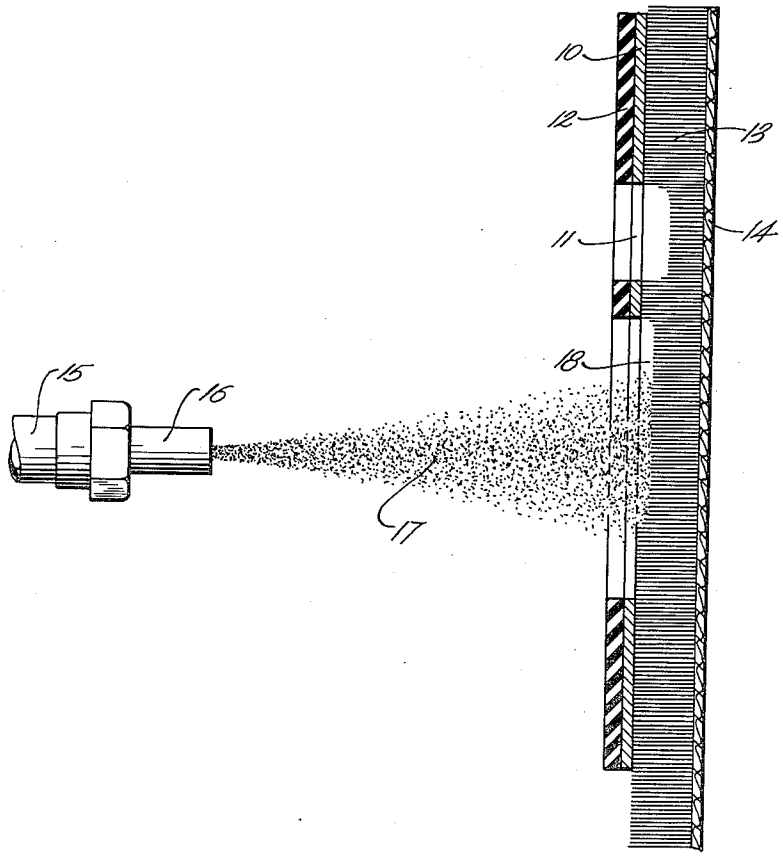
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METHOD OF PRODUCING BAS-RELIEF ON PILE FABRICS

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METHOD OF PRODUCING BAS-RELIEF ON PILE FABRICS

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4 Claims. (Cl. 41—39)

This invention relates to a method of producing bas-relief configurations or designs on pile fabrics such as for example on broadloom carpet, velours, velvets, and the like.

An object of the invention is to provide a method whereby pile fabrics may have portions thereof either entirely or partially removed to produce bas-relief effects by a very simple and inexpensive procedure.

Another object of the invention is to provide a method of producing bas-relief effects on pile fabrics wherein portions of the pile may be very easily and inexpensively removed to a very even or uniform depth.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawing for an illustrative embodiment of the invention, wherein:

The figure is a sectional view through a section of pile fabric illustrating a stencil as having been applied thereto and illustrating the manner in which the method of producing the bas-relief effect is carried out.

Referring to the accompanying drawing wherein similar reference characters designate similar parts throughout, the method embodying the present invention comprises applying to the pile fabric that is to be treated a stencil 10 which is preferably formed of metal but which may be of any preferred material. In this stencil suitable openings 11 are formed to confirm to the shape of the design that it is desired to apply to the pile fabric. The obverse face of the stencil is preferably, but not necessarily, coated and protected by a masking material 12 which should have a high degree of elasticity such as rubber. This masking material is applied to the stencil primarily for the purpose of protecting the stencil and prolonging its useful life. If the stencil is formed of metal and has its obverse side subjected to sand blasting the sand blast has the effect of peening the metal of the stencil and causing it to cup so that it will rise or draw away from the ends of the pile 13 of the fabric.

The fabric employed may have any conventional or preferred warp and woof indicated at 14 and the pile 13 thereon may be produced in any conventional or preferred manner. The fabric may be suspended if heavy but is preferably mounted on a suitable backing or easel not shown. The stencil is applied directly to the ends of the pile 13 and is firmly held thereagainst either by clamps or the equivalent. The openings 11 in the stencil expose the pile which it is desired to remove or shorten in conformity with the desired bas-relief design. When the stencil is applied to the fabric it is evenly subjected to sand blasting employing a sharp abrasive. A conventional sand blasting hose and nozzle are indicated at 15 and 16, respectively, and the discharging stream of abrasive particles is indicated at 17. While the abrasive particles may vary, it is highly desirable to have them sharp and for this purpose I find that carborundum particles serve admirably. The stream of particles issuing from the sand blast nozzle is directed against the exposed pile of the fabric in a direction perfectly perpendicular to the warp and woof, or in other words, directly against the ends of the pile. The sand blast is evenly moved over the areas of the pile fabric exposed by the stencil and in a very short period of time the exposed pile will be shorted to produce the bas-relief effect. The pile that is concealed by the stencil remains its original or full length. Directing the blast at an angle to the lengths of the pile is generally to be avoided for the reason that this has a tendency to undercut the pile at the margins of the stencil openings. Also, there is some tendency for the reduced length of pile to be uneven. If the sand blast is directed against the ends of the pile in a direction parallel to the lengths of the pile such undercutting is eliminated and if the blast is evenly distributed over the exposed areas of the pile fabric it will be found that the exposed pile will be evenly reduced in length so that the bottom of each pocket or depression 18 will be flat and smooth. By continuing the direction of the sand blast against any exposed area the entire pile at this area can be quickly removed down to the warp and woof of the fabric. In most instances, however, it is found desirable to merely shorten the length of the pile at the exposed areas, only a very small shortening producing quite noticeable and desirable bas-relief effects on the fabric. When all of the exposed areas of the fabric have been thus evenly treated by the sand blast the stencil is removed and the fabric cleaned to remove any particles of the abrasive that are lodged between the pile of the fabric.

I am aware that it has been customary to produce bas-relief effects on glass, stone, wood, and other substances by sand blasting through a stencil applied thereto. Such instances or materials, however, as a general rule are relatively hard and incompressible with the result that the

impinging particles of the sand or abrasive are able to pit and remove portions of the material exposed by the stencil. It is also well known that yieldable materials such as rubber effectively resist sand blasting in that the particles of abrasive encounter the yieldable material, compress it slightly, and are immediately thrown off without effectively removing any of the material. Although the pile of pile fabric in the case of carpet, velvets, velours, and the like, might be regarded as somewhat yieldable due to the flexibility of the pile I find that although the abrasive particles impinge upon the ends of the pile the cutting action of the sand blast is similar to that experienced in sand blasting stone, metal, glass, wood, and like hard materials. Although some abrasive particles may enter between the pile, the pile fabric does not become loaded with these lodged abrasive particles to prevent cutting, nor does the sand or abrasive gather adjacent the margin of the stencil openings and impede cutting. If the sand blast is evenly moved over the entire exposed area and the direction of the blast is squarely against the ends of the pile the shortening of the exposed pile will be extremely uniform, thus producing a very neat and attractive effect.

Some types of pile fabrics such as Brussels carpet have the pile formed by closed loops of yarn or threads. When such material is subjected to the present process the effect of the sand blast is to cut through the tops of the loops that form the pile and to also shorten them producing a contrasting effect between the cut pile and the uncut pile.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. The method of producing bas-relief pile fabrics which includes applying to the obverse side of a pile fabric a stencil shaped to conform to the desired outline and sand blasting through the openings in the stencil thus shortening the pile of the fabric exposed by the stencil.

2. The method of producing bas-relief pile fabrics which includes applying to the obverse side of a pile fabric a stencil shaped to conform to the desired outline and percussively blowing a comminuted sharp abrasive through the openings in the stencil thus shortening the pile of the fabric exposed by the stencil.

3. The method of producing bas-relief pile fabric which includes applying to the obverse side of a pile fabric, a stencil shaped to conform to the desired outline having applied to its obverse side a protecting elastic masking medium, and sand blasting through the openings in the stencil thus shortening the pile of the fabric exposed by the stencil.

4. The method of producing bas-relief pile fabric which includes applying to the obverse side of a pile fabric a stencil shaped to conform to the desired outline and sand blasting in a direction perpendicular to the plane of the fabric through the openings in the stencil thus shortening the length of the pile of the fabric exposed by the stencil.

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