

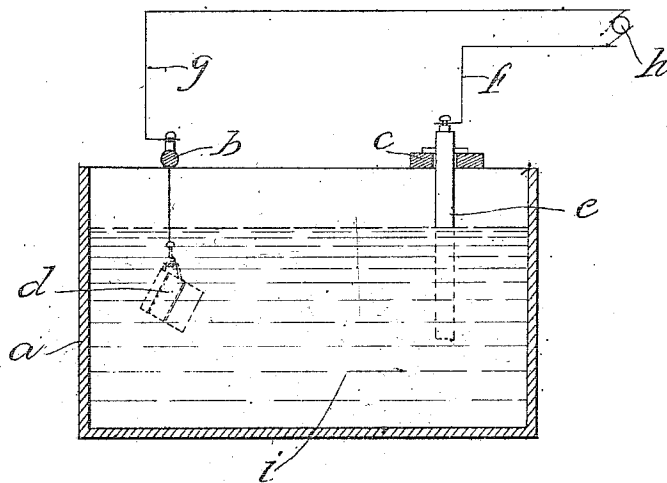
G. L. RICE & B. W. GILCHRIST.

ART OF ENAMELING METALS.

APPLICATION FILED FEB. 2, 1909.

971,641.

Patented Oct. 4, 1910.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE L. RICE AND BENJAMIN W. GILCHRIST, OF WOODHAVEN, NEW YORK; SAID
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ART OF ENAMELING METALS.

971,641.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed February 2, 1909. Serial No. 475,581.

To all whom it may concern:

Be it known that we, GEORGE L. RICE and BENJAMIN W. GILCHRIST, citizens of the United States, and residing at Woodhaven, Long Island, in the county of Queens and State of New York, have invented certain new and useful Improvements in the Art of Enameling Metals, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to the art of enameling metal and particularly to the art of enameling household utensils and other articles of manufacture or merchandise composed of iron or steel; and the invention consists in the article produced by the process herein-after described and in the process of producing said article as hereinafter set forth.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, said drawing being a sectional view of one form of an apparatus which we may employ.

In the drawing forming part of this specification, we have shown at *a* an ordinary electrolytic cell provided with the usual cathode and anode supports *b* and *c*, and from the cathode support *b* we suspend a utensil *d* which constitutes the article to be enameled, and from the anode support *c* is suspended the usual anode *e*, and connected with the parts *b* and *c* or through said parts with the parts *d* and *e* are the usual circuit wires *f* and *g* which connect with a generator *h* or other source of electricity.

The cell *a* contains an electrolyte *i* of which sulfur and a salt of metal or metals form a part, and the operation of this apparatus will be the same as that of all similar apparatus of this class. In this operation there is a film or covering of material deposited on the utensil *d*, and this film or covering contains sulfur which may be present either in the free or combined state.

Our invention is particularly designed for

use in enameling various utensils or articles composed of iron or steel, and in practice we prefer that the electrolyte in the cell *a* shall contain salts of magnetic metals and sulfur.

In the enameling of articles composed of iron or steel, as this process has heretofore been produced it has been found difficult to unite the enamel with the body of the utensil or article in such manner as to produce a perfect union, and the enamel easily shells off or breaks off, but with our improved process the sulfur in the magnetic covering or coating which is first placed on the utensil or article to be enameled enables the enamel to adhere to the body of the utensil or article and to practically form an integral part thereof, or in other words the union between the iron or steel body, the magnetic film or coating and the enamel is such that these parts cannot be separated, and while the enamel may be broken by violent or rough usage it will not separate from the metallic body.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. The method of enameling a metallic article, which consists in depositing, by the electrolytic process, on the article to be enameled, a coating of magnetic material and sulfur, and then applying the enamel thereto.

2. The improvement in the art of enameling metallic articles which consists in interposing between the body of the article and the enamel a binding, coating or film of magnetic material containing sulfur.

In testimony that we claim the foregoing as our invention we have signed our names in presence of the subscribing witnesses this 30th day of January 1909.

GEORGE L. RICE.

BENJAMIN W. GILCHRIST.

Witnesses:

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