S. J. E. SOLLEY.

WOVEN FABRIC AND METHOD OF PRODUCING THE SAME.

APPLICATION FILED JULY 27, 1908.

**919,485.** Patented Apr. 27, 1909.

Fig: 1.

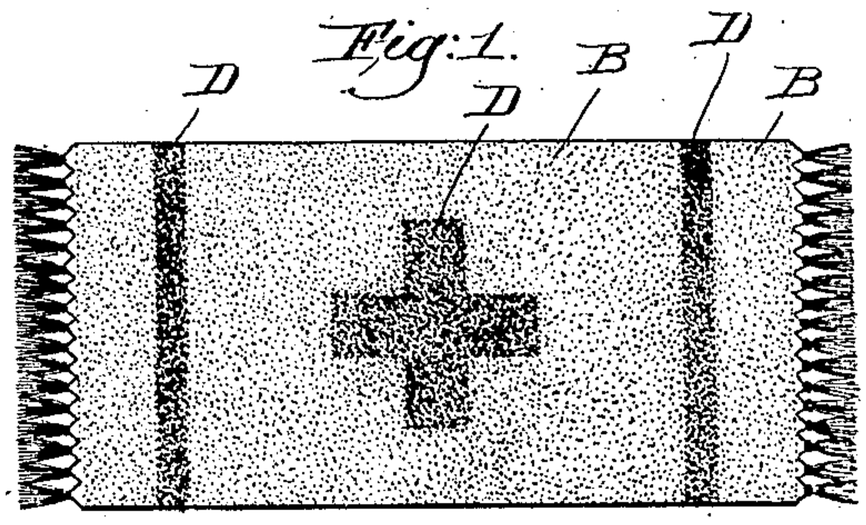



Fig: 2.

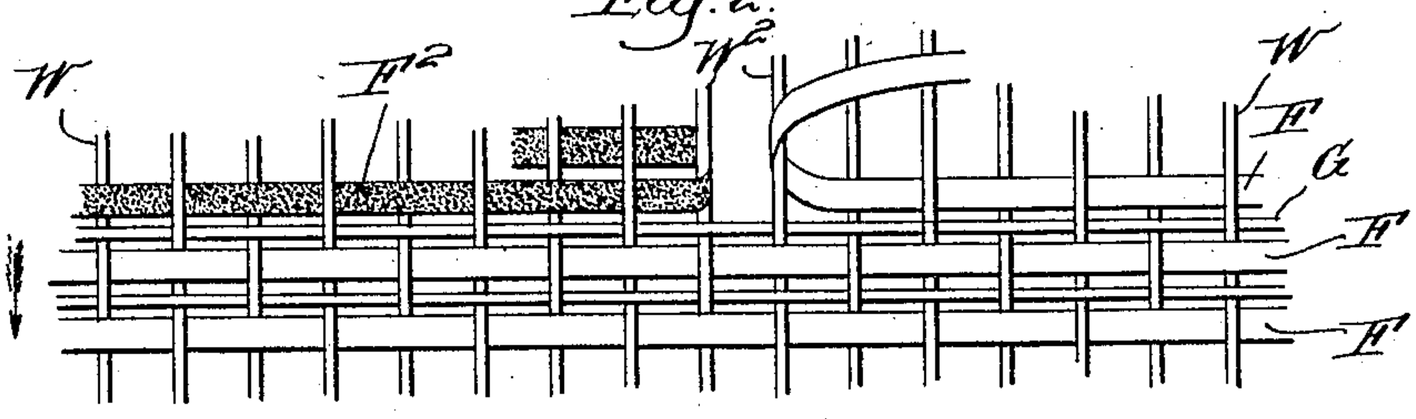
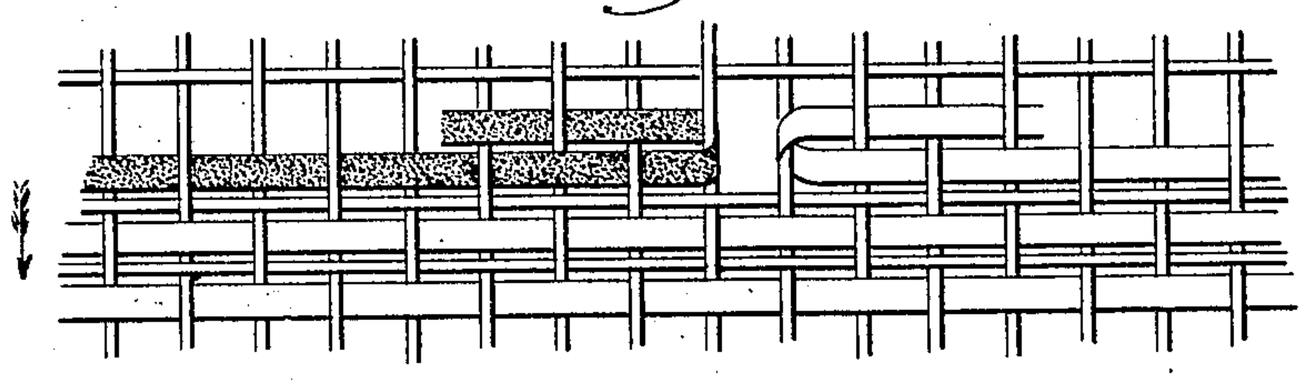



Fig: 3.



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# UNITED STATES PATENT OFFICE.

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## WOVEN FABRIC AND METHOD OF PRODUCING THE SAME.

No. 919,485. Specification of Letters Patent. Patented April 27, 1909.

Application filed July 27, 1908. Serial No. 445,452.

*To all whom it may concern:*

Be it known that I, SARAH J. E. SOLLEY, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Woven Fabric and Methods of Producing the Same, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawing representing like parts.

This invention relates to the production of a fabric suitable for rugs or carpets made with a filling or weft of narrow strips of old or new carpet or similar material, and having designs formed during the weaving.

Hitherto it has been impossible to obtain satisfactory results in the formation of designs in this kind of fabric. By this invention a fabric is produced which in design and appearance may be equal, if not superior, to the well-known oriental rugs and carpets.

In the present invention well defined designs can be formed with exactness, and appear equally well on both sides of the fabric. By employing the proper kind of material for the weft or filling and by properly beating up the texture of the rug can be made as firm and soft as desired.

This invention leaves no unsightly ends and produces no hard or objectionable ridges at any point in the carpet as has been the case heretofore when designs have been attempted in the production of fabrics of this character.

The essential feature of the invention consists in the employment of a binding filling of hard and firm character which does not appear on either face of the fabric when beaten in and which serves to hold in place the filling forming the face of the fabric and prevents the ends occurring at the defining lines of the design from working loose or appearing on the face of the fabric.

The invention consists, therefore, in a fabric wherein the filling is made up of woven strips of old or new carpet or similar material formed into designs, and an invisible binding filling, and in the improved method of producing the said fabric.

This invention both in the fabric and in the method will appear more fully from the accompanying description and drawings and will be particularly pointed out in the claims.

The drawings represent in a somewhat diagrammatic way the arrangement of the warp and filling which go to make up the fabric, and are for the purpose of making clear the relation of these parts the one to the other.

In the drawings, Figure 1 is a plan view of a small rug embodying the invention shown as provided with a simple form of design. Fig. 2 is a diagrammatic view of a portion of the fabric in the process of construction. Fig. 3 is a view similar to Fig. 2.

In fabrics of this character the warps which are invisible in the completed fabric are formed of any suitable hard fabrics, while the filling is formed of some material which will present when beaten in a soft and plush-like surface, such as is produced in pile carpets or rugs. One of the best materials and one most readily obtainable for this purpose is a narrow strip of ingrain or similar carpet, cut in the direction of the warp. The warp threads of such ingrain carpet serve to hold together the short filling threads of the cut strips presenting a fluffy appearance, and when these strips are beaten in only the short filling threads are presented on both surfaces, thus giving the soft pile effect desired. Either old carpet may be cut up for this purpose or narrow strips may be specially woven and used for a very fine class of work. Brussells carpet and other carpets presenting a hard woven back and a pile face may be cut into narrow strips and twisted before being beaten in so as to present only the pile face at either face of the rug or fabric. These strips thus employed are dyed in different colors and are placed in the shed by hand. The arrangement of the colored strips in the warps is all that serves to constitute and define any desired design. Hence, at the line separating the figure of the design from the body of the fabric there must be a joint between the filling strips. If this joint is effected by carrying the adjacent ends of the strip constituting the body and the strips constituting the body of the design about the same warp it will be seen that a ridge will be produced in the carpet which is objectionable not only in feeling but also which is soon exposed by wear. If these strips are turned back about adjacent wraps then an opening is produced

in the fabric, and if the defining line of the design extends for a plurality of fillings, as is usual, the opening correspondingly increases in size and constitutes a defect in the fabric.

The present invention makes use of an additional, or as it is herein termed a binding filling, preferably inserted in each shed with the main filling. This binding filling and the warps serve of themselves alone to form a complete fabric, so that the main filling is really unimportant to secure the strength and continuity of the fabric. This enables the strips of main filling to come together at the border line of the design without being bent back about the same warp, or in other words, enables the border line of the design to be formed in the space between adjacent warps, and the ends of the main filling to be beaten in and secured in the body of the fabric without forming either an objectionable ridge or a visible opening.

In the completed fabric represented in Fig. 1, B represents the body portion of the fabric and D the design portion herein shown as consisting simply of two stripes and a cross.

The construction of the fabric and the method of weaving will appear more clearly from Figs. 2 and 3, in which the arrows represent the direction of the beat up.

The warps are represented at W, $W^2$, the main filling constituting the body portion at F and the main filling constituting the design portion at $F^2$, while the binding filling is represented at G. For simplification of illustration the main filling constituting the body and the design are shown as plain strips, whereas they are in fact made up as above described of narrow strips of ingrain carpet cut in the direction of the warp or similar material.

The fabric is preferably woven in a hand loom, and as the mechanism of such a loom is familiar and well known it is unnecessary to describe the same.

In any given shed either the binding filling or the main filling may be first inserted and beaten up, but it has been found that the best results are produced by inserting the binding filling first and following it with the main filling, and such form is herein illustrated.

When the body portion of the fabric has been woven, as shown in the lower portion of Figs. 2 and 3, and the point is reached where the design is to appear, the outline of the design being chalked or otherwise marked on the warps, the binding filling is inserted in the open shed and beaten up. A piece of main filling F of the color of the body of the fabric is then laid in the same shed, as shown in Fig. 2, and the end turned back around one of the warps the space between which defines the outline of the design and is left protruding. The main filling $F^2$ of the color to form the design portion of the fabric is then laid in the same shed and the end bent back in the opposite direction around the other of the warps the space between which defines the outline of the design and is left protruding. This main filling is then beaten up in the shed. The protruding ends are then woven in to the warps on their respective sides. The shed is then changed. The binder filling is again inserted. The fabric is then beaten up. The operation then proceeds as before until the fabric is completed.

The above operation produces the most desirable form of fabric, the filling being thoroughly beaten in and when finished the fabric presenting on each side a surface in which the design is sharply defined and presenting no hard ridges or visible openings.

The construction and method may be varied slightly and satisfactory results secured by weaving the ends of the main filling back into the warps before the shed is changed and the binding filling inserted, but the best results are secured by beating up the main filling first and then weaving in the ends as above described.

The binding filling may be carried in a shuttle and inserted in a continuous strand back and forth as in the case of ordinary weaving.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The improved method of producing a woven fabric in a design, which consists in employing relatively small hard warp threads, relatively small hard binding filling, and relatively large fluffy main filling of different colors, inserting the binding filling and pieces of different colored main filling in the same shed, and turning the adjacent ends of said pieces of main filling back into the warps about adjacent warps the space between which defines the outline of the design.

2. The improved method of producing a woven fabric in a design, which consists in employing relatively small hard warp threads, relatively small hard binding filling, and relatively large fluffy main filling of different colors, opening the shed, inserting the binding filling in the shed, inserting two differently colored pieces of main filling in the same shed, turning the adjacent ends of said pieces back about adjacent warps the space between which defines the outline of the design and leaving the said ends protruding, beating up, weaving the said loose ends back into the warps, changing the shed.

3. A woven fabric presenting a design and consisting of relatively small hard warp threads, relatively small hard binding filling, and relatively large fluffy main filling of different colors, the binding filling and the main

filling extending side by side over and under the warps and the adjacent ends of different colored pieces of the main filling lying around adjacent warps the space between which defines the outline of the design, and interwoven back upon themselves.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

SARAH J. E. SOLLEY.

Witnesses:
MABEL PARTELOW,
THOMAS J. DRUMMOND.