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# UNITED STATES PATENT OFFICE

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## DELUSTERING OF TEXTILE MATERIAL

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This invention relates to the treatment of textile materials whereby the luster of the same is materially reduced, and relates more particularly to the treatment of textile materials containing organic derivatives of cellulose for the reduction of the luster thereof.

An object of our invention is to reduce the luster of textile materials such as yarns, fabrics or garments containing derivatives of cellulose by treatment of the same with a substance containing finely divided light-colored materials and in the presence of colloidal rubber or latex. Other objects of our invention will appear from the following detailed description.

Ofter it is desirable to reduce the natural luster of textile materials containing organic derivatives of cellulose. Heretofore the method employed, say in the case of yarns or fabrics containing cellulose acetate, has been to treat the same with boiling water or wet steam. However, the deluster effect produced by this method is not permanent, and when such textile materials are ironed while damp, they tend to regain their normal luster. We have found that if such textile materials are treated with a substance containing finely divided white or light-colored water insoluble compounds and in the presence of colloidal rubber or latex, the compounds are absorbed by the textile materials, and the latex that is also absorbed by the textile materials fixes the insoluble compounds, so that the same are not readily removable by washing. In this manner the substantially permanent deluster effects may be produced on such textile materials.

In accordance with our invention we treat textile materials made of any suitable material but particularly those made of or containing organic derivatives of cellulose with a substance containing finely dispersed white or light-colored water insoluble compounds and in the presence of colloidal rubber or latex.

The textile materials to be treated in accordance with our invention may be in the form of yarns, fabrics or garments. The yarns may be treated in the form of hanks or wound onto suitable packages such as bobbins, pirns, cones, etc. The fabric may be any suitable woven, knitted or netted fabric containing yarns of organic derivatives of cellulose. Garments such as hosiery, underwear and the like containing such yarns may also be treated in accordance with our invention.

The textile material may contain any suitable organic derivatives of cellulose such as organic esters of cellulose or cellulose ethers. Examples of organic esters of cellulose are cellulose acetate, cellulose formate, cellulose propionate and cellulose butyrate while examples of cellulose ethers are ethyl cellulose, methyl cellulose and benzyl cellulose. These textile materials need not consist wholly of such organic derivatives of cellulose but may also contain other fibres such as cotton, natural silk, wool, reconstituted cellulose (rayon), etc. If desired the textile material to be treated may be made wholly of such other fibres. This yarn may be a composite yarn containing fibres or filaments of cellulose acetate and fibres of the other materials, or the fabric may consist of yarns of cellulose acetate and yarns of the other materials.

The textile materials, as stated, are treated with a bath, paste or other substance containing the finely dispersed white or light-colored water insoluble compound. We have found that the higher the degree of dispersion of the compound, the better are the results obtained; and we prefer to employ the same in such dispersion that the same approaches or equals the degree of dispersion occurring in colloidal solutions. Any suitable white or light-colored compound may be employed, and the same may be in the form of salts, oxides or hydroxides of metals. Examples of such suitable compounds are zinc oxide, barium sulphate, aluminum hydroxide, zinc sulphide, calcium phosphate, etc. The presence of the latex or colloidal rubber is of importance, since this causes the compound to become fixed in the textile material.

Instead of employing the water insoluble compounds, the textile material may be treated with a soluble salt, and an insoluble light colored compound precipitated therein by treatment with a precipitating agent. Thus the fabric may be treated with barium thio-

cyanate and then treated with a solution of a soluble sulphate to precipitate the insoluble barium sulphate.

In order to assist the fixing of the water insoluble compound in the textile material, assistants, such as swelling agents for the derivative of cellulose occurring in the textile material, or salts of strong bases and weak acids may be added to the treating solution. Examples of swelling agents are aqueous solutions of soluble thiocyanates, of acetone, formic acid, acetic acid, etc., while examples of suitable salts are the thiocyanate of ammonium, potassium or sodium, or borax. If these substances are employed, care should be taken that the nature of the substance and the amounts used should be such as not to coagulate the latex in the bath. For instance the use of strong acid solutions should be avoided, as these tend to coagulate the latex.

The textile material may be treated in accordance with our invention by immersing of the same in a bath containing the treated substance, or the treating substance may be padded onto the textile material, or may be applied in the form of a paste or in any other suitable manner.

After treatment, the textile material may be washed and finished in any desired manner. The treated material may then, if desired, be dyed and/or printed with appropriate dyestuffs as required. If desired, the textile material may be dyed or printed prior to treatment by our process.

The textile materials when treated in accordance with our invention have their luster materially reduced, and this deluster effect is not materially altered even after severe scouring with soap solutions. The fabric when delustered in accordance with our invention does not become relustered when ironed or calendered while damp. By dyeing the textile material black, a black of subdued luster may be obtained—a result heretofore unattainable.

In order further to illustrate our invention but without being limited thereto, the following specific example is given.

*Example*

A satin fabric consisting wholly of an acetone soluble cellulose acetate is worked for one hour at 80° C. in an aqueous bath containing:

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| Latex (30%) | 20 cc. per liter |
| Zinc oxide | 10 grams per liter |

The zinc oxide is employed in the form of an impalpable powder and the bath is well stirred in order to maintain the zinc oxide in suspension. If desired a swelling agent such as ammonium thiocyanate in amounts of 5 grams per liter of bath may be added.

The fabric is then well washed and upon finishing it is found to have its luster well reduced. Even after washing the fabric for 10 minutes at 70° C. in a bath containing 5 grams of soap per liter, the fabric is still delustered.

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

Having described our invention, what we claim and desire to secure by Letters Patent is:

1. Method of reducing the luster of textile materials containing artificial fibres comprising treating the same with a medium containing latex in dilute solution and a finely divided relatively water insoluble body.

2. Method of reducing the luster of textile materials containing organic derivatives of cellulose comprising treating the same with a medium containing latex in dilute solution and a finely divided relatively water insoluble body.

3. Method of reducing the luster of textile materials containing cellulose acetate comprising treating the same with a medium containing latex in dilute solution and a finely divided relatively water insoluble body.

4. Method of reducing the luster of fabric containing cellulose acetate yarns comprising treating the same with a medium containing latex in dilute solution and a finely divided relatively water insoluble body.

5. Method of reducing the luster of fabric containing organic derivatives of cellulose yarns comprising treating the same with a medium containing latex in dilute solution and a colloidally dispersed relatively water insoluble body.

6. Method of reducing the luster of fabric containing cellulose acetate yarns comprising treating the same with a medium containing latex in dilute solution and a colloidally dispersed relatively water insoluble body.

7. Method of reducing the luster of fabric containing cellulose acetate yarns comprising treating the same with a medium containing latex in dilute solution and finely divided zinc oxide.

8. Method of reducing the luster of hose containing cellulose acetate yarns comprising treating the same with a medium containing latex in dilute solution and a finely divided relatively water insoluble body.

9. Textile materials containing artificial fibres having a reduced luster produced by treatment with a finely divided light-colored relatively water insoluble body and latex in dilute solution.

10. Textile materials containing cellulose acetate having a reduced luster produced by treatment with a finely divided light-colored relatively water insoluble body and latex in dilute solution.

11. Fabric containing yarns of cellulose acetate having a reduced luster produced by treatment with a finely divided light-colored relatively water insoluble body and latex in dilute solution.

12. Hose containing yarns of cellulose acetate having a reduced luster produced by treatment with a finely divided light-colored relatively water insoluble compound and latex.

In testimony whereof, we have hereunto subscribed our names.

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