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FABRIC TREATMENT

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This invention relates to a method of treating moired fabrics. It relates more particularly to a method for subjecting such fabrics to various after-treatments without affecting the brightness and the appearance thereof.

An object of this invention is to give moired fabrics made of various materials, and particularly those comprising organic derivatives of cellulose, a full, soft hand.

Another object of this invention is to give said fabrics a desirable soft hand and appearance without dulling or otherwise affecting the highlights of the moire pattern.

Other objects of this invention will appear hereinafter from the following detailed description.

Moire effects on fabrics are well-known and such effects may be obtained by subjecting ribbed fabrics to heat and pressure under certain conditions. Moire effects on plain or satin weave fabrics have also been obtained by subjecting such fabrics to the action of engraved rollers under heat and pressure. Where the moired fabrics are made of filaments or yarns comprising organic derivatives of cellulose the moire effect may be made permanent by the application of heat and pressure and it does not disappear or become fainter when the fabric is subjected to wear and laundering, as is the case with moire patterns on silk, linen, cotton and other fabrics. After fabrics are moired as mentioned above, they are ordinarily given finishing treatments with finishing oils or other finishing agents to improve their hand and fullness. These agents are ordinarily applied as aqueous solutions or aqueous dispersions thereof. While such treatment enhances the commercial desirability of these fabrics with regard to their feel and handling qualities, such treatment has the effect of dulling the highlights of the moire pattern and thereby seriously detracting from the brightness and beauty of the fabric.

I have now discovered that the dulling of the highlights of moire-patterned fabrics by treatment with aqueous solutions or dispersions may be overcome by pretreating said moired fabrics with a solution of a water-insoluble resin dissolved in a suitable solvent prior to the finishing treatment of the fabrics with the aqueous solutions or dispersions of finishing agents. In accordance with my treatment a small amount of the resin is deposited on the material so that the subsequent treatment of the fabric with aqueous solutions is without any dulling effect on the originally clear and bright highlights of the moire pattern. My process is applicable to both ordinary moire and scratch moire patterned fabrics.

The resins which are suitable for use according to my invention may be those which are naturally occurring, as well as those which are made synthetically. Among those naturally occurring resins which may be used in my invention are colophony, copal, kauri, dammar, mastic, sandarac and shellac. Oleo-resins such as copaiba as well as gum resins are also suitable. Synthetic resins such as the glyptal, cumaron, vinyl acetate, thio-urea, croton-aldehyde, phenol-formaldehyde, ester gum and furfural resins, among others, may also be used in my process.

The resin, dissolved in a suitable volatile solvent, is applied to the moired fabric in any suitable manner. The fabric may be either passed through the liquid containing the resin dissolved therein or the fabric may be wetted by passing it between rolls, which may be partially immersed in the bath and which feed a controlled amount of liquid to the fabric. Padding methods may also be employed. The solvent may be removed by allowing it to evaporate, either into the atmosphere or, where it is desired to recover the solvent, into a solvent recovery system. By passing the wetted fabric over heated coils, removal of the solvent may be considerably facilitated.

The solvent utilized should be one that is substantially completely miscible with the resin being applied and yet have no deleterious effect on the material being treated. This is especially important where fabrics comprising organic derivatives of cellulose are being treated. Such solvents as benzene, toluene, xylene, carbon tetrachloride, dichlor-ethane, chlor-benzene, trichlor-ethylene, butyl, amyl and hexyl acetate and butyl, amyl and hexyl propionate are suitable.

The concentration of resin in the solvent should be low and should preferably be kept between about 0.30% to about 0.75% by weight. Only a relatively small amount of the resin deposited on the fabric is sufficient to obtain the desired effect and therefore only relatively dilute solutions need be used.

My invention may be used in treating silk, linen or other fabrics capable of being moired, but it is of especial value in the treatment of moired fabrics such as those composed of or containing yarns of organic derivatives of cellulose wherein the moire pattern is permanent. Such organic derivatives of cellulose may be cellulose esters such as cellulose acetate, cellulose propionate or cellulose butyrate, mixed esters such

as cellulose acetate-butyrate, cellulose acetate-propionate, etc., or cellulose ethers such as methyl, ethyl or benzyl cellulose. Mixed materials containing one or more of the aforementioned cellulose derivatives, together with other textile fibers, may likewise be treated in accordance with my invention. Such materials may contain, for instance, in addition to the cellulose ester or ether, cotton, linen, silk or a regenerated cellulose type of artificial silk.

In order to illustrate my invention, but without being limited thereto, the following example is given:

Example

A fabric composed of cellulose acetate yarns was treated under heat and pressure with a ribbed pressure surface and a bright, permanent moire pattern is produced. A resin solution was prepared by dissolving 200 parts by weight of colophony resin in 32,000 parts by weight of carbon tetrachloride. The moired fabric was passed between rolls supplied with this resin solution and the fabric uniformly dampened. The excess of resin solution on the fabric was removed by passing it between a second set of rolls maintained at a slight predetermined pressure. The solvent was then evaporated from the fabric by passing it through a heated chamber and the solvent vapors passed to a solvent recovery system. A finishing agent such as sulphonated olive oil or mineral oil or both was then applied to the fabric by padding or passing between rolls partially immersed in the bath to give it the desired hand and fullness. After the application of the finishing oil it was noted that the brightness and the highlights of the moire pattern were not affected by the aqueous solution and retained their original clear cut and definitely patterned appearance.

It is to be understood that the foregoing detailed description is merely given by way of illustration and that many variations may be made therein without departing from the spirit of my invention.

Having described my invention, what I desire to secure by Letters Patent is:

1. Method of preventing the dulling of highlights in moire patterns on fabrics containing filaments having a basis of an organic substitution derivative of cellulose by finishing treatments, which comprises treating the moire fabric containing filaments having a basis of an organic substitution derivative of cellulose with a dilute solution of a resin in a volatile solvent therefor, and removing the solvent.

2. Method of preventing the dulling of highlights in moire patterns on fabrics containing filaments having a basis of cellulose acetate by finishing treatments, which comprises treating the moire fabric containing filaments having a basis of cellulose acetate with a dilute solution of a resin in a volatile solvent therefor, and removing the solvent.

3. Method of preventing the dulling of highlights in moire patterns on fabrics containing filaments having a basis of an organic substitution derivative of cellulose by finishing treatments, which comprises treating the moire fabric containing filaments having a basis of an organic substitution derivative of cellulose with a solution comprising from 0.3 to 0.75% of a resin dissolved in a volatile solvent therefor, and removing the solvent.

4. Method of preventing the dulling of highlights in moire patterns on fabrics containing filaments having a basis of cellulose acetate by finishing treatments, which comprises treating the moire fabric containing filaments having a basis of cellulose acetate with a solution comprising from 0.3 to 0.75% of a resin dissolved in a volatile solvent therefor, and removing the solvent.

5. Method of preventing the dulling of highlights in moire patterns on fabrics containing filaments having a basis of an organic substitution derivative of cellulose by finishing treatments, which comprises treating the moire fabric containing filaments having a basis of an organic substitution derivative of cellulose with a dilute solution of colophony resin dissolved in carbon tetrachloride, and removing the solvent.

6. Method of preventing the dulling of highlights in moire patterns on fabrics containing filaments having a basis of cellulose acetate by finishing treatments, which comprises treating the moire fabric containing filaments having a basis of cellulose acetate with a dilute solution of colophony resin dissolved in carbon tetrachloride, and removing the solvent.

7. Method of preventing the dulling of highlights in moire patterns on fabrics containing filaments having a basis of an organic substitution derivative of cellulose by finishing treatments, which comprises treating the moire fabric containing filaments having a basis of an organic substitution derivative of cellulose with a solution comprising from 0.3 to 0.75% of colophony resin dissolved in carbon tetrachloride, and removing the solvent.

8. Method of preventing the dulling of highlights in moire patterns on fabrics containing filaments having a basis of cellulose acetate by finishing treatments, which comprises treating the moire fabric containing filaments having a basis of cellulose acetate with a solution comprising from 0.3 to 0.75% of colophony resin dissolved in carbon tetrachloride, and removing the solvent.

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