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TEXTILE PRODUCT AND PROCESS

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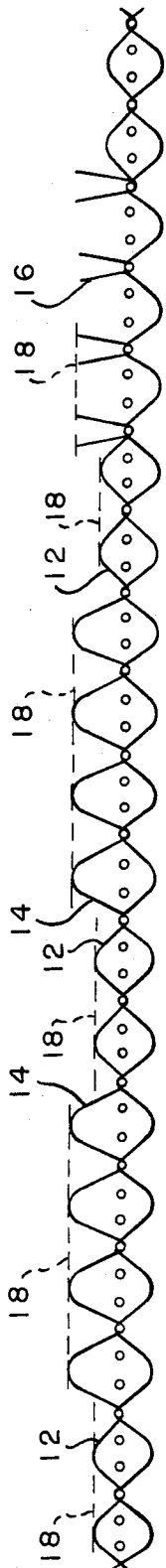


FIG. -2-

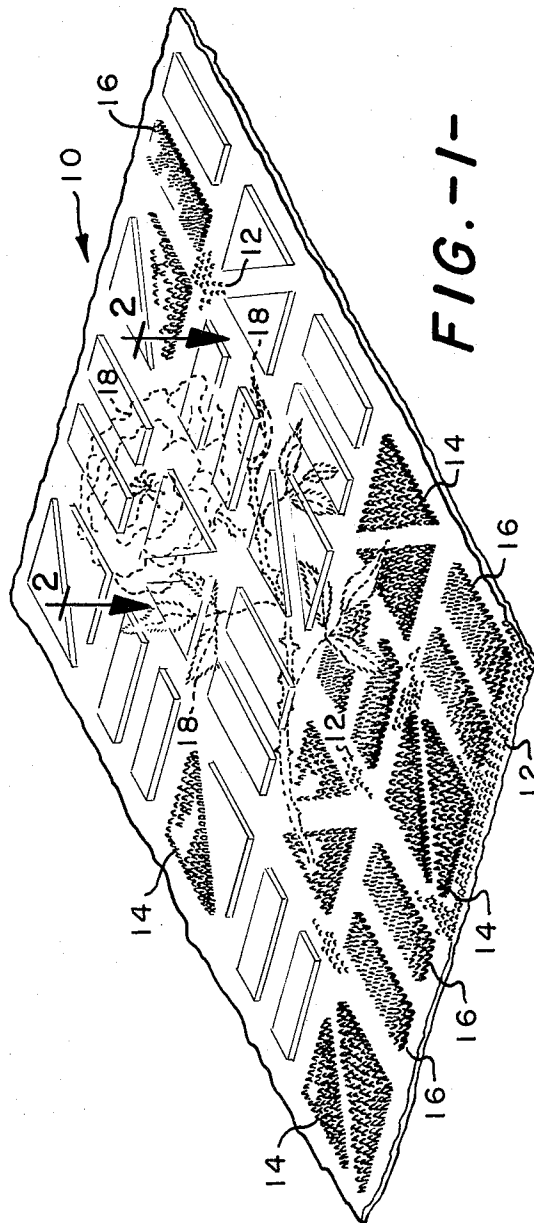


FIG. -1-

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TEXTILE PRODUCT AND PROCESS

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15 Claims

ABSTRACT OF THE DISCLOSURE

A printed textile fabric, and a process of producing the same, wherein a pile fabric having a patterned surface construction is printed with a design superimposed on the patterned surface of the fabric out of registry therewith to provide a product particularly adapted for use in carpets, towels, upholstery, and the like.

This invention relates to the production of textile fabrics and, more particularly, to a product and process for producing a textile pile fabric having a printed design superimposed thereon out of registry with the patterned surface construction of the fabric.

In the textile field, it is a continuing desire to provide new and aesthetically attractive products. In the production of textile fabrics, and in particular textile pile fabrics such as carpets, towels, flocked fabrics, and the like, various patterns may be produced in the surface of the fabric itself by varying the construction of the pile surface of the fabric. For example, patterned textile carpets are produced by utilizing areas of high and low pile to provide a particular design. In terry towels, it is common practice to provide patterns in the towel by utilizing high and low pile, or pile and no pile areas on the surface of the towel. Similarly, in flocked fabrics, it is a practice to provide a patterned effect on the surface of the fabric by utilizing plural flocking steps wherein selected areas of the fabric substrate are provided with flock of varying fiber lengths.

To accent the patterns in such fabrics, yarns of different colors may be employed to produce various parts or sections of the patterns during construction of the fabrics. It is also known to print such patterned pile fabrics with various colors to accept the pattern design in the fabric and further enhance the aesthetics of the product. Such printing is superimposed on the fabric in registry with sections of existing pattern in the surface of the fabric.

It is an object of the present invention to provide a new and different patterned textile pile fabric of the general type described.

It is a more specific object to provide a pile fabric having a patterned surface construction with a design printed thereon on top of but out of registry with the patterned surface areas of the fabric. The resulting product provides a novel and aesthetically attractive appearance particularly suited for use in carpets, towels, upholstery, draperies, wearing apparel, and the like.

The above as well as other objects of this invention are accomplished by providing a textile pile fabric having a patterned surface construction and thereafter printing the patterned fabric with the same or a different design from the existing pattern in overlying relation but out of registry with the surface pattern of the fabric.

In the present specification and claims, the term "pile fabric" is intended to include not only textile fabrics containing pile yarns as they are made by a textile manufacturer, but also any end products in which such fabrics may be employed, for example, carpets, towels, upholstery, draperies, wall coverings, wearing apparel, and the like.

The invention will be best understood by reference to the accompanying drawings in which:

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FIG. 1 is a diagrammatic perspective view of a portion of a pile fabric having a patterned surface construction and a printed design superimposed thereon in nonregistry with the surface pattern of the fabric, and

FIG. 2 is an enlarged diagrammatic cross-sectional view of FIG. 1 taken generally along the line 2—2 of FIG. 1.

Referring more specifically to the drawings, FIG. 1 shows a woven pile fabric, such as a carpet 10, having a pile surface pattern formed of low loop pile areas 12, high loop pile areas 14, and high cut pile areas 16. The pile fabric may be constructed in any conventional manner, e.g., weaving, knitting, tufting, napping, flocking or otherwise adhesively bonding, to produce a desired pattern in the pile surface construction. The fabric of the drawing, as can be seen, possesses a geometric surface pattern of rectangles, squares and triangles formed by the areas of low loop pile, high loop pile, and high cut pile yarns.

As shown diagrammatically in broken lines 18, the patterned surface of the pile fabric is printed with a floral design which is superimposed on the fabric pattern out of registry with the underlying surface pattern construction. The fabric may be printed in any suitable manner, such as by roller printing, screen printing, photographic printing or the like. The printed design may be of single or multiple colors, and the yarns employed in the pile surface pattern also may be of single or multiple colors, if desired.

As best shown in FIG. 2, the pile surface pattern of the fabric is constructed of areas of the low loop pile yarns 12, high loop pile yarns 14 and cut pile yarns 16, which are overprinted with the design 18. Although the fabric as shown in the drawings is overprinted on the areas of low loop, high loop, and cut pile, other combinations of pile yarns may be employed to impart a pattern to the fabric construction. For example, the pattern formed in the fabric could be composed of areas of cut pile and loop pile of similar height, areas of pile and no pile, and various combinations thereof.

It should be understood that the construction and the particular pile pattern employed in the fabric is virtually unlimited, as is the print design to be superimposed on the pattern pile fabric, so long as the pile pattern and the printed design are out of registry with one another. The print design may be the same or of different shape from the pile pattern, and the final product would be governed by the particular visual appearance desired. The fabrics of the present invention possess a different and an enriched appearance which enhances the surface of the products formed therefrom. The pile pattern may be indistinctly or subtly seen underlying the bolder printed design. When areas of cut pile and loop pile are employed to form the pile design, the color of the printed design may vary—loop pile areas appearing lighter in color and cut pile areas appearing darker—to provide a highly attractive visual appearance.

From the foregoing specification and drawings, it can be seen that the present invention provides new and novel printed pile fabrics of unusual aesthetic appearance suitable for use in multitude of textile products.

That which is claimed is:

1. A textile pile fabric having a patterned surface construction of varying appearance and having a design printed thereon out of registry with the patterned pile surface construction of the fabric.

2. A fabric as defined in claim 1 wherein said patterned surface construction contains cut pile and loop pile yarns.

3. A fabric as defined in claim 1 wherein said patterned surface construction is composed of pile and no pile areas.

4. A fabric as defined in claim 1 wherein said patterned surface construction is composed of pile yarns of differing pile heights.

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5. A fabric as defined in claim 4 wherein said surface is composed of distinct areas of pile yarns of differing pile heights.

6. A fabric as defined in claim 1 wherein said patterned surface construction and said printed design are of different pattern appearance. 5

7. A fabric as defined in claim 1 wherein said fabric is a terry towel.

8. A fabric as defined in claim 1 wherein said fabric is a pile carpet. 10

9. A fabric as defined in claim 1 wherein said patterned surface construction is multicolor.

10. A fabric as defined in claim 1 wherein said printed design is multicolor.

11. A process for producing a printed textile fabric comprising the steps of providing a textile pile fabric having a patterned surface construction of varying appearance and printing a design on the surface of the fabric superimposed on and out of registry with the patterned surface construction thereof. 15

12. A process as defined in claim 11 wherein said pile fabric is provided by a tufting operation. 20

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13. A process as defined in claim 11 wherein said pile fabric is provided by a weaving operation.

14. A process as defined in claim 11 wherein said pile fabric is provided by an adhesive bonding operation.

15. A process as defined in claim 14 wherein said pile fabric is provided by a flocking operation.

References Cited

UNITED STATES PATENTS

3,187,782	6/1965	Gattoni	26—69 R
2,160,827	6/1939	Cheney et al.	26—69 R
2,816,811	12/1957	Tillett et al.	161—67
3,012,303	12/1961	Whitaker et al.	161—62
2,110,867	3/1938	Castles	161—63
3,496,054	2/1970	Baigas, Jr.	161—63

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