UNITED STATES PATENT OFFICE.

ALEXANDER CLASSEN, OF AACHEN, GERMANY.

ELECTROLYTIC PROCESS FOR THE PRODUCTION OF METALLIC DARK COATINGS UPON METALS.

No. 891,982. Specification of Letters Patent. Patented June 30, 1908.

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To all whom it may concern:

Be it known that I, ALEXANDER CLASSEN, of the city of Aachen, Prussia, in the Empire of Germany, have invented certain new and useful Improvements in Electrolytic Processes for the Production of Metallic Dark Coatings upon Metals, of which the following is a specification.

The present invention relates to processes for the electrolytic production of metallic coatings.

As is known, in many electrolytic processes when the operation is not carried out in the correct manner, an unintended irregular deposit of gray color is obtained.

An important object of the present invention is to intentionally produce a quite uniform metallic deposit of pure black or deep blue color. This process permits of the most different kinds of articles, as, for example, parts of weapons, being provided with a dark dull coating. The process is particularly suited for depositing nickel, but may also be used for other metals.

In accordance with the present process the metallic articles are treated as follows:—(1) They are polished; (2) the polish is then dulled either by dipping the articles into an acid bath, or by means of the sand-blast; (3) the articles are then subjected to the action of an electric current of such a tension as is necessary for producing white shining nickel, namely in a bath which contains, besides the ordinary salts, a decoction of licorice-root or licorice-root itself; (4) after the deposit is produced in this manner the tension is suddenly reduced considerably without removing the articles from the bath. The articles thus treated have the desired appearance.

Good results are obtained with an electrolytic bath of the following composition:—20 kg. sulfate of nickel, 4 kg. sodium sulfate, 1 kg. chlorid of nickel and 0.5 kg. boracic acid are dissolved in 100 liters of water, and 5 kg. extract of licorice-root, or simply the root itself, is added to the solution thus obtained. This composition of the bath is only meant to serve as an example and may be replaced by any other which is based on the known employment of licorice-root or of another material of like action; such materials are glucosides, phloroglucosides, phloroglucides and the like, or nitrogenous glucosides or their derivatives, or, instead of these substances, extracts of plants, roots or barks which contain the named substances or one of the same.

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

1. An electrolytic process for producing a metallic deposit of dark color, wherein after the deposit having the bright metallic luster has been produced, the tension of the current is considerably reduced.

2. A process of producing metallic coatings of dark color on other metals consisting in polishing the metal to be treated, in dulling the polish of the metal, in then placing the metal as cathode in an electrolytic bath containing a glucoside, in allowing the metal to remain in such bath until a metallic coating is produced thereon, in suddenly reducing the electric tension of said bath considerably, and in then removing the coated metal from the bath.

3. A process of producing metallic coatings of dark color on other metals consisting in polishing the metal to be treated, in dipping the metal in an acid-bath and thereby dulling the polish of the metal, in then placing the metal as cathode in an electrolytic bath containing a glucoside, in allowing the metal to remain in such bath until a metallic coating is produced thereon, in suddenly reducing the electric tension of said bath considerably, in allowing the metal to remain in the bath after the tension of the bath is reduced, and in then removing the coated metal from the bath.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALEXANDER CLASSEN.

Witnesses:

HENRY QUADFLIEG,

MARIANNE LESLER.