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ORNAMENTAL FINISH AND METHOD OF MAKING THE SAME

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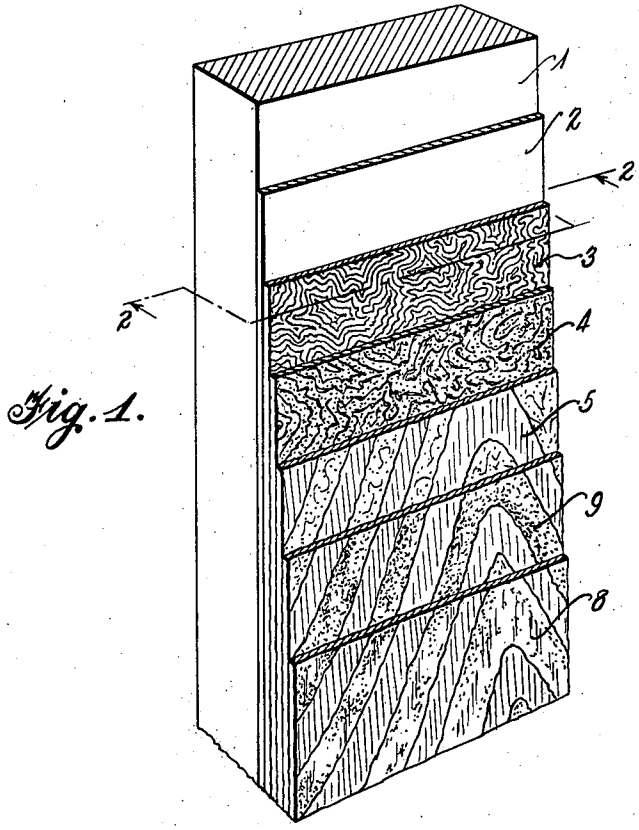


Fig. 1.

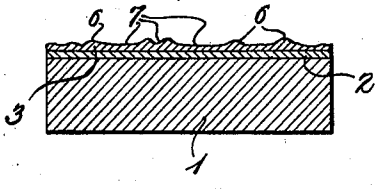


Fig. 2.

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ORNAMENTAL FINISH AND METHOD OF MAKING THE SAME

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9 Claims. (Cl. 41—24)

This invention relates to surface finishes and to a method of producing said finishes. More particularly, the invention relates to decorative or ornamental surface finishes which may be applied to any material which is non-porous or to any porous material which has been rendered non-porous; and to a method for producing said finishes on such materials.

The invention includes, as one of its novel features, a base coating which may be applied directly to the surface of an article to be finished by spraying or otherwise, and which coating upon drying provides a rough or non-smooth surface which is peculiarly well adapted to serve as a foundation for any decorative pattern with which it is desired to ornament said article. More specifically, the base or foundation coat is such that, upon drying, it takes the form of a wrinkle coat that has been found to give depth to a decorative pattern applied thereon and to facilitate the production of a finish which very closely resembles the natural appearance of the finish simulated.

The present invention is especially well adapted for ornamentally decorating sheet metal, and another of its important features is that it overcomes the objections inherent in sheet metal finishes presently known, namely, that of emphasizing or magnifying slight defects or imperfections in the sheet metal due to dents, wavings, bulges, etc., by what is commonly termed the "high-lights." Heretofore, these high-lights have been sought to be eliminated by roughening the surface of the sheet metal to thereby eliminate its smoothness and in this way tend to counteract reflection or high-lights. The roughening has previously been accomplished by providing minute indentations in the surface of the metal by hammering, sand blasting, pitting with acid, etc. All of these known methods are objectionable from the standpoint of economy, uniformity, and quality of the finish. The present invention is a great improvement over the above expedients in that it requires no special or costly treatment of the surface of the metal but merely requires the application of a coating to said metal which is of such a nature that it inherently wrinkles and forms a rough coat upon which any desired pattern or design may be applied.

It is, therefore, one of the principal objects of the present invention to provide an ornamental finish which may be applied to wood, glass, metal, stone, composition materials, etc., to change the surface characteristics thereof to simulate any desired finish.

Another object of the invention is to provide a decorative or ornamental finish which is of such a character as to give the appearance of depth and thereby provide a more natural and less artificial looking product.

Still another object of the invention is to provide a base coat for ornamentally finishing objects and which coat is of such composition that upon drying it will provide a rough or non-smooth coating of such nature that any design or pattern, whether it simulate wood grain, marble, Caen stone, travatine, fabric, plant life, etc., applied thereto, will result in a finish having a depth and aspect closely resembling the physical appearance of the simulated material.

A further object of the invention is to provide a relatively simple method for producing simulated ornamental finishes which provides "depth" and enables close and natural appearing duplication of any desired pattern.

A still further object of the invention is to provide a new and novel decorated article of manufacture.

Other objects and features of the invention will be apparent to those skilled in the art from the following description taken in conjunction with the accompanying drawing in which:

Figure 1 is a diagrammatic view illustrating an article processed according to the present invention; and

Figure 2 is an enlarged sectional view taken on line 2—2 of Figure 1.

It will be understood that the thickness of the various coatings shown in the drawing has been greatly exaggerated for illustrative purposes. In said drawing, the invention is shown applied to a body or strip of sheet metal 1. It will be understood, however, that the invention is not limited to ornamenting metal and that the same may also be practiced with any suitable non-metallic material.

Before any coating is applied to the strip 1, it is thoroughly cleansed so that any paint applied thereto will closely adhere and be bonded to its surface. In one mode of carrying out the invention, a clean sheet of metal is provided with a priming coat 2 of any suitable nature. This coating may be applied quickly by dipping, and dried quickly by baking. After the priming coat 2 is thoroughly dried, the wrinkle base coat 3, previously referred to, is next applied. The wrinkle coat 3 may be conveniently applied by spraying or by any other suitable method. This wrinkle coat is preferably dried by baking, although the same may be allowed to dry in the

air if desired. The composition of the wrinkle coat and the advantages of drying the same by heating or baking at a high temperature will be pointed out more fully hereinafter.

After the wrinkle coat **3** has thoroughly dried, a coat of ground color **4** is applied thereto preferably by spraying because this enables an operator to more evenly apply the same to said rough wrinkle coat. The ground color coat **4** is selected in accordance with the background of the pattern or finish which it is desired to simulate and is preferably dried by baking.

The finish illustrated in the drawing is that of a wood grain and, therefore, in carrying out the illustrative process, a grain coat **5** is applied to the ground color coat. The grain coat is of a color which corresponds to the wood finish being simulated. This coating is preferably, although not necessarily, applied by a roller which compresses to some extent the ridges **6** of the wrinkle coat **3**. These ridges are shown in greatly exaggerated form in Figure 2. It will be understood, however, that the roller does not press so hard against the wrinkle coat as to completely compress the ridges **6** into the valleys **7** therebetween and thereby nullify the purpose for which the wrinkle coat was provided. Hence, even after application of the grain coat by a roller, the surface still remains rough compared to the original smooth surface of the sheet of metal **1**. The grain coat may be dried in any suitable manner.

After the grain coat has dried, the same may be protected by spraying a coat of clear flat nitro-cellulose lacquer **8** thereon. In certain cases it may be desirable to first apply a high-light coat **9** to the grain coat before applying the lacquer coat **8**. This high-light coat may be applied by a roller or by any other means so that the coloring thereof is properly positioned relatively to the grain pattern previously applied.

In simulating a wood finish, as described above, the grain coat and high-light coat applied to the ridges and valleys **6** and **7**, respectively, of the wrinkle coat, create an appearance of depth and to some extent reproduce the appearance of saw marks appearing in a board which has not been sufficiently planed or sanded to eliminate the fine fibers of the wood which have been raised by the saw. In addition, the use of several colors, to wit, the ground coat, grain coat, and high-light coat, in reproducing a grain further gives the effect of depth and a very natural and pleasing appearance.

While the grain coat has been described as applied by a roller it will be obvious that the same may be applied by any other suitable means. It will also be understood that all of the coats described need not be used and that the priming coat, ground color coat and/or high-light coat may be omitted if desirable in reproducing certain finishes.

In producing the wrinkle coat **3**, it is advantageous to dry or bake the same at an elevated temperature depending upon the nature of the material which is being ornamented. For example, in applying ornamentation to a metal, a temperature up to 450° F. may be advantageously used. On the other hand, the treatment of wood, stone, composition wall board, etc. will require a very much lower temperature, approximately 100 to 150° F. The period of baking of sheet metal to dry the wrinkle coat will, of course, depend upon the temperature used. A period of approximately one hour is required to properly treat the wrinkle coat **3** at a temperature of 400° F. There is an advantage in drying the wrinkle coat at elevated temperatures, namely, the accentuation of the wrinkling and a resulting harder finish.

The nature of the wrinkle coat **3** may be modified to suit the pattern of the material simulated by varying the nature of the ridges and valleys thereof. Thus, the thickness of the film of wrinkle coat applied will affect the nature of the wrinkles. Thin films produce fine wrinkles and thick films produce coarse wrinkles. The wrinkling effect is attributable to the particular drying oil used in the composition of the wrinkle material. The phenomenon of wrinkling appears to be due to the more rapid oxidation of the exposed surface of the film and to the slower oxidizing of the material beneath said exposed surface; the exposed surface expanding laterally and the less oxidized material below said surface flowing into the folds produced by the expansion of said film. Whatever the explanation of the foregoing phenomenon may be, the general effect produced is that of a surface having ridges projecting thereover and running irregularly without any breaks in its surface.

The thickness of the film of wrinkle coat **3** applied may be readily varied by the type of spray nozzle which is used in applying the same. A spray nozzle producing a coarse atomization will give a greater deposition of the wrinkle coat and consequently coarser wrinkles will result. On the other hand, a spray nozzle which produces a relatively fine atomization will result in a thinner film and finer wrinkles.

A typical formula for the wrinkle composition which may be used in practicing this invention is as follows:

Modified phenolic resin such as amberol F7 (Resinous Products Co.)	Pounds	100
Raw China wood oil	Gallons	20
Liquid cobalt drier	do	¾
Mineral spirits	do	12
Toluol	do	16

In preparing the wrinkle coat, the amberol and oil are placed in a kettle and heated sufficiently to melt the amberol. When the melting is complete, the temperature is brought up to 500° F. and maintained at said temperature for about seventeen minutes. The mixture is then water-checked to reduce its temperature to 400° F., and while this lower temperature is being maintained the cobalt drier and mineral spirits are added. Toluol is next added in safe proportions until the full amount required has been introduced. The mixture is then maintained under heat until it takes a body or assumes a viscosity such as will run U-plus on a Gardner hold viscosity tube.

While the invention has been specifically described in connection with the production of a wood grain on metal, and while a typical formula of the wrinkle material has been given, it will be understood that the invention is not limited to practice of the formation of wood grain on metal or any other material, and, further that the composition of the wrinkle material may be varied slightly from that set out herein and still be satisfactory for use in making the ornamental article, and for carrying out the process of producing the same defined in the annexed claims.

Having described my invention, I claim:

1. An article of manufacture having a simulated finish thereon comprising a prime coat, a

wrinkle coat on said prime coat, a ground coat on said wrinkle coat having the general color of the background of the pattern simulated and a pattern comprising one or more coats on said ground coat.

2. An article having a simulated wood finish thereon, comprising a wrinkle coat, a ground coat on said wrinkle coat of the general color of the wood simulated, and a grain coat corresponding to the grain of said wood applied on said ground coat.

3. An article having a simulated wood finish thereon, comprising a wrinkle coat, a ground coat on said wrinkle coat of the general color of the wood simulated, a grain coat corresponding to the grain of said wood applied on said ground coat, and a protective transparent coat on said grain coat.

4. The method of producing an ornamental finish on an article which comprises applying to an article a coating of a composition which when dried thereon produces a wrinkled surface, and applying an ornamental coating in the form of a desired pattern to said wrinkled surface.

5. The method of producing an ornamental finish on an article which comprises applying to an article a coating of a composition which when dried thereon produces a wrinkled surface, baking the coated article to dry said coating to produce said wrinkled surface, and applying an ornamental coating of a desired pattern to said dried wrinkled surface.

6. The method of producing an ornamental finish on an article which comprises applying to an article a coating of a composition containing a wrinkling oil which when dried produces a wrinkled surface, applying a ground coat of the color of the background of the pattern to be imitated on said wrinkled coat, and applying a design coat corresponding to said pattern on said ground coat.

7. The method of producing an ornamental finish on an article which comprises applying to an article a coating of a composition containing a wrinkling oil which when dried produces a wrinkled surface, applying a ground coat of the color of the background of the pattern to be imitated on said wrinkled coat, applying a design coat corresponding to said pattern on said ground coat, and applying a protective coating to said design coating.

8. The method of producing an imitation wood finish on an article which comprises applying a coat of wrinkling material to an article, applying a ground coat of the general color of the wood to be imitated on said wrinkling material and applying a grain coat simulating the pattern of said wood on said ground coat.

9. The method of producing a simulated wood finish on an article which comprises applying a coat of wrinkling material to an article, applying a ground coat of the general color of the wood simulated on said ground coat, and rolling a grain coat on said ground coat with sufficient pressure to partially compress the ridges of said wrinkle coat.

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