US 20060026778A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2006/0026778 A1**

Lion (43) **Pub. Date: Feb. 9, 2006**

(54) **PROCESS FOR CONTINUOUS PRODUCTION OF A FLOCKED AND DYED CLOTH BACKING**

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(21) Appl. No.: **11/196,728**

(22) Filed: **Aug. 4, 2005**

(30) **Foreign Application Priority Data**

Aug. 4, 2004 (FR) 04 08626

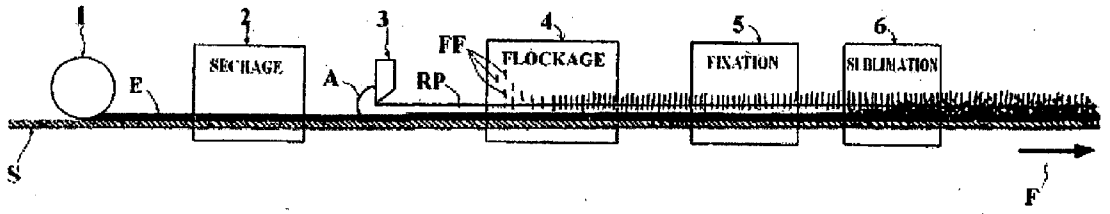
Publication Classification

(51) **Int. Cl.**
D06P 5/00 (2006.01)
D04H 11/00 (2006.01)

(52) **U.S. Cl.** **8/488**; 8/467

(57) **ABSTRACT**

In this process of continuous manufacture of a flocked and dyed cloth backing (S) including stages of application (**3**) of a polymerizable resin (RP) layer to at least one surface of the cloth backing, projection (**4**) of white or unbleached flock fibers (FF) onto the resin layer, polymerization (**5**) of the resin to fix the flock fibers on the cloth backing, deposition (**1**) of at least one sublimable dye (E) to dye the flock fibers, and sublimation (**6**) of the deposited dye, the stage of deposition (**1**) of at least one sublimable dye (E) is carried out before the stage of projection (**4**) of the flock fibers, and the stage of sublimation (**6**) is carried out after the stage of polymerization (**5**) of the resin by a simple application of heat without application of pressure to the cloth backing (S).



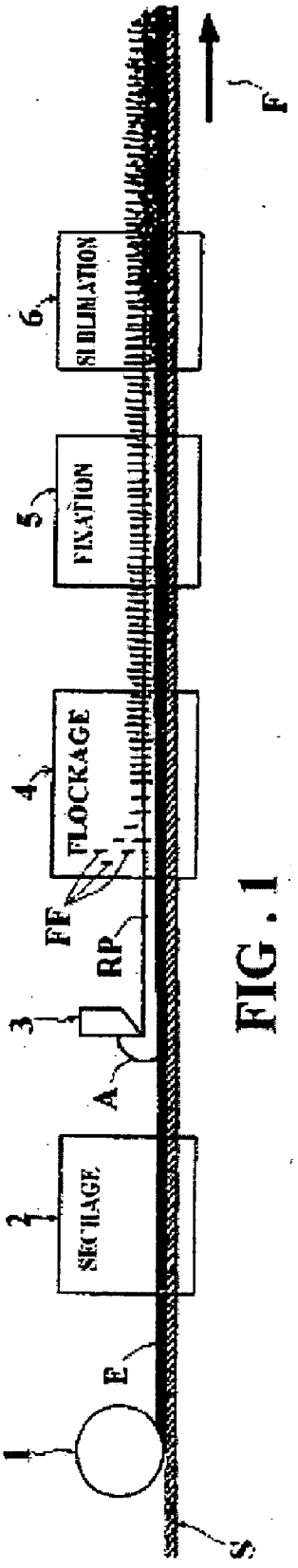


FIG. 1

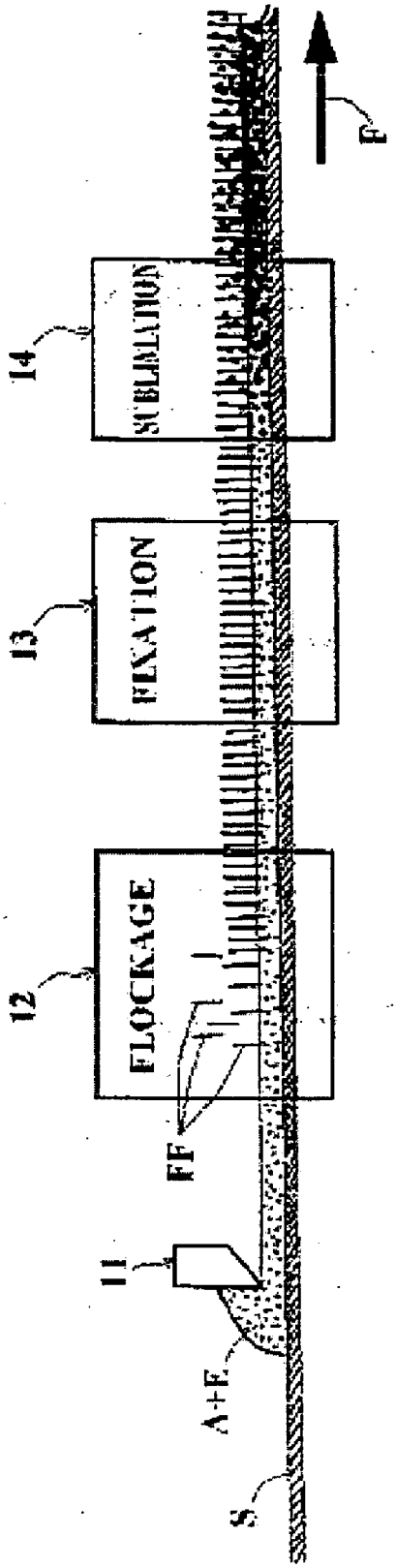


FIG. 2

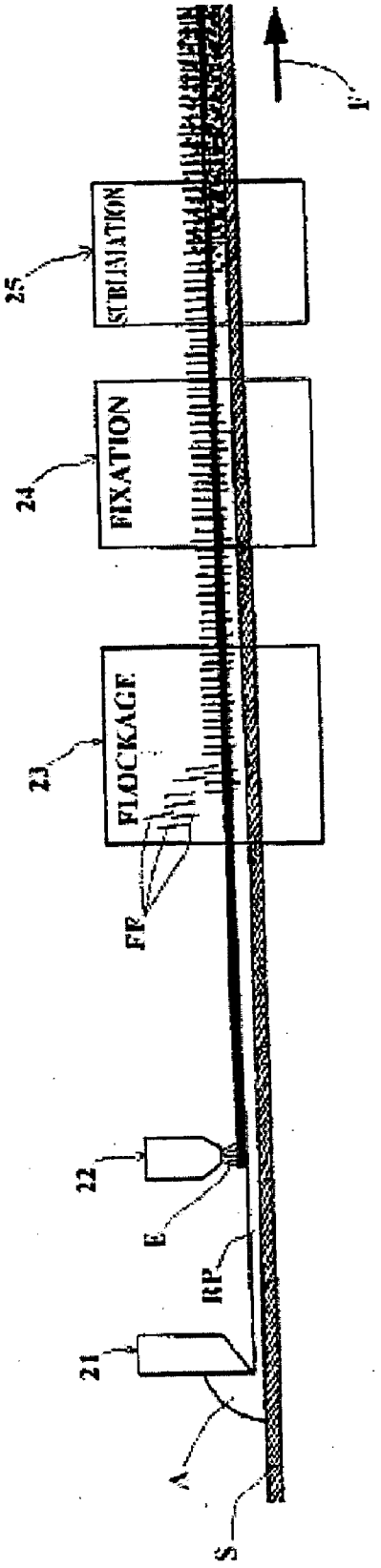


FIG. 3

PROCESS FOR CONTINUOUS PRODUCTION OF A FLOCKED AND DYED CLOTH BACKING

[0001] This invention relates to a process for continuous production of a flocked and dyed cloth backing.

[0002] Obtaining monochrome flocked surfaces with a given shade is well known and well managed. "Flock" fibers are prepared by their manufacturer and dyed to the desired shade by conventional textile dyeing processes. These dyed fibers are then applied by the classic process of "flocking" and are fixed on a backing by implantation in a polymer resin layer. The final color of the flocked product is then obtained by a combination of the initial shade of the "flock" fibers, the density of these fibers that are applied on the backing, and the pigmentation of the resin in which the fibers are implanted. This process of obtaining monochrome flocked surfaces is widely used. It has several disadvantages, however, both for the flock manufacturer and for the industrial user:

[0003] for the flock manufacturer, production in medium quantities of several thousand meters of flocked products in a given uniform color calls for several hundred kilograms of "flock" fibers that are dyed to the given desired shade (roughly 200 kg of "flock" fibers per 2000 m^2 of the manufactured flocked product); the dyeing and finishing of such a quantity of textile fibers lead to significant wastes of dyes and textile finishing agents that themselves dictate onerous operations of waste water treatment as well as frequent operations of draining and cleaning manufacturing and dyeing materials;

[0004] at the site of the industrial user of "flock" fibers, this same production in medium quantities entails major dead times in production as a result of the operations of cleaning machinery that are essential between each change of shade; by way of example, production of 2000 m^2 of flocked product in a given shade can take from 3 to 4 hours of production time and the preparation and machinery cleaning time can take half the production time; segmented production, moreover, increases systematic losses caused by the production process.

[0005] On the other hand, use of white or unbleached fibers to produce flocked products is known. The use of white or unbleached fibers has multiple advantages both for the "flock" fiber manufacturer and for the industrial user:

[0006] for the "flock" fiber manufacturer, elimination of the operations of textile dyeing and elimination of the use of dyeing materials, which leads to savings in material and energy, reduction of wastes, elimination of waste water treatment operations, and major improvement in industrial efficiency by the significant increase of quantities produced relative to the fibers;

[0007] for the industrial user of "flock" fibers, major improvement in productivity by reducing the cleaning time and downtime of the machinery (time that can make up 50% of the production time); reduction of losses and wastes caused by changes of color and by cleaning; and elimination of messy work for employees.

[0008] Obtaining a flocked and dyed product from white or unbleached fibers is obviously possible by a supplementary printing operation carried out again on the flocked white or unbleached product.

[0009] Among the printing techniques, printing-sublimation that is applicable to certain synthetic fibers allows continuous production (in rolls) of flocked and dyed products, either plain or reproducing a given monochrome or polychrome pattern.

[0010] This operation is conventionally carried out in steps. More exactly, after the flocked product has been produced, a temporary preprinted paper with sublimable inks is placed in contact with the flocked product, and the combination is raised for several seconds to a temperature of close to 200° C. that can initiate sublimation of the pigments contained in the ink used. The impression carried by the temporary paper is thus faithfiilly "transferred" hot to the flocked backing, by imparting to the latter a dyed appearance, plain or multicolored, depending on the graphic characteristics of the temporary preprinted paper.

[0011] This process of printing-sublimation, used by the holder of this patent application to continuously print his flocked articles, is described especially in documents EP-A-0 913 271 (or U.S. Pat. No. 6,224,707) and EP-A-0 993 963 (or U.S. Pat. No. 6,249,297). These two documents call for use of polyamide or polyester "flock" fibers, of which the "titer" (diameter) is between 0.5 Dtex and 20 Dtex, and whose length is between 0.3 mm and 3 mm.

[0012] The polyamide fibers, for example of "Nylon 6" or "Nylon 6-6" (filed trademarks), resist rather well the crushing caused by the printing-sublimation operation, during which the "flock" fibers are subjected to the combined effect of heat—roughly 200° C. to 210° C.—and the application pressure of the preprinted paper on the flocked backing. Conversely, resistance to washing and rubbing, dry and wet, of the shades obtained in this way on the polyamide fibers as well as the brightness of these shades are weak.

[0013] On the other hand, polyester fibers lead to impressions with very good fastness or resistance to washing, rubbing, light . . . and they allow shades that are lively and bold to be obtained. Under the conditions described in the aforementioned documents, the polyester "flock" fibers, however, have the disadvantage of lying down under the combined action of temperature and pressure during the printing-sublimation operation. This results in that the "flock" fibers on the surface of the flocked and dyed backing exhibit unattractive crushing and general orientation. The feel of the flocked surface is rough, at least in one direction, i.e., in the direction corresponding to the passage of a finger "the wrong way," and the printed surface is flat and crushed.

[0014] This crushing phenomenon could be limited by reducing the intensity of the pressure applied during the printing-sublimation operation. Perfect and stable contact, however, must be maintained between the flocked backing and the preprinted temporary paper for the entire printing-sublimation operation. If this were not the case, any movement, however tiny, of one of the two elements relative to the other during this operation would impart a blurred or "smeared" appearance to the impression obtained on the flocked backing. This is because the fact of having to maintain close contact between the preprinted paper and the

flocked backing during the entire printing-sublimation operation obviously implies application of a certain pressure to the combination and a guarantee that this pressure is entirely constant and very uniform. A compromise must thus be found, on the one hand, between a pressure strong enough to maintain close contact between the preprinted paper and the flocked backing, and, on the other hand, a pressure weak enough to prevent crushing of the "flock" fibers of the flocked backing during the printing-sublimation operation. Such a compromise is difficult to achieve, and, in any case, it does not allow complete satisfaction to be provided at the same time for the sharpness of the impression obtained and a soft feel of the flocked surface of the backing.

[0015] The adverse effect of crushing that is caused by the printing-sublimation operation could be limited by using as a flocking adhesive a polymer resin with an elevated softening and melting point, or by a selection of polyester fibers with improved resistance to temperature, such as, for example, "PCT"-type fibers. The improvement obtained with polymer resins with little thermal sensitivity is significant, but it does not prevent a preferred orientation of the "flock" fibers. There are fibers with improved thermal resistance; but they are only available in titers exceeding 1.5 Dtex, and the printed flocked product obtained with these fibers still maintains a "rough" touch. The use of such fibers is thus possible, but the result obtained is not satisfactory with respect to the "feel" of the flocked product.

[0016] Thus, the object of this invention is to provide a process that makes it possible to obtain a flocked and dyed product from white or unbleached fibers, not requiring any repeated printing operation, the flocked and dyed product having an extremely soft feel, without orientation and invulnerable to the action of temperature (this process does not disrupt the possible orientation of the "flock" fibers imparted to the flocked layer before the sublimation operation).

[0017] To do this, the object of the invention is a process of continuous manufacture of a flocked and dyed cloth backing comprising stages of application of a polymerizable resin layer to at least one surface of the cloth backing, projection of white or unbleached flock fibers onto said resin layer, polymerization of the resin to fix the flock fibers on the cloth backing, deposition of at least one sublimable dye to dye the flock fibers, and sublimation of the deposited dye, characterized in that the stage of deposition of at least one sublimable dye is carried out before the stage of projection of the flock fibers and the stage of sublimation is carried out after the stage of polymerization of the resin by a simple application of heat without application of pressure to the cloth backing.

[0018] As the sublimation stage is carried out without application of pressure to the flocked cloth backing, there is no risk of crushing of the flock fibers, and consequently the surface of the flocked backing maintains a pleasant and soft feel. Moreover, as the deposition of the dye or dyes on the backing is carried out before the stage of projection of the flock fibers (flocking), there is no risk of the flock fibers being crushed in the case in which the operation of deposition of the dye or dyes is carried out by placing some dye vehicle in contact under pressure with the cloth backing that has to be dyed and flocked. The invention, however, does not exclude the case in which deposition of the dye or dyes is carried out by a non-contact process, for example by pulverization or by inkjet.

[0019] The process according to the invention can have, moreover, one or more of the following characteristics:

[0020] in a first embodiment of the process according to the invention, said at least one sublimable dye is deposited on the cloth backing before the stage of application of the polymerizable resin layer;

[0021] in a second embodiment of the process of the invention, said at least one sublimable dye is deposited on the polymerizable resin layer before the stages of projection of the flock fibers and polymerization;

[0022] in one or the other of the first and second embodiments, said at least one sublimable dye is deposited uniformly on said at least one cloth backing surface or on said polymerizable resin layer;

[0023] in a variant, said at least one sublimable dye is deposited in the form of patterns on said at least one cloth backing surface or on said polymerizable resin layer;

[0024] in a third embodiment of the process according to the invention, said at least one sublimable dye is mixed with the polymerizable resin and a layer of the mixture obtained is applied to the cloth backing;

[0025] in any of the three embodiments of the process of the invention, the polymerizable resin layer is applied uniformly to said at least one surface of the cloth backing;

[0026] in a variant, the polymerizable resin layer is applied in the form of patterns to said at least one surface of the cloth backing;

[0027] for the stage of projection of the "flock" fibers, polyester "flock" fibers with a fine titer, preferably less than 1.2 Dtex, are used;

[0028] preferably polyester fibers with a titer in the range from 0.3 to 1 Dtex and with a length of between 0.2 and 0.5 mm are used;

[0029] again, more preferably, super microfibers of polyester with a titer of roughly 0.3 Dtex are used;

[0030] as the polymerizable resin, a "100% solid" resin is used, with a high softening point, preferably a softening point above 170° C., for example a polyurethane resin;

[0031] as the polymerizable resin, a resin with weak adhesive power is used, for example an acrylic resin in a modified aqueous dispersion.

[0032] Other objectives, characteristics and advantages of the invention will appear during the following description of several embodiments of the invention given by way of example with reference to the attached drawings, in which:

[0033] **FIG. 1** schematically illustrates a first embodiment of the process of the invention;

[0034] **FIG. 2** schematically illustrates a second embodiment of the process of the invention; and

[0035] **FIG. 3** schematically illustrates a third embodiment of the process of the invention.

[0036] Referring first of all to **FIG. 1**, it is apparent that the first embodiment of the process according to the invention comprises a first stage **1** that consists in depositing at least one ink E containing at least one sublimable dye on a backing S that unwinds continuously in the direction indi-

cated by the arrow F, a second stage **2** of drying of the ink E that has been deposited on the backing S, a third stage **3** consisting in applying a layer of adhesive A (polymerizable resin RP) to the layer of ink E, a fourth stage **4** or flocking stage consisting in projecting "flock" fibers FF onto the polymerizable resin RP layer, a fifth stage **5** or fixing stage consisting in having the resin of the adhesive A polymerize in order to fix the bottom of the "flock" fibers FF in the resin, the free portion of said "flock" fibers FF extending essentially perpendicular to the surface of the resin layer, and a sixth stage **6** or sublimation stage consisting in having the sublimable dye or dyes contained in the ink E sublimate in order to dye the "flock" fibers FF.

[**0037**] The backing S can be selected from a wide range of backings that can be flocked, such as paper, cardboard, plastic film, woven material, or nonwoven material. In the case in which the backing S is composed of plastic film, in certain cases, before treatment by the process of the invention, the backing can be advantageously stabilized by thermal bonding of the plastic film onto a temporary backing in a manner similar to that described in the aforementioned document EP-A-0 993 963. In any case, the backing S can be present in the form of a roll that is placed on a delivery spool (not shown in **FIG. 1**) using which the roll is unwound continuously for implementing the operations of stages **1** to **6** of the process according to the invention.

[**0038**] The first stage **1**, the stage of deposition of the ink E, can be carried out using any means of conventional continuous deposition such as by screen printing, photogravure, flexography, offset or again by inkjet. The ink E can be deposited in such as way as to cover the entire surface of the backing S or only selected zones of the surface of the backing S according to one or more predefined patterns. In both cases, a single ink or several inks can be used in such a manner as to obtain a monochrome or polychrome impression as desired, in a classic manner.

[**0039**] The second stage **2**, the drying stage, can be carried out in the classic manner, for example by passage over a heating drum or in a tunnel furnace.

[**0040**] In stage **3**, the polymer resin RP used as the adhesive A can be deposited in a thickened and/or thixotropic aqueous emulsion (acrylic or polyurethane resins), in the form of plastisols, or else, in a preferred version of the invention, in the form of 100% solid or "high solid" liquid resins, which can be polymerized by thermal means or by irradiation (by ultraviolet or electron beams). These latter resins, 100% solid or "high solid," have the advantage of being able to exhibit a very high softening point, which can be useful when the backing S, once flocked, is then subjected to heat treatments at relatively elevated temperatures. One example of a "high solid" resin that can be used for stage **3** is the "IMPRANIL-IMPRAFIX" system from the BAYER Company, Germany.

[**0041**] In the case in which the flock fibers FF must be fixed temporarily on the backing S, for example when the flock fibers FF of the flocked and dyed backing obtained by the process according to the invention must be able to be transferred entirely or partially to another backing, for example a textile backing, after having been covered completely or selectively, depending on the case, by an operation of coating or by a screen printing operation, with a hot-setting adhesive layer ("hot-melt thermofusible"-based system) during subsequent treatment of the flocked and dyed backing, a resin with weak adhesive power is used as the polymerizable resin RP. For this temporary fixing of the flock fibers, for example, an acrylic resin can be used that is deposited in a modified aqueous dispersion in a limited quantity, for example from 30 to 60 gr/m^2 (weight of dry resin).

[**0042**] As wished or required, the polymer resin RP layer used as the adhesive A can be coated uniformly or according to a given pattern, for example by serigraphic coating on a rotary frame. The resin layer has a final thickness of between 15 and 100 μm, depending on the nature of the "flock" fibers FF used for the fourth stage **4**. Generally, the finer the titer and the shorter the length of the "flock" fibers used, the smaller the thickness of the polymerizable resin layer can be.

[**0043**] During the fourth stage **4**, the "flock" fibers FF are projected into the polymer resin RP layer by any one of the conventional flocking techniques that are well known and thus do not need to be described in detail.

[**0044**] Although white or unbleached "flock" fibers of various natures can be used for the flocking stage **4**, preferably polyester fibers (standard polyester of the PET type or modified polyester of the PCT type) are used due to their good resistance to washing and to rubbing and due to their good light fastness after they have been dyed.

[**0045**] Preferably, polyester fibers are used with a titer of less than 1.5 Dtex, and even more preferably, with a titer in the range of between 0.3 to 1 Dtex, with a length of between 0.2 and 0.5 mm, in such a manner as to obtain a flocked backing with a soft or very soft feel.

[**0046**] In one preferred version of the invention, "super microfibers" of PET are used that have a titer close to 0.3 Dtex and that are cut to a length of between 0.2 and 0.5 mm. These fibers are marketed by the company VELUTEX-FLOCK S.A. in GRANOLLERS, Spain. These "super microfibers" impart to the flocked surface an exceptionally soft feel and have the advantage of being essentially invulnerable to crushing when they are exposed to the combined action of heat and pressure. This surprising and unexpected property (it is commonly and logically accepted that fibers of greater diameter have increased resilience) allows use of flocked products with these fibers in applications such as thermobonding, thermoforming or thermocompression (hot molding of pieces covered with a flocked backing) or mold decoration that is better known to those skilled in the art under the name "decoration in mold" without its leading to crushing of the "flock" fibers and without changing the visual appearance or the very soft feel of the flocked product. In "decoration in mold," a plastic material is injected into the mold whose cavity has a surface that is at least partially covered by a flocked plastic film whose "flock" fibers are rotated toward the inside surface of the mold cavity.

[**0047**] In stage **5**, the polymerizable resin RP is polymerized by irradiation (UV or electron beam) or by thermal means. Polymerization by thermal means can be done by, for example, passing the backing S through a tunnel furnace or over the peripheral surface of a rotating heating drum at a temperature of between 100° C. and 180° C.

[**0048**] In stage **6**, sublimation of the sublimable dye or dyes contained in the ink E is obtained by raising said dyes

to a temperature close to 200° C., for example 210° C., for a period of 30 to 45 seconds. There again, this can be done by passing the backing S through a tunnel furnace or over the peripheral surface of a rotating heating drum (it can be the same tunnel firnace or the same heating drum as that used for stage **5**, said furnace or said drum then having sections with different temperatures).

[**0049**] It will be noted that the time and temperature necessary to obtain sublimation can be reduced relative to the values that are indicated above if work is done in a low-pressure (partial vacuum) atmosphere. In this case, the aforementioned tunnel furnace or the heating drum can be placed in a chamber under a partial vacuum.

[**0050**] The sublimable dyes contained in the ink E are then activated. They pass into the vapor phase, crossing the polymer resin RP that under these conditions is perfectly permeable to these gaseous dyes, and they begin to be fixed permanently on the "flock" fibers FF. If, in stage **1**, the ink E had been deposited uniformly in one color, the flocked product with white or unbleached fibers then takes on a uniform shade corresponding to the selected dye formula. On the other hand, if, in stage **1**, the ink E has been printed according to a multicolor pattern, the surface of the flocked product will reproduce the original pattern with precision and sharpness, the progression of the gaseous dyes being unidirectional.

[**0051**] During the above-described process, it is apparent that at no time is the layer of "flock" fibers subjected to pressure and high temperature at the same time. This results in that the "flock" fibers FF are not crushed and that the flocked and dyed surface of the backing S maintains a very soft feel.

[**0052**] After stage **6**, the combination composed of the backing S and of the layer of dyed "flock" fibers is cooled by natural cooling or preferably by forced cooling, for example by passage over the peripheral surface of one or more rotating drums cooled by water circulation. In the case in which the backing S is a plastic film stabilized by a temporary backing, the latter is separated from the plastic film and rolled onto a take-up spool with a view to being possibly reused as a temporary backing.

[**0053**] On the other hand, regardless of its nature, the backing S, flocked and dyed, can be wound onto a take-up spool for later use or for possible later treatment, for example "decoration in mold," thermoforming, thermocompression, thermobonding or others.

[**0054**] In a second embodiment of the process of the invention, illustrated by **FIG. 2**, the sublimable dye or dyes (ink E) are first of all mixed with an adhesive A (polymer resin), their formulation making it possible to obtain a given shade. This formulation can be advantageously prepared by a computer-controlled mixing device. In this case, the dye formula of the color to be reproduced can be obtained by mixing four dyes comprising a quadrichromia (trichromia+ black), the exact quantities of the four dyes being determined by a data processing system as a function of the desired color to be reproduced.

[**0055**] Then, the mixture A+E of the polymer resin and the sublimable dyes is deposited on the backing S (stage **11** of **FIG. 2**). Deposition of the mixture A+E can be done, for example, in a uniform layer by coating or according to a predefined pattern by rotary serigraphic coating.

[**0056**] After stage **11**, the process illustrated by **FIG. 2** comprises, moreover, a flocking stage **12** by which white or unbleached "flock" fibers FF are projected and implanted in the dyed polymer resin, followed by a stage of fixation **13** polymerization) by which the "flock" fibers are fixed on their base by the dyed polymer resin, and finally a sublimation stage **14** by which the sublimable dyes are sublimated and fixed permanently on the "flock" fibers. The three stages **12**, **13** and **14** can be carried out in a manner and under conditions similar to those that were described above regarding stages **4**, **5** and **6** of the first embodiment of the process of the invention illustrated in **FIG. 1**.

[**0057**] The second embodiment of the process of the invention illustrated by **FIG. 2** only allows a backing with a flocked surface that has a uniform color to be obtained. This result is obtained, however, from white or unbleached fibers, with neither prior coloring nor subsequent printing of the "flock" fibers, which leads to extremely significant production savings. Moreover, as no pressure is applied to the "flock" fibers FF during stages **13** and **14**, the "flock" fibers are thus not crushed and maintain the orientation that has been imparted to them during the flocking stage **12**. This results in that the flocked and dyed surface of the backing **5** that has been obtained in this way maintains a soft or very soft feel according to the fineness of the "flock" fibers FF used. There again, if "super microfibers" as mentioned above are used, the flocked and dyed backing will maintain a very soft feel even if it is subsequently subjected to operations of "decoration in mold," thermocompression, thermoforming, thermobonding or other similar operations.

[**0058**] In a third embodiment of the process of the invention illustrated by **FIG. 3**, the backing S is first of all covered by an adhesive A that is colorless or uniformly pigmented white (stage **21**). The adhesive A (polymer resin RP) can be applied in one uniform layer (simple coating) or according to a predefined pattern by rotary serigraphic coating. While the polymer resin RP layer that has been thus obtained is still liquid, this layer of polymer resin is then covered (stage **22**) in a uniform or selective manner with an ink E containing at least one sublimable dye by a technique of contactless coating or printing, for example by pulverization, projection or inkjet printing. While the layers of polymer resin RP and ink E are still liquid, white or unbleached "flock" fibers FF are projected and implanted in the resin RP layer through the layer of ink E (flocking stage **23**), then they are fixed on their base by polymerization of the polymer resin (stage **24**) and finally dyed by sublimation of the sublimable dye(s) contained in the ink (E) (stage **25**). The stages **23**, **24**, **25** can proceed in a manner and under conditions similar to those of the corresponding stages **4**, **5**, and **6** of the first embodiment of the process of the invention illustrated by **FIG. 1**. According to the mode of coating or printing of the ink E (stage **22**), the flocked and dyed surface of the backing S will have a uniform shade or a multicolored appearance that reproduces a predefined pattern or random appearance.

[**0059**] There again, with the third embodiment of the process of the invention illustrated by **FIG. 3**, provided that no pressure has been applied to the "flock" fibers FF during the sublimation stage **25**, the "flock" fibers are not exposed to any crushing, and the flocked surface of the backing S

thus maintains a soft or very soft feel according to the fineness of the fibers used in the flocking stage **23**.

[**0060**] It goes without saying that the three embodiments of the invention that have been described above have been given as a purely indicative and by no means limiting example and that numerous modifications can be easily made by one skilled in the art without, however, departing from the scope of the invention. For example, although in the three described embodiments only one of the two surfaces of the cloth backing S is covered by "flock" fibers and dyed, the described process could be applied to two surfaces of the backing S.

1. Process of continuous manufacture of a flocked and dyed cloth backing (S) comprising stages of application (**3**, **11**, **21**) of a polymerizable resin (RP) layer to at least one surface of the cloth backing, projection (**4**, **12**, **23**) of white or unbleached flock fibers (FF) onto said resin layer, polymerization (**5**, **13**, **24**) of the resin to fix the "flock" fibers on the cloth backing, deposition (**1**, **11**, **22**) of at least one sublimable dye (E) to dye the flock fibers, and sublimation (**6**, **14**, **25**) of the deposited dye, characterized in that the stage of deposition (**1**, **11**, **22**) of at least one sublimable dye (E) is carried out before the stage of projection (**4**, **12**, **23**) of the flock fibers, and the stage of sublimation (**6**, **14**, **25**) is carried out after the stage of polymerization (**5**, **13**, **24**) of the resin by a simple application of heat without application of pressure to the cloth backing.

2. Process according to claim 1, wherein said at least one sublimable dye (E) is deposited on the cloth backing (S) before the stage of application (**3**) of the polymerizable resin (RP) layer.

3. Process according to claim 1, wherein said at least one sublimable dye (E) is deposited on the polymerizable resin (RP) layer before the stages (**23** and **24**) of projection of the flock fibers and polymerization.

4. Process according to claim 2, wherein said at least one sublimable dye (E) is deposited uniformly on said at least one surface of the cloth backing (S) or on said polymerizable resin (RP) layer.

5. Process according to claim 2, wherein said at least one sublimable dye (E) is deposited in the form of patterns on said at least one surface of the cloth backing (S) or on said polymerizable resin (RP) layer.

6. Process according to claim 1, wherein said at least one sublimable dye (E) is mixed with said polymerizable resin (RP), and the mixture layer obtained is applied (stage **11**) to the cloth backing (S).

7. Process according to claim 1, wherein the polymerizable resin (RP) layer is applied uniformly to said at least one surface of the cloth backing (S).

8. Process according to claim 1, wherein the polymerizable resin (RP) layer is applied in the form of patterns to said at least one surface of the cloth backing (S).

9. Process according to claim 1, wherein for the stage (**4**, **12**, **23**) of projection of the flock fibers (FF), polyester flock fibers with a fine titer, preferably of less than 1.5 Dtex, are used.

10. Process according to claim 9, wherein polyester fibers with a titer in the range from 0.3 to 1 Dtex and with a length of between 0.2 and 0.5 mm are used.

11. Process according to claim 9, wherein super microfibers of polyester with a titer of roughly 0.3 Dtex are used.

12. Process according to claim 1, wherein as the polymerizable resin (RP), a 100% solid resin is used, with a high softening point, preferably a softening point above 170° C.

13. Process according to claim 12, wherein a polyurethane resin is used as the polymerizable resin (RP).

14. Process according to claim 1, wherein a resin with weak adhesive power is used as the polymerizable resin (RP).

15. Process according to claim 14, wherein the polymerizable resin (RP) is an acrylic resin in a modified aqueous dispersion.

16. Process according to claim 3, wherein said at least one sublimable dye (E) is deposited uniformly on said at least one surface of the cloth backing (S) or on said polymerizable resin (RP) layer.

17. Process according to claim 3, wherein said at least one sublimable dye (E) is deposited in the form of patterns on said at least one surface of the cloth backing (S) or on said polymerizable resin (RP) layer.

18. Process according to claim 10, wherein super microfibers of polyester with a titer of roughly 0.3 Dtex are used.

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