form supports for the skeins to be dyed, which are hung over the same, so that, when the said sliding frame is brought down, the skeins will be immersed and soaked in the coloring-matter contained in the vat C. If the sliding frame D is raised the skeins will be removed from the vat C, and the skein-supporting rollers I I are then brought in contact with wringing-rollers J J mounted in the frame A, which rollers are caused to revolve by means of worm-wheels K K mounted on a shaft, L, which has its bearing in the end pieces of the frame A. These worm-wheels engage with pinions M M secured on the ends of the wringing-rollers J J. The shaft L, carrying the worm-wheels K K, is also provided with pulleys N to communicate with the driving-shaft.

In carrying out my invention I proceed as follows: The sliding frame D is brought into the position shown in Fig. 1; then the skein-supporting rollers I I are taken out of the frame D, and the skeins to be dyed are hung on them. The rollers having been replaced, the frame is allowed to descend, and the skeins are thereby plunged and immersed in the coloring-matter in the vat C. When the skeins have become thoroughly soaked with the coloring matter the frame D is caused to rise, and the skein-supporting rollers are brought in contact with the wringing-rollers J J, which serve to wring or press out all the liquid remaining in the skeins and at the same time change the position of the skeins so that, when the frame again ascends from the bath, a different portion of the skein will be in contact with the supporting-rollers. This operation is repeated until the skeins have attained the proper shade or color.

The advantages of my machine and mode of operation are as follows: The absorption of the coloring-liquid is perfectly obtained by vertically and regularly plunging the skeins into the dyer's bath, and each portion of the thread is brought successively in contact with the coloring-liquid without undergoing any alteration

of texture whatever, and without disturbing the regularity of the skein, which is essential for the subsequent operation of weaving; besides the skein, when drawn out of the bath, is necessarily loaded with the coloring-liquid, which, in dripping down, comes in contact with all the threads with a perfect regularity, thereby serving to hasten the operation of dyeing, and at the same time the liquid thus accumulating in the lower portion of the skein assists in keeping the same in a vertical position.

If desired, the machine may also be employed to remove the gum, soften, wash, and rinse the material, these operations being performed in the same manner as in dyeing, the nature of the liquid only changing.

I do not wish to confine myself to the precise means and mechanism, as herein described, for operating the several parts of the machine used in carrying out my invention, as other means may be employed without departing from my invention, and without changing the result.

What I claim as new, and desire to secure by Letters Patent, is—

1. The method, substantially as herein described, of vertically and successively immersing in and removing skeins of thread from the bath contained in a vat, C, by means of a rising-and-falling frame, D, containing rods or rollers I I supporting the said skeins, as set forth.

2. The combination, with the skein-supporting rollers I I and rising-and-falling frame D, of the wringing-rollers J J for wringing and changing the position of the skeins, substantially as and for the purpose described.

CÉSAR CORRON.

Witnesses:
EDM. DELORME,
OSCAR HANCKE, *U. S. Consular Agent.*