UNITED STATES PATENT OFFICE.

GEORGE THOMAS CLARE, OF NEW YORK, N. Y.

IMPROVEMENT IN THE PROCESS OF ORNAMENTING METAL AND OTHER SURFACES.

Specification forming part of Letters Patent No. **182,748**, dated October 3, 1876; application filed March 21, 1876.

To all whom it may concern:

Be it known that I, GEORGE THOMAS CLARE, of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Process of Ornamenting from Engravings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in printing and ornamenting from stone drawings and wood or zinc engravings. It consists in printing or ornamenting a smooth flat surface, either wooden or metallic, the same having been previously coated with a dry sympathetic covering, which readily absorbs the printers' fatty inks, and further provided with a yielding background for such coating. The practical utility of my improvement in the art of decorating is well seen in the manufacturing processes of clock-dials, signs, cornices, mop-boards, door-panels, table-tops, and other like articles, which call for an ornamental appearance and illustrated face.

Hitherto fine high-class signs and decorations have been made by the slow and expensive process of hand-drawing, or have been first printed on prepared paper and then transferred. Very crude and rough-looking signs and other decorations have been made by direct printing and by stenciling, but these latter modes utterly fail to produce the soft and varied shades and tints of a crayon-drawing, as in a lithograph, or the fine lines of a wood or steel engraving.

By the process which I will now describe I am enabled to reproduce, on iron or other metal sheets, or wood, copies of fine crayon-drawn pictures or engravings in all their varied colors, as soft-looking and truthful as if printed on plate-paper. I first prepare the surface to be operated on with a mixture of strong copal-varnish and boiled oil, with or without a pigment ground into it. (I find equal quantities to give the best result.) This first coat is then sufficiently heated to drive out the moisture, which forms a skin and adheres firmly to the metal, is yielding and elastic, and will not scale off. I afterward lay on the top of this first coat a covering of fir-balsam or gum-dammar dissolved in turpentine only, and on this tacky surface I dust through a fine sieve, or blow on with a sand-blast or fan, very finely powdered white lead, paris-white, zinc-white, or any other pigment. The tacky surface absorbs sufficient of this dry dust, which remains there permanently fixed, to form a "picking-up" surface for the printer. It is perfectly water-proof, and being free from oil readily absorbs the fatty inks of the printer. This dry dust also excludes the air, and thus prevents the hardening of the varnish-coat underneath, giving, as a result, a yielding background and a picking-up surface. Before printing, the plates are passed through rollers, and after printing are baked and varnished. The same result is arrived at by mixing the white lead, zinc-white, or paris-white with water, and laying it on with a brush in a liquid state, instead of dusting, as mentioned above.

By the wet process a pure water-color coating is got onto the metal plates, which will not scale off, and when printed on and varnished is as durable as oil-paint.

I make all my inks with burnt linseed-oil and wax, instead of the ordinary printer's varnish, as I find that more color can be ground into a given quantity of burnt oil than into the same quantity of varnish, thus intensifying all my colors, as well as giving them better wearing properties.

Having fully described my present invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A process of printing and ornamenting wood or metal surfaces, consisting in providing the same with a dry, sympathetic, or absorbent coating, based upon a yielding background, and then printing directly upon the said coating, substantially as and for the purposes set forth.

2. The process of preparing a plate-surface for the press, either lithographic or letter-press, consisting in covering said surface with a mixture of copal-varnish and boiled oil, which is then coated with a tacky substance,

and finally dusted with white lead or other suitable pigment, substantially as and for the purpose described.

3. The process of decorating metallic or other substances, consisting in providing them with a smooth absorbing-surface, underlaid by an elastic supporting-skin, and then passing same successively through a rolling, printing, baking, and final varnishing process, all substantially as and for the purpose described.

4. As a new article of manufacture, a plate for printing or ornamental purposes, provided with a smooth absorbent picking-up surface, underlaid by an elastic supporting-skin or groundwork, substantially as and for the purposes described.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of March, 1876.

GEORGE THOMAS CLARE.

Witnesses:
GEORGE H. CLARE,
FRED H. CLARE.