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TREATMENT OF CELLULOSIC MATERIAL

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My present invention relates to a process of treating cellulosic fibers.

One of its objects is an improved process of making resistant to washing cellulosic fibers treated with resins. Further objects will be seen from the detailed specification following hereafter.

It has been found that a disadvantage of the known processes for improving the resistance of cellulose fibers to creasing, particularly those in which the transformation of formaldehyde resins is produced in the fiber, is that the fibers or fabrics suffer in softness owing to the treatment and acquire a harsh feel which is not desired. By an aftertreatment with a softening agent it is indeed possible to improve the goods but this improvement is not so great that all the requirements of use can be said to be fulfilled. It has been proposed to add to the impregnating baths used in the process a solvent or plastifier, such as glycerin, triacetin or the like in order to secure a softer feel, but this expedient is not very satisfactory because the addition of such substances tends to diminish the resistance of the resinous material to being removed from the fiber by washing.

The present invention produces a great improvement in the application of the resins in question for diminishing the tendency of cellulosic fibers or fabrics to crease in that this resistance is attained without material diminution of softness of feel and with retention of resistance of the resinous material to removal by washing. According to the invention the cellulosic material, before it is impregnated with resin or substances which yield resin, is soaked in a solution or emulsion of wax. The operation may consist in thoroughly saturating the fiber or the fabric with a suitably composed emulsion of wax, then centrifuging or pressing and finally subjecting the material to the usual impregnation with resin. Instead of using two baths the wax liquor, if desired, can be added directly to the bath which is to impart resistance to creasing, so that the process becomes a single-bath process. As waxes may be used natural or artificial waxes, as well as products resembling wax, although not being strictly waxes in their chemical composition.

The process may also be conducted by first impregnating the cellulose material with the solution of wax and a compound having the tendency to accelerate the condensation with formaldehyde to produce resin and, after drying, treating the goods with formaldehyde vapour at a raised temperature.

The following examples illustrate the invention:

(1) The goods to be treated are saturated with an emulsion of 3 per cent. strength of equal parts of Japan wax and the sodium salt of oleic-acid-N-methyl-tauride, the operation being conducted in a vat or on a foulard at ordinary temperature; the goods are then pressed to a content of approximately 100 per cent. moisture. Directly after the pressing the goods are introduced into a solution of dimethylol-urea of 20 per cent. strength and at a temperature of 50–60° C., which also contains 6 grams each per litre of mono- and di-sodium phosphate; pressing to a content of 100 per cent. moisture and drying under tension, so that no folds or creases can be produced, follow. Finally, the goods are subjected to the usual condensation at a raised temperature.

(2) For the preliminary treatment there is used an emulsion of equal parts of a wax obtainable according to British Patent No. 305,552, and triethanolamine (commercial) and the whole procedure follows that described in Example 1.

(3) An emulsion of wax of 3 per cent. strength as specified in Example 1 is mixed with 6 grams of mono- and di-sodium-phosphate and 50 grams of para-formaldehyde per litre. The cellulose material to be treated is saturated with the mixture, then centrifuged or pressed and finally heated for 2 hours at 120° C. for producing the resistance to creasing.

(4) The cellulose material to be treated is saturated with an emulsion of wax of 3 per cent. strength as specified in Example 1 but with addition of 6 grams each per litre of mono- and di-sodium-phosphate, then pressed or centrifuged, dried under tension and finally treated in a closed vessel for 2 hours at 120° C., under pressure, with vapour of formaldehyde.

The term cellulosic fibers is intended to include fibers of cellulose such as cotton and fibers of cellulose hydrate such as viscose artificial silk.

What I claim is:

1. In a process of improving the resistance to creasing of cellulose filaments by a treatment with an artificial resin the step of soaking said filaments in a liquid containing wax, prior to the treatment with an artificial resin.

2. In a process of improving the resistance to creasing of cellulose filaments by a treatment with an artificial resin the step of soaking said filaments at ordinary temperature in an emulsion of 3 per cent. strength of equal parts of Japan wax and the sodium salt of oleic-acid-N-methyl-tauride prior to the treatment with an artificial resin.

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