

UNITED STATES PATENT OFFICE.

WILLIAM SUTHERLAND, OF MANCHESTER, ENGLAND.

IMPROVEMENT IN THE PROCESSES OF ORNAMENTING WOOD, &c.

Specification forming part of Letters Patent No. **185,843**, dated January 2, 1877; application filed September 26, 1876.

To all whom it may concern:

Be it known that I, WILLIAM SUTHERLAND, of Manchester, England, have invented certain Improvements in Printing, Staining, and Ornamenting the Surface of Wood, Metal, and other Surfaces, of which the following is a specification:

This invention consists of a new and improved method of printing upon color or preparation laid upon the surface of wood, by which method or process the most elaborate, as well as the simplest, design can be produced in as many colors as may be desirable.

In order to carry out this invention I proceed as follows: I prefer to use light-colored woods, such as white pine, pear-tree, deal, pitch-pine, box, oak, ash, or any other light-colored wood, the surface of which is made smooth and level in the usual manner. I now prepare the surface of the wood with a coating of glue, size, or any other suitable glutinous medium, and then with a thin coat of white or brown shellac dissolved in methylated spirits, naphtha, spirits of wine, or any other suitable spirit, or with ordinary varnish.

In order to simplify the description of my process, I will proceed to describe the *modus operandi* used in printing and staining one color, it being understood that any number of colors can be printed in the same manner.

I cause a design to be engraved on a copper, steel, zinc, or other metal plate. I then coat over the surface of the wood with the coloring pigment, stain, or solution required. I prefer to mix the same in distemper or water color, using ordinary beer, porter, or a weak solution of glue, isinglass, or gum as a medium to bind the color sufficiently for the purpose. I now take a print off the engraved plate, with ink made with boiled linseed-oil, Stockholm tar, and black or red color. The paper being thin tissue prepared with a sizing of soft-soap lees, I now lay the print down upon the surface of the wood to be decorated, and rub the same well with a flannel rubber. I then take a soft sponge and water, and wash off the paper, leaving the ink upon the color previously spread upon the surface of the wood, thus cleaning off all the paper, the superfluous color, and size preparation, leaving

no color upon the wood but that which is covered by the greasy lines of the engraving.

I now proceed to cover all the parts I wish to remain the natural color of the wood with white varnish, Canada balsam, Brunswick black, or any other suitable medium. This being dry, I cover the whole of the surface of the wood or parts thereof with black, brown, red, or any other stain or tint of color or dye that may be suitable. When this color is thoroughly dry I lay the ornamented wood in a bath of turpentine or other suitable spirit. The turpentine or spirit softens the varnish and the printing-ink, which is all washed clean off the wood with the turpentine, so that there is nothing left upon the wood but the various distemper colors before named. The work may then be French polished or varnished in the usual manner. If I wish to form a white outline on the wood I print upon the prepared wood without first coloring the surface, as before described, and while the printing-ink is in the wood I put in all the colors required, and then wash off the ink with turpentine. Wherever the greasy portions of the engraving have covered the wood, it will, in this case, be the original color forming a comparatively white outline.

If I desire to print a design on the wood with two or more colors, I make separate engravings of the various parts of the design, and print on the wood in succession, washing off the color just printed upon, then coloring the wood with the next color, repeating the process until all the colors required are printed.

By my improved process I first prepare the wood, then print upon it. I then paint in all the colors required, using distemper colors or aniline dyes, or stains dissolved either in water or methylated spirit, which dyes or stains sink into the body of the wood. I then wash off the print, which leaves either a colored or white outline, as may be desired. It is then polished in the usual manner. The same process will apply to all painted surfaces and to the surface of tin, brass, or other metals.

Having thus described the nature of the said invention, and the manner of performing the same, I would have it understood that what I claim is—

The described method of ornamenting wood surfaces, the same consisting in first preparing the surface of the wood, as set forth, then transferring to it a printed pattern, painting in the colors or dies mentioned, removing the ink of the engraving and the varnish, and then polishing, substantially as set forth.

In testimony whereof I have hereto set my

hand and affixed my seal this 29th day of August, 1876.

W. SUTHERLAND. [L. s.]

Witnesses:

ARTHUR W. SLACK,
Solicitor, Manchester.

W. G. SUTHERLAND,
Glass Painter, Manchester.