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[54] **DUAL SURFACE TEXTILES**

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[51] **Int. Cl.²** **B05D 5/04**

[58] **Field of Search** ..... 8/2.5, 18; 117/38, 45, 117/135.5, 139.5 A

[56] **References Cited**

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[57] **ABSTRACT**

A material such as rayon, cotton or other fabric is first made water and moisture-repellant by the treatment of such fabric by known means such as silicone steriods and the like. Thereafter applying a coat of polyester, which has been previously treated with vinyl acetate and vinylpyrrolidone components to make it receptive to color dyestuffs, to the repellant fabric. Thereafter transferring color prints, carried by a paper carrier or backing, to the fabric by means of pressure-heat contact between paper carrier and fabric or by heat-vaporization of the prints from the carrier to the fabric. The resulting material shows no smudge, color runoff or other deleterious effects that water repellant materials exhibit when color prints are applied directly without first applying the treated polyesters.

4 Claims, No Drawings

DUAL SURFACE TEXTILES

This invention relates to dual surfaced textiles and in particular to woven textiles having fabric qualities and carrying synthetic fibers compatible with coloring dyes to form a completed textile.

BACKGROUND

Woven textiles such as cotton, rayon, silk, etc., fabrics are generally made water repellant by various processes and means such as treating the materials with soap solutions and thereafter treating the material with solutions of zinc soap such as composition of zinc and calcium sterates, sodium soaps and etc. It is also possible to waterproof such materials with silicone steriods and the like as produced by such companies as Dow Chemical Corp. However, it is known that such water-moisture repellant materials exhibit a quality of refusing to accept or become compatible with the application of color dyes, inks and etc., so as to produce some new design print or configuration of the fabric.

The invention contemplated herein includes the taking of a watercolor repellant fabric and applying thereon a different material in the form of treated plastics such as polyesters, cellulosic polymers, vinyl acetate polymers, polyurethanes, alkyds, polycarbonates and others which are color receptive by virtue of their having been treated and thereafter printing the plastic-coated repellant fabric with a new color design. The new material accepts neatly and easily the new color print with no stain, overflow smudge or loss in detail of the print or design.

It is therefore a principal object of the invention to provide a new process for producing water-repellant fabric which is receptive to color printing and dyeing.

Another object of the invention is to produce a waterrepellant material receptive to color dyes, prints that are simple attractive and economical to produce with no stain, overflow, smudge, etc., during the application of such dyes.

Other objects and advantages will become apparent from a reading of the specifications as disclosed herein.

In accordance with a particular embodiment of the invention, water repellant fabric in the form of rayon and etc., is first obtained, either by woven, knitted or other means, and finished in accordance with the degree of repellant required. For example, rayon, cotton or other composition of thread, yearn, fiber and the like are first treated with synthetic resins or conveniently referred to as polyester resins along with moisture-proofing agents such as plasticizers capable of producing moisture-proof water-repellant fabrics. Such materials are available and, for example, particularly described in U.S. Pat. No. 2,137,636 to H. J. Barrett. A typical example of the type of method for waterproofing is shown below:

EXAMPLE

	Parts by Weight
Resin	17.6
Paraffin wax (M.P. 61–3°C)	0.7
Tricresyl Phosphate	9.0
Dewaxed dammar	4.3
Ethyl Acetate	130.0
Toluene	55.0

The above composition may be maintained at about 40 degrees to prevent separation of the moisture-proofing agents. The composition may be used for moisture-proofing transparent sheets of regenerated cellulose for example by immersing the fibers in the above solution or by otherwise coating them and removing the excess and drying at about 90° – 110°C. The above would produce a substantially water-repellant, moisture-repellant fabric.

After a repellant fabric has been provided, such as above for example, although other such fabrics made by other means can be made available, the next step is to coat or apply over such repellant fabric a composition of material in the form of polyester, either in liquid or sheeted forms so that such fabric could be made receptive to color prints and/or dyestuff. The original repellant fabric, as previously stated above, is not compatible with the reception of color dyestuff and the like, but by the application of polyester treated to the color dye receptive there is produced a fabric water-repellant and color receptive which is the subject of this application.

Plastics such as polyesters and polycarbonates when treated as follows — with a coating consisting essentially of a cellulosic film-forming polymer having applied thereon a top coating of a solid continuous copolymer consisting of a vinyl-pyrrolidone component and vinyl acetate component wherein said vinylpyrrolidone component comprises 5% – 55% by weight of said copolymer — permit such plastics to exhibit color dye and ink receptive qualities. The polyester treated as above for example is coated on to the repellant fabric in any convenient fashion. For example, the liquid treated polyester is coated onto the repellant fabric and thereafter activated by the adhesive properties of the polyester and by subjecting the coated fabric to heat and pressure, bonding of polyester and fabric takes place. Other means for applying the treated polyester to the fabric is possible such as the use of polyesters in sheeted form.

After the repellant fabric has been suitably coated with the treated polyester plastic, the combined fabric is caused to be printed by color designs conveniently mounted on paper carriers. The color design may be transferred from the paper carriers to the treated coated fabric by pressure-heat contact methods or by heat-vaporization processes. For example, color-prints on a paper carrier is made to come in continuous contact with the treated fabric, and while in contact, heat and pressure is applied such as by a pair of rollers disposed to produce a collandering effect. The heat and pressure permit the transfer of the color design from the paper carrier or backing to the fabric.

The treated repellant fabric can also have color prints stamped thereon in any number of ways, and there is no limitation on the number of colors, the variations and graduation of color, and number of different configurations of prints that can be applied.

Transfer of the prints from the paper carrier can be effected by the use of heat-vaporization methods, the use of this means is fairly common to the art. There are any number of ways such prints can be transferred to the treated fabric, the above are merely representative.

It is possible to apply the polyester coating to the repellant fabric in a very selective manner so that not all of the fabric is covered. For example, by coating the fabric in selective steps a first color may be printed and any residue washed off the uncoated parts. After dry-

ing, the fabric is coated in another selective area and, again, the residue washed off. This process can be continued until the desired color effect is achieved.

The foregoing are merely selective embodiments of the invention and such representative embodiments are not intended to be all encompassing, but there are other variations and modifications of the invention that can be accomplished herein but not shown although intended to be protected by the claims herein.

In view of the foregoing, what is claimed is:

1. The process of producing waterrepellant fabric material receptive to color prints which comprises first water-proofing said fabric material with resins and moisture-proofing plasticizers, applying a coat of polyester which has been treated with a coating consisting essentially of a cellulosic film-forming polymer having applied thereon a top coating of a solid continuous copolymer consisting of a vinylpyrrolidone component and a vinyl acetate component wherein said vinylpyrrolidone component comprises 5%–55% by weight of said copolymer to cause said polyester to become receptive to color dyes, applying color prints to a paper carrier, causing said paper carrier to contact the fabric, and applying pressure to prints to cause them to be transferred to the fabric.

2. The process according to claim **1** and wherein said prints are caused to be transferred to the fabric by applying heat to the prints to effect their transfer to the fabric.

3. The process according to claim **1** and wherein said prints are caused to be transferred by applying heat vaporizing to the said prints.

4. The process according to claim **1** and wherein said coating of polyester is selectively applied to said fabric in selected areas, and color prints thereafter applied to said coated areas, the residue washed from those areas not selectively coated.

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