

C. R. FRANTZ.
FLEXIBLE WALL, CEILING, AND SURFACE COVERING.
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935,903.

Patented Oct. 5, 1909.

Fig. 1.

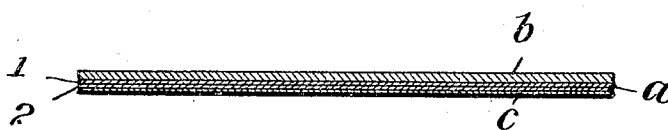
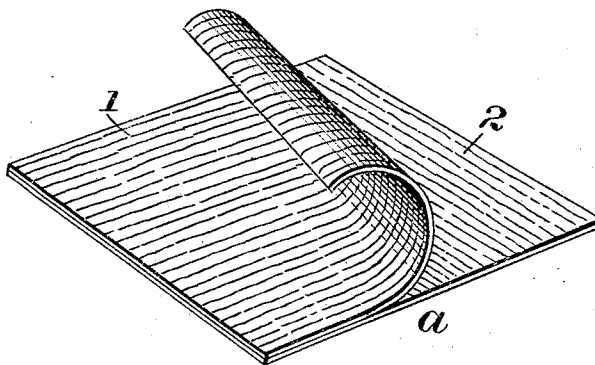


Fig. 2.



Witnesses

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UNITED STATES PATENT OF ICE.

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FLEXIBLE WALL, CEILING, AND SURFACE COVERING.

935,903.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CAROLINE R. FRANTZ, a citizen of the United States, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented certain new and useful Improvements in Flexible Wall, Ceiling, and Surface Coverings, of which the following is a specification.

My invention relates to wall coverings and consists of an article made from one or more sheets of paper with an enamel or paint facing and waterproof backing, as fully set forth hereinafter and as illustrated in the accompanying drawing, in which:

Figure 1 is a sectional view illustrating my improved wall covering; Fig. 2 a face view showing the arrangement of the different layers when the body of the article consists of a plurality of layers.

In the manufacture of that class of wall coverings in which a body sheet of paper is coated with enamel it is found that the paper will stretch when moistened and that the coating is cracked or crazed, and further the stretching interferes with the proper "matching" of the pattern in applying the sheets or strips side by side on the wall. This defect can be more or less overcome with some grades of thinner papers by the use of size in the manufacture of the paper, but where the paper is thick and heavy, sizing is not sufficient, and I therefore apply directly to the back of the material a coating of waterproof varnish or other suitable waterproof coating. Thus the body strip *a* of paper, Fig. 1, of one or more thicknesses, has applied to the outer face a suitable coating *b*, as enamel. In practice I use enamel made of oxid of zinc and sulfate of zinc ground with white varnish and refined linseed oil and gum resin. The proportions used are such as will result in a thick coat, the surface of which is properly finished, or ornamented in any suitable manner, and to the back is applied the coating *c* of waterproof material, either before or after the first coating process. This back coating not only aids in preventing the stretching of the body portion *a* and the cracking or crazing of the coating and preserves the form of the article, but has the further advantage of preventing moisture in the wall or in the pasting or cement material from penetrating to the body paper, which would cause it to swell and the enamel to peel off.

An ordinary spirit-varnish applied to the back of the sheet would present a smooth glazed surface to which the water paste or cement used for securing the paper to the wall would not properly adhere. A spirit or waterproof varnish however is very desirable on account of its resistance to moisture, and to permit its use and at the same time insure proper adhesion of the paste or cement I make use of a composition of spirit or waterproof varnish and mineral matter in a finely powdered condition, as lime, or gypsum, or like material, the mineral matter being used in such proportion to the varnish as to secure an opaque coating. I have found that such a coating is fully waterproof, does not crack, prevents stretching of the paper body and that the water paste or cement will adhere firmly thereto, and that in connection with the surface coating of enamel on the paper it forms a protective wall covering which is stiff, rigid and hard and yet readily applied to the wall. To secure yet greater body and stiffness however and especially to further aid in preventing stretching and the cracking of the enamel, permitting a thick coating of enamel to be used when the body *a* is thick and heavy, I make the body *a* in layers by cementing or otherwise securing together two or more strips 1, 2, Fig. 2, with the grain of one strip at an angle to the grain of the other. As is well known paper has a "grain" and will swell or widen under the influence of moisture in a direction transverse to the grain, and by thus using a plurality of superposed sheets or strips, cemented or pasted together during or after the process of manufacture of the paper, one strip serves to bind and hold the next so that distention in any direction and curling of the edges is prevented. As shown in Fig. 2 the grain of the layer 1 is at right angles to that of the layer 2. The enamel as above described is not only water-proof, but, while it can be made of any desired thickness, it is sufficiently flexible to permit the wall covering to be rolled and bent within desired limits without cracking the enamel, and further the said enamel does not crack under the influence of heat or become crazed or broken after the covering is applied to the wall.

I claim as my invention:

1. A wall ceiling or surface covering consisting of a body sheet or portion of paper

having applied to its back a waterproof composition having a roughened surface containing sufficient finely powdered mineral matter to insure the proper adhesion of paste
5 or cement.

2. A wall ceiling or surface covering consisting of a body sheet or portion of stiff hard paper having applied to its back a waterproof composition containing sufficient
10 finely powdered mineral matter to produce an opaque effect and sufficient roughness to insure the proper adhesion of paste or cement.

3. A wall ceiling or surface covering consisting of a body sheet or portion of stiff hard paper having applied to its back a waterproof composition containing sufficient
15 finely powdered rock to produce sufficient roughness to insure the proper adhesion of
20 paste or cement.

4. A wall ceiling or surface covering consisting of a body sheet or portion of paper and a back coating of waterproof material

having on its surface ridges of finely powdered mineral matter mixed therewith to
25 insure adhesion of paste or cement.

5. A wall ceiling or surface covering consisting of a body sheet or stiff paper, a surface coating of enamel and a back coating of waterproof material having at its sur-
30 face ridges of finely powdered mineral matter mixed therewith to insure adhesion of paste or cement.

6. A wall, ceiling or surface covering consisting of a body sheet or portion of paper
35 having applied to its back a waterproof composition having on its surface separated ridges containing finely powdered mineral matter to insure the adhesion of paste or
40 cement.

In testimony whereof I affix my signature in presence of two witnesses.

CAROLINE R. FRANTZ.

Witnesses:

ARTHUR R. FRANTZ,
MABEL MILTON.