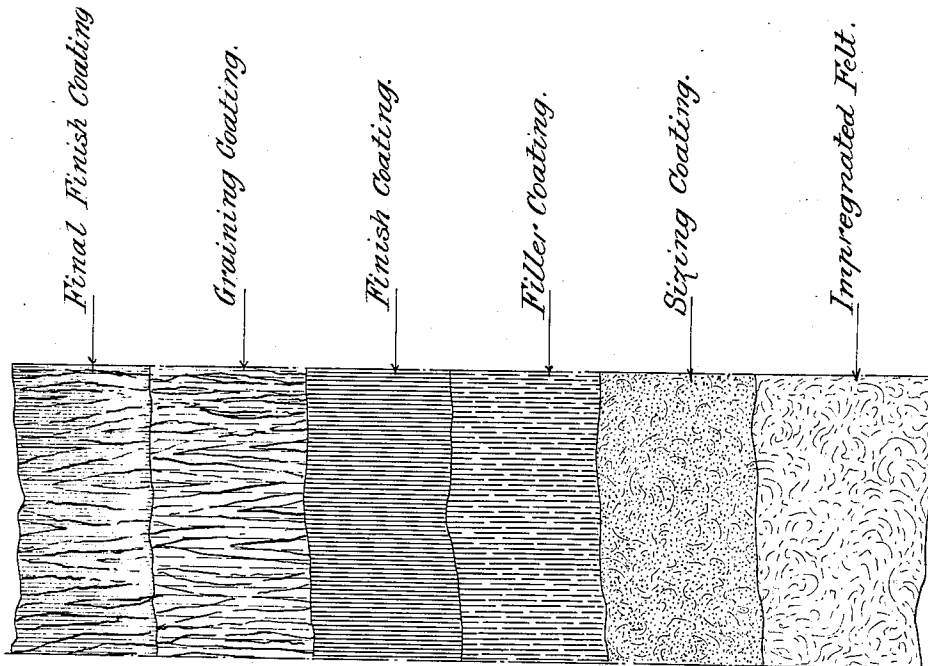


J. SMITH.  
WATERPROOF FLOOR COVERING.  
APPLICATION FILED JAN. 30, 1911.

1,008,296.

Patented Nov. 7, 1911.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

JUDD SMITH, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO UNITED ROOFING AND MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF DELAWARE.

## WATERPROOF FLOOR-COVERING.

1,008,296.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed January 30, 1911. Serial No. 605,352.

*To all whom it may concern:*

Be it known that I, JUDD SMITH, a citizen of the United States, residing in Minneapolis, county of Hennepin, and State of Minnesota, have invented new and useful Improvements in Waterproof Floor-Covering, of which the following is a specification.

This invention relates to improvements in flexible water-proof coverings which are especially adapted for floorings, and has for its object the production of a covering which may be satisfactorily employed as a substitute for wood, so-called linoleum, oil-cloth and the like as interior floor covering, and which withal is extremely durable, attractive in appearance and cheap to manufacture.

Heretofore many attempts have been made to produce a satisfactory floor covering from felt, one of the essential features being the production of ornamental effects so as to render the same an attractive substitute for the present materials which are employed for these purposes. One of the chief difficulties has been the fact that the felt is not adapted to receive paint and varnish and in addition the impregnating materials with which the felt is saturated tend to re-act with the drying oils of paint applied thereto with the result that the coating is injured, and the varnish and the oils of the paint penetrate it, thus rendering the same rigid and destroying its flexibility.

The gist of my invention consists in the provision of coverings having flexible foundations saturated with suitable pitchy water-proof composition, such for example as asphalt, to which is superficially applied an impervious coating of sizing, said sizing including a colloidal inorganic compound capable of forming a glossy film when obtained in the form of a thin layer by the evaporation of a solution of the same. Upon this sizing-coating a coat of filler consisting of linseed oil, drier and pigment is first applied, then finishing coats of paint and varnish, the same being preferably "grained" with the well known Posselious "graining" machine, and finally the covering is finished after such "graining" with a coat of tough, high-grade, elastic floor varnish.

The gist of my invention is the applica-

tion of a sizing coating to the saturated felt, or other material, which will prevent absorption, and produce a surface to which filling and finishing coats of paint and varnish will firmly adhere.

The invention is fully set forth and described in the accompanying specification and the drawing forming a part thereof in which the figures show a representation of the successive layers of the covering embodying my invention.

In carrying out my invention I preferably employ a felt which has been covered or saturated with a water-proof composition containing hydro-carbon, such as asphalt paint or pitch, applying to this a sizing containing preferably about one part of silicate of soda and two parts of glue. To this, when thoroughly hardened and dried, I apply filling and finishing coats of paint and varnish to produce any desired ornamental effect. For floor covering in imitation of matched wooden strips, I employ the following process; to the sized felt preferably wool felt I apply a filler consisting preferably of about one part of linseed oil and two parts of gloss oil, which may be ground together with a pigment for example French ocher to give it any desired color tone, and thinned sufficiently with naphtha to the proper consistency for such application. When this is dry, I apply another coating of paint containing about one part of linseed oil and two parts of varnish, into which also may be mixed, if desired, a pigment such as yellow ocher. A graining color is then applied by means preferably of a Posselious graining machine in imitation of the selected wood, and a finishing coat of high grade floor varnish is then applied. The floor covering so produced resembles with great exactness a floor of the real wood represented, and is flexible and durable.

The sizing coating, as stated, preferably consists of some suitable colloidal glutinous organic material, such as animal glue, and a colloidal inorganic compound capable of forming a glossy film when obtained in the form of a thin layer by the evaporation of a solution of the same, such as silicate of soda. This sizing coating is not only adhesive to both the foundation layer and to the finish-coating, but is also resistant both

to the impregnating compositions of the foundation and to the oils, and alcoholic and other ingredients contained in the finish-coatings. Thereby the ornamental finish-coating is adequately united with the foundation so that the tendency of the same to peel from said foundation is minimized, and in addition all reactions between the ingredients of the foundation and those of the finish-coating are prevented.

The application of the ordinary sizing consisting of wheat or rye flour and glue, while it has been proposed for roofing material, does not produce a satisfactory covering especially if the covering is intended for the hard and peculiar usage to which floor coverings are subjected.

The peculiar properties imparted by the silicate of soda to the sizing, results in the production of a covering which can be readily flexed without noticeable cracking and even if flexed to the extent that serious cracking occurs, the same can be restored to its original condition, and the cracking becomes invisible. Moreover, the silicate of soda, even though the same, as is well known, possesses the peculiar property of combining with large quantities of water, does not seem to affect, or be affected by, the subsequent coatings of paint and varnish or oil contained therein. Silicate of soda, commonly known as "water glass" constitutes one of the so-called inorganic colloids, and when dissolved in water forms a gelatinous mass, which when obtained in thin layers by the evaporation of the solution produces a peculiar glossy film, admirably suited, when the same is covered with "grained" coatings of paint or varnish or both, to produce a surface closely approximating in appearance any wood that it is desired to imitate, the grain being copied from the actual wood.

The term "pitchy" or "pitch-like" is employed in the claims, to generically cover "pitchy materials, including among others the common pitch obtained by the distillation of turpentine, and bitumen or asphalt, as well as petroleum pitches, coal tar pitches and like materials."

What I claim and desire to secure by Letters Patent is:

1. A water-proof covering for floors and the like, comprising a flexible porous foundation impregnated with a water-proofing composition of pitch-like nature, a coating of sizing, including a colloidal, inorganic compound capable of forming a glossy film when obtained in the form of a thin layer by the evaporation of a solution of the same, superficially applied to said foundation, a finish-coating containing paint or varnish superposed upon said sizing coating, said sizing coating being adhesive to both said foundation and said finish-coating, and being

also resistant to the impregnating composition of said foundation and the ingredients of said finish-coating.

2. A water-proof covering for floors and the like, comprising a felt foundation impregnated with a water-proofing composition of a pitch-like nature, a coating of sizing, including a colloidal, inorganic compound capable of forming a glossy film when obtained in the form of a thin layer by the evaporation of a solution of the same, superficially applied to said foundation, a finish-coating containing paint or varnish superposed upon said sizing coating, said sizing coating being adhesive to both said foundation and said finish-coating, and being also resistant to the impregnating composition of said foundation and the ingredients of said finish-coating.

3. A water-proof covering for floors and the like, comprising a flexible porous foundation impregnated with water-proofing composition of a pitch-like nature, a coating of sizing, including a colloidal glutinous organic material, and a colloidal inorganic compound capable of forming a glossy film when obtained in the form of a thin layer by the evaporation of a solution of the same, superficially applied to said foundation, a finish-coating containing paint or varnish superposed upon said sizing coating, said sizing coating being adhesive to both said foundation and said finish-coating, and being also resistant to the impregnating composition of said foundation and the ingredients of said finish-coating.

4. A water-proof covering for floors and the like, comprising a felt foundation impregnated with a water-proofing composition of a pitch-like nature, a coating of sizing, including a colloidal glutinous organic material and a colloidal inorganic compound capable of forming a glossy film when obtained in the form of a thin layer by the evaporation of a solution of the same, superficially applied to said foundation, a finish-coating containing paint or varnish superposed upon said sizing coating, said sizing coating being adhesive to both said foundation and said finish-coating, and being also resistant to the impregnating composition of said foundation and the ingredients of said finish-coating.

5. A water-proof covering for floors and the like, comprising a flexible porous foundation impregnated with a water-proofing composition of a pitch-like nature, a coating of sizing, including a silicate capable of forming a glossy film when obtained in the form of a thin layer by the evaporation of a solution of the same, superficially applied to said foundation, a finish-coating containing paint or varnish superposed upon said sizing coating, said sizing coating being adhesive to both said foundation and said

finish-coating, and being also resistant to the impregnating composition of said foundation and the ingredients of said finish-coating.

5 6. A water-proof covering for floors and the like, comprising a flexible porous foundation impregnated with a water-proofing composition of a pitch-like nature, a coating of sizing, including an alkaline silicate, 10 superficially applied to said foundation, a finish-coating containing paint or varnish superposed upon said sizing coating, said sizing coating being adhesive to both said foundation and said finish-coating, and being 15 also resistant to the impregnating composition of said foundation and the ingredients of said finish-coating.

7. A water-proofing covering for floors and the like, comprising a flexible, porous 20 foundation impregnated with water-proofing composition of a pitch-like nature, a coating of sizing, including sodium silicate, superficially applied to said foundation, a finish-coating containing paint or varnish 25 superposed upon said sizing coating, said sizing coating being adhesive to both said foundation and said finish-coating, and being also resistant to the impregnating composition of said foundation and the ingredients 30 of said finish-coating.

8. A water-proof covering for floors and the like, comprising a felt foundation impregnated with water-proofing composition of a pitch-like nature, a coating of sizing, 5 including glutinous colloidal organic material and an alkaline silicate, superficially applied to said foundation, a finish coating containing paint or varnish superposed upon said sizing coating, said sizing coating be-

ing adhesive to both said foundation and said finish-coating, and being also resistant 40 to the impregnating composition of said foundation and the ingredients of said finish-coating.

9. A water-proof covering for floors and the like, comprising a felt foundation impregnated with water-proofing composition of a bituminous nature, a coating of sizing, including glutinous colloidal organic material and alkaline silicate, superficially ap- 50 plied to said foundation, a finish-coating, containing paint or varnish superposed upon said sizing coating, said sizing coating being adhesive to both said foundation and said finish-coating, and being also resistant to 55 the impregnating composition of said foundation and the ingredients of said finish-coating.

10. A water-proof covering for floors and the like, comprising a felt foundation impregnated with water-proofing composition of a bituminous nature, a coating of sizing, including glutinous colloidal organic material and alkaline silicate, superficially applied to said foundation, a filler-coating containing oil, drier and pigment, a color-coat- 65 ing containing paint and varnish applied to said filler-coating, said color-coating being "grained" in imitation of a natural wood, and a final coating of tough, elastic varnish 70 applied to said "grained" color-coating.

In witness whereof I have hereunto set my hand at the city of Minneapolis, this 21st day of January 1911.

JUDD SMITH.

Witnesses:

PETER ZAHUM,  
P. A. PAULSON.