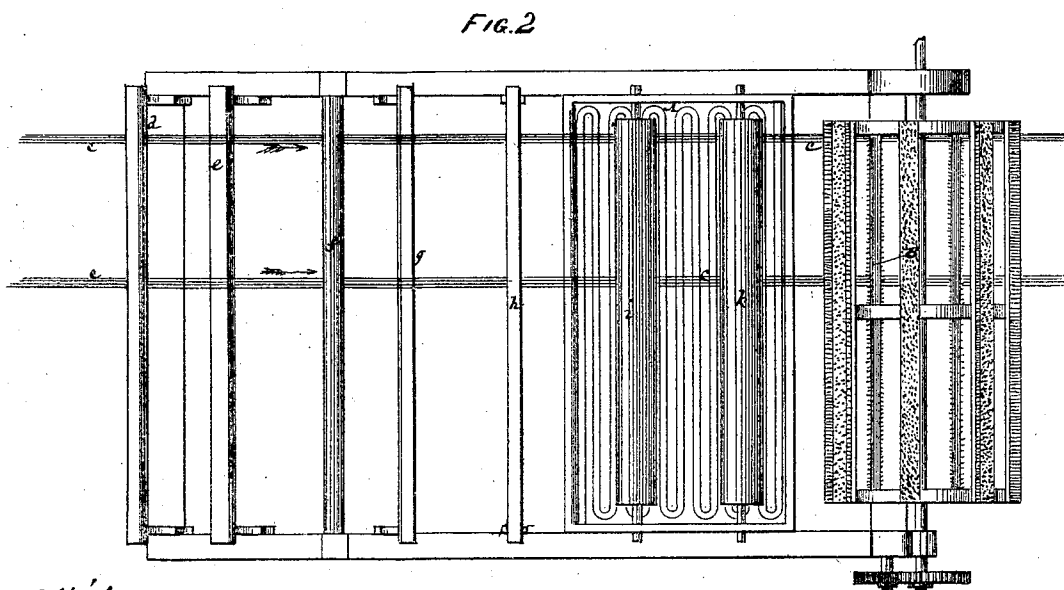
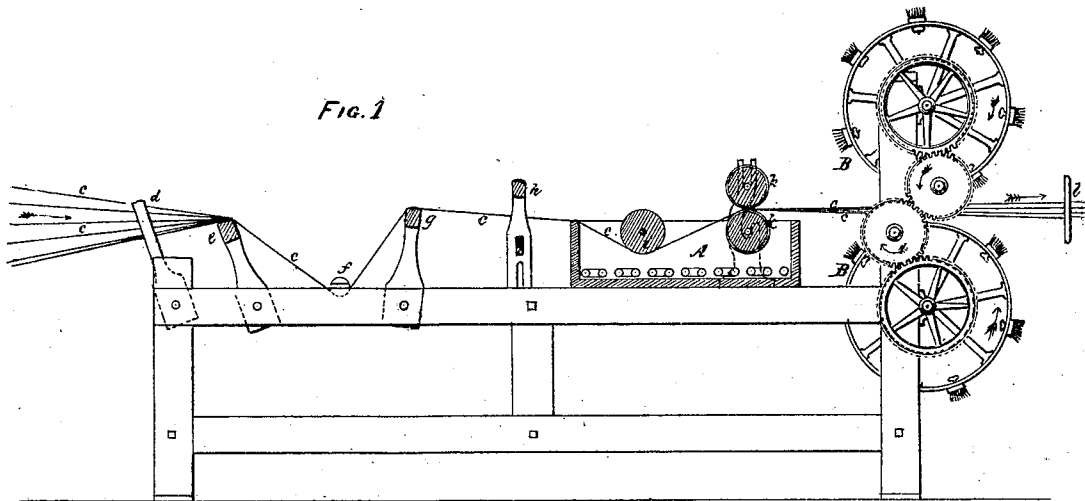


J. H. HIGGINS.

Improvement in Dyeing and Dressing Yarns.

No. 128,395.

Patented June 25, 1872.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN H. HIGGINS, OF NEW YORK, N. Y.

IMPROVEMENT IN DYEING AND DRESSING YARNS.

Specification forming part of Letters Patent No. 128,395, dated June 25, 1872.

To all whom it may concern:

Be it known that I, JOHN H. HIGGINS, of the city, county, and State of New York, have invented a new and Improved Process of Dyeing and Dressing Yarn; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a longitudinal sectional elevation of an apparatus designed to carry out my improved process of dyeing and dressing yarn; and Fig. 2, a plan of the same.

Similar letters of reference indicate corresponding parts.

This invention, while applicable to dyeing and dressing warps of different kinds or materials and for different purposes, will be found very advantageous as applied to dyeing and dressing warps used in the backs of carpets.

Heretofore it has been customary, in dyeing and dressing warp-yarns, first to dye said yarns the necessary color, and then to boil in a separate vessel the starch used for dressing them, and to convey said starch or dressing in pails or buckets to the trough of the dressing-machine, after which the dyed yarns are passed through the trough containing the starch, and from thence to and between the brushes of the dresser. Such process not only involves much time, labor, and expense, but entails a great want of uniformity in the color of the warps, inasmuch as warps dyed on different days or at different times would almost unavoidably be passed through the starch-trough of the dresser at the same time. My improved process consists in dyeing and starching or dressing the warps at one and the same time as they pass through the dresser. To this end I mix with the dissolved starch or dressing the necessary coloring materials or solutions, and apply heat to the trough of the dresser containing the same, whereby the warps, in passing through said trough to the dressing-brushes, are uniformly dyed and starched simultaneously, at a great saving of expense, time, and labor.

The dyeing materials or solutions, and their proportions to each other and to the starch or dressing, of course will vary with the different colors or shades it is required to give the warps; but the following mixture will be found to answer for warps used in the backs of carpets, thus: Dissolve two hundred pounds of starch in one hundred and fifty gallons of water, and heat by steam; then add two quarts of iron liquor and two quarts of logwood liquor of 12° (Baumé) strength, and boil for about five minutes, more or less. Afterward add sixteen quarts more of logwood liquor of the same strength as before, and sixteen quarts of lead and copperas liquor, when the mixture is ready for use. The lead and copperas liquor may be made by mixing with thirteen gallons of water six pounds of brown sugar of lead and eight pounds of copperas, and boiling the whole together.

The accompanying drawing represents an ordinary warp-dresser, but in which the trough A, that is heated by a coil of steam-pipes, *b*, is designed to contain not only the starch or dressing, but also in one common mixture the necessary dyeing materials or solutions. In said machine the warp-yarns *c c* first pass through a reed, *d*; then over a plain guide, *e*, under a roller-guide, *f*, over a plain guide, *g*, through a copper guide or reed, *h*, to the mixture in the trough A, and under a roller, *i*, therein; from thence between squeezing-rollers *k k*, covered with felted cloth, to express all surplus mixture; and from these to and between the rotary brushes B B, and onward to and through a rear guide, *l*, the brushes revolving to act upon the warps in a reverse direction to the travel of the latter.

What is here claimed, and desired to be secured by Letters Patent, is—

The process herein described of dyeing and dressing warp-yarns by mixing the dye with the dressing, substantially as specified.

JOHN H. HIGGINS.

Witnesses:

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