

UNITED STATES PATENT OFFICE.

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

METHOD OF PREPARING DYE-STUFFS FOR APPLICATION TO FIBROUS MATERIALS.

SPECIFICATION forming part of Letters Patent No. 272,499, 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, and State of Rhode Island, have invented certain new and useful Improvements in the Method of Preparing Dye-Stuffs for Application to Fibrous Material; and I do hereby declare that the following specification is a full, true, and exact description thereof.

10 In previous Letters Patent granted to me, dated 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 a vehicle powder charged with coloring-matter and an oleaginous constituent; and in 15 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 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 20 oleaginous constituent, and afterward 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. In practically working the processes described in 30 said patents it is generally necessary to make use of dye-stuffs which require to be diffused for dissolution in a considerable quantity of water, and afterward it becomes necessary to dry the coloring agent before it can be mixed with the powder-vehicle and applied to the fibrous material. In case, too, the mordant used with such coloring-matter is to be dissolved before it can be used, the same operation must be 35 gone through.

40 My present improvement consists in a method of preparing dyes which are not readily soluble in mass, but require to be widely distributed, in conjunction with suitable mordants for the same, so that when mixed with an earth 45 or other suitable vehicle they can be applied in a finely-powdered condition to fibrous material, according to the processes described in my said former patents.

I take a suitable quantity of dye-stuff, to 50 which a proper quantity of mordant may be

added, if a mordant be required to fix the color, and the proper proportion of oleaginous constituent, and it is best to add a small quantity of earth or suitable pulverulent vehicle. The whole is to be thoroughly ground in a paint- 55 mill, or in other grinding-machine that will make the mixture homogeneous and uniform. The pasty, sirupy product thus obtained should then be incorporated into the proper quantity of pulverulent vehicle to bring the whole to a 60 suitable condition for application to fibrous material for the purpose of superficially coloring the material during the process of its manufacture, as described in my said former patents, and finally the material so colored is to 65 be treated by any proper method for fixing the color or producing a chemical union between the mordant and the dye.

The advantages which are gained are, in case dye-stuffs are used which are not readily soluble in mass, that a dye and mordant may be brought into conjunction and yet not react on each other until they have been widely distributed and subjected to the action of steam or moisture. Again, the labor of dissolving 75 the dye-stuff or the mordant separately in a large quantity of water, and then drying the same, and afterward bringing them into conjunction in a dry state, is saved by thus thoroughly intermixing the dye-stuff and mordant 80 substantially in a mass and with so little amount of moisture as is insufficient to cause them to react upon each other.

A suitable formula, as an example, will be as follows: Take of earth vehicle, one pound; 85 then of dye-stuff—fuchsine, for example—two ounces. Add four ounces of the oleaginous ingredient—paraffine-oil, for example. Now add to the dye-stuff and oil a sufficient amount of the vehicle first weighed out to make it of a 90 proper consistency to grind. After grinding, add the balance of the one pound of earth vehicle and thoroughly incorporate by means of a chaser or other suitable device. If a mordant—acetate of alumina, for example— 95 be required, it may be ground with the dye-stuff; or one-half the amount of oleaginous ingredient required for the completed powder may be taken and ground separately with a small portion of the vehicle, as mentioned in 100

the first example. The two products may then be incorporated by a chaser or other suitable means, as stated above.

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

1. The method, substantially as hereinbefore described, of preparing dye-stuff or dye-stuffs for application in a finely-powdered condition to fibrous matter, by first comminuting or grinding the coloring-matter with an oleaginous constituent, and then incorporating therewith a pulverulent vehicle, which renders the colored mass pulverulent and enables it to be worked in a finely-powdered condition, as set forth.

2. The method, substantially as hereinbefore described, of preparing dye-stuff or dye-stuffs with a mordant for application in a finely-powdered condition, by first comminuting or grinding the coloring-matter and a mordant with an oleaginous constituent, and then incorporating therewith a pulverulent material, which renders the colored mass pulverulent and enables it to be worked in a finely-powdered condition, as set forth.

H. W. VAUGHAN.

Witnesses:

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