

UNITED STATES PATENT OFFICE

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IMPROVEMENT IN PROCESSES OF DYEING SILK FABRICS.

Specification forming part of Letters Patent No. **163,521**, dated May 18, 1875; application filed April 27, 1875.

To all whom it may concern:

Be it known that I, JEAN BAPTISTE CHARLES HENRI PETITDIDIER, of St. Denis, France, have invented an Improved Process of Dyeing Silk, Woolen, Cotton, and other Fabrics, of which the following is a specification:

My invention has for its object an improved process for dyeing silk, either in the raw state or in piece, and either alone or mixed with wool or cotton, or with both wool and cotton.

I have found that all silk tissue, when moistened with water, loses its primitive elasticity and crispness. In consequence hereof, according to my invention, I employ in place of water either alcohol, benzine, spirits of turpentine, sulphur of carbon, ether, or wood-spirit as the solvent or vehicle in which the coloring matter is dissolved for dyeing the silk, or mixtures of silk with wool or cotton, as I have found that these liquids do not have the deteriorating effect upon the silk that water has. As mordants for the dyes prepared with the said solvents I employ resins which are soluble therein, and which mix readily with the coloring matter, and allow the same to be taken up by the silk. After steeping in the dye-bath the silk is dried, and the color is then fixed on the tissue by the application of steam, after which the resinous matter is removed from the silk by passing it several times through a bath of benzine. As a suitable mordant I employ about six pounds of resin with about three and a half ounces of stearic acid dissolved in about seven pints of benzine.

For preparing the dye solution I take any suitable known coloring matters, such as aniline colors or vegetable lakes, which I dissolve in any of the before-mentioned solvents. This solution is mixed with the dissolved mordant, in proportions depending on the depth of tint required, and is placed in a vat so arranged that the tissue, in passing between two cylin-

ders covered with caoutchouc, will take up the coloring matter uniformly.

After drying and steaming, as before described, the tissue is passed through three baths of benzine, for dissolving the fatty and resinous mordant, after which the fabric is finished in the usual way, and folded.

If, instead of silk tissues in piece, cut lengths of raw silks have to be dyed, these are passed one by one between the two before-mentioned cylinders, one of which is immersed in the bath, and the process is carried out as described above for dyeing the silk tissue in piece. The same process is also applicable for dyeing or reviving faded dresses or pieces of silk, as also for reviving silk tapestry. The latter is effected by applying the dye solution above described by means of a brush, for which purpose I thicken the resinous mordant sufficiently to prevent it from running or spreading. This may be effected by the admixture of tallow, wax, spermaceti, or by using an excess of the stearic acid.

Having thus described my improved process for dyeing or reviving silk in the raw state or in piece, either alone or mixed with wool or cotton, or with both wool and cotton, I claim—

The herein-described improvement in the process of dyeing fabrics wholly or in part silk, consisting in the solution of the dye in alcohol or similar solvent, combined with a fatty and resinous mordant, and subsequently passing the dyed fabric through a bath of benzine, for dissolving the said fatty and resinous mordant.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

H. PETITDIDIER.

Witnesses:

ROBT. M. HARPER,
ARMENGAUD, JEUNE.