

UNITED STATES PATENT OFFICE.

LÉON JAROSSON, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN PAINTING ON CLOTH.

Specification forming part of Letters Patent No. 9,771, dated June 7, 1853.

To all whom it may concern:

Be it known that I, LÉON JAROSSON, of Jersey City, in the county of Hudson and State of New Jersey, have invented or produced a new and useful art, the same being an improved method of painting or ornamenting cloths of all kinds which have been previously prepared with a mordant that will combine chemically with the colors as they are laid on and blended one with the other, and developing and permanently fixing the colors thereon by steam and restoring the cloth to its natural pliable soft condition by washing out the excess of coloring-matter and leaving the picture indelibly fixed on the cloth, of which the following is a specification.

To enable others skilled in the art to make use of my invention or discovery, I will proceed first to describe what has heretofore been done, and next the difference between such known processes and what I claim as my new discovery in the art.

The printing upon cloths by blocks or rollers is well known, the cloth having been previously prepared with a mordant for fixing chemically the colors; but with blocks or rollers only one color can be laid on the cloth and no blending can be done, for two reasons—viz., that the second color destroys the first in a great measure, and the mordants used exhaust their chemical effect upon the first color and would not act upon the succeeding ones. It is also admitted that colors laid on by blocks and rollers have been treated with steam for brightening and fixing them in the cloth.

Another method of ornamenting or painting—as upon canvas in oil-colors or upon velvets and satins in water-colors—is equally well known; but in neither of these latter cases are mordants or chemical colors used, nor are the colors permanently fixed in the material so painted upon. Besides, such pictures are ornamental only, for the pliability of the cloth is lost and the picture or ornament is upon the surface and not in the body of the cloth, and to apply it to any useful purpose would entirely destroy it.

My invention or discovery might be considered as combining the permanency of the first with the beauty of the second of the above-

described methods. What the artist puts upon the surface of his canvas, and which is merely ornamental, I put into the body of the fabric in permanent colors, restore the cloth to its natural pliable state or condition, and make an article both ornamental and useful.

My invention is applicable to the making or ornamenting of table or piano covers, floor-cloths, tapestry, pictures, or portraits, and in its practice I can lay one color over another or blend them in with the same facility that oil-colors can be laid or blended on canvas, which laying of chemical colors in or on cloth so as to preserve them all has not, to the best of my knowledge, been heretofore known or used.

In the practice of my invention I find it equally applicable to silks, satins, velvets, woolen or cotton goods, and may be executed in imitation of gobelin tapestry, richly-wrought needle-work, or pictures or faces from nature.

To paint on felt or woven woolen goods I proceed as follows: The cloth is first perfectly bleached in the ordinary manner with soap and silver. A tepid-water bath is then prepared, into which is placed as a mordant bisulpho hydro-chlorate of tin, until the liquid weighs 3° Baumé, (acid weight.) This mordant is composed of muriatic acid, sulphuric acid, and block tin, in about the proportions of eighteen pounds of the first, nine pounds of the second, and two and one-half pounds of the third, the whole being warmed in a sand bath, while chlorine gas is introduced by a pipe or otherwise to saturate it. Into this mordant the cloth is placed and allowed to remain about three-quarters of an hour, when it is sufficiently charged with the mordant to receive the chemical colors to be laid or painted upon it, even when one color is laid over the other to the extent of several colors, the mordant retaining its power of taking and holding the quantity of color necessary to give depth and richness to the picture. After the cloth is taken out of the mordant it is rung out and the creases carefully shaken out, and after a period of about ten minutes should be placed in a liquid prepared with twenty parts of cold water to one part of clear chloride of lime water at 2½° Baumé, where it is allowed to remain about three minutes, after which it is

washed in clean water and taken out and dried. This prepares the fabric for the receiving of the colors.

The primitive colors which I use are various, being chiefly vegetable, but using some mineral and some animal colors, and the various shades thereof are made by mixing the colors or reducing them with gum-water, prepared from the gums arabic or senegal, which should be well bleached or purified and dissolved in water in the proportions of about twelve ounces of the gum to one quart of water. By mixing or commingling the primitive colors any other tints may be produced, according to the taste of the artist, which mixed colors may be farther changed in shade by reducing with gum or other water.

The mordant (it might be proper to state) which I use is entirely colorless; and as I use cloth as white as it can be made, so as to clearly show the finest tints, it is important in the practice of my art, inasmuch as a mordant prepared of sulpho-muriate of tin is tinged with yellow and imparts its color to the cloth.

The picture should be commenced with the lighter shades first and finished with the darker ones, allowing each color, after it is put on, to dry before another is put over it, and thus great richness is given to the picture which is being painted on the cloth, while the mordant retains its chemical affinity for the colors and fixes them permanently in the cloth successively as they are laid on.

The most expeditious and economical manner of putting on the figures or designs is to have the outlines or so much of the figure as may be necessary lithographed and struck onto the cloth, by which means any number of copies of the same design may be produced, and which will obviate the necessity of employing artists to sketch out the figures, for with a copy before the operator and the outline established the colors may be easily blended in.

As yet, not having largely entered into the manufacture of this new article or this new art, and indeed no further than to fully and completely establish the feasibility of the operation, I use very crude instruments for putting on and blending the colors, and which time and experience may greatly improve or change; but as I have accomplished the object with them any others more neatly made could be considered only as their equivalents.

I use for the purpose of sketching in the figures (when not lithographed) and for many of the sharper lines a gold or common pen or style, a brush, and a small roll of felt or other cloth, and sometimes, for pressing or working in the colors more deeply into the cloth, I use a smooth piece of wood, ivory, or glass, which may be easily cleansed and not affected by the colors.

After the figure, landscape, design, or ornament of any kind is fully painted on the cloth (and it might be proper here to state that up to this part of the operation the colors are neither fully developed nor permanently fixed

or set) the cloth is stiff with the gum and colors, and it is first rolled in a damp cloth or laid between damp cloths to soften and moisten it. Each piece is then separately rolled up in a clean white cloth and suspended in a steam-chamber, so that the rolls shall not touch each other or the sides of the chamber. This is necessary to prevent the colors from running or mixing with each other. The steam-chamber being tightly closed, the steam is allowed to enter the chamber, and the cloths or rolls remain therein from forty-five to ninety minutes, or in proportion to the bulk or size of the piece to be operated upon. This steaming may require one, two, or more separate operations, although, as a general thing, for small articles, one will serve the purpose.

When two operations are necessary the rolls or goods should be turned upside down or reversed end for end at each to prevent the colors from running. This may be more economically done by machinery from the outside, and it may be found necessary to keep the rolls in continuous motion in the steam-chamber, and would obviate the necessity of opening the chamber or handling the hot rolls or goods being steamed. After the painted cloths are properly steamed for brightening and fixing the colors thereon they are taken out and exposed to the air for twenty-four hours (more or less) to dry and allow such of the colors—as blue and green—which require the reoxygenation of the air to give them life and to fully develop themselves. Smaller articles will of course require much less time. After the steaming and drying the fabrics are allowed to lie in clear water until the gum therein dissolves, after which they are dipped up and down, without rubbing, until the colors cease to run, and for this purpose a running stream of water is the best. When well washed or rinsed, as above, they are rolled up in a clean white towel or cloth and beaten by the hand or otherwise to drive out the water, and if any color remains in the towel wash and dry again until the excess of coloring-matter or that which the mordant has not combined with is entirely washed out. Brush the fabric lightly with the nap or grain of the cloth, and put a piece of white paper over it and iron it with a moderately-heated iron, being careful not to scorch or injure the cloth or colors. The colors are now fully developed and permanently fixed or set, and the article ready for the market. There may and doubtless will be many modifications of this general plan developed by experience when the business is largely entered into, and much of the manual labor be performed by machinery; and by describing only what as yet in the infancy of the art may be considered a very crude operation I do not wish it to be understood that I confine myself to the precise process or manipulation herein set forth, but to vary the same so long as I retain the general principal of the operation herein set forth.

I would again repeat that my invention differs from block or roller printing in this, that

by blocks or rollers one color cannot be put upon another; that for each separate color a separate block or roller must be used. In my invention the colors may be laid one upon the other with the same implements at pleasure and to any extent, preserving the tints of all and giving tone to the picture. It differs from oil-paintings upon canvas or water-colors on silk, satin, velvet, as these are on the surface perishable, and can only be ornamental, while mine are in the body of the cloth, imperishable, and both ornamental and useful.

Having thus fully described the nature of my new and useful discovery in the arts, what I claim therein as new, and desire to secure by Letters Patent, is—

The painting upon cloth previously prepared with the mordant herein described, that will combine chemically with colors laid on one over the other, and blended by means substantially as described, by which I give great richness to the figures, while the tint of each is carefully preserved, and developing and fixing permanently the colors by steam, and restoring the cloth to its natural pliable state by washing out the excess of coloring-matter, substantially in the manner described.

LÉON JAROSSON.

Witnesses:

A. B. STOUGHTON,
EDMUND F. LEE.