

UNITED STATES PATENT OFFICE.

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FLOOR COVERING AND PROCESS OF MAKING THE SAME.

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To all whom it may concern:

Be it known that I, CALEB MARSHALL TAYLOR, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Floor Coverings and Processes of Making the Same, of which the following is a specification.

10 This invention relates to floor coverings and to a process of making the same.

The floor covering provided is of that type known as felt base floor coverings and particularly such materials in which an asphalt or bitumen impregnated base is used and constitutes an improvement over such materials.

15 The invention is also peculiarly adapted for use in combination with all floor coverings in which either the wear surface or the opposite face is formed of paint or other material containing linseed oil or other oil, or any material subject to saponification or removable under the action of soap and the usual floor cleaning materials.

20 Bitumen impregnated felt base floor coverings may be recognized by the main dark body which is particularly evident when the material is cut. The felt of such bases may be made from rags, or from paper, or any cellulose material, or from a mixture of such materials, thoroughly impregnated with asphalt or tar or some suitable bituminous material. When used as a supporting base 25 for floor covering it is the usual practice to coat the bitumen impregnated base with a layer of paint and often to apply various painted designs, all of which may be applied in any convenient manner. Also, a coat of paint is applied to the opposite or under surface of the impregnated base to cover the dark and unsightly bitumen impregnated base.

30 In the manufacture of such bitumen impregnated bases it has been found that the wear paint and the decorative paint may become discolored, due in part to the next interior material of the bitumen of the base. Also in drying the paint coats it is necessary 35 to dry at relatively low temperatures and for a longer period of time, often as long

as four or five days. A higher temperature and more rapid drying would tend to liquefy the bitumen and delay proper drying of the paint and also discolor the paint due to the release of materials from the base. Thus a baking temperature of 175° F. or more such as is desirable for drying the paint coats, is not advisable in the usual drying of such coated bases.

40 After the present known product is completed it is usually necessary to place paper between adjacent surfaces when the material is rolled or stacked in layers to prevent the adjacent painted surfaces from adhering. It is well known that all such painted surfaces, and also that the surface of the material known as linoleum, is worn away by the use of soap and water because of the saponification by such cleaning materials on the oils in the paint and linoleum.

45 The present invention provides an impregnated felt base possessing the desirable characteristics of bitumen impregnated bases of durability, flexibility and softness, and is also waterproof and weatherproof. Most important, the impregnating material will not soil and may be subject to relatively high baking temperatures without discoloring the paint thereon. The use of the base of this invention renders it unnecessary to 50 apply the coat of paint to the under surface of the floor covering, renders it unnecessary to use the spacing paper, and avoids all danger of discoloration of the decorative or wear coats of paint, and finally makes it possible to complete the drying of the paint coats in a much shorter length of time than heretofore possible where bitumen impregnated bases are used.

55 In producing the impregnated felt base of this invention, the usual rolls of felt of the floor covering type may be used. A saturant solution is prepared of a mixture of nitrocellulose and a solvent therefor. Preferably a substantial quantity of a semi-drying or drying vegetable oil is added to the mixture as a softening material, and it is desirable to add a quantity of resin. Cumaron is an example of a suitable resin. To 60 this cellulose mixture may be added a pigment color of any desired shade, a feature

not heretofore known in floor coverings. The mixture is brought to the desired working temperature and the felt is saturated with it by being passed through tanks, or
 5 other suitable applying means, and finally it is passed through pressure rolls to press out all excess saturant solution. The felt is then dried at a suitable temperature, for instance,
 10 approximately 140° F. for 5 to 15 minutes, after which it may be used or coated as desired. In the claims, "dried" or "dry" means that the product is not sticky or tacky, and is in condition to be laid on a floor without danger of adhering to the
 15 floor. It is likewise so dry that it may properly receive paint coats.

Other cellulose esters than nitrocellulose, such as acetyl cellulose, may be used.

One satisfactory mixture for the saturant
 20 solution may be made by using 10 parts by weight of nitrocotton, and 90 parts of weight of a solvent mixture, which mixture may be composed of 35 per cent of acetone oil and 65 per cent of such a diluent as
 25 solvent naphtha, or xylol, or toluol, or benzol. Any well known working formula may be used for combining such a mixture of drying or semi-drying vegetable oil with nitro-
 30 cotton. To such a mixture 30 parts by weight of linseed oil or other semi-drying or drying vegetable oil can be added. Also, 5 parts by weight of a resin could be incorporated in the mixture. The amount of coloring pigment may be varied as desired.

35 The resultant material may be used as the desirable tough, clean floor covering base having the above mentioned desirable qualities of a bitumen impregnated base and none of the recognized undesirable features.
 40 As a result of the treatment, the tensile strength of the base is increased at least 25 per cent, and the material of the felt is cemented together. It is thus possible to use a relatively cheap grade of felt. This
 45 process toughens the texture of the felt, gives it a smooth surface and better base for paint coats than the base provided by bitumen materials, and there is no tendency to bleed sticky tarry material as where
 50 bitumen felts are used, neither is it necessary to use a sealing coat on this saturated felt before applying the print or decorative coat. It is a particularly necessary feature that the felt be relatively smooth so that the
 55 resultant finish is smooth enough to receive evenly the usual printed decorative effects such as are ordinarily applied by block printing machines.

I claim:

60 1. A floor covering comprising a dry felt base of the floor covering type impregnated throughout with a cellulose ester saturant which includes a drying oil.

2. A floor covering comprising a dry felt
 65 base of the floor covering type impregnated

throughout with a nitro-cellulose saturant which includes a drying oil.

3. A floor covering comprising a dry felt base of the floor covering type impregnated throughout with a nitro-cellulose saturant
 70 combined with a resin and a drying oil.

4. A floor covering comprising a dry felt base of the floor covering type impregnated throughout with a saturant of a mixture of
 75 nitro-cellulose, a drying oil, and a coloring material.

5. A floor covering comprising a dry felt base of the floor covering type impregnated throughout with a cellulose ester non-saponifiable material.
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6. The process of making an impregnated felt base floor covering, which process comprises saturating a dry felt base of the floor covering type throughout with a saturant containing in solution 10 parts by weight
 85 of a cellulose ester, and 90 parts of a solvent therefor, and drying the base thus treated.

7. The process of making an impregnated felt base floor covering, which process comprises saturating a dry felt base of the floor covering type throughout with a saturant containing in solution 10 parts by weight of
 90 a cellulose ester, 90 parts of a solvent therefor, 30 parts of a drying vegetable oil, and drying the base thus treated.

8. The process of making an impregnated felt base floor covering, which process comprises saturating a dry felt base of the floor covering type throughout with a saturant containing in solution 10 parts by weight
 100 of a cellulose ester, 90 parts of a solvent therefor, and 30 parts of a softening medium, and drying the base thus treated.

9. The process of making an impregnated felt base floor covering, which process comprises saturating a dry felt base of the floor covering type throughout with a saturant containing in solution 10 parts by weight of
 105 nitrocellulose and 90 parts of a solvent therefor, and drying the base thus treated.

10. The process of making an impregnated felt base floor covering, which process comprises saturating a dry felt base of the floor covering type throughout with a saturant containing in solution 10 parts by weight of nitrocellulose, 90 parts of a solvent
 115 therefor, and 30 parts of a drying vegetable oil, and drying the base thus treated.

11. A floor covering comprising a dry felt base of the floor covering type impregnated throughout with a saturant containing a mixture of nitrocellulose, a coloring material, and a drying vegetable oil.
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12. A floor covering comprising a dry felt base of the floor covering type impregnated throughout with a saturant containing a mixture of nitrocellulose, a coloring material, a drying vegetable oil, and a resin.
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13. The process of making an impregnated felt base floor covering which com-
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prises saturating an absorbent felt base of the floor covering type with a solution of a cellulose ester, mixed with 3 times its dry weight of drying vegetable oil, and drying the material thus treated at a temperature of approximately 140° F. strength of felt base floor coverings which comprises saturating an absorbent felt base of the floor covering type with a mixture of a cellulose ester and a drying vegetable oil. In testimony whereof I affix my signature.

14. The process of increasing the tensile

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