

UNITED STATES PATENT OFFICE.

THOMAS CROSSLEY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MANUFACTURING TWO-PLY CARPETS.

Specification forming part of Letters Patent No. **11,564**, dated August 22, 1854; antedated February 22, 1854.

To all whom it may concern:

Be it known that I, THOMAS CROSSLEY, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented a new and useful Improvement in the Manufacture of Two-Ply Ingrain Carpetings; and I hereby declare that the following is a full, clear, and exact description of the same, and that I have herein specified the peculiarities which distinguish my invention from all things heretofore known or put in practice.

Two-ply and three-ply carpets may be characterized as double or treble cloths or carpets, which are united together at intervals by the interweaving of the warp-threads of the different plies or cloths with each other, so that the latter are firmly united together and mutually aid in stiffening and strengthening each other. On this account a carpet of two plies is much more durable than one of a single ply, as the strains to which it is subjected are clinched between the two cloths, while in the single ply they are all borne by the one. These considerations render it necessary that all carpets woven entirely of woollen yarn or of worsted should have a foundation or back of some sort independent of the face of the carpet. In the two-ply ingrain carpet this back is furnished by the under ply, and where this carpet is woven of colored yarns each cloth or ply becomes a separate carpet, and either may be placed uppermost and subjected to wear. Where a two-ply carpet is to be printed, however, as in the case of Letters Patent granted to me on the 16th day of March, 1852, for a two-ply printed carpet, as a new article of manufacture, the lower cloth, when the carpet is printed upon but one side, serves the purpose only of strengthening and stiffening the fabric, of assisting to prevent the passage of dust, and of diminishing the destructive effect of the latter where the fabric lies immediately upon the floor. A large proportion of valuable stock thus lies dead, as it were, beneath the actual visible carpet, which never comes to view, and I have discovered that the wool in this lower ply may be entirely replaced by linen, which serves the purpose of strengthening and stiffening the woollen or upper ply in a far better manner than is accomplished by wool, while the cost of the carpet is materially reduced, and I am enabled to furnish the market with a two-ply printed carpet

at a price far less than the cost at which such fabrics have heretofore been produced.

To enable others skilled in the art to make use of my invention, I will proceed to describe the manner in which I have carried it out.

The fabric may be woven upon any plain loom that will ingrain, the warp for the lower cloth, as well as its filling, being composed entirely of linen. The upper ply is composed entirely of wool, as is usual in two-ply carpets, and is thoroughly ingrained down into the linen ply, which thus holds the upper cloth in place and strengthens and stiffens it in a manner far superior to what can be effected by a soft woollen cloth, while it will offer much greater obstruction to the passage of the dust. These qualities must render this carpet far more durable and unyielding than one in which both the plies are of wool. For the purpose of still further strengthening this fabric, and also of rendering it more impervious to the dust, I contemplate, under certain circumstances, sizing the linen cloth in any appropriate manner after the carpet is woven.

Heretofore I have described the lower cloth as composed entirely of linen. This I prefer for the purpose, as it will furnish a harder, more unyielding cloth than any other material. The linen may, however, be wholly or in part replaced by cotton, and I do not consider such modifications as altering the principle of my invention.

The carpet which I am thus enabled to produce is much better adapted to the purpose of printing than one in which the lower ply is also of wool, as the linen, being hard and unyielding, renders the upper or woollen surface much more firm and inelastic—qualities which particularly adapt it to the reception of a perfect impression; and, furthermore, where the carpet is all of wool the colors, as they are applied, having passed through the first ply, are absorbed by the lower one, and thus the intensity of the figure upon the surface is diminished. With one woollen and one linen ply the coloring-matter, not being absorbed by the linen, is entirely deposited in the woollen ply, and a much deeper impression is obtained.

I do not claim the manufacture of carpets composed of different fibrous materials in which the whole or nearly all of one fiber is shown on one side of the carpet, and all or nearly all

of the other fiber on the other side of the carpet, as this has been done in pile-carpets and other fabrics; but.

What I claim as my invention, and desire to secure by Letters Patent as a new article of manufacture, is—

A two-ply ingrain carpet having the lower ply composed entirely of linen or cotton and the upper ply of wool, when united, substantially in the manner described, for the purpose

of producing a durable and economical carpet, to be subsequently printed upon one side, in the manner and for the purpose described.

In testimony whereof I have hereunto set my signature.

THOS. CROSSLEY.

In presence of—

CAUSTEN BROWNE,
SAM COOPER.