UNITED STATES PATENT OFFICE.

GEORG WEGNER, OF BERLIN, GERMANY.

PROCESS OF ELECTROPLATING ALUMINUM.

SPECIFICATION forming part of Letters Patent No. 490,841, dated January 31, 1893.

Application filed May 5, 1892. Serial No. 431,886. (No specimens.)

To all whom it may concern:

Be it known that I, GEORG WEGNER, a subject of the Emperor of Germany, residing at Berlin, Germany, have invented certain new and useful Improvements in Processes of Electroplating Aluminum; and I do hereby declare the following to be a full, clear, and exact specification.

Objects made of aluminum, that are to be galvanized, are first freed by such known means as potassium hydrate, &c. from all particles of grease, and after washing in clear water, and then dipped in a bath at boiling heat, containing cyanides of silver and mercury, for one to two minutes. In this process there forms a deposit of silver amalgam, on the aluminum, forming a thin fast adhering coat. The before described process is necessary in order to make the aluminum, which is known to be a bad conductor, more conducting for the later galvanizing, and more advantageous in its operation as a cathode. Hereupon the amalgamated aluminum is laid in a second bath in which chloride of zinc and sulphate of soda are dissolved; the anode and cathode formed by the amalgamated aluminum are connected in the usual way with a galvanic battery of low tension, and the latter left closed until a coating of zinc of desired thickness is formed on the aluminum, that is, on the amalgam. After this second treatment the aluminum is sufficiently prepared to be coated with copper, silver or gold, &c., in the manner usual with other metals, in which case by using alloys, it is possible to give the aluminum any desired coloring.

All attempts hitherto made to electroplate aluminum directly, have given negative results, because the silver or cyanide baths used, which are employed for galvanizing other metals, affected the aluminum; the aluminum is protected from the destroying action of the acids by the coating of zinc, and can be subjected to the galvanizing process like any other metal.

I claim:

The hereinbefore described process of galvanizing aluminum, consisting in first dipping into a bath at boiling temperature, containing cyanides of silver and mercury, to heighten its conductivity; then electrically coating with zinc, in a bath containing chloride of zinc and sulphate of soda, to protect the aluminum against the acid bath in coppering, silvering, gilding, &c.

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

GEORG WEGNER.

Witnesses:

R. BAYER,

W. HAUPT.