

W. WALLACE.  
Carpet-Fabric.

No. 215,999.

Patented May 27, 1879.

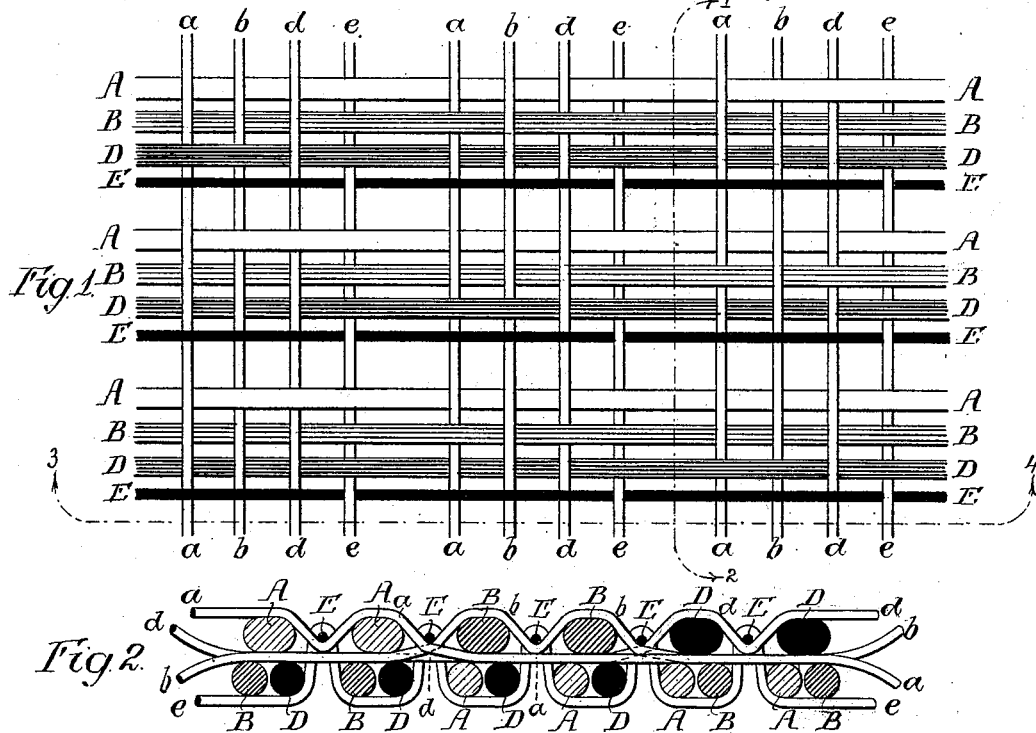


Fig. 3.

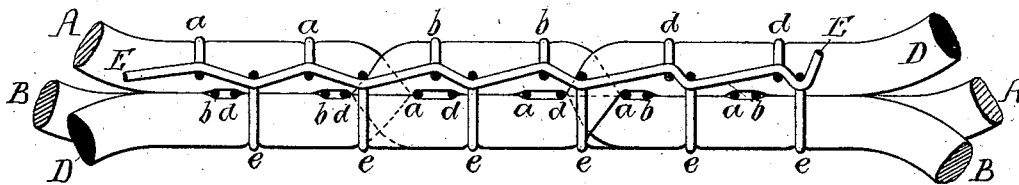
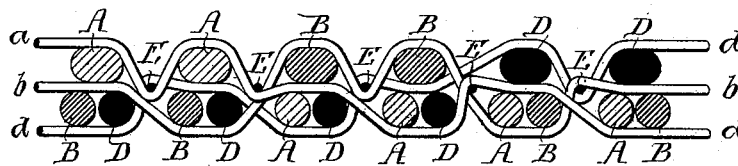


Fig. 4.



Witnesses.

Henry Smith  
McDermott

Inventor,  
William Wallace  
by his Attorneys  
Howson and Son

# UNITED STATES PATENT OFFICE.

WILLIAM WALLACE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF  
ONE-HALF HIS RIGHT TO JOHN WALLACE, OF SAME PLACE.

## IMPROVEMENT IN CARPET FABRICS.

Specification forming part of Letters Patent No. **215,999**, dated May 27, 1879; application filed  
November 14, 1878.

*To all whom it may concern:*

Be it known that I, WILLIAM WALLACE, of Philadelphia, Pennsylvania, have invented certain Improvements in Carpet Fabrics, of which the following is a specification.

The main object of my invention is to produce, at a cheap rate, a carpet somewhat resembling in appearance the more expensive ingrain carpet, but having a face and back firmly bound together at all points; and this object I attain by combining together sets of threads, each composed of two or more figuring-wefts, a binding-weft, and face-binding warps equal in number to the figuring-wefts, and so arranged in respect thereto, and to the binding-weft, that the different figuring-weft threads may be caused to appear in line with each other laterally on the face of the fabric.

In the accompanying drawings, Figure 1 is a diagram showing the arrangement of thread in my improved carpet fabric; Fig. 2, a longitudinal section of part of the fabric on the line 1 2, Fig. 1, drawn to an exaggerated scale and showing the wefts duplicated; Fig. 3, a transverse section on the line 3 4, Fig. 1, drawn to an exaggerated scale and showing the warps duplicated; and Fig. 4, a view also drawn to an exaggerated scale, and representing a longitudinal section of a modified form of my improved fabric.

The fabric shown in Figs. 1, 2, and 3 may be said to consist of a repetition of sets of threads, each set comprising eight threads, of which four—namely, A, B, D, and E—are wefts, and the other four, lettered *a*, *b*, *d*, and *e*, are warps. These four warps are so arranged as to pass through one space of the reed in weaving. The wefts A, B, and D are figuring-wefts, and the weft E is finer and is used as a binder. The warps *a*, *b*, and *d* are used to bind down the wefts A, B, and D where they appear on the surface, and these warps are bound down by the wefts E, while the warp *e* appears on the back of the fabric only, and is bound up by the wefts E.

The warp *a*, by preference, corresponds in color with the weft A, and the warps *b* and *d* likewise correspond with the wefts B and D, respectively.

The mode of weaving is as follows: Starting

with the introduction of the weft A, the jacquard is first operated so as to raise all of the warps with the exception of the warps *e* and the warps *b* and *d* of those sets in which the weft A is to appear upon the surface. The weft A is then thrown in and beaten up, and the jacquard again operated so as to raise all of the warps with the exception of the warps *e* and the warps *a* and *d* of those sets in which the weft B is to appear upon the surface. The weft B is then thrown in and beaten up, and this is followed by another operation of the jacquard, so as to raise all of the warps with the exception of the warps *e* and the warps *a* and *b* of those sets in which the weft D is to appear upon the surface.

After the weft D has been thrown in and beaten up the jacquard is operated so as to raise all of the warps *e*, and leave down all of the warps *a*, *b*, and *d*, and the fine weft E is then thrown in and beaten up, so as to bind down the warps *a*, *b*, and *d*, and bind up the warp *e*.

The face and back of the fabric are thus firmly united at all points, the fabric being of a homogeneous and well-secured character throughout.

The method above described of raising the warps and introducing the wefts will be clearly understood on reference to Fig. 1 of the drawings, which shows the arrangement of warps and wefts in nine sets of threads, the threads, however, not being beaten up.

In beating up after the insertion of the figuring-wefts the threads will be caused to assume the relation to each other shown in Fig. 2, owing to the passage of all the warp-threads of a set through one space of the reed, and the under threads will be compacted beneath the surface-thread, so that they will not show through the spaces between said surface-threads to such an extent as to interfere materially with the pattern on the face of the fabric.

In the finished fabric every weft where it appears on the surface is bound down by a warp of corresponding color, and the other warps of the set are carried below the said weft which appears on the surface, as shown in Figs. 2 and 3.

Either of the figuring-wefts may be caused to appear upon the surface of the fabric at any desired point, and when beaten up the surface-wefts of laterally-adjointing sets are brought into line with each other, so that three colors may be brought into line laterally in the pattern, thus producing an acceptable imitation of the three-ply ingrain carpet.

As the warp *c* and weft *E* do not appear upon the face of the fabric, they may consist of inferior material—cotton, for instance—and in some cases the warp *c* may be entirely dispensed with, the warps *a b d* in such case appearing on both faces of the fabric, and being combined with the binding-wefts *E*, so as to bind the face and back of the fabric together, as shown in Fig. 4.

The use of the warp *c* is preferred, however, because, when it is used, the under wefts are not visible from the face of the fabric to such an extent as when the wefts *a*, *b*, and *d* are used to bind both the face and back of the fabric.

Although I have shown and described the use of three figuring-wefts and three face-binding warps in a set, and although I prefer to use this number in practice, the number of such wefts and warps in a set may be limited to two of each, or may include more than three of each.

While my improved fabric, made as shown in the drawings, resembles an ordinary three-ply ingrain fabric to such an extent as to form an available substitute for the same, the fabric is more firmly bound together than an in-

grain fabric, and can be made at a less cost, as it is easier to weave and contains considerably less material than an ingrain.

I claim as my invention—

1. The combination, in a carpet fabric, of sets of threads, each set composed of two or more figuring-wefts, a binding-weft, and face-binding warps, the latter being equal in number to the figuring-wefts of the set, and being arranged in respect thereto and to the binding-wefts as described, so that different figuring-wefts of laterally-adjoint sets are brought into line with each other on the face of the fabric, all as set forth.

2. The combination, in a carpet fabric, of sets of threads, each set composed of two or more figuring-wefts, a binding-weft, a single rear-binding warp, and face-binding warps equal in number to the figuring-wefts, the binding-weft being combined with the face and rear warps, as described, so as to bind the face and back of the fabric together, and the face-binding warps being combined with the figuring-wefts and binding-weft, as set forth, so that different figuring-wefts of laterally-adjoint sets are brought into line with each other on the face of the fabric, all substantially as specified.

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

WILLIAM WALLACE.

Witnesses:

ALEX. PATTERSON,  
HARRY SMITH.