UNITED STATES PATENT OFFICE.

HENRY GRANT HIGLEY, OF TAMPICO, MEXICO.

METHOD OF APPLYING ENAMEL AND KINDRED COATINGS TO IRON.

1,178,469. Specification of Letters Patent. Patented Apr. 4, 1916.

No Drawing. Application filed March 31, 1914. Serial No. 828,455.

To all whom it may concern:

Be it known that I, HENRY GRANT HIGLEY, a citizen of the United States, and at present residing at Tampico, Mexico, have invented a new and useful Improvement in Methods of Applying Enamel and Kindred Coatings to Iron, of which the following is a specification.

This invention relates to the process of applying enamel and kindred coatings to iron surfaces, be the latter for ornamental or for other purposes, that the said adhesion will be very great.

My process comprises a preliminary treatment of the iron surface to be enameled.

The following process comprises my invention: For this preliminary treatment the iron is coated, preferably by submersion, in a bath of dilute sulfuric acid to which has been added that form of iron oxid known as iron rust, and also enameling powder, then the iron is allowed to dry. It is now ready to receive the enamel and be placed in the oven in the usual way. There should be enough enamel powder in the bath so that a piece of iron dipped into the bath, will retain a coat or film of the said enamel powder when lifted out.

The process which comprises my invention is as follows: Immerse the iron which is to be enameled in a solution of dilute sulfuric acid containing iron rust for a period of time preferably of from one to twelve hours, the bath containing enamel powder, then remove the iron from the bath and in its wet or dry state apply the enamel either dry, or wet with water, allow the enamel coating to dry and then the iron is ready to be placed in the oven. It can also be placed in the oven in a moist state. When iron or steel or any alloy containing iron is immersed in a solution of dilute sulfuric acid containing iron rust for an hour or longer time, and then the enamel is fused on, it will be found that the enamel will adhere very strongly to the iron, also if the enamel powder is applied wet with dilute sulfuric acid instead of with water, the enamel will fuse on more strongly than it will when it is applied wet with water.

There are several kinds of enameling powders used for enameling iron, and it is preferable to use that particular kind in the bath for the preliminary treatment as will be used later as the enamel proper for enameling the iron. And I do not claim the mixture of any of these enamels.

With my preliminary treatment above described, it will be found that the enamel that may be applied, can not very easily be separated from the iron after coming from the oven.

I claim:

The process of enameling iron consisting in immersing the iron in a bath of dilute sulfuric acid containing iron oxid and enamel composition, applying enamel to the iron so treated and then firing in the usual manner.

HENRY GRANT HIGLEY.

Witnesses:

THEODORE D. ROCK,

GEO. W. WALKER.