Feb. 5, 1935. D. FINLEY 1,990,173

COVERING MATERIAL

Filed Feb. 6, 1933

Fig. 1

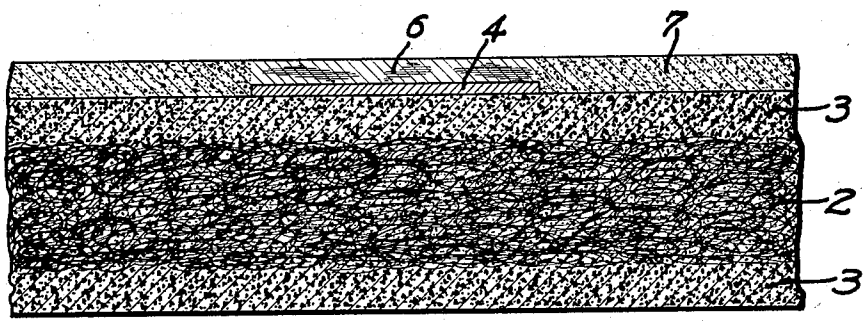
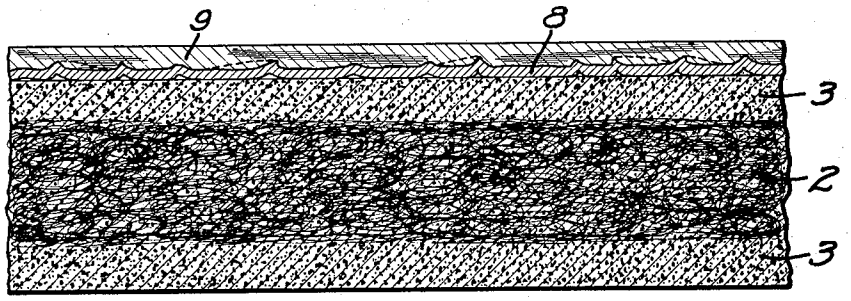


Fig. 2



INVENTOR.
DOZIER FINLEY
BY Charles S. Evans
HIS ATTORNEY

Patented Feb. 5, 1935 1,990,173

UNITED STATES PATENT OFFICE

1,990,173

COVERING MATERIAL

Dozier Finley, Berkeley, Calif., assignor to The Paraffine Companies, Inc., San Francisco, Calif., a corporation of Delaware

Application February 6, 1933, Serial No. 655,426

4 Claims. (Cl. 41—26)

My invention relates to covering materials, and more particularly to improvements in the decorative coating thereof.

One of the objects of my invention is the production of a covering in which a wider range of color effects can be secured than has been possible heretofore.

Another object of my invention is the production of a covering in which the entire surface, or selected areas thereof, are covered with a light reflecting substance to enhance the brilliancy and depth of the coloring.

This application is a continuation in part of my copending application Serial No. 193,928, filed May 24, 1927, which application matured into Patent No. 1,911,357, issued May 30, 1933.

My invention possesses other objects and valuable features, some of which will be set forth in the following description of my invention which is illustrated in the drawing forming part of the specification. It is to be understood that I do not limit myself to the showing made by the said description and drawing, as I may adopt varying forms of my invention within the scope of the claims.

Referring to the drawing:

Figure 1 is a vertical sectional view showing the application of a light reflecting medium disposed under the transparent portion of the coating.

Figure 2 is a vertical sectional view showing the application of a wrinkled sheet of metallic foil disposed under the transparent coating.

Floor coverings of the type known as felt base floor coverings have been made according to a practically unvarying procedure since the beginning of the industry. Briefly this procedure comprises saturating a base sheet, preferably felt, with an asphaltic compound having a melting point of from 115° F. to 145° F. This saturated sheet is then coated on both sides with linseed oil or China-wood oil base paint, the underside, which is designed to lie next to the floor, receiving a comparatively thin coating in which sufficient pigment is carried to hide the black color of the base. The upper surface receives a much thicker coating which may be designated as a "seal coat" as it seals the asphalt in the base and prevents its black color from bleeding thru into the print coat which is superimposed upon the seal coat. The print coat is practically a pigmented varnish enamel which is applied by means of a system of block printing.

The print coat, when dried, constitutes the final finish of the floor covering. The surface is enamel-like in character due to the fact that varnish has been used in the print paint. The enamel-like surface thus produced is usually deemed sufficient for a final finish, but there are certain manufacturers who are making such printed floor coverings and applying over the printed surface a finish surface coating comprising a nitrocellulose lacquer. It has not been uncommon to apply varnish over the surface of printed floor coverings either before or after they have been put into service. The present invention does not however, have anything to do with the practice of merely varnishing or lacquering the surface.

Before taking up the various steps of the process, it is necessary that consideration be given the matter of light absorption and reflection. In the manufacture of floor coverings as just explained, the enamel paint composing the printed surface provides but one method of producing color effects. The paint is composed of a more or less light colored oil and varnish mixture and has ground into it pigments of such character as zinc oxide, with or without tinting colors such as ultra-marine blue.

No matter what may be the character of the pigment, the color is seen by the observer in accordance with the following phenomena. Light from the prevailing source is directed to the surface of the floor covering where it passes thru an almost infinitely thin layer of oil varnish and strikes the uppermost layer of pigment particles. If there is no preferential absorption of the various component colors in the original white light, then practically all of the white light is again diffused outwardly and the observer sees a white area on the surface of the covering. If on the other hand, there is an absorption of practically all of the components of the white light except the green, this green is diffused outwardly and the observer sees a green area. It will thus be observed that the light absorption has taken place at the surface of a solid particle of matter and has not been brought about by the absorption of component colors of the white light while the light was traveling thru an appreciable thickness of transparent material.

There is another type of light absorption of which no advantage has ever been taken in the printing of floor coverings. This type of light absorption is obtained when the light is passed thru a colored glass or a colored medium of any description which has the characteristics of transparency or translucency. It is a type of absorption which is entirely different than that which takes place when light hits an opaque object and is again thrown away from that object. The fact that white or any other colored light from an opaque surface appears different than the same color of light which is passed thru a transparent colored medium is a matter of common experience. It is with the object of taking advantage of this fact that the present invention has been developed.

Broadly, the covering material of my inven-

tion comprises a base, a light reflecting metallic film or foil over all or selected areas of the base, and over which a transparent wearing or service coating is applied. When only selected areas are covered in this manner, the remaining areas are preferably covered with the usual paint coats. If desired, the transparent coating may be colored by suitable dyes or stains; or desirable effects can be secured by using a metallic film or foil of selected color in combination with a clear or colored transparent coating.

In detail, the method of my invention is carried out as follows: A base 2, preferably a felt sheet such as is customarily used in the manufacture of floor covering, is treated with a linseed oil or a China wood oil base paint and covered with the usual "seal" coat 3. The base is then ready to receive the wearing or service coat and up to this point my method is the same as that previously employed. In carrying out my process, it is preferable that certain areas be selected on which the method of this invention will be applied. For example, it will be found particularly applicable to the representation of petals and leaves of flowers, but is of course not necessarily confined to this use, as the entire surface may be so coated if desired.

When selected areas are to be covered in accordance with this method, such selected areas are first covered with a suitable metallic foil, such as aluminium or other metal foil, which is preferably cemented onto the base. This may be the natural color of the metal, or it may be colored. The design is then printed on the floor covering using the printing blocks in the normal manner with the exception that a varnish is used on the printing block for the selected areas, while the usual print paint is used on the block printing the remaining areas. In other words a surface or wear-taking layer is provided in which selected areas are overlaid with a transparent coating 6 while the remaining areas are covered with an opaque coating 7.

In order to produce a smooth surface it is essential that the thickness of both the print coat and the varnish coat be the same. It will thus be obvious that a transparent coating of varnish having an appreciable thickness is provided, and since the light absorption in a transparent coating is so different than that in an opaque surface, these areas are emphasized so that very attractive contrasts can be secured.

The varnish coating may, if desired, contain an oil soluble stain or dye, for example, if the petals of a red rose are to be represented, the varnish probably would be stained with a soluble red dye and if the leaves were to be represented, a soluble green dye would be dissolved in the varnish. When adding these stains, consideration must be given to the thickness of the coat. A thin transparent object appears to have a much lighter color than a thick one, and since the transparent varnish coat is of appreciable thickness, care must be taken to secure the color desired. If a colored metal foil is used a clear varnish may be used, or varnishes of contrasting colors may be employed to produce striking and attractive effects.

When the surface of the floor covering is dry, the areas covered with the transparent coating appear to lie in different planes than the areas covered with the opaque coating. There is also a difference in the character of the colors produced in the two types of coating so that a wide range of color combination and effects can be secured.

Pleasing effects have been produced by allowing the foil to wrinkle slightly while being secured to the base. In Figure 2, is illustrated a piece of floor covering in which the entire surface is covered by wrinkled foil 8 underlying the transparent coating 9. The effect is reminiscent of the "cracking" of old varnish, but is striking and beautiful.

I have referred to the use of a transparent varnish coat thruout the specification, and while spar varnish is probably the best suited for this use, there are other coating materials which may be employed. For example, the following may be used in place of spar varnish: flooring or furniture varnishes, lacquers, preferably the lacquers having a base of cellulose esters, and some of the phenol condensation products commonly referred to as synthetic resins. I have explained my process as applied to floor coverings which are made in a printing machine, but it is obvious that the same results can be obtained by the application of the varnish with a brush or spray.

I claim:

1. A floor covering comprising a traffic resisting base, a light reflecting metallic foil cemented to selected areas of said base, a transparent wear taking coat disposed only over said foil, and an opaque wear taking coating on said base and adjacent said transparent coat, whereby the transparent coated areas are emphasized and made to appear to lie in a different plane than the opaque coating.

2. A floor covering comprising a traffic resisting base, a light reflecting metallic foil and an opaque wear taking coating applied in adjacent alternating relation upon selected areas of said base, and a transparent wear taking coat disposed only over said metallic foil, the exposed traffic surfaces of said transparent coat and said opaque coating lying in the same plane, whereby the transparent coated areas are emphasized and made to appear to lie in a different plane than the opaque coating.

3. A floor covering comprising a traffic resisting base, a light reflecting colored metallic foil and an opaque wear taking coating applied in adjacent alternating relation upon selected areas of said base, and a transparent wear taking coat disposed only over said metallic foil, the exposed traffic surfaces of said transparent coat and said opaque coating lying in the same plane, whereby the transparent coated areas are emphasized and made to appear to lie in a different plane than the opaque coating.

4. A floor covering comprising a traffic resisting base, a light reflecting metallic foil and an opaque wear taking coating applied in adjacent alternating relation upon selected areas of said base, and a transparent wear taking coat containing a soluble dye, disposed only over said metallic foil, the exposed traffic surfaces of said transparent coat and said opaque coating lying in the same plane, whereby the transparent coated areas are emphasized and made to appear to lie in a different plane than the opaque coating.

DOZIER FINLEY.