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K. EICHSTÄDT

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METHOD OF DECORATING COMPOSITION MATERIAL

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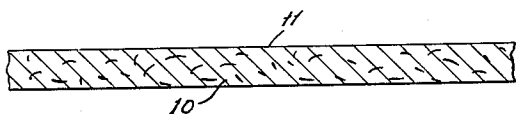


Fig. 1

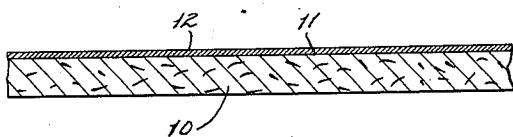


Fig. 2

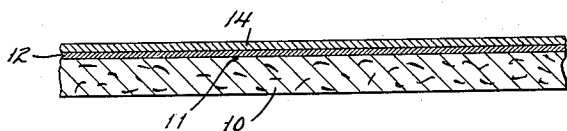


Fig. 3

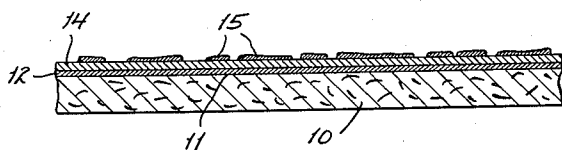


Fig. 4

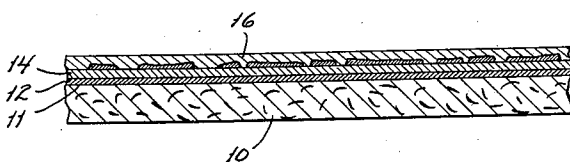


Fig. 5

INVENTOR.

Karl Eichstadt

BY

Bates, Golick, & Teare

ATTORNEY.

UNITED STATES PATENT OFFICE

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METHOD OF DECORATING COMPOSITION MATERIALS

Karl Eichstädt, Berlin-Charlottenburg, Germany,
assignor to Oxford Varnish Corporation, De-
troit, Mich., a corporation of Michigan

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1 Claim. (Cl. 91—67.9)

This invention relates to a decorated surface and method of producing the same. More especially, the invention is concerned with an improved method of decorating the surfaces of fiber, composition boards or other artificial wood by the use of ordinary printing processes. This, therefore, is the general object of the present invention.

Considerable difficulty has been encountered in the past when attempts have been made to decorate composition, fiber or other artificial boards, whereas natural wood boards have been successfully decorated. Natural woods of the inexpensive types have been decorated by a printing process to simulate the more expensive types of woods. Generally, a printing member has been made from the more expensive wood by the usual photo mechanical reproduction process and the pattern transferred in color to the article to be decorated by any well-known printing process. For this purpose offset printing methods have been used with success.

However successful such printing methods have been on natural woods, when attempts were made on artificial woods, such as fiber or other composition boards, such attempts produced comparatively poor results. It has been thought that this was due to the lack of surface adhesion between the fiber and the color, especially as nitrocellulose and oil paints are generally used in such printing. Hence, as in the decorating of metallic panels, ground or filler coats have been first laid on the fiber or composition board and thereafter the board has been decorated, but even then the quality of the reproduction has been poor, as tonal values were lost and the surface remained sticky.

I have found that while fiber, or composition boards lack sufficient adhesive qualities to permit the color or priming coat to adhere thereto, this is due to a great extent to the binding material used in the manufacture of the composition board, and this could not be cured by simply covering the board with a primer coat. When either the primer coat, which is a heavy coating, or the decorative coat is applied to most types of composition boards, the treated surface remains sticky and the true colors of such coat or coats are distorted or changed to such an extent that composition boards could not be generally used, as in most instances the reproduction was not sufficiently faithful to the original to meet commercial demands.

The distortion of the colors and the tonal qualities of the reproduction, I have found, is due to

the exudations or sweating of the binding materials used in the manufacture of the composition board. These binding materials generally contain substances such as bitumen, asphaltum or artificial resins. I have found that the mineral oils and waxes contained in such products are released from time to time and while the amount released is small, it nevertheless is sufficient to prevent the priming coats and/or decorative coats from completely drying. Even when the outer surface of such coats appear to be dry, they are not completely dry, as the exudation or sweating of binding materials prevents complete drying of the surface of such coats which is in contact with the composition board, and even when the surface of the decorated composition board apparently dries, it subsequently becomes sticky, due to the action and reactions of these exudations on the coatings.

Likewise I have found that the exudation of the binding materials used in the manufacture of the composition board so attacks the color of the priming and/or decorating coats that tonal values are lost and the colors are changed. Likewise I have found that even when colors are controlled so as to provide for this change, nevertheless they eventually change due to the continued exudation of the binding materials, the amount of which varies, due to climatic conditions, as well as due to conditions under which the composition board was manufactured.

An object of the present invention is to provide a method of decorating composition boards in such a manner as will increase the adhesive properties of the composition board and at the same time prevent the exudation of the binding materials used in the manufacture of such boards from affecting the priming or color coat, and to produce a decorated composition article which will not deteriorate in time, due to the exudation of the binding material used in the manufacture of the composition.

Other objects of the present invention will become more apparent from the following description, reference being had to the accompanying drawing, which diagrammatically illustrates the invention. The novel characteristics of the invention will be summarized in the claim.

In the drawing, Fig. 1 is a diagrammatic sectional view of a fiber or composition board; Fig. 2 is a view similar to Fig. 1, illustrating the first step in my improved method; Figs. 3 and 4 illustrate diagrammatically subsequent steps in the decoration of the composition board; Fig. 5 is a

diagrammatic section illustrating the completed article.

The present invention contemplates the treating of the fiber or composition board, prior to the application of the priming and/or design coats, in such a manner as will prevent the exudation or sweating of the binding material used in the manufacture of the composition board from affecting either the drying of the subsequent coats, the colors or tones of the priming and/or design coats and at the same time increase the adhesive properties of the surface of such board for the priming or design coats. I prefer to accomplish this result by providing the composition board with an intermediate or locking layer or coating which will neutralize the exudations of the binding materials and which will not affect the tonal qualities or color of the priming or design coats.

I prefer to prepare the composition board by smoothing its surface in the usual manner by sanding or the like. A thin intermediate or locking coating is then applied by spraying, dipping or painting. Such layer is permitted to dry and the priming and/or design coatings are applied in the usual manner.

I have found that a watery varnish, such as a casein or watery shellac solution is well suited for use as a locking coat and, dependent upon the binding material used in the manufacture of the composition board, soda or ammonia is added to neutralize the exudations of such binding material. As an example of a suitable mixture, the following is given:

	Parts
Casein-----	8
Shellac-----	8
Soda-----	8
Water-----	78

When the above coating is used and allowed to dry on the composition board, it neutralizes the exudations of the binding material and protects

the priming and/or design coatings, permitting them to thoroughly dry and preventing any reactions on such coatings by the binding material, thereby creating permanency of color and tone of the finished article.

Referring again to the drawing, I have indicated in Fig. 1 a fiber or composition board 10. The board has been previously prepared by a suitable smoothing operation to provide it with a smooth surface 11. The board is first coated with a thin layer of the locking solution above described, such solution, upon drying, forming a thin, transparent intermediate layer or locking coat 12. A priming coat 14 is next applied and subsequently the design coating 15, followed by a lacquer or varnish wearing coat 16. The locking coat 12 acts both to overcome the detrimental actions of the binding material of the composition board, on the color or priming coats, and to provide a surface having a greater adhesive property for the priming and/or color coats than the composition board itself.

While I have explained the invention as utilizing a priming coat, this is not essential, as in many instances the color of the composition board itself forms a desirable background for the design. In such instances, the design coat 15 is applied directly to the locking coat 12.

I claim:

The method of decorating a composition board having a fibrous material retained in a mass formation by an asphaltic binding material, comprising neutralizing the exudations of such binding material by coating the surface of such material with a solution comprising substantially equal parts of casein, shellac and soda mixed in substantially nine and three-fourths parts of water, drying such coating, applying a design in color to the coated surface, and subsequently applying a wearing coat of lacquer to the decorated surface.

KARL EICHSTÄDT.