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R. WHEWELL ET AL

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WOVEN FABRIC

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Fig. 1.

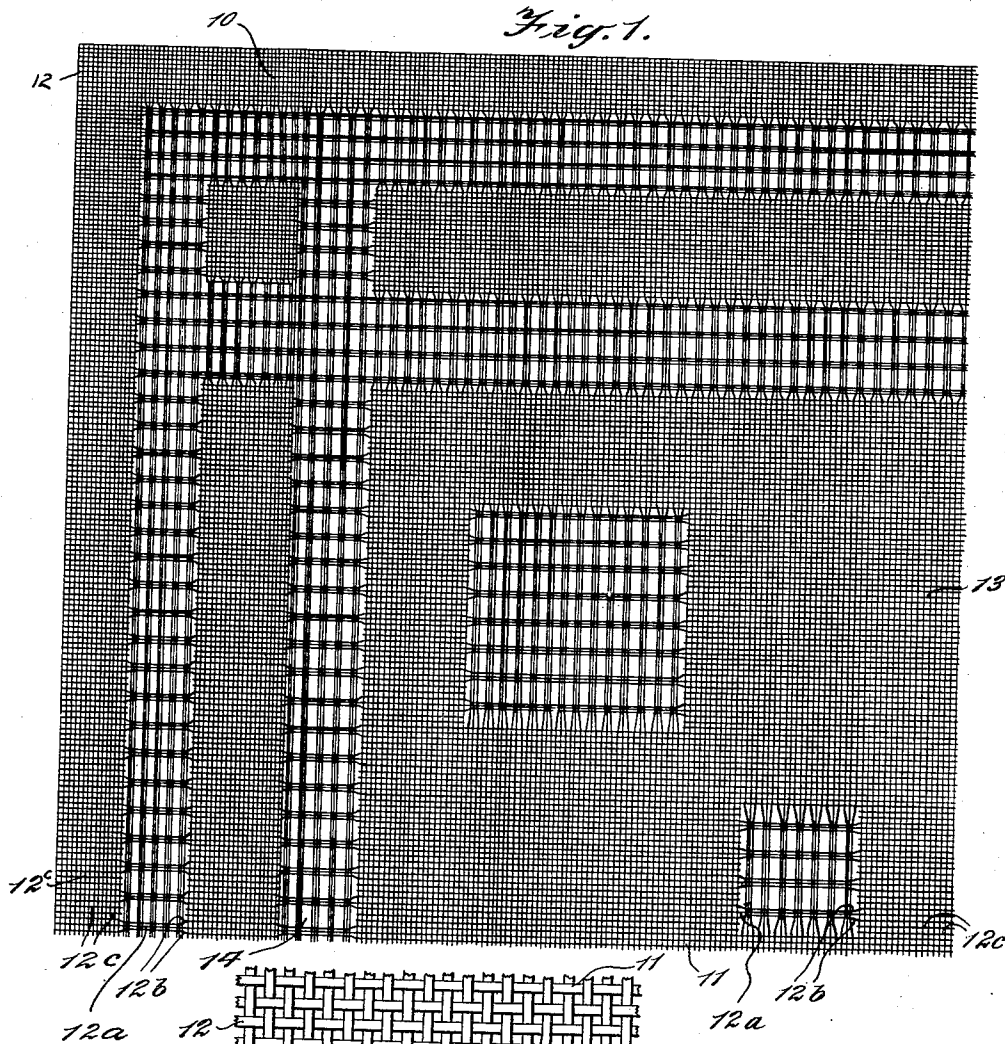
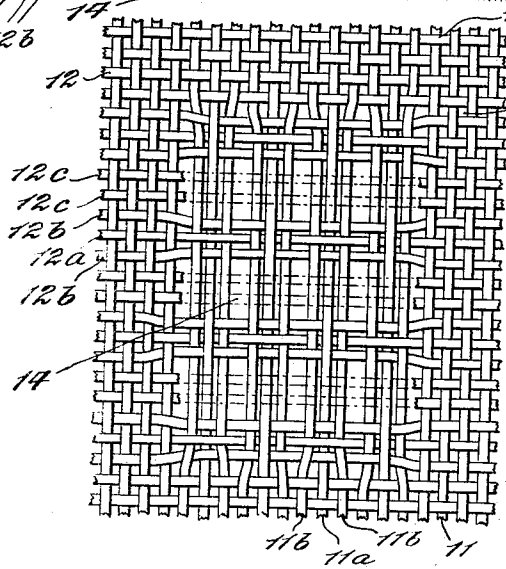


Fig. 2.



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WOVEN FABRIC

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5 Claims. (Cl. 139—416)

This invention relates to woven fabrics and more particularly to woven fabric having a design or pattern formed therein by contrasting portions of open and close weave.

An object of this invention is to provide a relatively inexpensive woven fabric in which a design is formed by weaving certain portions of the fabric in an open weave as contrasted with other portions of the fabric of a close weave, such a fabric being especially suitable for use as handkerchief or curtain material. When used for handkerchiefs, the fabric of this invention provides an acceptable substitute for the more expensive hand-drawn fabrics. Other objects and advantages of the invention will be apparent from the following description and the annexed drawing in which a selected embodiment of the invention is shown, and in which—

Fig. 1 is an enlarged view of the face of a woven fabric incorporating the invention; and

Fig. 2 is an enlarged view showing the weave of the fabric illustrated in Fig. 1 in detail.

Referring to the drawing in detail, there is a woven fabric 10 consisting of the usual warp threads 11 and weft threads 12. The body 13 of the fabric may be of any relatively plain, close weave, the weave illustrated being a one-by-one plain weave. In contrast to this body portion 13, there are portions 14 of a relatively open weave.

The body portion 13 and the open portions 14 may be woven in such a manner as to produce any desired pattern or design in the fabric.

The open portions 14 are produced by weaving the warp and weft threads in the manner shown in Fig. 2. In these portions of the fabric, certain of the weft threads 12^c are not interwoven with the warp threads in the pattern area but are floated free of the warp threads and are sheared off at the edges of the pattern area before the fabric is finished. The position of these weft threads 12^c before shearing is indicated by the dotted lines in Fig. 2.

In the embodiment illustrated in Fig. 2, the weft threads 12^c are positioned in the open portions 14 of the pattern area so that there will be two of these weft threads 12^c between groups of three weft threads 12^a and 12^b which are interwoven with the warp threads. This sequence is repeated throughout the pattern area and, in effect, divides the remaining weft threads into groups of three. In each of these groups of three weft threads, the central thread 12^a is woven alternately over and under groups of three warp threads across the pattern area. The out-

er weft threads 12^b of each group are interwoven with the warp threads in the customary manner.

The weaving of the weft threads 12^a in the manner described divides the warp threads 11 into groups of three. The result is that in each group of three warp threads, the central warp thread 11^a is woven so as to pass alternately over and under the groups of weft threads 12^a and 12^b and the outer warp threads 11^b of each group are woven in the customary manner with each group of weft threads.

This arrangement of the warp and weft threads permits the outer weft threads 12^b and the outer warp threads 11^b in each of the groups to move more or less freely toward the central thread 12^a or 11^a of their respective groups. The central weft threads 12^a have a tendency to urge the outer warp threads 11^b toward the central warp thread 11^a of the respective groups. Similarly, the central warp threads 11^a have a tendency to urge the outer weft threads 12^b of each group toward the central weft thread 12^a of the respective groups.

The weave of the warp and weft threads in the pattern area is known as a mock leno weave. It accomplishes a result similar to the real leno weave but does not require the use of doup or the twisting of the warp ends such as are required in the weaving of a real leno weave. The combination of this mock leno weave with the shearing of the weft threads 12^c from the pattern area, provides an open weave which has the necessary firmness and strength for practical purposes, but which, on the other hand, provides a definite contrast to the closely woven body portion of the fabric and may be utilized to produce any desired design in the fabric. Thus, a relatively inexpensive fabric is produced which compares favorably with the more expensive fabrics, for instance, those having hand-drawn designs.

In the illustrated embodiment of the invention, the mock leno weave has been shown as consisting of three warp and three weft threads, with each group of three weft threads being spaced apart by two weft threads which have been sheared from the pattern area. It will be obvious that various multiples of these threads can be effectively utilized in carrying out the invention; for instance, instead of having the groups of weft threads spaced apart by two picks, the spacing could be changed to four picks. Also, the number of either the warp or

the weft threads in each group could be increased say to five.

While the invention has been shown and described in connection with a preferred embodiment, the invention is not to be limited to the exact form shown and described, as it will be apparent to those skilled in the art that certain modifications and changes may be made without departing from the scope of the invention.

We claim:

1. A woven fabric having an open-work pattern formed therein consisting of warp threads and weft threads, a body portion in which said warp and weft threads are woven in a relatively close, plain weave, contrasting portions of an open weave forming a pattern in said fabric, said open weave consisting of a plurality of groups of three or more weft threads interwoven with the warp threads, said groups of weft threads being spaced apart by at least two weft threads in the body portion, said spacing weft threads having been removed from the open-weave portion, the central weft thread of each group being interwoven with the warp threads by alternately passing under and over groups of at least three warp threads across the open weave, and the remaining weft threads in each group being interwoven with said warp threads in the usual manner.

2. A woven fabric having an open-work pattern formed therein consisting of warp threads and weft threads, a body portion in which said warp and weft threads are woven in a relatively close, plain weave, contrasting portions of an open weave forming a pattern, said open weave consisting of a plurality of groups of three weft threads interwoven with the warp threads, said groups of weft threads being spaced apart by two weft threads in the body portion, the spacing weft threads having been removed from the open-weave portion, the central weft thread of each group being interwoven with the warp threads by alternately passing over and under groups of three warp threads across the open

weave, the remaining weft threads of each group being interwoven with said warp threads in the usual manner.

3. A woven fabric having an open-work pattern formed therein consisting of warp threads and weft threads, a body portion in which said warp and weft threads are woven in a relatively close, plain weave, contrasting portions of an open weave forming a pattern in said fabric, said open weave consisting of a plurality of groups of three weft threads, said groups of weft threads being spaced apart by two weft threads in the body portion, said spacing weft threads having been removed from said open weave, the weft threads in said groups being interwoven with groups of three warp threads across the open weave in a mock leno weave.

4. A woven fabric having an open-work pattern formed therein consisting of warp threads and weft threads, a body portion in which said warp and weft threads are woven in a relatively close, plain weave, contrasting portions of an open weave forming a pattern in said fabric, said open weave consisting of a plurality of groups of three or more weft threads, said groups of weft threads being spaced apart by two or more weft threads in the body portion, said spacing weft threads having been removed from said open weave, the weft threads in said groups being interwoven with groups of three warp threads across the open weave in a mock leno weave.

5. In a woven fabric having a body portion of relatively close weave and a pattern formed by a relatively open weave, said open weave comprising groups of warp and weft threads woven in a mock leno weave, said groups of weft threads being spaced apart by two or more weft threads in the body portion, said spacing weft threads having been removed from the pattern area.

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