

UNITED STATES PATENT OFFICE.

HENRY W. VAUGHAN, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO
JOHN W. SLATER AND HOWARD RICHMOND, OF SAME PLACE.

METHOD OF APPLYING DYE-STUFFS TO FIBROUS MATERIALS.

SPECIFICATION forming part of Letters Patent No. 272,498, dated February 20, 1883.

Application filed July 17, 1882. (No specimens.)

To all whom it may concern:

Be it known that I, HENRY W. VAUGHAN, of the city and county of Providence, in the State of Rhode Island, have invented a certain
5 new and useful Improvement in the Method of Applying Dye-Stuffs to Fibrous Material Suitable for Textile Fabrics; and I do hereby declare that the following specification is a true and exact description thereof.

10 In previous Letters Patent granted to me December 30, 1879, No. 223,019, there is described a method of coloring fibrous material, consisting in mechanically incorporating into its fibers during the manufacturing processes
15 a vehicle-powder charged with coloring-matter and an oleaginous constituent; and in the previous Letters Patent granted to me May 24, 1881, No. 242,080, there is described a process of dyeing fibrous material which consists in
20 bringing into juxtaposition a dye-stuff and a mordant by mechanically incorporating the same, either separately or together, into the fiber by the aid of a suitable vehicle-powder and an oleaginous constituent, and afterward
25 causing the mordant and the dye to unite mechanically to form a fast color, reference to said Letters Patent being had for a more full description of the processes therein described.

My present improvement is a modification
30 of the hereinbefore referred to patented processes; and it consists in first spraying a suitable quantity of oleaginous or unctuous matter upon the fibrous material, sufficient in quantity and so distributed over the fiber as to enable a powder-vehicle charged with coloring-
35 matter or mordant, or with both coloring-matter and mordant in conjunction, to adhere to the surface of the fiber; and, secondly, in applying to the oiled fiber the powder-vehicle so
40 charged.

It will be also within my improvement to apply the powder-vehicle charged, as above stated, with coloring-matter or with mordant, or with both coloring-matter and mordant, to
45 the fibrous material and afterward applying to the fibrous material so treated the oleaginous or unctuous matter; and also it will be within my improvement to apply to the fibrous material separately but contemporaneously the

color or mordant charged powder and the oleaginous matter.

A convenient method of applying the oleaginous material preparatory to receiving the powder-vehicle charged with coloring-matter or with mordant, or with both coloring-matter
55 and mordant, is by means of an apparatus well known in the arts as an "atomizer;" and a convenient time to apply the same to the fibrous material will be found to be when the fibrous material is in that stage of manufacture when
60 it is in the form of sliver and while it is between the railway-trough and railway-head. The amount of oleaginous material will depend upon the amount of powder-charged vehicle—say four ounces of oleaginous material to every
65 pound of color.

To apply the color or mordant charged powder, I prefer to use an air-blast, which can be obtained from any of the various blowing-machines known in the art. To the air-outlet is
70 attached a pipe or trough—say nine inches square and two or three feet in length. The fibrous material is made to pass in front of this pipe or trough in the form of a sliver over a wire-mesh-covered cylinder revolving in front
75 of the aperture in the pipe, and so that the fibrous material will be held against the aperture during its passage across the same. The color or mordant charged powder may be sifted
80 into the air-receiving aperture of the blowing-machine; or it may be applied to the sliver while the latter is in the trough, and be distributed upon the sliver by the air-blast without being borne by the blast through the blowing-machine.
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If the powder-vehicle charged with color or with mordant, or with both color and mordant, is to be applied to the fibrous material before the oleaginous matter is applied, or contemporaneously with the application of the oleaginous matter, the same apparatus, consisting
90 of an atomizer for the oleaginous matter and a blowing-engine for the color or mordant charged powder, can be used, the only difference in treatment between the two cases consisting
95 in the difference in time when the oleaginous matter and the powder-vehicle are respectively applied.

In place of the blowing-engine, a boiler and pipe to blow a steam-jet may in some cases and under some circumstances be used for distributing the color or mordant charged powder upon the fibrous material, and this I consider would be an equivalent for the blowing-engine which I prefer to use in the hereinbefore-described process.

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

1. The method of applying dye-stuffs to fiber suitable for textile fabrics, substantially as hereinbefore described, by spraying said fiber with oleaginous matter and blowing upon said

fiber the coloring-matter, combined with a pulverulent vehicle, as set forth. 15

2. The method of applying dye-stuffs and their mordants to fiber suitable for textile fabrics, substantially as hereinbefore described, by spraying the fiber with oleaginous matter and blowing upon said fiber the coloring-matter, combined with a pulverulent vehicle and a mordant, as set forth. 20

H. W. VAUGHAN.

Witnesses:

J. C. B. WOODS,
I. KNIGHT.