TAB 6

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application James R. McCulloch
Serial No. 07/922,918
Filed: July 31, 1992
For: TRANSFER PRINTING FLOCKED FABRIC

Examiner: A Clingman
Art Unit: 1105

Honorable Commissioner of Patents and Trademarks
Washington, DC 20231

AMENDMENT IN RESPONSE TO PAPER NO. 5

Dear Sir:

Responsive to the Office Action mailed March 17, 1993, please extend the period for response for two months up to and including August 17, 1993. This firm's check in the amount of $180 for a two month extension of time for a small entity is enclosed.

Please amend this application as follows:

In the Specification

On page 3, line 23, change the period to --; and--.

On page 3, after line 23, insert --FIGURE 3 is an enlarged, schematic view of an alternate embodiment of the fabric according to the invention.--

On page 4, line 16 after "in" insert --a fabric 132 seen in FIGURE 3 with-- and after "fibers" insert --18, 118--.

On page 4, line 17 after "fibers" insert --118--.

On page 4, line 18 after the first occurrence of "fibers" insert --121-- and after the second occurrence of "fibers" insert --120-- and after "adhesive" insert --123--.

In The Claims:

RHODES, COATS & BENNETT
ATTORNEYS AT LAW
30 FIRST UNION TOWER
GREENSBORO, N. C. 27402
TELEPHONE 919/273-4422

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In claim 11, line 3 delete ", and a softer hand".

In claim 12, line 5, after "dye," insert --said fabric--.

Amend claim 20, second line by inserting the word "air" before --texturizing--.

Remarks

The Office Action rejected all of the claims under 35 USC §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Office Action enumerated a number of phrases from the claims, suggesting that those phrases were in some manner indefinite. A good many of the apparently objected-to phrases appear in many patents, and to that extent the rejection is respectfully traversed.

Applicant's invention relates to transfer-printed, flocked fabrics. Flocked fabrics have a substrate which is usually, but not necessarily, woven, with the flocked fibers adhered to the substrate so as to be upstanding on one surface of the substrate, thereby becoming "raised fibers".

Generally, in transfer printing, a transfer print paper having a dye such as a disperse dye arrayed on it, is placed into intimate contact with the fabric and subjected to heat and pressure to sublimate the disperse dye and cause it to migrate into the fibers. In so doing with a piled fabric such as a flocked fabric, the pile or raised fibers can be crushed, thereby negating some of the aesthetic qualities of the

RHODES, COATS
& BENNETT
ATTORNEYS AT LAW
00 FIRST UNION TOWER
EENSBORO, N. C. 27402
LEPHONE 919/273-4422

flocked fabric. Alternatively, the pressure applied to the fabric in the transfer printing process can be lowered to avoid crushing the fibers, but the resultant print is not deep enough to make an acceptable product. Applicant has solved this dilemma by an ingenious, but simple, improvement. He includes pigment particles in the adhesive which adheres the flock to the substrate, so that the adhesive is of a dark color. Then, the fabric is printed in the transfer printing process with lower pressure without crushing the pile, and not yielding in a washed-out, poorly printed fabric. The underlying pigment in the adhesive gives greater depth of shade to the look of the fabric.

Six samples are enclosed herewith, two each of three different print patterns. One of each pair is made in accordance with the invention with the darkly pigmented adhesive, and the other with a conventional, light colored adhesive.

The darker adhesive fabrics can be clearly identified from the reverse side of the fabric because they have darkness showing through. From the front sides, the fabrics having the pigmented adhesive have a deeper, richer print than the fabrics with the lighter adhesive. While which is more attractive is perhaps a matter of taste, the commercial desirability of the darker fabrics is much greater than the lighter fabric. Fabrics of this type are typically used as upholstery fabrics.

RHODES, COATS
& BENNETT
ATTORNEYS AT LAW
00 FIRST UNION TOWER
EENSBORO, N. C. 27402
LEPHONE 919/273-4422

Turning now to the specifics of the rejections, the Examiner is referred to the enclosed print-out from Dialog File 340, a data base having U.S. patent information in the form of the abstract, claims, titles and other identifying information, but not all specifications. Various terms specifically objected to in the Office Action were searched in that data base using Boolean Logic. Thus, referring to the second page of the print-out, at the top line, the search command was "Textile? (N1) Substrate?". This search command searches the patent data base for patents in which the root word "textile" is within one word of the root word "substrate". "Textile?" appeared 15,775 times, and "substrate?" appeared 81,969 times. They appeared adjacent one another 284 times. While some of those usages might have been in abstracts in the data base, obviously very many must have been in the claims, so that "textile substrate" has been deemed an allowable phrase in many prior patents. What does applicant mean by "textile substrate"? A textile fabric, whether it be woven, non-woven or knitted, providing the base for the overall fabric.

The Office Action also called into question the phrase "raised. . .fibers on the substrate". A similar search found that the word "raised?" was adjacent to the word "fiber?" 52 times. Similarly, the objected-to phrase "thermoplastic fibers" has appeared in patents over 1,000 times. While the phrase "dark pigmented adhesive" was not searched, "pigmented

RHODES, COATS
& BENNETT
ATTORNEYS AT LAW
00 FIRST UNION TOWER
EENSBORO, N. C. 27402
LEPHONE 919/273-4422

adhesive" showed up 15 times, and whether the pigmented adhesive is light or dark is something every first-grader knows and needs no elaboration.

The Office Action also objected to the phrase "disperse dye distributed in a pattern in upper portions of said thermoplastic fibers". Obviously, this means the result of the print operation so that the pattern of the disperse dye is distributed on the thermoplastic fibers in their upper portions. It is hard to see what is objectionable about that phrase.

In claim 2 the phrase "said dispersed dye makes a deep colored print" was objected to, but again the search shows that the phrase "deep color" appeared in 155 prior patents. Those of ordinary skill in the textile trade, the applicable art for this invention, know a deep color when they see one.

The Office Action also entered an objection to the phrase "upper portions of said fibers are colored only by disperse dyeing", and it is hard to see what is objectionable about that phrase. It means that no other dye was applied to the upper portions of the fibers.

The phrase "said dyed pattern is crock-fast" in claim 7 was also objected to. Crock-fastness is a very well known concept in textile technology, and 13 prior patents showed up in the search using that phrase.

The language of claim 10 "wherein said fibers are arrayed on said substrate in a textured array so that some fibers

RHODES, COATS
& BENNETT
ATTORNEYS AT LAW
600 FIRST UNION TOWER
GREENSBORO, N. C. 27402
TELEPHONE 919/273-4422

diverge from neighboring fibers and said pigmented adhesive is visible between said diverging fibers" was also noted in the Office Action. While the search did not highlight any uses of the phrase "textured array", the air texturizing of flocked fabrics is a known technology, as discussed at page 4, lines 13-16. Incidentally, that paragraph has been amended to make reference to a new FIGURE 3 to show the explicitly claimed product of claim 10, in compliance with Patent and Trademark Office regulations. Perhaps the inclusion of the drawing will assist the Examiner in understanding the meaning of the claim.

Claim 11 was objected to for the language "said fabric has a loftier, more erect pile and a softer hand than conventional transfer printed flocked fabrics, and a softer hand". The latter reference to "and a softer hand" is redundant and has been deleted from claim 11, but "soft hand" is a very well known concept in textile technology. Note that 115 patents have those words in juxtaposition.

The Office Action also asked questions about measurement of loftier, more erect pile. While no quantitative measurement is known, the subjective evaluation of the marketplace is real enough to show the difference between one fabric and another. As to conventional transfer printed flocked fabrics, those are the transfer printed flocked fabrics known heretofore as sold commercially.

The Office Action asked what was novel about applicant's transfer printed, flocked fabric as claimed in claim 12.

RHODES, COATS
& BENNETT
ATTORNEYS AT LAW
00 FIRST UNION TOWER
EENSBORO, N. C. 27402
LEPHONE 919/273-4422

Applicant considers the combination of the elements recited as being novel, including the pigmented adhesive adhering the raised fibers to the substrate, with the resultant fabric having been transfer printed. The Office Action also asked in what sense the "upper portions" of applicant's disperse dye-colored nylon fibers form "a deep, dark, crock-fast colored print". In order to avoid any misunderstanding, claim 12 has been amended to make it clear that it is the fabric having those fibers which forms a deep, dark, crock-fast, colored print and not just isolated fibers.

With respect to the method claims, similar objections to "a substrate", "thermoplastic fibers", and "a pigmented adhesive" as mentioned above appeared in the Office Action. As pointed out above, those are not indefinite terms and the rejection is respectfully traversed.

The Office Action also asks what the method of printing the flocked fabric of independent claim 13 is. That method includes the adhesion of undyed thermoplastic fibers to a substrate with a pigmented adhesive so that the fibers have a lower portion adhered to the substrate and an upper portion forming a nap and thereby forming a flocked fabric, and transfer printing the flocked fabric. The inclusion of the dark pigment affects the visual impression and ocntributes to the print's appearance.

With respect to claim 14, the Examiner seems to be having a problem with the notion that the "adhering step" can be

RHODES, COATS
& BENNETT
ATTORNEYS AT LAW
100 FIRST UNION TOWER
REENSBORO, N. C. 27402
ELEPHONE 919/273-4422

defined as adhering the thermoplastic fibers with a darkly pigmented adhesive. The inference of the rejection is that some additional positive step must be recited in the dependent claim, but that is not correct. All the dependent claim need do is limit the scope of the independent claim. By specifying that the adhering is done with a darkly pigmented adhesive as distinct from the unspecified type of pigmented adhesive in claim 13, claim 14 narrows the scope of claim 13.

The same analysis applies to the rejection of claims 15 and 16. Those claims provide a limitation in scope of the protected method from the independent claim and therefore are proper claims.

With respect to claim 18, the Office Action called into question the phrase "thermal brushing". "Thermal brushing" means post brushing with sufficient heat to restore the fibers to an upright position. The fibers are moved by the brush while the heat softens the adhesive in the fiber to permit them to be moved by the brush.

The phrase "a pattern having deep, dark colors" in claim 19 was rejected as being indefinite, but, as seen above, that is not an indefinite phrase.

The Office Action objected to claim 20 as failing to recite the specifics of applicant's texturing of the fibers on the substrate. Claim 20 has been amended to make it clear that the process is "air texturing", a conventionally known process, so that naming of specifics involved in that process

RHODES, COATS
& BENNETT
ATTORNEYS AT LAW
500 FIRST UNION TOWER
REENSBORO, N. C. 27402
ELEPHONE 919/273-4422

is not deemed to be necessary. The Office Action also asks in what sense it is that texturing nylon fibers on a substrate is a method of printing. Claim 20 specifies causing some fibers to diverge from neighboring fibers more than other fibers, so that the pigmented adhesive is visible between the diverging fibers. By causing the pigmented adhesive to be more visible in some locations, the visual appearance is modified.

Claim 21 appears to have been rejected for reciting that the transfer printing takes place at "pressures lower than in conventional transfer printing". The question presented in the Office Action was what are "conventional" transfer printing pressures. The Office Action also asks "and how for (far?) lower pressures does applicant use for this transfer printing step?" The specification made it clear that conventional pressures are on the order of 60-pounds (see page 5, line 5). The intent of the claim is to read on processes which an infringer might adopt in which the infringer has conventional, transfer printing equipment which he uses at a particular pressure to transfer print flocked fabric and has lowered that pressure to print the accused goods. Whether that lowering is from 60-pounds to 20-pounds or from 50-pounds to 10-pounds is not deemed critical. What is critical is the infringer's misappropriation of applicant's invention by lowering the pressure from the usual to avoid crushing the pile.

RHODES, COATS
& BENNETT
ATTORNEYS AT LAW
00 FIRST UNION TOWER
EENSBORO, N. C. 27402
LEPHONE 919/273-4422

The Office Action recited that claim 22 recited 10-59 pounds (per square inch) pressure for the transfer printing step in the method to print a flocked nylon fabric. It is not clear what, if anything, is objectionable in claim 22.

Applicant's comments concerning claim 21 are equally applicable to the rejection of claim 23. With the objection of claim 23, the point was made that "deep, dark color would be a function of the disperse dyes used in applicant's transfer printing process." While that is true, they would also be a function of the pressure used in the printing process and the pigment applied to the adhesive. The point of applicant's invention is that all of these come together in making a deep, dark, attractive fabric, such as the enclosed specimens.

Applicant's claims have been crafted to cover the invention as it really is, a fabric sold in real life, evaluated by those knowing and appreciating deep, dark color. The Examiner is courteously requested to reconsider the rejections of the Office Action in that light and in light of the enclosures herewith and applicant's comments. It is believed this application is now in condition for allowance, but if the Examiner believes that some further refinements are

RHODES, COATS
& BENNETT
ATTORNEYS AT LAW
100 FIRST UNION TOWER
REENSBORO, N. C. 27402
ELEPHONE 919/273-4422

needed to the claims, he is encouraged to telephone the undersigned.

Respectfully submitted,

Howard A. MacCord, Jr.
Reg. No. 28,639

Date: 8/17/93

File No. 2626-3

Enclosures

I Hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on 8/17/93
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LEPHONE 919/273-4422