UNITED STATES PATENT OFFICE.

EZRA RIPLEY, OF TROY, NEW YORK.

IPROVEMENT IN THE METHOD OF MAKING PATTERNS FOR CASTING HOLLOW WARE AND OTHER ARTICLES OF METAL IN WHICH THE INNER AND OUTER PATTERNS ARE REQUIRED TO BE OF A CORRESPONDING FIGURE.

Specification forming part of Letters Patent No. **3,724**, dated August 31, 1844.

To all whom it may concern:

Be it known that I, EZRA RIPLEY, of the city of Troy, county of Rensselaer, and State of New York, have invented a new and useful Improvement in the Art of Pattern-Making for Castings in Iron or other Metals; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in procuring a second or cast-iron pattern of any plate or hollow ware, of nearly a uniform thickness, directly from the first or block pattern by means of the intervention of a coating of oil-paint and sand or other suitable composition of the same thickness of the required pattern, thus obviating the necessity of excavating or relieving the back side of the pattern.

To enable others skilled in the art to use my invention, I will proceed to describe its operation.

I first make a block-pattern—that is, an exact pattern of the face or outer surface of the desired casting, and which may be carved at pleasure in any shape or form, and in any figures in however bold relief, and without any regard to the proposed thickness of the desired plate or other casting. This I call a "block" or "first" pattern. The surface of this block-pattern is perfectly finished and varnished. I then take from this block-pattern a plaster cast, which is obtained in the ordinary mode of obtaining plaster casts by laying the block-pattern in a molder's flask or box and pouring in plaster upon its finished surface till the flask is full, and suffering the plaster to set or harden in that position. The block-pattern is then removed. This plaster cast retains in reverse an exact impression of the face or outer surface of the block-pattern. I then cover the face of my plaster cast with a coating of oil-paint and sand, or any other suitable composition, equal in thickness to the second or cast-iron pattern afterward to be obtained. This coating, when made of oil-paint or other adhesive substance and sand, is obtained by laying onto the surface of the cast an even coat of oil-paint, and while the paint is green or undried covering the painted surface with sand to any thickness and suffering the paint to dry, when a coating of sand of uniform thickness will be found to have adhered to the painted surface. This process is then repeated any number of times requisite to obtain the required thickness. This is the process best adapted to patterns of ornamental and intricate carved work. When the pattern sought is plain hollow ware or other nearly even surface the cast may be more conveniently coated with putty or plastic or malleable substance laid on of the required thickness and uniformity.

To obtain the second pattern or cast-iron plate or figure required from the block-pattern and cast as above prepared, the molder proceeds in the following manner: He first lays the plaster cast as above prepared on the ground, facing upward, and places that part of his flask called the "nowel" over and resting on the plaster cast so as to form a box around its upper surface, and rams the flask full of molding-sand, compressed and packed in the ordinary form of molding. The nowel is then reversed or turned upside down and the plaster cast removed, leaving an exact impression of its surface in the sand. The part of the flask called the "cope" is then placed over and resting upon the first or block-pattern, which lies with the pattern-face upward, and rammed up with molding-sand packed and compressed in the usual mode. The cope is then turned upside down and the block-pattern removed, leaving an exact impression of its pattern-surface in the sand. The nowel and cope are then placed together in the same manner as is done in ordinary molding after the pattern is removed, and the metal is poured in in the ordinary mode, and thus a perfect iron plate or second pattern is obtained of nearly uniform thickness, and the inner and outer surface corresponding respectively with the surface of the block-pattern and the plaster cast.

The peculiar advantages of my invention over the ordinary modes of pattern-making heretofore in use are facility and cheapness.

I have contemplated the application of my

invention to patterns of all manner of castings in iron when uniformity or particular variety of thickness is desired.

What I claim as my invention, and desire to secure by Letters Patent, is—

The mode or manner in which I obtain iron or other metallic castings or second patterns of nearly uniform thickness by means of spreading any suitable material or composition on the face of the aforesaid plaster cast in thickness equal to the thickness of the iron or other metallic castings or second pattern afterward to be obtained, and the principle involved in such mode of proceedings.

EZRA RIPLEY.

Witnesses:
ERASTUS GEER,
ABRAM COX.