Feb. 2, 1937. K. EICHSTÄDT 2,069,228

PROCESS FOR DECORATING WOOD OR SIMILAR MATERIALS

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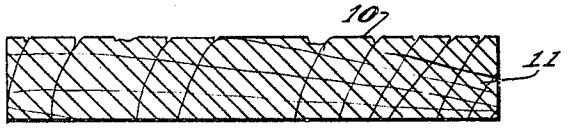


FIG. 1

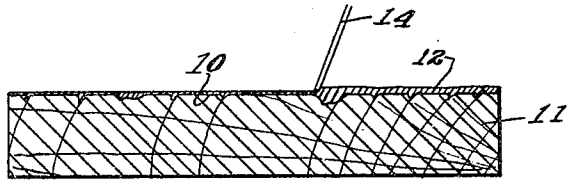


FIG. 2

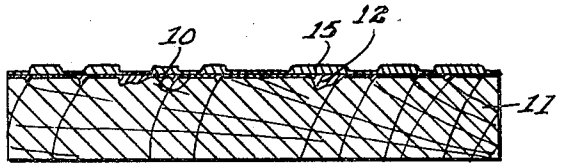


FIG. 3

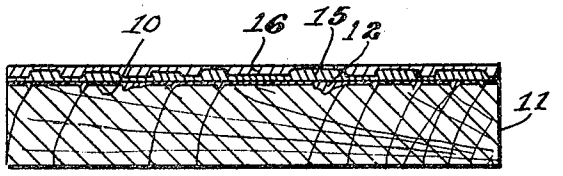


FIG. 4

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PROCESS FOR DECORATING WOOD OR SIMILAR MATERIALS

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In Germany November 26, 1932

1 Claim. (Cl. 41—26)

This invention relates to a process for decorating wood or similar materials, and is especially concerned with the preparation of the surface to be decorated.

It is well known that relief, offset and intaglio printing processes have been used to print or decorate the surfaces of inexpensive woods with various patterns. In many instances, photomechanical reproductions have been applied to wood surfaces by these processes. However, such methods of decorating the wood surfaces have been used with little success and with great disadvantages. The printing colors or inks were either absorbed by the wood surface, or they did not adhere to the surface grains or hard spots of the wood. In the first instance, the quantity of color absorbed by the wood was so great that the result was a faded appearance. In the second instance, the color would peel or was easily wiped or rubbed from the surface of the top grain.

Another disadvantage encountered in the past has been the inability to match the printing colors to the available kinds of woods, especially when it was desired to match colors true to nature, as in the case of the reproduction of imitation wood finishes and the like, as well as in instances where accurate contrasts and sharpness of image was desired. This was due to the high color absorption characteristic of the softer parts of the wood surface. Hence, in the past it has been practical to limit the printing on wood to instances where large surfaces were desired, and where the appearance of ultimate product was to create a general impression rather than to bring out fine details and tones. Even in such instances, because of the care required to keep the above-named disadvantages at a minimum, the decorating of wood surfaces has been expensive.

An object of the present invention is to provide a method of decorating materials, such as wood surfaces and the like, in a manner as to overcome the disadvantages heretofore mentioned, and which method will be simple and capable of being carried out economically.

Another object of the present invention is to provide a method of treating the surfaces of wood and other similar materials, so that such surfaces may be decorated by ordinary printing processes in an economical manner.

A further object is to provide a method for decorating wood or similar surfaces in instances where accurate tonal reproductions and sharpness of image are required of the ultimate product.

In the drawing, Fig. 1 is a section illustrating diagrammatically an object to be decorated; Figs. 2, 3 and 4 are sections illustrating the object shown in Fig. 1, after different steps in my method have been performed thereon.

When it is desired to decorate a surface such as the surface 10 of the block or slab 11, shown in Fig. 1, and which may be birch, maple or any other variety of close grained wood or similar fibrous or porous material, the surface of the material is first carefully sanded and then treated or coated with a glue and glycerine compound 12. Such compound generally comprises 95 to 98% of pure cabinet glue, similar to material used in the manufacture of furniture to which is added from 1 to 2% glycerine to render the surface slightly more flexible.

This glue compound is heated to thin the glue and render it more fluid, and applied to the surface to be decorated as hot as possible, so that the glue compound will readily be absorbed by the wood or material to be decorated. The surplus glue is then removed from the surface, as, for instance, by a scraper 14, as shown in Fig. 3, care being used to leave a fine film of glue over the surface so that the surface grains will be covered, to the end that the colors will adhere sufficiently thereto so that they will permanently remain on the surface.

When using ordinary production methods, there is an intermission of several hours between the application of the glue compound and the ultimate decoration of the surface, during which time the compound dries without the use of baking ovens or other artificial drying apparatus. After this glue film has dried, the material is decorated by a usual printing process by applying the design in color 15 and thereafter providing a finish or protecting coat 16 in the usual manner, without encountering any of the disadvantages heretofore set forth. I find that woods treated in such manner are especially well adapted for printing or decorating by the well-known intaglio printing processes.

In certain instances, such, for instance, when it is desired to decorate woods such as poplar, alder and the like, which are porous and have a light grain or other porous similar materials, I find it desirable to use a coating of a colorless substance, as a filler, and for this purpose I prefer to use blanc fixé, or as it is commonly called, barium sulphate, in a vehicle, such as, for instance, the glue compound heretofore mentioned. The proportion of powdered barium sulphate required varies, of course, with the porosity of the material

to be coated. Suffice it to say that for 700 parts of the liquid glue compound, from 2 to 400 parts of barium sulphate is used.

When an undertone is desired of the ultimate decorated article, a portion of the barium sulphate is replaced with a color pigment, as, for instance, when replacing part of the barium sulphate with an umber, a brown undertone will result. The tone may be varied, as desired, to secure any tonal effect required. This solution is applied as heretofore explained in connection with the glue compound, and has been formed to provide a surface which is especially adapted for use when letter press or relief printing methods are used to decorate the article.

Both of the above named solutions provide a primer coat which is in harmony with the inks and other ingredients of the top or decorating coats; that is, these primer coats are nitrocellulose proof.

Under certain conditions where the surface must withstand extreme temperature changes, and/or unusual moisture conditions, it becomes desirable to replace the glue solution with a waterproof vehicle and oils are used for this purpose. However, such oils as mineral oils, are avoided, because the top coats do not permit mineral oils to dry properly when absorbed by the pores of the wood.

The most successful oils are medium gravity linseed oil varnishes, which are reduced with benzine to the proper consistency. The oil must be nitrocellulose proof and this is determined to a great extent upon the capacity of the oil to oxidize. Hence, oils having a high polymerization are preferably used for this purpose.

From the foregoing description, it is readily apparent that I have provided a simple, efficient and economical method of preparing wood or similar surfaces, so that such surfaces may be decorated by the usual printing methods, and that articles produced by my improved method will readily similate natural objects having sharpness of image and contrasting tones.

It is also evident that my improved method permits woods, such as gum woods, pine, spruce and other inexpensive woods to be grained or decorated by well-known printing processes to simulate the more expensive woods, such as mahogany, walnut and the like.

I claim:

The method of decorating wood surfaces, comprising heating a transparent liquid compound including glue, glycerine and barium sulphate, applying such compound to the surface to be decorated, removing part of such coating by a scraping action, leaving a thin, even surfaced layer of such compound over the entire surface to be decorated, drying the coated surface, thereafter decorating the wood surface by a printing operation to simulate a more expensive wood, and finally applying a wearing coat to the decorated surface.

KARL EICHSTÄDT.