May 9, 1944. E. SPIELMANN 2,348,230

ART OF IMPRINTED WOVEN FABRICS

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Fig. 1.

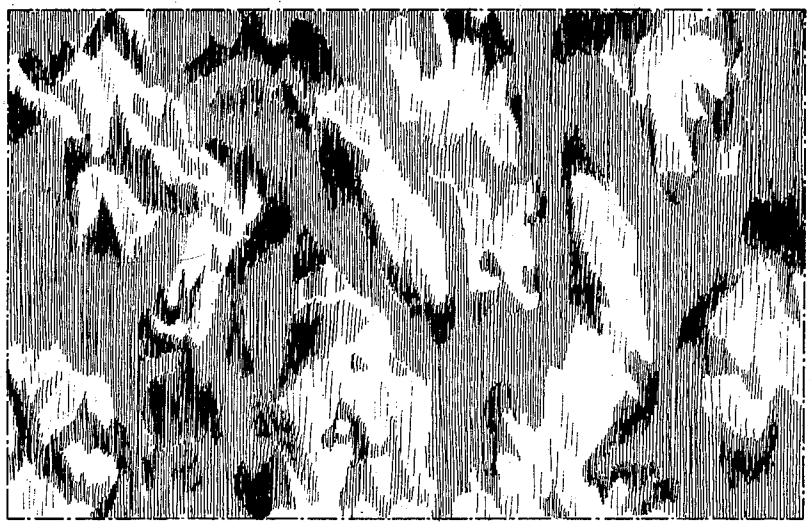


Fig. 2.

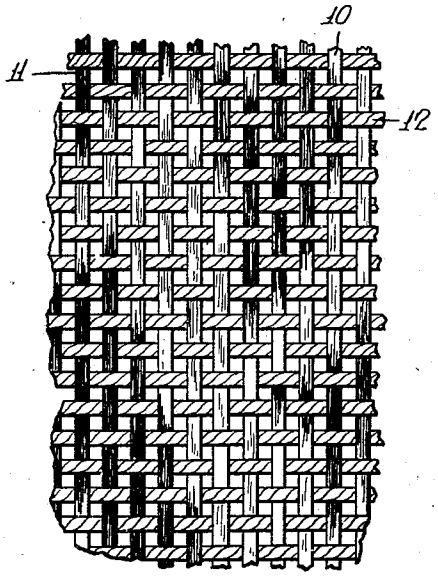
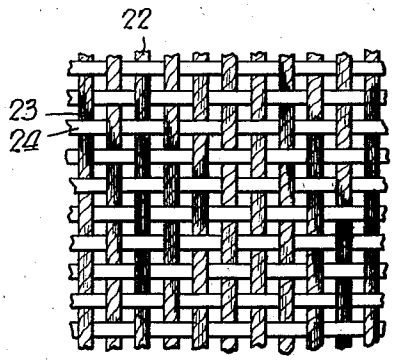


Fig. 3.



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ART OF IMPRINTED WOVEN FABRICS

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9 Claims. (Cl. 28—74)

The present invention relates to the art of imprinted woven fabrics and is concerned with methods for readily attaining novel design effects of striking appearance.

As conducive to a clear understanding of the invention, it is noted that in the art of warp-printed fabrics, the unprinted weft is incorporated in the design imprinted upon the warp, with resultant popular effects immediately distinguished from those of fabrics imprinted only after they have been woven.

Among the objects of the invention are greatly to enhance the beauty, distinctiveness and striking effectiveness of such warp-printed fabrics, by not only interrupting them with the pattern of the interwoven unprinted weft strands, but in addition by imparting to the pattern a tri-dimensional effect coupled with a shading off in the outline of the pattern, all as a consequence of slight displacement of the pattern imprinted upon the warp strands out of the common plane thereof.

From the method aspect the invention in a preferred embodiment involves the slight displacement or distortion of the pattern imprinted upon the face of the warp to render it stereoscopic or tri-dimensional in appearance, and to tone down the outline thereof, by shrinking strongly twisted or crepe strands that are incorporated in the finished fabric.

In one desirable embodiment, the pattern is imprinted upon the warp prior to the interweaving therewith of the weft strands. Such imprinting is performed in conventional manner except that the color or pigment is colorfast and not subject to washing out or spreading in shrinking of the woven fabric either in hot water or by other known methods. The weft strands are plain or uncolored, and of strongly twisted crepe thread. These are shuttled through the previously imprinted warp in the usual weaving loom. Thereupon, the completely woven fabric is cooked in water, or subjected to equivalent treatment, which results in shrinking the twisted crepe weft.

As a result of the shrinking operation, not only are the strands of the warp drawn more closely together, but the imprinting of the pattern thereon no longer remains in the common plane in which it was laid down. Short segments of the length of the warp strands with their imprinted exposed areas are shifted about the axes of the strands. The colored face of the strands thus moves inward partly below the exposed surface of the fabric and corresponding unprinted surface of the warp strands moves outward about the axis of the strand to be exposed to view at the face of the fabric. This rotary movement of warp segment is slight, but the effect upon the pattern is astounding. For the color at one edge of the individual warp strand is accentuated and at the opposite edge it is toned down. There results a tri-dimensional aspect, devoid, however, of the relatively sharp geometrical outline characteristic of ordinary warp-printed textiles. Even relatively commonplace patterns imprinted upon the warp are rendered exceptionally alluring by the method set forth.

The term "pattern" as used in the specification and claims designates a decorated or differentiated design imprinted upon the warp as distinguished from the uniform undifferentiated dyeing of the entire warp.

It will be understood that, if desired, the imprinted warp strands could be strongly twisted in a crepe effect and the unprinted weft strands be left relatively untwisted, in which case a variant of the design effect would be attained.

In another embodiment both the imprinted warp strands and the weft strands are strongly twisted as crepe threads, in which case still different effects would be attained as a result of the shrinking treatment.

In the accompanying drawing in which one or more of the various embodiments of the fabric of the present invention are illustratively shown,

Fig. 1 is a plan view of the fabric,

Fig. 2 is a plan view on a greatly magnified scale showing a preferred embodiment, and

Fig. 3 is a similar view of an alternative embodiment.

Referring now to the drawing, Fig. 1 shows in a general way the absence of sharp geometrical outlines of an illustrative design shown imprinted upon the warp and the suggestion of characteristic effect thereof.

In Fig. 2 the relatively untwisted warp threads appear at 10, and the warp printing at the darkened portions thereof 11. The interwoven unprinted crepe twisted weft threads are indicated at 12.

In the embodiment of Fig. 3 the warp threads 22 are shown crepe twisted and the warp printing thereon appears at 23. The interwoven weft threads 24 in this embodiment are shown unprinted and relatively untwisted.

While various embodiments are within the scope of the invention from its broader aspects, it will be understood that the relatively untwisted warp in combination with the twisted or crepe

weft is to be preferred in that, in general, it yields the most striking results.

If desired, the strands of the weft could be in part of twisted or crepe thread and in part of untwisted threads, such twisted and untwisted threads alternating or being distributed in any recurrent sequence desired, such relationship resulting in a modification of the pattern originally imprinted upon the warp.

As many changes could be made in the method and product, and many apparently widely different embodiments of this invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A printed woven fabric having a set of warp strands and a set of plain or uncolored weft strands, the warp strands solely having a colorfast pattern imprinted thereon, at least one of said sets of strands being of crepe twisted thread, the pattern being displaced out of a common plane as a consequence of shrinking the fabric.

2. An imprinted woven fabric having crepe twisted warp strands with a colorfast pattern imprinted thereon and relatively untwisted plain or uncolored weft strands, the pattern being displaced out of a common plane as a consequence of shrinking the fabric.

3. An imprinted woven fabric having substantially untwisted warp strands with a colorfast pattern imprinted thereon, and having shrunken plain or uncolored twisted weft strands, the imprint upon the warp strands being in part deflected about the axes of said warp strands as a consequence of shrinking the fabric.

4. An imprinted woven fabric having crepe twisted warp strands with a colorfast pattern imprinted thereon, and crepe twisted plain or uncolored weft strands, the pattern being displaced out of a common plane as a consequence of shrinking the fabric.

5. The method of fabricating a woven printed fabric which consists in printing a colorfast pattern upon the set of warp strands thereof, interweaving the warp with a set of plain or uncolored weft strands, at least one of said sets of strands being crepe twisted, and finally shrinking the fabric.

6. The method of fabricating a printed woven fabric which consists in printing a colorfast pattern upon the warp thereof interweaving the warp with a crepe twisted plain or uncolored weft, and shrinking the fabric.

7. The method of preparing a printed woven fabric, which consists in imprinting a colorfast pattern upon a warp of substantially untwisted strands, interweaving the warp with a plain or uncolored crepe twisted weft, and cooking the fabric with shrinkage of the twisted thread and modification thereby of the imprinted pattern.

8. The method of fabricating an imprinted woven fabric which consists in imprinting a colorfast pattern upon twisted warp and interweaving the warp with a plain or uncolored weft of substantially untwisted threads and thereupon shrinking the fabric.

9. The method of fabricating imprinted woven fabric which consists in printing a colorfast pattern upon strongly crepe twisted warp strands and interweaving the warp with plain or uncolored crepe twisted weft and thereupon shrinking the fabric.

ERNST SPIELMANN.