

# UNITED STATES PATENT OFFICE.

STEPHEN M. ALLEN, OF BOSTON, MASSACHUSETTS.

## IMPROVED MANUFACTURE OF CARPET-LINING.

Specification forming part of Letters Patent No. 37,728, dated February 24, 1863.

*To all whom it may concern:*

Be it known that I, STEPHEN M. ALLEN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in the Manufacture of Fabrics for Underlaying Carpets, Mats, &c.; and I do hereby declare that the following description is a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

To increase the durability of carpets, &c., as well as to secure softness of tread, it has been usual to place between them and the surfaces to be covered some thin material, which should be comparatively inexpensive. Sheets of paper have been used for this purpose, but have proved too hard and inelastic, not only preventing the yielding of the carpet under the foot, but, when dust and gritty particles collected on the surface of the paper below the carpet, ground the carpet out very rapidly, which would not be the case were the paper resting on a soft surface below, because this grinding movement could not then take place. A species of hair felt also has been used under carpets; but this presents a rough surface the fibers of which soon adhere to and become interlaced with those of the under side of the carpet, the wear upon which grinds out and disintegrates the fibers of the felt, so that it can never be relaid. Moreover, such a fabric does not possess sufficient strength to be taken up and shaken to remove the dust and gritty particles that may have accumulated in it, and consequently would prove too expensive for practical use.

By my improvements I have succeeded in combining all the requisites desirable in fabrics for underlaying carpets—viz., cheapness, softness to the tread, and durability both in the fabric itself and in the carpet it is designed to protect. In making my experiments to attain the desired ends it became evident, first, that the surface with which the under side of the carpet was in immediate contact must be

smooth to prevent the two surfaces from adhering; and, secondly, that a soft, yielding material must intervene between the floor or other surface to be covered, both to afford softness to the tread and to prevent a grinding movement upon the fabric between it and the carpet. I effect these results by forming upon or combining with sheets of soft felt of any desired thickness a smooth and compact facing of paper or other similar surface that will answer the purposes of my invention, the fabric thus formed being placed under the carpet with its smooth surface in contact therewith and its elastic backing resting upon the floor or other locality to be covered.

The mode that I consider the best for carrying out the purposes of my improvements I will now describe in detail.

I make a smooth, soft felt or matted surface usually from flax, hemp, jute, hair, and wool in different proportions to produce the proper tenacity and pliability, either by carding and passing through a felting-machine, or by felting with the hands or by lapping or matting with either machinery or the hands that will accomplish the desired object, after which, by machinery, or the hands I attach the same, with the use of gluten, paste, or other similar substance, to a hard paper or other suitable surface, and after having allowed it to thoroughly dry, and thus to firmly adhere, it is then ready to be placed upon the floor under the carpet.

The paper side of the fabric, when it is laid upon the floor, is placed upward and next in contact with the under surface of the carpet, the carpet sliding freely upon its surface, while there is sufficient softness from the use of the felt to the tread as to prevent the carpet from grinding against the dust either upon the paper or the floor.

By the uniting of the paper with the felt, as described, sufficient strength is given to the felt to permit of its being many times taken up and being freed of its dust, &c., relaid without in the least degree impairing the same, a result in underlaying carpets with fabrics never before secured.

One other advantage also secured in the use of my improved fabric for underlaying carpets

is that the ill effects of a draft or circulation of air through the crevices or cracks of the floor are entirely prevented.

Having thus described my improvements, I shall state my claim as follows:

What I claim as my invention, and desire to have secured to me by Letters Patent, is—

The improvement in the manufacture of fabrics for underlaying carpets, &c., the same con-

sisting in permanently combining with or forming upon soft sheets of felt of any desired thickness a smooth and compact facing of paper or other similar surface, substantially in the mode hereinabove described.

STEPHEN M. ALLEN.

Witnesses:

JOSEPH GAVETT,  
ALBERT W. BROWN.