

(No Model.)

G. BERTEAUX.

WOVEN FABRIC.

No. 333,276.

Patented Dec. 29, 1885.

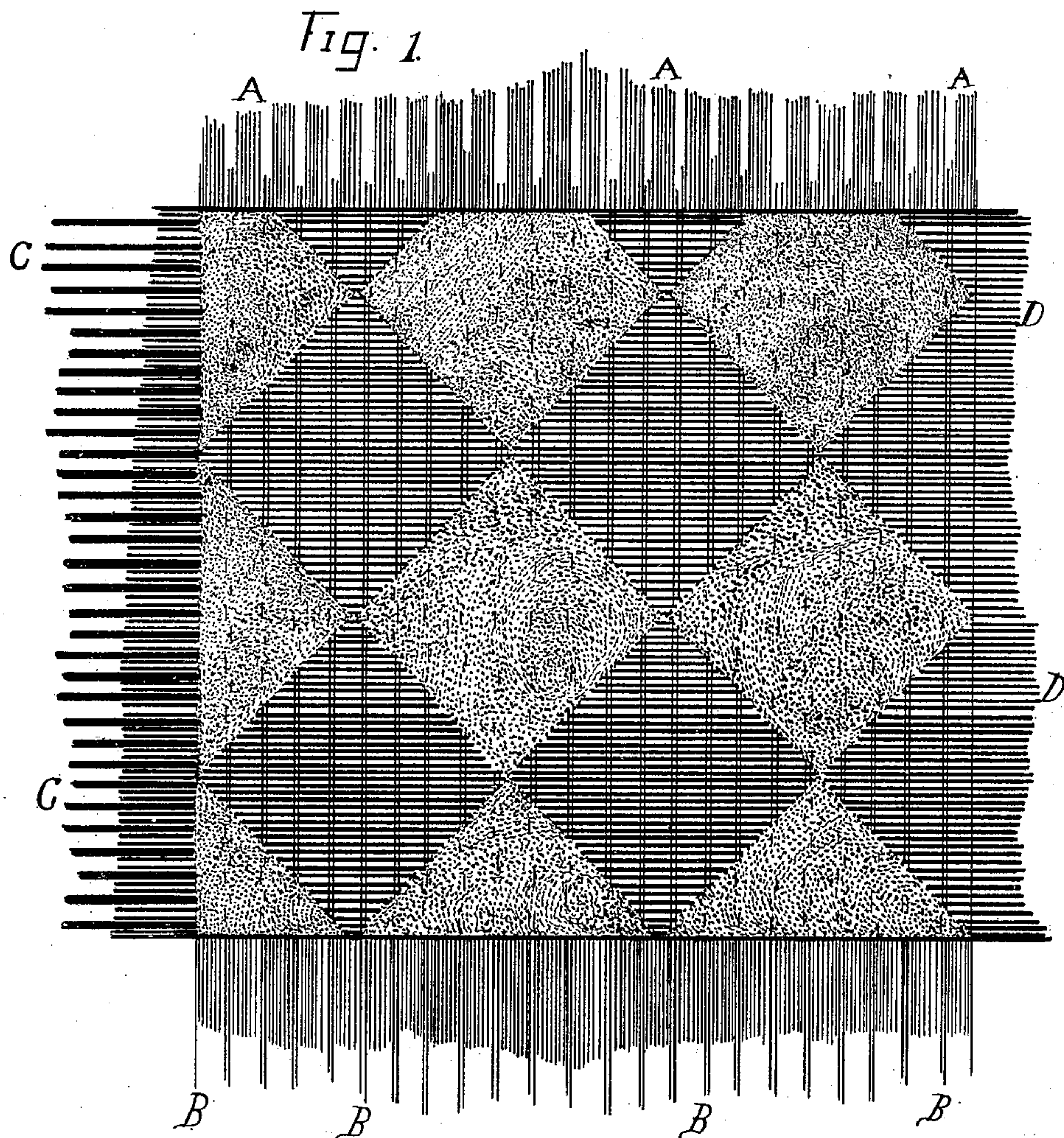


Fig. 2.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## WOVEN FABRIC.

SPECIFICATION forming part of Letters Patent No. 333,276, dated December 29, 1885.

Application filed February 12, 1885. Serial No. 155,691. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGES BERTEAUX, a citizen of the Republic of France, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Woven Fabrics, of which the following is a specification.

My invention relates to a class of fabrics that may be used for upholstery and furniture-coverings, curtain and drapery hangings. It may also be used for ladies' coatings and dress-trimmings.

The invention consists in a fabric composed of a new combination of weft and warp threads, as hereinafter pointed out, one set of the weft-threads being combined with one set of warp-threads, so that they will form on the face or back of the fabric figures in relief, and another set of weft-threads being combined with the same set of warp-threads to form a ground that may be woven plain, twilled, or figured. When "chenille fur" is used for the figuring-weft, or the figuring-weft is napped and sheared, the figures and ground have the appearance of brocade velvet.

To produce my improved fabric, I require two warps, each warp on a separate beam, and two kinds of weft. The weft for the figure in relief I prefer to be of chenille, and for fine goods a class of chenille known as "chella." A heavy soft-spun yarn, or a hard-twisted thread of colored yarns or yarn and bullion twisted, may be used for the weft forming the figures in relief; but when hard-twisted yarns or bullion-yarn is used the relief figures will not be in "plush." The collocation or arrangement of the warp and weft threads is illustrated by the accompanying drawings, in which—

Figure 1 is a face view of a piece of fabric woven according to my invention. Fig. 2 is a sectional edge view showing the collocation or manner of arranging the warp with the weft threads to produce a figure in relief and a ground plain, twilled, or figured.

Similar letters refer to similar parts in both views.

In Fig. 1 the vertical lines represent the warp-threads and the horizontal lines the weft-threads. The threads A A are known to weavers as "stuffer" warp-threads, such

being warp-threads that never show on the face or back of the fabric, but always lie between the wefts, and are hidden as much as possible by the wefts and binder warp-threads. The threads B B are known to weavers as the "binding" warp-threads, such being combined with the wefts to form the figures and bind the fabric together.

C and D represent the weft-threads, the weft C being required to be thicker and heavier than the weft D. The stuffer-threads A A are arranged in the loom heddles or harness, if a jacquard be used, three threads in an eye, two eyes and six stuffer-threads occurring between each two pairs of binder-threads. The binding-threads are drawn in the heddles or harness single—that is, a single thread for each eye of the heddle or harness.

Fig. 1 represents the pattern of the fabric woven in form of diamonds. That part of the face representing the diamond in relief is formed by raising part of the binding warp-threads and sinking all of the stuffer warp-threads and part of the binding warp-threads. The weft is thrown in pick and pick—that is, one pick of weft C and then a pick of weft D—and the lifting of the stuffer and part of the binder threads is so arranged that where the stuffer-warp is raised up before the introduction of a shot of weft, that shot or pick of weft will show under or on the back of the fabric, and where the stuffer-threads and part of the binder-threads are lowered, that shot or pick of weft will show on the face. As the warp-threads are raised or lowered and governed by the heddles or harness of the loom, the weft will be thrown on the face or back of the fabric, with the stuffer warp-threads between the two wefts, and where the weft C is thrown on the face or back it will form a figure in relief. Where the weft D is thrown on the face or back of the fabric, it combines with the warp B, and forms a ground plain or figured, as desired. If fine chenille be used for the weft C, it will make a raised figure. The binder-warp B, being of fine yarn, will be covered by the chenille fur, and the figure will have the appearance and feel of velvet or plush. If soft-spun silk be used for the weft D, and the binding warp-threads be of the same color as weft D, the ground can be



twilled, so that the weft D will almost cover the binder warp-threads B, so that they will not show. The weft D will predominate in the ground, both on the face and back of the fabric.

5 In place of chenille for the weft C, a soft-spun thread of long fibers may be used. These fibers from the weft forming the figure may be drawn or raised by a "gig," and the raised fibers when sheared will have the appearance and feel of velvet or plush. A hard-twisted thread of colored yarns, or a thread on which is twisted a strip of bullion, called "bullion twisted thread," may be used; but the hard-  
5 twisted and bullion thread will not make velvet or plush.

My improved fabric may be woven on a hand or power loom; but the loom to make a figure will require an independent heddle-  
0 motion or a Jacquard machine to control the warp-threads. The loom will also require a two-shuttle-box motion on each side of the

loom, so as to work pick and pick. In fact, the fabric may be woven on any hand or power loom having the heddle-harness and  
25 box-motion above mentioned, and a suitable picking motion.

Having thus described my invention, I claim—

The combination, with the stuffer-warps A  
30 and binder-warps B, of the thick wefts C and fine wefts D, the thick wefts C being interwoven with the binder-warps B to form raised figures on the face and back of the fabric, the binder-warps B being interwoven with the  
35 thin wefts D to form the ground, and the stuffing-warps lying under the thick wefts C, and between the latter and the thin wefts D, all substantially as described.

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Witnesses:

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