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ROBERT H. CHATHAM, OF MANCHESTER, ENGLAND, ASSIGNOR TO CELANESE CORPORATION OF AMERICA, A CORPORATION OF DELAWARE.

TREATMENT OF FABRICS, PAPER, AND OTHER MATERIALS.

No Drawing.

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This invention relates to the treatment of fabrics, paper and other materials, which term likewise includes articles made thereof, for the purpose of printing, dyeing, coating or finishing the same.

The invention consists in applying to the material by impregnating, padding, printing or otherwise, a solution containing cellulose acetate or other organic ester or ether of cellulose (hereinafter referred to as a precipitable organic substitution derivative of cellulose) in a dissolved state, and thereafter precipitating the cellulosic derivative from the solution upon the material. A practically permanent impregnation, print coating or finish can thus be obtained on the material or on the parts to which the cellulosic derivative has been applied, and a general improvement can be obtained in the appearance of the papers, fabrics, and articles, doing away for instance with the fluffy effect noticed in ordinary fabrics and kindred articles. All kinds of patterns and effects can be produced through my process, such as a practically permanent damask effect, dyeing effect and kindred effects. Dyestuffs, filling materials or other added substances may be added to the cellulosic solution according to the particular effect desired. I may use any solution of cellulose acetate, or cellulose organic ester, or cellulose ether suitable for the purpose, such a solution, for example, being a solution made as follows:

One pound of cellulose acetate is dissolved in 1500 c. c. phenol (99%), 1500 c. c. formaldehyde (40%), and 1000 c. c. alcohol. This solution is only given as an example and doesn't limit the range of the invention as any other solution of cellulose acetate or cellulose ethers or cellulose organic esters can be used which is suitable for the purpose, and other ingredients, solvents or softening agents, filling materials or dye stuffs, can be incorporated in solution or suspension to produce any desired effect. In the same way all kind of fabrics, papers or articles can be used in a dyed or undyed state or otherwise pretreated or not.

The application of the solutions on the fabrics, paper or article for the purpose of impregnation can be done, for example, on a padding machine, in which case the fabric or article passes in between two rolls, the lower half of one of which revolves in the solution, to impregnate it with the required

quantity of solution. The paper, fabric or article so impregnated passes then through a precipitating liquid capable of precipitating the cellulosic derivative, like water, or any other appropriate liquid. In this way the cellulose acetate, cellulose ether or cellulose ester or compounds are precipitated, and thereby, permanently fixed on the fabric and separated from the solvents used or the greatest part of the solvents used, and may then be dried, for instance, by passing over a heating arrangement for drying, and can then be hot pressed, for instance, by passing through a hot calender or in any other appropriate way.

In the case of printing, the solution can be applied to the papers, fabrics or articles by using any of the known machines for printing such materials, the so printed materials or articles then passing through the precipitating liquid (water) or any other appropriate liquid in order to fix the printing or finish permanently thereon and remove the solvent or greatest part of the solvent, after which the materials or articles may then be dried and hot pressed or finished as above.

It will be readily understood that the foregoing description is merely an example and that the manner of operating may be greatly varied without departing from the spirit of the invention.

What I claim is:

1. Process for treating paper, textile and other materials, comprising applying thereto a solution containing a precipitable organic substitution derivative of cellulose, and thereafter precipitating the cellulosic derivative thereon by the action of a liquid precipitant and drying and hot pressing the treated material.

2. Process for treating paper, textile and other materials, comprising applying thereto a solution containing a precipitable organic substitution derivative of cellulose, and thereafter precipitating the cellulosic derivative thereon by water.

3. Process for treating paper, textile and other materials, comprising applying thereto a solution containing a precipitable organic substitution derivative of cellulose, and thereafter precipitating the cellulosic derivative thereon by water and thereafter drying the treated material.

4. Process for treating paper, textile and other materials, comprising applying thereto

a solution containing a precipitable organic substitution derivative of cellulose, and thereafter precipitating the cellulosic derivative thereon by water and thereafter drying
5 and hot pressing the treated material.

5. Process for treating paper, textile and other materials, comprising applying thereto a solution containing a dissolved precipitable organic substitution derivative of cellulose and an added substance for deposition
10 therewith on the material, and thereafter precipitating the cellulosic derivative on the material by the action of a liquid precipitant.

15 6. Process for treating paper, textile and other materials, comprising applying thereto a solution containing a dissolved precipitable organic substitution derivative of cellulose and an added substance for deposition
20 therewith on the material, and thereafter precipitating the cellulosic derivative on the material by water.

7. Process for treating paper, textile and other materials, comprising applying thereto a solution containing cellulose acetate, and
25 thereafter precipitating the cellulose acetate on the material by the action of a liquid precipitant.

8. Process for treating paper, textile and
30 other materials, comprising applying thereto

a solution containing cellulose acetate, thereafter precipitating the cellulose acetate on the material by a liquid precipitant and drying the material.

9. Process for treating paper, textile and
35 other materials, comprising applying thereto a solution containing cellulose acetate in solution and an added substance for deposition therewith on the material, and thereafter precipitating the cellulose acetate on
40 the material by a liquid precipitant.

10. Process for treating paper, textile and other materials, comprising applying thereto a solution containing cellulose acetate, thereafter precipitating the cellulose acetate
45 on the material by a liquid precipitant and hot pressing the material.

11. Process for treating paper, textile and other materials, comprising treating the material with a solution consisting of cellulose
50 acetate, phenol, formaldehyde and alcohol in about the proportions of 1 pound of cellulose acetate, 1500 cubic centimetres of phenol (99%), 1500 cubic centimetres of formaldehyde (40%) and 1000 cubic centimetres of
55 alcohol, thereafter precipitating the cellulose acetate on the material by a liquid precipitant, and finishing the material.

ROBERT H. CHATHAM.