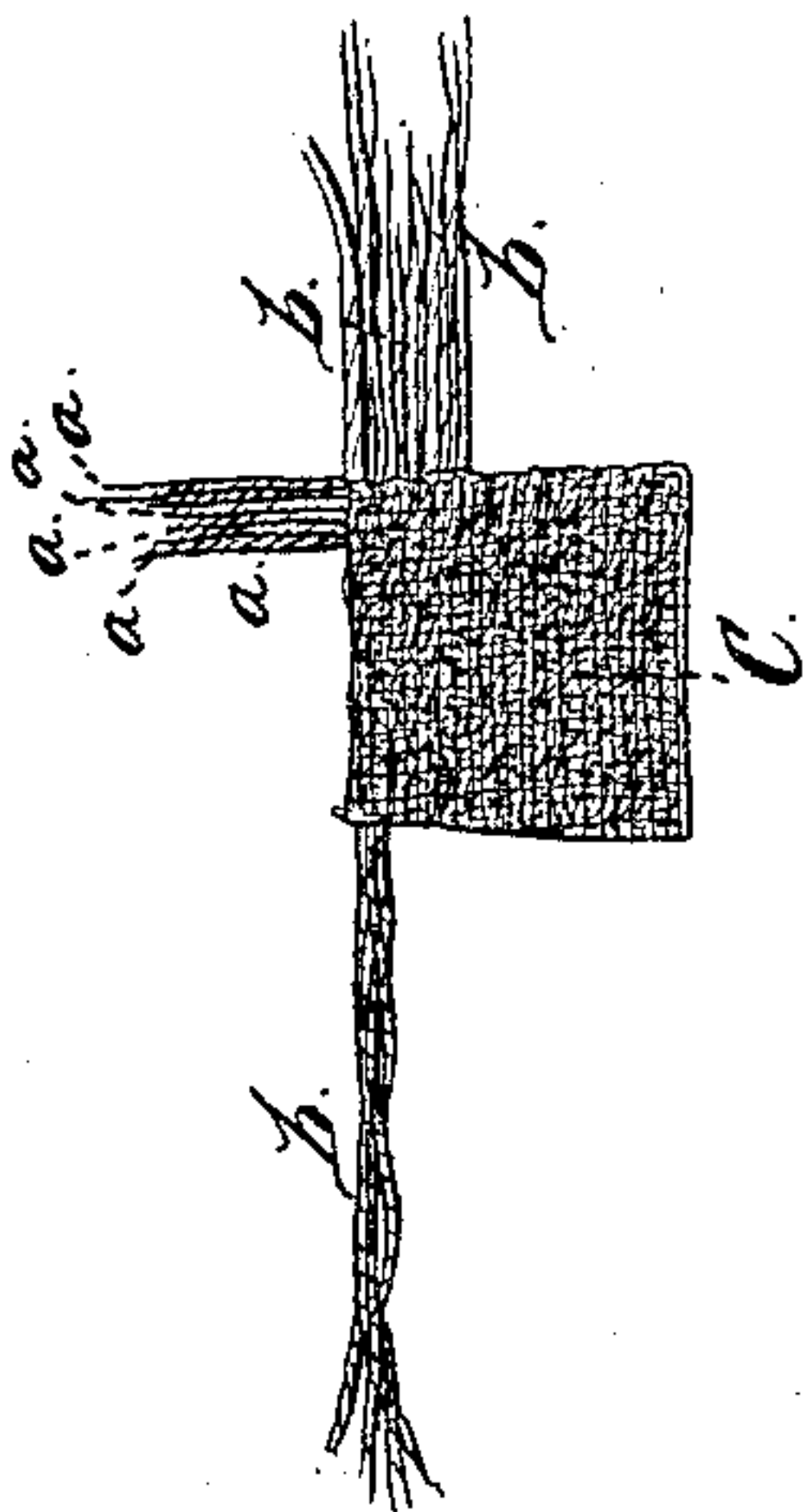


G. Crompton.
Woven Fabric.

N^o 56,381.

Patented Jul. 17, 1866.



Witnesses.

J. B. Kidder
M. W. Frothingham

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UNITED STATES PATENT OFFICE.

GEORGE CROMPTON, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN WOVEN FABRICS.

Specification forming part of Letters Patent No. **56,381**, dated July 17, 1866.

To all whom it may concern:

Be it known that I, GEORGE CROMPTON, of Worcester, in the county of Worcester and State of Massachusetts, have invented an improved Textile Fabric; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In the production of certain classes of woven fabrics where yarns of different colors or of different degrees of fineness are employed, a somewhat varied appearance is imparted to the surface of the texture in accordance with the color or varied sizes of the warp and weft threads and the disposition of the warp with respect to the weft. There exists, however, in all fabrics so made a uniformity of appearance upon the surface, or a uniform disposition of particular threads with relation to the other threads, which it is sometimes very desirable to break up. This it is not very practical to do merely by the method of combining or weaving the threads, because, as the yarns have a uniform disposition in the separate threads, a corresponding uniformity will be produced in the woven fabric. For instance, supposing a white yarn is twisted in with a black yarn or yarns to make the warp-thread. Now, however varied the appearance produced by the method of weaving the threads, all the white yarns in the surface of the texture will have a general parallelism, or will all run in the same general direction, and so with all the black yarns.

Now, in most woven goods the threads used, whether of warp or woof, are composed of yarns twisted together, the disposition of the yarns produced by the double and twist giving to the thread itself a uniform appearance along its surface, though there may be an alternation of colors or an alternate appearance of fine and coarse yarns, contingent upon the grade or colors of the separate yarns used in the formation of the thread, and with this regularity in the threads it is impossible to produce the desired irregularity in the surface of the fabrics woven therewith. To produce this irregularity, I begin with the thread itself, and make it up of yarns braided together in-

stead of twisted together. Threads so braided I introduce into the warp or the weft, or both, and the result is an utter breaking up of the regularity of appearance of the yarns, destroying their parallelism, and thereby producing a desirable effect never before obtained upon the surface of woven fabrics.

My invention consists, therefore, in a textile fabric made up in whole or in part of braided yarns in contradistinction to double and twisted yarns. The threads may be composed of three or more strands, and the peculiarity of each thread, by which the peculiar effect is produced in the fabric, is owing to the fact that the yarns in the process of braiding are laid angularly with respect to each other instead of being laid or wound in the same direction as in a twisted thread, so that in the woven fabric a particular yarn of a particular size or color appears in such angular relation to the other yarns as to destroy the parallelism that exists in the yarns of all fabrics woven with double and twisted threads.

The variety of changes which can be brought about by this method of incorporating the yarns which make up the fabric will readily suggest themselves to practical weavers.

Braided threads of three strands may be incorporated with braided or twisted threads of two, three, or more yarns, and the colors of the yarns, the materials of which they are spun, the sizes of the threads, and the disposition of the warp and woof may be so varied as to enter in countless ways into the formation of the fabric to produce effects entirely novel and desirable.

I am aware that in the English Patent No. 10,076 of 1844 it is proposed to use in the production of elastic fabrics rubber covered with braid, to be introduced in the process of weaving. Such material, however, is not introduced as a braid, or to produce as a braid any peculiar effect in the goods, the braid being only used as a cover to the rubber, its yarns having to be closely braided for this purpose. Such braids are not introduced as regular warp-threads, but in addition to the warp, no warp-threads being displaced for its introduction. In my goods, however, each braid forms either a direct warp or a direct filling-thread, and is not used extraneously or as a cover for any

other material, the yarns being loosely braided and not compacted as when braided over rubber.

I am also aware of the manner of introducing plaited threads into fabrics, as shown in English Patent No. 288 of 1858. In such fabrics there are plaited or twisted pillars united together at intervals by plaited or twisted threads, the obvious purpose of the employment of plaits being to produce desirable effects in the goods by reason of the uniform appearance in the fabric of the yarns making up each plait. In my fabric, however, the braided threads are used for the very purpose of breaking up in the fabric the uniformity of appearance of the yarns forming each distinct thread; and this I accomplish by weaving the parallel braids and threads in close juxtaposi-

tion in contradistinction to laying the plaits at intervals, the contact of the adjacent threads destroying the uniformity in appearance of the yarn which exists in each braid *per se*.

The accompanying drawings will serve to represent a fabric made in accordance with my invention, *a* denoting the warp-threads; *b*, the filling-threads, braids being used for the latter, and the interweaving of braids and twists producing an irregular effect, as seen at *c*.

I claim—

A textile fabric woven with braided threads, substantially as described.

GEO. CROMPTON.

Witnesses:

J. B. CROSBY,
FRANCIS GOULD.