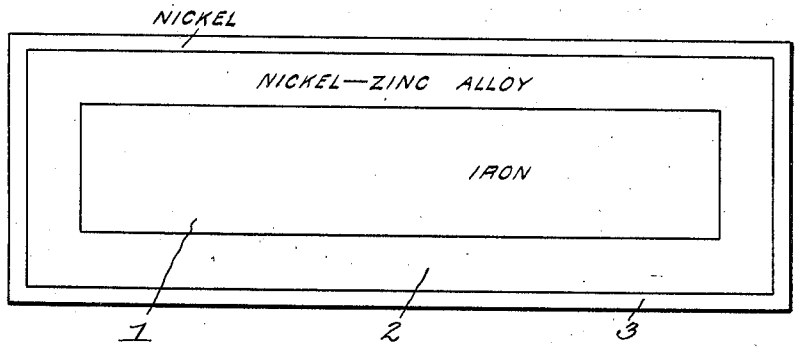
Dec. 8, 1925. 1,564,581

W. R. KING

ELECTROPLATING

Filed May 3, 1924



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIS R. KING, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE HANSON & VAN WINKLE COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

ELECTROPLATING.

Application filed May 3, 1924. Serial No. 710,796.

To all whom it may concern:

Be it known that I, WILLIS R. KING, a citizen of the United States, and a resident of Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Electroplating, of which the following is a specification.

The object of the present invention is to apply a nickel surface to corrosive metals as, for example, iron or steel. As is well known, nickel electro-deposited on iron does not prevent corrosion and it has been customary to deposit a preliminary coating of zinc upon the iron and then coat the zinc with a deposit of nickel. It is, however, very difficult to nickel-plate over zinc. I have discovered that if the preliminary deposit is made with an admixture of nickel, the resultant nickel-zinc alloy will not only form a protective coating against corrosion but will also render very easy the subsequent electro-deposition of the nickel coating that forms the outer surface. The nickel-zinc alloy may contain as much as 80 to 90% of zinc and still accomplish the desired results. The minimum limit of the zinc content is approximately 75%. A suitable solution for the purpose comprises sulphate of nickel and sulphate of zinc or a mixture of a double sulphate of nickel and ammonia and sulphate of zinc. There may, of course, be added to the electrolyte any additional agents for increasing the conductivity or the like purpose.

In the accompanying drawing is illustrated an article with protective coatings electro-deposited according to my invention.

In said drawings, 1 is a plate of iron or the like corrosive metal that it is desired to protect. 2 is the layer of nickel-zinc alloy deposited on the iron to protect it from corrosion. 3 is a surface coating of pure nickel electro-deposited on the nickel-zinc alloy.

Such an article so plated possesses a maximum of protection against corrosion, with the added beauty and hardness of the nickel surface. A coating made according to this process will have a maximum of cohesion and a minimum of cost.

I claim:—

1. The method of electro-plating on corrodible metals, which comprises applying first a coating of nickel-zinc alloy and then depositing upon the latter an outside coating of nickel.

2. The method of applying protective coatings to articles of corrodible metal, which consists in immersing such articles in an electrolytic bath containing salts of nickel and zinc, passing electric current to deposit an alloy of nickel-zinc on the articles, removing the articles from the bath and subsequently placing them in a bath of nickel salt, and again passing electric current through the bath to deposit a surface coating of nickel on the intermediate coating of nickel-zinc.

3. As a new article of manufacture, an article having a corrodible base, an intermediate coating of electro-deposited nickel-zinc alloy, and a surface coating of nickel.

4. As a new article of manufacture, an article having a base of corrodible metal, and an intermediate protective coating of electro-deposited nickel-zinc alloy having a preponderance of zinc and a surface coating of electro-deposited nickel.

WILLIS R. KING.