UNITED STATES PATENT OFFICE.

EDWARD C. BROADWELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO MATTHEW J. GRIER, OF SAME PLACE.

PROCESS OF COATING WITH ALUMINUM OR ALLOYS THEREOF.

SPECIFICATION forming part of Letters Patent No. 503,070, dated August 8, 1893.

Application filed January 10, 1893. Serial No. 457,955. (Specimens.)

To all whom it may concern:

Be it known that I, EDWARD C. BROADWELL, a citizen of the United States, and a resident of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Processes of Coating with Aluminum or Alloys Thereof, of which the following is a full and sufficient specification.

The metal to be coated, after cleaning, if cleaning is necessary, is treated with a flux containing a haloid salt of tin or of tin and zinc. In practice I use a flux which contains a chloride of tin and also a chloride of zinc mixed, in the flux. The flux is prepared in any ordinary or convenient manner of preparing fluxes.

Ordinarily, I treat the metal to be coated by dipping it into the flux, but I can treat it by brushing it over with the flux or in any of the ways of treating metals with a flux. After treating with the flux, above described I usually let the metal dry a few moments but this is not absolutely needful to carry out my process.

The bath is of molten aluminum or alloy thereof. Into this bath is dipped the metal to be coated after being treated with the flux as above described. This dipping is repeated if a thicker coating is required.

I do not limit myself to any particular one of the elements of the chlorine group as I consider that no one using the other steps of my process and a flux containing a salt formed by tin or tin and zinc and any member of that group is outside the limits of my invention.

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

1. The method of plating with aluminum or aluminum alloys which consists in treating the metal to be coated with a flux containing tin combined with an element of the chlorine group and then dipping the metal thus treated in a bath of molten aluminum or alloy of aluminum substantially as described.

2. The method of plating with aluminum or aluminum alloys which consists in treating the metal to be coated with a flux containing tin and zinc combined with an element of the chlorine group and then dipping the metal thus treated in a bath of molten aluminum or alloy of aluminum substantially as described.

EDWARD C. BROADWELL.

Witnesses:
M. W. COLLET,
E. J. FARREN.