

# United States Patent Office.

BENJAMIN GEORGE GEORGE, OF LONDON, ENGLAND.

Letters Patent No. 113,758, dated April 18, 1871.

## IMPROVEMENT IN THE ORNAMENTATION OF METAL, GLASS, &c.

The Schedule referred to in these Letters Patent and making part of the same.

I, BENJAMIN GEORGE GEORGE, of 47 Hatton Garden, London, in the county of Middlesex, lithographer and printer, do hereby declare the nature of the said Improvements in Methods of Manufactures and Combinations therewith of Processes for Producing Pictorial, Ornamental, and other Designs to be as follows:

My invention consists of improvements in the manufactures of pictorial, ornamental, and other designs and devices, and for show-tablets for advertising purposes, and for lettering on tin, tinned iron, terne, iron, copper, brass foil, or other metals, plates, and sheets of metal, or amalgamations thereof, and on the well-known printed tin and terne-plates, and on glass, wood, or other suitable materials, both before and after the manufacture of such plates or materials into various articles, the object being a perfection not attainable by the ordinary methods now in use, as well as a large economy in the cost of production.

Pictures, ornamental designs, tablets, and show-cards transferred on metal or other materials, and used as pictures, advertisement-tablets, or in the manufacture of goods of an ornamental and artistic character, to which my improvements relate, have hitherto been prepared in the following manner, viz:

The surface of a sheet of metal or other material is painted over in oil-color, and is then dried in a stove or otherwise, and, for good work, it is afterward rubbed down with pumice or otherwise, to obtain a smooth surface, and these processes are repeated once or more times, according to the finish and polish required.

The picture, design, or show-tablet, which has been previously printed on what is known as transfer-paper, is then transferred upon this painted surface of the plate or other material, and is afterward varnished and dried.

By my improvements I avoid this expensive and imperfect method of producing the painted ground on the surface of the plate previous to the process of transferring the printed work; and to this end I adopt the following means:

I first prepare a design, such as a picture, ornamental design, or show-tablet, and having lithographed it or engraved it, I print it in the ordinary manner of printing on transfer-paper, and when the color or colors are well dry I proceed with one of the first processes of my improvements, as follows:

I prepare a lithograph or suitable metal plate or wood block, or other printing surface, to print one uniform flat surface of color the dimensions required, and upon and all over the picture or design or show-tablet; or, in other words, all over and upon the sur-

face of the transfer-paper, on which is printed the picture or design or show-tablet, I print one or more layers of color in white, or of whatever tone or tint I desire the ground to be, thereby covering and obliterating the entire printed picture, design, or show-tablet, and making it to appear like one flat sheet of printed color.

I now take a sheet of metal, either tin, iron, copper, brass, or other metal or amalgamation thereof, or it may be glass or wood, or other suitable material, and having rubbed a little oil or varnish over it to make it tacky, I proceed to transfer the printed work in the usual way, and the surface of color last printed upon and over the picture, design, or show-tablet is, by the process of transferring, reversed, and becomes the ground on which the picture, design, or show-tablet lies after the transfer-paper is removed; for by transferring the order of the printed colors is changed, and this last printed flat ground coming first on the metal, the picture, design, or show-tablet on the transfer-paper, which was covered by this printed flat ground in the last operation of printing, will appear on the top of it, and the printed ground thereby becomes the substitute for that made by the common and expensive process of first preparing the ground on the metal by the usual means of hand-painting.

When the ground on which the picture, design, or show-tablet is to lie is required to be of a dark tone or color, or black, I then print one or more layers of white color over and upon the various colors forming the printed picture, design, or show-tablet on the transfer-paper before printing the dark or black ground, and this white color coming directly upon the picture, design, or show-tablet, forms a backing, and prevents the colors composing it from being deteriorated by the dark or black ground which would otherwise come in contact with and upon them, and thereby destroy their purity and brilliancy.

After the transfer of the printed picture, design, or show-tablet to the metal I pass it through a rolling-machine, such as is used to glaze paper, and this process gives a beautiful, smooth, and polished finish to the transferred work, and prepares it to receive the varnish covering, which is then applied in the usual way, and it is finally stoved to harden.

By my process of printing and transferring, the pictures, designs, and show-tablets or letterings thus made are doubly useful, for not only may they be exhibited in the ordinary way, but they may be used as transparencies, as the thin white or tinted ground, although sufficient to back up the design and so form a ground for the printed picture or design or show-tablet to lie on according to my system, is, nevertheless, not thick enough to obscure the light when

placed behind so as to exhibit them as transparencies; and this is very important, for, as transparencies on glass are commonly made, they cannot be seen to advantage when the light is before them, from the want of this white or tinted background or ground to back up the picture or design.

By the above process I am able to produce, with great effect and little cost, many beautiful works of art for domestic and general use, as well as pictures, illuminated texts, reading-sheets, &c., for use in and for the adornment of schools, cottages, &c., the free introduction of which has hitherto been prohibited by their cost.

Having now herein described my invention and the several methods by which it is performed,

I claim—

The process herein described of transferring printed work on the surface of metal or other suitable material.

BENJAMIN GEORGE GEORGE.

Witnesses:

F. W. ATKINSON,  
W. D. WOOD.