

UNITED STATES PATENT OFFICE.

JOHN ZIMMER, OF CLEVELAND, OHIO, ASSIGNOR OF TWO-THIRDS HIS RIGHT
TO ROBERT SANDERSON AND SAMUEL CURTIS, OF SAME PLACE.

IMPROVEMENT IN METALLIC COMPOUNDS FOR COATING CUTLERY, &c.

Specification forming part of Letters Patent No. 135,028, dated January 21, 1873.

To all whom it may concern:

Be it known that I, JOHN ZIMMER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new Metallic Compound for Coating or Covering Cutlery and other articles; and I do hereby declare that the following is a clear and exact description of the process of making said compound and mode of using the same:

The nature of this invention relates to a certain metallic compound for coating or covering articles of cutlery, and other like purposes, to arrest oxidation of the metal thus coated over, and to give the effect and appearance of silver-plating at much less cost than silver.

I will proceed and describe one formula for preparing this metal compound and the process of using the same in plating articles. As one example or formula for said compound, I use fifty pounds tin, (banco tin being preferred,) three ounces silver, twelve ounces nickel, three ounces bismuth, one-half ounce sulphur, (roll sulphur preferred,) two ounces sal-ammoniac, and one-half ounce mercury, which are combined as hereinafter set forth, forming a new metallic compound. The tin is put into a cast-iron vessel first and melted over an ordinary coal fire; then the silver is added; next in order is the nickel, bismuth, sulphur, sal-ammoniac, and, last, mercury. These several articles follow each other in order as the preceding ones melt and amalgamate by heat, forming a new metal or compound.

The article to be coated or plated by said compound is first cleaned from rust, dirt, &c., by a preparation or compound of two pounds of sulphuric acid and one gallon of water, in which the article remains from ten to thirty minutes, depending upon the condition of the article; when it is taken from this acid bath the article is washed in clean water, to cleanse it from the acid of the bath. The next step is a

preparation or compound of muriatic acid, zinc and water, the proportions of which are about one gallon muriatic acid to one pound of zinc, to which is added one gallon of water. After the acid and zinc have combined in this solution, the article is immersed and immediately withdrawn, and then plunged into the liquid metal compound before set forth and directly withdrawn. On withdrawing the article from the first bath of the metallic compound, it is again dipped into another like metal compound to the first, but having upon its surface a film of or covering of lard oil, or its equivalent, enough to cover over the metal surface about one-sixteenth of an inch in depth. After the article has been dipped into the metal compound, it is then immersed in coal-oil, and next washed in a solution of water and sal-ammoniac of about the proportions of two pounds sal-ammoniac to one gallon of water. The plating of the article is then completed by washing in clean water, leaving it bright and smooth, and requiring no rubbing or varnishing to give an appearance much like polished silver.

I do not confine myself to the exact proportion herein given for the said metallic compound, but propose to vary the same within the limits of the invention.

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

1. The metallic compound, substantially as and for the purpose set forth.
2. The coating or covering articles of cutlery, &c., with the metallic compound herein described, by the means or mode substantially as set forth.

JOHN ZIMMER.

Witnesses:

J. H. BURRIDGE,
A. F. CORNELL.