

UNITED STATES PATENT OFFICE.

VICTOR G. BLOEDE, OF CATONSVILLE, MARYLAND.

PROCESS OF VAPOR-DYEING.

SPECIFICATION forming part of Letters Patent No. 570,115, dated October 27, 1896.

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To all whom it may concern:

Be it known that I, VICTOR G. BLOEDE, a citizen of the United States, and a resident of Catonsville, in the county of Baltimore and State of Maryland, have invented a certain new and useful Process for Dyeing or Coloring Fibers and Fabrics; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Heretofore it has been customary to effect the dyeing of fibers and fabrics by treating the fibers or fabrics to be colored with or in various solutions of mordants and dyestuffs. This process requires considerable time and is an expensive and wasteful one in that there is always more or less color or mordant that escapes unemployed or unacted upon or washes off of the fiber, and is thus lost or wasted. My new process is designed to prevent this loss as well as to greatly expedite the process of dyeing and to effect a better fixation of the color; and it consists in the employment of vaporized substances, either in whole or in part, instead of one or more aqueous baths.

In the successful execution of my process it is of course essential that one or more of the bodies, either color or mordant, required in the formation or fixation of the dye be of a volatile character, as, for instance, is the case with a number of the anilin compounds and homologue bodies.

In carrying out my process in practice the goods, if necessary, may be first mordanted in the ordinary manner and then, instead of being treated to an aqueous bath of the color or color-producing principle, are subjected to the action of the vapor of the said color or color-producing principle, either by passing the goods through a chamber containing this vapor or in any other convenient manner. As the range of colors and combinations that can be obtained and successfully employed in this way is very large, I do not limit myself to any particular shade of color or the use of any special compound, any coloring-matter capable of volatilization and recondensation being applicable in conjunction with the proper mordants or developers; but I will give a few examples of how the process is operated in practice. To produce the well-

known reds, browns, oranges, and other colors of the primuline series, for instance, I bottom the goods in the usual manner by padding or saturating them with a solution of primuline, the excess being squeezed off. I then diazotize in the usual manner. After the diazotization, instead of running the goods through a bath of the so-called "developers," consisting of beta-naphthol, resorcin, &c., I vaporize these substances by the application of the necessary heat and bring the vapor in contact with the goods, either alone or combined with ammonia vapors where an alkali is necessary, or the vapors of a volatile acid where an acid is necessary or desirable, or air, or steam, or both. In cases where the base of the color with which the goods are bottomed is volatile the preparatory treatment in liquor may also be dispensed with and the bottoming effected by the vapor treatment. In this case I first dampen the goods to be colored and then bring them in contact with the vapors of the volatile coloring compound to be used as a bottom, then further develop by a second contact with the vapors of the desired developer or coloring-matter.

Any of the compounds of the anilin, toluidin, phenyl, or naphthalene series or other homologues capable of volatilization and the formation of coloring compounds within the fiber may be used in my process.

Having now fully described my process, what I desire to claim and secure by Letters Patent, is—

1. The within-described process of dyeing or coloring fibers or fabrics consisting in subjecting the fibers or fabrics to the action of the vapors of volatile coloring-matters, or color-producing volatile compounds, instead of their application in aqueous solution.

2. The within-described process for bottoming, or preparing, fibers or fabrics for dyeing or coloring which consists in subjecting the fibers or fabrics to the action of the vapors of volatile coloring-matter, or color-producing volatile compounds, instead of their application in aqueous solution.

VICTOR G. BLOEDE.

Witnesses:

GERTRUDE GIBSON,
CARL SCHON, Jr.