UNITED STATES PATENT OFFICE.

MAURICE JOYCE, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN PROCESSES OF PRODUCING RELIEF-LINE METAL PLATES FOR PRINTING, &c.

Specification forming part of Letters Patent No. **153,084**, dated July 14, 1874; application filed April 10, 1874.

To all whom it may concern:

Be it known that I, MAURICE JOYCE, of Washington, District of Columbia, have invented a new and useful Improvement in the Process of Producing Molds for Relief-Line Plates for Printing and other purposes; and I do hereby declare that the following is a full, clear, and exact description of my invention, and sufficient to enable any person skilled in the art to which it appertains to make and use the same.

To carry out my invention I take a smooth metallic plate, which is covered with a thin coating of clay, plaster, or equivalent material applied in a plastic state.

I usually employ a mixture of ground potters' clay and plaster-of-paris, nearly equal parts, moistened with water to the consistency of mortar; but ground soap-stone, chalk, or other material may be used instead.

The material is spread upon the metal plate and scraped down to any desired thickness, accordingly as lines are required in high or low relief, the thickness of the coating determining the relief elevation of lines in the finished plate.

I usually dry the plaster coating before any portion is cut away, but this is not essential.

My design may be penciled, traced, or transferred onto the surface of the plaster, or an artist sufficiently skilled may work without any copy. The coating is then cut away for the lines, entirely through to the metallic plate.

Points, needles, gravers, &c., may be used for cutting or scratching away the material. When the design has been completed the lines are cleaned out with a soft brush, or blown out with a bellows.

The plate at this stage of the operation resembles a mold for a stereotype-plate as used in the clay or plaster process of stereotyping, except that the lines and letters are cut entirely through the plaster.

The mold or matrix is now made ready, and a metal stereotype-plate cast upon it in any manner usual in the stereotyper's art. This plate is finished up in the ordinary manner, and if more relief is desired for the lines the low portions of the plate may be cut or "routed" out.

Door-plates and other ornamental relief-line plates may be made in the same manner.

My invention enables me to produce relief-line plates in a very short time, and is much quicker and cheaper than any other process of producing relief-plates for printing or other purposes with which I am acquainted. It is especially adapted for the speedy reproduction of plates for maps, diagrams, plans, &c.

I am aware of the English patent of Alfred Vincent Newton, No. 189, dated A. D. 1853, and do not claim anything therein described; but

Having thus fully set forth the nature and purport of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The process of preparing a matrix for producing metallic relief-line stereotype-plates by spreading a coating of plaster, clay, or other suitable material upon a metallic base and cutting the desired design clear through such coating to the metallic surface, substantially as described.

2. A matrix for producing cast-metal stereotype-plates, consisting of a metallic base or supporting plate provided with a coating of clay, plaster, or equivalent material and having the desired design cut clear through to the base-plate, substantially as described.

3. A cast-metal relief-line plate for printing or ornamental purposes, when obtained by the process and in the manner hereinbefore set forth and claimed.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MAURICE JOYCE.

Witnesses:
H. H. TWOMBLY,
ALBERT F. CHILDS.