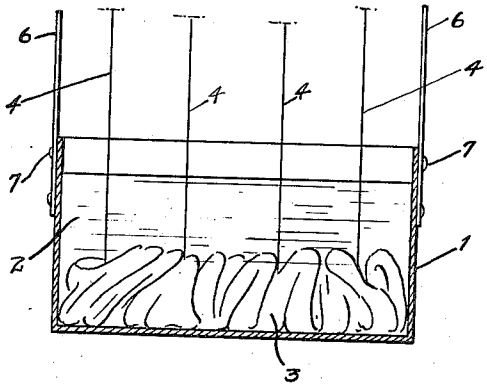
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MANUFACTURE AND TREATMENT OF TEXTILE FABRICS

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MANUFACTURE AND TREATMENT OF TEXTILE FABRICS

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4 Claims. (Cl. 28—1)

This invention relates to the manufacture and treatment of textile fabrics and particularly to the manufacture of textile fabrics exhibiting crêpe effects.

Fabrics exhibiting crêpe effects are produced, in general, by weaving a fabric which contains yarns which have been twisted to such a high degree that on treating the fabric with a hot aqueous liquor the highly twisted yarns shrink and cockle, thus imparting to the fabric the characteristic crêpe appearance. The treatment with hot aqueous liquors is generally referred to as the "crêping treatment" and will be so referred to in the present specification and claims.

It has now been discovered that the efficiency of the crêping treatment may be very considerably improved by vigorously agitating the fabric undergoing crêping, and preferably the crêping liquor also, during the crêping treatment. By this means it has been found possible to produce crêpe effects of more pronounced nature than are obtained by a similar treatment without the agitation or, alternatively, to produce a satisfactory crêpe effect on fabrics containing threads twisted to a somewhat lower degree than is necessary to give a similar crêpe effect under ordinary conditions.

The degree of agitation employed in accordance with the present invention, considered as relative movement between the crêping liquor and the fabric, is greater than arises with the usual gently boiling crêping liquor.

This agitation may be effected in various ways. One convenient method is to feed the fabric through the vessel containing the crêping liquor while supporting it on a vibrating perforated tray, e. g. a wire gauze tray. Another is to suspend the fabric in the crêping liquor by means of a series of strings which are kept in motion vertically and/or horizontally preferably throughout the crêping treatment.

The agitation of the crêping liquor may be effected by various means. Thus, the crêping liquor may be agitated by boiling it very vigorously or by forcing bubbles of gas, for example air, into the crêping liquor, e. g. from nozzles situated at the bottom of the vessel containing the crêping liquor. The nozzles so employed are preferably relatively coarse, as bubbles of a substantial size are much more efficient than fine bubbles. The bubbles should be comparable in size to those produced by vigorous ebullition. Mechanical agitation of the crêping liquor by means of stirring devices, e. g. paddles, reciprocating vanes and the like may be employed as well as or instead of one or more of the expedients already mentioned.

The fabric treated in accordance with this invention may contain yarns of natural or artificial textile materials, e. g. yarns of wool, cotton, silk, regenerated cellulose, cellulose acetate and other cellulose derivatives, and is valuable especially in connection with fabrics consisting of cellulose acetate yarns, which are difficult to crêpe by ordinary methods. Particularly good results are obtained by the treatment, in accordance with this invention, of fabrics in which the high twist yarns, especially if they have a basis of cellulose acetate or other organic derivative of cellulose, have been twisted by a process in which at least the last part of the twist is inserted in the presence of steam, preferably moist steam, or hot water. In this connection reference is made to U. S. Patent No. 2,089,191.

It has been found desirable in order to obtain the best results to subject the fabric to the crêping treatment of the present invention while the fabric is still in the condition in which it was originally woven, e. g. without any intermediate cool scouring treatment.

The following examples illustrate without in any way limiting the invention:

Example 1

A fabric comprising a cellulose acetate weft which has been highly twisted in presence of wet steam, and a substantially untwisted cellulose acetate warp, is subjected to a crêping treatment in a vigorously boiling bath containing 5 gms. of soap per litre. The fabric is suspended by a series of strings. The production of the crêpe effect is more rapid if the strings, and thus the fabric, are kept in constant motion.

Example 2

A fabric in which both warp and weft consist of regenerated cellulose yarns, which may be made by the viscose or cuprammonium process or by saponifying a stretched or unstretched cellulose acetate yarn, the weft yarns being highly twisted, is suspended by a series of strings in a bath containing 5 gms. of soap per litre. The bath is kept in a state of vigorous ebullition or is agitated both by ebullition and by the passage therethrough of large bubbles of air, and the strings, and through them the fabric, are kept in constant motion. A satisfactory crêpe pattern results. The same treatment may be applied to a fabric containing highly twisted regenerated

cellulose yarns in the weft and cellulose acetate yarns in the warp.

The accompanying drawing shows somewhat diagrammatically one form of apparatus which may be employed in carrying out applicant's invention.

Referring to the drawing the reference numeral 1 indicates a vessel for containing a bath of crêping liquor 2. The fabric 3 to be treated is suspended in the bath by means of strings 4 attached in any suitable manner to any suitable means for continually moving the strings to keep the crêping liquor and fabric in constant motion relative to each other. The means for moving the strings may be supported on brackets 6 which are attached to the vessel 1 by means of bolts 7.

This application is a division of application Serial No. 221,029 filed July 23, 1938.

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

1. Process for producing crêpe effects on fabrics containing high twist yarns having a basis of an organic derivative of cellulose, at least part of the twist having been inserted in the presence of moist steam or hot water, which comprises suspending the fabrics from strings in a hot aqueous liquor, and by continually moving the strings keeping the liquor and the fabric in constant motion relative to each other, such motion being substantially more violent than the relative motion caused by gentle boiling of the liquor.

2. Process for producing crêpe effects on fabrics containing high twist yarns having a basis of an organic derivative of cellulose, at least part of the twist having been inserted in the presence of moist steam or hot water, which comprises suspending the fabric from strings in an aqueous liquor, boiling said liquor and continually moving the points of suspension of said fabric, so as to keep the liquor and the fabric, relative to each other, in a constant motion substantially more violent than that caused by gentle boiling of the liquor.

3. Process for producing crêpe effects on fabrics containing high twist yarns having a basis of cellulose acetate, at least part of the twist having been inserted in the presence of moist steam or hot water, which comprises suspending the fabric from strings in a hot aqueous liquor, and by continually moving the strings keeping the liquor and the fabric in constant motion relative to each other, such motion being substantially more violent than the relative motion caused by gentle boiling of the liquor.

4. Process for producing crêpe effects on fabrics containing high twist yarns having a basis of cellulose acetate, at least part of the twist having been inserted in the presence of moist steam or hot water, which comprises suspending the fabric from strings in an aqueous liquor, boiling said liquor and continually moving the points of suspension of said fabric, so as to keep the liquor and the fabric, relative to each other, in a constant motion substantially more violent than that caused by gentle boiling of the liquor.

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