UNITED STATES PATENT OFFICE.

VICTOR G. BLOEDE, OF BALTIMORE, MARYLAND.

PROCESS OF IMPROVING THE FINISH AND DURABILITY OF FABRICS FOR WINDOW-SHADES, &c.

SPECIFICATION forming part of Letters Patent No. 347,315, dated August 17, 1886.

Application filed May 1, 1886. Serial No. 200,877. (Specimens.)

To all whom it may concern:

Be it known that I, VICTOR G. BLOEDE, of Baltimore, State of Maryland, have invented a new and useful Process of Improving the Finish and Durability of Certain Fabrics known as Shade Cloths, Hollands, Hollenas, and Book or Binders' Cloth, which process is fully set forth in the following specification.

My invention relates to that class of textile fabrics used for window-shades, book-coverings, and other purposes where the fabrics are exposed to the action of light, air, and moisture, and by a special preparation of these goods, after dyeing and sizing, to secure in them a greater resistance to these influences, and hence greater permanency. Some of these fabrics as now found upon the market are simply dyed or tinted fabrics sized with glue or starch to communicate stiffness and finish, while others are sized with clay and starch, or mixtures of clay, starch, and pigments, and known in the market under various names—such as "hollands," "hollenas," "shade-cloths," "book-cloths," &c. All of these goods as now known to commerce possess the great disadvantage of being free absorbents of water, and hence losing their luster or becoming stained or discolored by exposure to dampness, or by being touched with water. In addition to these disadvantages, the air and moisture, having free access to the interior of the fiber, the goods, especially when exposed to strong light, as in the case of shade-cloths, become rapidly discolored or bleached, while the fiber itself becomes weakened and finally destroyed. A further disadvantage of these goods is that, owing to the roughness and porosity of their surface, dust finds ready lodgment, causing in a short time discolorations and stains, and rendering them unsightly. I have been successful in overcoming these difficulties and objections in the fabrics named, and have succeeded in obtaining goods superior in finish and permanency to anything now produced in this line, by so filling the surface or body of the fabric with odorless waxy or resinous matter that they become non-absorbent—*i. e.*, water and air proof.

Goods treated by my process for window-shading possess the great advantage of being, unlike the oil-painted goods, entirely odorless, while equally, if not more, resistant to air and moisture. I accomplish this result by impregnating the fabrics, after they are dyed and sized, and would ordinarily be considered ready for the market, with a solution of waxy or resinous matter in some volatile hydrocarbon, and then exposing the tissue so treated to the action of artificial heat, or air alone, until the volatile matter has been entirely expelled. I have found in the application of this process that, while not essential, it is both desirable and economical to so manage the operation that the waxy or resinous matter remains confined to the surface of the goods instead of being allowed to permeate the entire fabric. I accomplish this result in a simple and thorough manner by either of the following processes:

In the first instance the fabric, before being treated with the resistant solution, is slightly dampened; or, what is better, it is used directly after the sizing operation has been performed, and while the fabric is still damp from the effects of this operation. The water retained in the fiber, as well as the clay and pigments, if such goods are being operated upon, acts as a resistant toward the waxy or resinous bodies, and by preventing their absorption confines them to the surface, where, by the evaporation of the hydrocarbon, they become fixed.

In the second method, which I have also found fairly effective, I accomplish a similar result by adding to the waxy or resinous solution a small percentage of water, (varying in quantity from one to ten per cent., according to the nature of the goods operated upon,) and combine these materials by strong agitation into a smooth emulsion. The fabric on being treated with this solution eagerly absorbs the water combined in the emulsion, producing results similar to those obtained in the first process, by confining the waxy or resinous matter to the surface of the fabric. If a heavier or fuller impregnation of the goods with waxy matter is desired, the goods are thoroughly dried before treatment, in which case the dissolved waxy or resinous matter is deposited through the entire body of the fabric.

Having thus described fully the principle

and object of my process, I will proceed to give the details of its practical application.

I have obtained the best and most economical result by the use of a solution of cotton-seed gum or wax in light benzine or benzole; but in lieu of the cotton-seed wax a solution of paraffine, beeswax, stearine, or other similar matter in a volatile hydrocarbon may be employed, or a mixture of these and a resinous body, in order to communicate a greater degree of hardness. The solution of cotton-seed wax, or other suitable matter, is best effected by heating the hydrocarbon solvent to a temperature of 80° to 100° Fahrenheit, and then introducing the waxy or resinous matter in a fused state, stirring until thoroughly dissolved. In case resin or a similar hard gum is used as an admixture with the waxy matter, I find it desirable to dissolve the resin separately and add the solution so obtained to the solution of waxy matter.

As a type of a solution admirably adapted to the purpose, the following may be given: high-gravity benzine, one gallon; cotton-seed wax, ten to twelve ounces; resin, two to three ounces; or the same proportions, substituting paraffine for the cotton-seed wax.

The impregnation of the fabrics with the solution may be effected in any convenient manner—such, for instance, as applying it with a brush or swab, or by taking the fabric through the solution and removing the surplus by squeezing or draining. In some cases it may prove advantageous to repeat the process of impregnation several times.

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

The process herein described for improving and rendering more permanent the fabrics now sized with starch only, or a mixture of starch, clay, and pigments, and used as shade-cloths, book-covers, &c., by impregnating said fabrics (after they have been sized and colored) with a solution of waxy or resinous matter in a volatile hydrocarbon, substantially in the manner and for the purpose set forth.

VICTOR G. BLOEDE.

Witnesses:
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