

UNITED STATES PATENT OFFICE.

THOMAS ROBINSON, OF CAMBRIDGE, MASSACHUSETTS.

METHOD OF DECORATING WOOD AND OTHER SURFACES.

SPECIFICATION forming part of Letters Patent No. 470,899, dated March 15, 1892.

Application filed May 22, 1891. Serial No. 393,765. (No specimens.)

To all whom it may concern:

Be it known that I, THOMAS ROBINSON, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Methods of Decorating Wood and other Surfaces, of which the following is a specification.

This invention has for its object to enable wooden panels and other surfaces to be decorated at a slight expense; and it consists in the improved method which I will now proceed to describe and claim.

My invention is applicable to the decoration of wood, celluloid, and other materials. I have employed it, however, chiefly in the decoration of wood and celluloid, and regard these as the materials best suited for the practice of my invention. Hence I will describe my invention as applied to the decoration of said materials without being understood as limiting myself thereto.

My invention involves the transference to the article to be decorated of a print or picture which has been printed, painted, or otherwise applied to a sheet of paper or other material adapted to be treated in the manner hereinafter described to transfer the said picture to the surface to be ornamented.

I will first describe my invention as practiced in retransferring; or, in other words, transferring a picture temporarily from the original sheet to a transfer-sheet and then retransferring it permanently to the surface to be ornamented, the invention being practiced in this way when it is desired that the transferred picture shall be viewed in the same position as in the original.

In decorating wood I first clean the surface of the wood, which should be smooth, but not necessarily flat, and apply a light coat of white shellac or other resinous or gummy material, which is preferably transparent or colorless. Said coating should be of a material capable of being dissolved by a chemical—such as wood-alcohol. The coating thus applied is allowed to dry before it is further treated. I then take plain white paper and apply to one side thereof a coating of the same or similar material, allowing said coating to dry before further treatment. This sheet I call the “transfer-sheet.” I then take a sheet of paper upon

which the picture to be transferred has been printed, painted, or otherwise applied and immerse said sheet, which I will call the “original,” in a bath of wood-alcohol. After the original has been permeated by the alcohol I remove it from the bath, and after draining off all the alcohol that will flow, but without removing the alcohol retained by the pores of the paper, I place the saturated original on the transfer-sheet, the face of the picture being placed in contact with the coating of the transfer-sheet. The solvent with which the paper is saturated dissolves the coating on the transfer-sheet and causes the coloring matter composing the picture or design to adhere closely to the transfer-sheet, such adhesion being due, as I believe, to the softening of the gum coating, so that the coloring-matter becomes intimately united with it, both the gum-coating and the coloring-matter being at the same time intimately united with the material of the transfer-sheet, the union of the coloring-matter with the transfer-sheet being so firm and close that it cannot be disturbed by the operation of removing the material or body of the original sheet. This removal may be effected in any suitable way, preferably by wetting and exerting rubbing pressure upon the back of the original sheet, and thus removing the material in flakes or fragments until everything pertaining to the original, excepting the coloring-matter, is removed, the latter remaining upon the transfer-sheet. I then immerse the transfer-sheet having the design upon it in a bath of the same solvent, and after saturating the transfer-sheet I press it against the shellac coating of the body to be decorated, the side having the design being in contact with said shellac coating. I maintain the pressure of the transfer-sheet against the said coating till the solvent has dissolved the latter and effected a firm and intimate union between the coloring-matter and the material of the body to be decorated, this union being due to the causes which established the union between the coloring-matter and the transfer-sheet. I then remove the transfer-sheet by the same means that were employed for removing the original from the transfer-sheet, the coloring-matter being left

upon the surface of the body to which the transfer-sheet was applied. This completes the transferring process, and the only step remaining is to varnish the decorated surface in case it is desired that the same shall present a smooth and polished surface.

When it is not desired that the transferred design shall be viewed in the same position on the decorated article as in the original, I dispense with the transferring-sheet and apply the original, saturated with the solvent, directly to the shellacked surface of the body to be decorated.

I do not desire to be understood as limiting myself when decorating wood to the use of shellac as the dissolvable material forming a coating to which the coloring-matter is transferred, but may use any suitable coating, preferably of a gummy nature, adapted to be dissolved by a solvent, such as wood-alcohol, and to effect when dissolved a close and intimate union of the coloring-matter deposited upon it with the body to be decorated. Neither do I limit myself to the use of wood-alcohol as the solvent, but may use any other suitable solvent of the coating employed which may be found suitable for the purpose.

In decorating celluloid I omit the shellac coating on the article to be decorated, but proceed as above described in all other respects. The wood-alcohol or other solvent with which the sheet from which the design is transferred is saturated dissolves the surface of the celluloid to a slight extent, and thereby enables the coloring-matter to unite so firmly and intimately with the body of the article that it cannot be removed by water. Surfaces treated with the finish known as "enamel"—a composition usually composed of zinc, Chinese white, and other materials—may be decorated in the same manner as celluloid, the solvent acting to partially dissolve the enamel and cause the coloring-matter to adhere thereto.

Wood-alcohol is particularly adapted for use in my improved method, because it acts as a suitable solvent for the surfaces hereinbefore described, without affecting the colors of the transferred pictures or designs.

In some cases the solvent may be applied to the surface to be decorated before the design is applied thereto, the surface being thus softened or partially dissolved, so that when the coloring-matter of the design is pressed against said surface it enters into intimate union therewith.

My improved method may be used in transferring pictures or designs that have been applied in any known way to sheets of paper or other flexible material. In practising said method I have transferred pictures printed from wood-cuts in ordinary printing-ink, ordinary lithographs printed in colors, water-color designs painted by hand, and prints or impressions made from steel engravings. I

have employed this method chiefly in the decoration of wood and celluloid, and in all cases have obtained a perfect transfer to the decorated surface of all parts of the design, even the most delicate lines being transferred without the slightest loss or injury.

I claim—

1. The improved method, hereinbefore described, of decorating wooden and other surfaces, the same consisting in applying to the surface of the body to be decorated a coating of transparent gum, such as shellac, which is soluble in wood-alcohol, saturating a sheet of flexible material, to which a picture or design has been applied by printing, painting, or otherwise, with a solvent of said coating, such as wood-alcohol, pressing the face of said saturated sheet against the said coating and maintaining the pressure until the solvent with which said sheet is saturated has dissolved the gum coating and caused the firm adhesion of the coloring-matter composing the picture or design to the body to be decorated, and then removing said sheet, leaving the picture upon the surface of said body, as set forth.

2. The improved method, hereinbefore described, of decorating wooden and other surfaces, the same consisting in applying to the surface of the body to be decorated a coating of transparent gum, such as shellac, which is soluble in wood-alcohol, applying to the surface of a transfer-sheet a similar coating, saturating a sheet of flexible material, to which a picture or design has been applied, with a solvent of the material used in coating said body and transfer-sheet, pressing said original against the coating of the transfer-sheet and maintaining the pressure until the said solvent has caused the firm adhesion of the coloring-matter of the picture or design to the transfer-sheet, then removing the original sheet, leaving the coloring-matter upon the transfer-sheet, then saturating said transfer-sheet with the said solvent, pressing its face against the coating of the body to be decorated until the solvent has caused the firm adhesion of said coloring-matter to the said body, and then removing the transfer-sheet, as set forth.

3. The method hereinbefore described of decorating surfaces which are soluble in wood-alcohol, the same consisting in saturating a sheet of flexible material, to which a picture or design has been applied by printing, painting, or otherwise, with a suitable solvent, such as wood-alcohol, pressing the face of said saturated sheet against the surface to be decorated until the solvent has sufficiently dissolved said surface to cause a firm and intimate union of the coloring-matter therewith, and then removing said sheet, as set forth.

4. The method hereinbefore described of decorating surfaces which are soluble in wood-alcohol, the same consisting in soften-

ing or dissolving a portion of said surface by
a solvent, such as wood-alcohol, pressing a
picture or design printed on or otherwise ap-
plied to a sheet of flexible material against
5 said surface, and then removing said sheet,
the coloring-matter of the design being left
upon the said surface, as set forth.

In testimony whereof I have signed my

name to this specification, in the presence of
two subscribing witnesses, this 14th day of 10
May, A. D. 1891.

THOMAS ROBINSON.

Witnesses:

C. F. BROWN,
EWING W. HAMLEN.