

# UNITED STATES PATENT OFFICE.

GEORGE W. HOLLEY, OF NIAGARA, NEW YORK.

## IMPROVEMENT IN ENAMELING CAST-IRON.

Specification forming part of Letters Patent No. 16,798, dated March 10, 1857.

*To all whom it may concern:*

Be it known that I, GEORGE W. HOLLEY, of the town and county of Niagara and State of New York, have invented a new and improved method or process of covering or coating the surface of cast-iron with any of the vitreous or porcelain compounds or compositions with which cast-iron has hitherto been coated or covered by means of a high degree of heat; and I do hereby declare that the following is a full and exact description thereof.

The nature of my invention consists in providing what I call a "skeleton" or "core" plate for non-tubular surfaces, corresponding in its surface, as nearly as may be, to the surface of the pattern which is to be molded, in which mold, when prepared, the iron to be coated or covered with any given composition is to be cast. This skeleton or core plate is to be covered with sand properly prepared with sour flour or molasses on the side on which it is proposed to coat or cover the cast-iron plate with any given composition. After the impression of the mold is made upon the sand attached to the skeleton or core plate, it is to be put in an oven and dried or baked until the surface of the sand is hardened. Then the compound or composition with which it is proposed to coat or cover the cast-iron is to be carefully and properly spread over the surface of the baked or hardened sand, and then the composition or compound itself thoroughly dried. Then the other half of the mold is to be made, either of green or dried sand, care being taken to fill it thoroughly with ventilating-holes, to allow the escape of gas and air when the melted iron is poured into the mold. The two parts of the

mold are then to be closed together, and the melted iron poured in in the ordinary way. If it is the inside of a tubular surface—such as pipes for conveying gas, water, or steam—that is to be covered or coated with a given compound or composition, then a ventilated core-rod must be substituted for the skeleton or core plate and the same process gone through with, substantially, as before. The thickness of the baked or dried sand on the skeleton or core plate and core-rod will vary from three-eighths of one inch to six inches, according to the size of the casting it is proposed to coat or cover over. The thorough coating or covering of the iron is secured and perfected by the melted iron running over and around the compound or composition on the skeleton or core plate and the core-rod, and melting the same or softening it so that it will adhere to the iron as it cools.

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

The process of covering the skeleton or core plate and core-rod in the manner above described with the compound or composition with which it is proposed to coat or cover the iron, and then pouring the melted iron on and around said compound or composition, and melting or softening the same so that it will adhere to the surface of the iron as it becomes cold.

The same process may be used for coating or covering copper, brass, and other metals.

GEORGE W. HOLLEY.

Witnesses:

SAMUEL D. COZZENS,  
A. L. HOLLEY.