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UNITED STATES PATENT OFFICE.

DAVID BASCH, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

COMPOSITE-METAL ARTICLE.

No Drawing. Application filed May 11, 1923. Serial No. 638,401.

To all whom it may concern:

Be it known that I, DAVID BASCH, a citizen of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Composite-Metal Articles, of which the following is a specification.

The present invention relates to the production of a protective coating of cadmium upon a foundation metal and particularly metals having a substantial electronegative potential with respect to cadmium when in contact with an electrolyte.

When copper, which is coated with cadmium is in contact with even a weak electrolyte, such as constituted by atmospheric moisture, there is set up an electrolytic action between the copper and the cadmium which eventually consumes the cadmium coating.

In accordance with my invention a layer of metal of intermediate electrolytic potential is applied between the foundation metal and the cadmium coating when a substantial difference of potential would exist between the foundation metal and cadmium in the presence of an electrolyte.

When coating copper with cadmium I provide a layer or film of tin between the copper and the cadmium. Electrolytic corrosion thereby is substantially prevented.

The tin coating is applied on the copper by electrolysis or other suitable method. For example, tin is deposited from a standard electrolytic bath containing tin chloride, sodium or potassium hydroxide and some alkali cyanide. The external cadmium layer may be deposited from an electrolytic bath containing a chloride or sulphate of cadmium and preferably also potassium or sodium cyanide. An acid electrolyte likewise may be used. Although the thickness of the tin and cadmium coatings will vary with the conditions I have used successfully a thin coating of tin and a cadmium coating from one-half mil. to 1 mil. and upward.

In accordance with my invention, tin also may be applied to advantage to foundation metals to which cadmium does not readily adhere, as for example, high carbon steel, such as spring steel. The tin may be applied electrolytically or in any other convenient way, and the cadmium deposited on the tin as above stated.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. An article of manufacture comprising a foundation metal having a substantial electrolytic potential with respect to cadmium, a layer of tin thereon, and a coating of cadmium on said tin.

2. An article of manufacture comprising a body of copper, a coating of metal thereon intermediate in electrolytic potential between copper and cadmium and a layer of cadmium on said metal coating.

3. An article of manufacture comprising a body of copper, a coating of tin thereon and a coating of cadmium on said tin coating.

In witness whereof, I have hereunto set my hand this 10th day of May, 1923.

DAVID BASCH.