Aug. 26, 1930. L. V. CASTO 1,773,948

METHOD FOR REPRODUCING MARBLE AND WOOD GRAIN SURFACES

Filed March 28, 1928

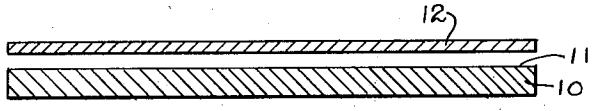


FIG. - 1

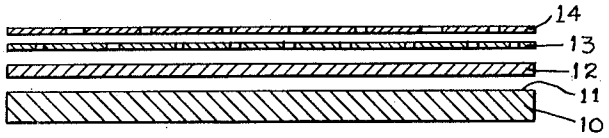


FIG. - 2

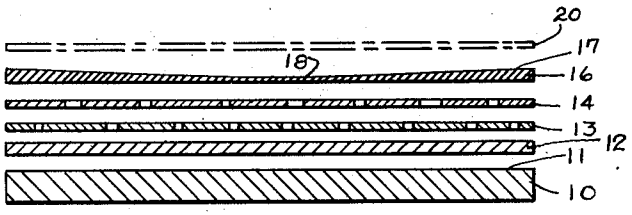


FIG. - 3

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UNITED STATES PATENT OFFICE

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METHOD FOR REPRODUCING MARBLE AND WOOD GRAIN SURFACES

Application filed March 28, 1928. Serial No. 265,328.

This invention is concerned with the art of reproducing the natural appearances of surfaces such as marble slabs, wooden panels and the like on slabs of dissimilar materials, and has for its general object an improved method of utilizing a transfer pattern taken from a printing surface photographically derived from the original surface to be simulated and a colored finishing coat. By controlling the pigmental or color environment of the transfer when being applied to the surface being finished the full tone, half tone and quarter tone color contrasts between the ground color or the color of a ground coating of pigment, the sharp contrasts between the transfer color and the ground color can be subdued or varied at will without destroying the detail present in a transfer pattern derived in the manner referred to.

Other objects of my invention will become apparent from the following description relating to the accompanying drawings, wherein I have shown in diagrammatical cross-section the mode of application of my process. The essential characteristics thereof will be summarized in the claims.

In the drawings, Fig. 1 is a diagrammatic cross sectional representation of a slab material, the surface of which is to be treated by the use of my process, and represents the slab with an application of the ground coat thereto; Fig. 2 is a diagrammatic representation similar to Fig. 1, but including two transfer patterns applied to the ground coat; Fig. 3 is a representation of the slab with the surface thereof completely finished or sealed.

My invention contemplates the improvement of the method of applying graining transfers such as marble grains, wood grains, etc. to surfaces being finished in simulation of the surface appearance of the natural object by following generally the now well known process of grain reproduction by the use of a photographically derived pattern forming surface; but I modify the last step in the finishing process to the extent that the heretofore final coating, usually a clear varnish or lacquer is treated with a suitable coloring matter such as an aniline dye to give this otherwise transparent coating a color which will impart to the surface tonal depth and will serve to blend the full tone, half tone and quarter tone contrasts between the ground coating and the grain pattern colors. I find this can be effected in a readily practical manner by using a clear lacquer pigmented to translucency with an aniline dye. I choose to mix a soluble aniline dye of predetermined color selection to impart to the lacquer a color which when superposed over the ground coat and varying tonal contrasts between the ground coat and color of the transfer will represent one of the natural general tones of the original surface being simulated.

In Fig. 1 of the drawings I diagrammatically show in cross section a slab 10, the surface 11 of which may have applied thereto a ground coating 12 as a base for the finish, which ground coating may be serviceable as a filler and support for a grain transfer, the color of this ground coat being also determined with care. The grain transfer may be taken from a pattern forming surface which is photographically derived through the making of a negative of the natural slab such as marble or wood, and I may then reproduce from the negative a half tone or photogravure printing surface in the well known manner and which will be suitable for forming the transfer. I recommend a printing surface derived in the manner set forth in the patent to Saalburg No. 923,799 issued June 1, 1909, known as photogravure plate or roll surface formation.

The grain pattern may be removed from such a surface by the use of a resilient take-off roll. A roll carrying such transferred pattern may then be passed over the ground coat 12 and thus deposit thereon the grain pattern layer of pigment 13, the pigment or ink forming the transfer being selected with care to approximate as nearly as possible one of the natural grain colors of the original slab surface being reproduced.

In some cases I prefer to superpose one transfer over another, particularly when reproducing the natural appearance of a marble slab, and I show in Fig. 2 such a second

transfer layer 14, it being obvious that the transfers are not applied to the ground coat until the ground coat is sufficiently dry to receive the first transfer, the latter being dried before the second transfer is applied, the drying period such time as is necessary for the transfers to become sufficiently dry to physically preserve the grain lines thereof.

I then select a suitable aniline color of such chemical composition as to be readily soluble in a clear varnish or lacquer, and which color will effect a blending of the ground color and the quarter tone, half tone and full tone shades of the transfer, the aniline color selected being a matter of personal judgment to those skilled in the art.

In some instances particularly where a shaded butt walnut surface is being reproduced and it is desired to have the center of the pattern generally of lighter shade than the border, this may be effected by rubbing down the pigmented lacquer to obtain the effect desired and thereafter a final coating of clear lacquer or varnish may be applied to give the desired protection to the underlying reproduced grain. This decrease in coating cross section is illustrated at 18 in Fig. 3 of the lacquer layer 16. Such a layer of lacquer will produce a general tonal variation relatively light at the center 18 and graduating to a much darker tone 17 due to the greater thickness of the pigmented lacquer layer.

It will be apparent that by using an aniline dye in the finishing coat, that is in the varnish or lacquer, a wide range of varying effects in tonal blending may be obtained and the reproduced surface will be durable and lasting and the color effect depending upon quality of materials used in this reproduction process. The surface may then be coated with a clear lacquer or varnish finish 20 if desired.

A simulated surface reproduction effected in the manner described will have a tonal depth which completely eliminates the optical effect of flatness and a degree of light refraction is obtained, which eliminates glaze when the surface is viewed at an angle by the observer.

I claim:

1. The process of reproducing the natural appearance of materials upon the surfaces of dissimilar materials, which comprises first applying a ground coat to the surface of the material being treated, the ground coat having a color which when subsequently covered with an overlying open transfer will produce some of the natural tones of the surface being imitated, applying to said ground coat a transfer taken from a photographically derived grain pattern of the original or natural surface being simulated, then applying to said surface a finishing coat of translucent lacquer or varnish, rubbing the lacquer or varnish to reduce the finishing coat thickness over part of the underlying pattern to thereby vary the general tonal effect of the reproduced surface, whereby said finishing coat will impart to the surface being treated a blending effect and thus subdue the sharp full tone, half tone and quarter tone color contrasts between the ground coat and the transfer pattern and finally applying a protective coating of transparent lacquer or varnish to the entire surface.

2. The process of reproducing the natural appearance of materials upon the surfaces of slabs of dissimilar materials, which comprises first applying a ground color to the surface being treated, applying an open pattern transfer taken from a photographically derived grain pattern of the original or natural surface being simulated to the surface being treated, then blending the full tones, half tones and quarter tones of the transfer by the use of a coating of translucent sealing and finishing material such as lacquer or varnish carrying a suitable dye, said coating having a varying thickness, whereby said finishing coat will impart to the surface being treated a blending effect between the full tone, half tone and quarter tone contrasts between the ground color and the transfer pattern tones.

In testimony whereof, I hereunto affix my signature.

LLOYD V. CASTO.