

UNITED STATES PATENT OFFICE.

HEINRICH ROESSLER, OF FRANKFORT-ON-THE-MAIN, GERMANY, ASSIGNOR
OF ONE-HALF TO BERNHARD EDELMANN, OF SAME PLACE.

ART OF DESILVERIZING ARGENTIFEROUS LEAD.

SPECIFICATION forming part of Letters Patent No. 480,416, dated August 9, 1892.

Application filed June 13, 1891. Serial No. 396,186. (No specimens.) Patented in Germany June 29, 1890, No. 56,271.

To all whom it may concern:

Be it known that I, HEINRICH ROESSLER, of Frankfort-on-the-Main, in the Empire of Germany, have invented a new and useful Improvement in the Desilverization of Argentiferous Lead, (for which I have received Letters Patent in Germany, No. 56,271, dated June 29, 1890,) of which the following is a specification.

This invention has for its object to produce a substance from which the lead may be readily and completely isolated. When lead is desilverized in the ordinary manner by fusing the lead with zinc, instead of two well-defined layers of zinc-silver alloy and lead being formed, as theoretically required, lead containing zinc is obtained and a mixture of zinc-silver particles with lead, (so-called "zincscum,") from which only half the lead can be removed by eliquation, the remainder being retained with such tenacity that it can only be separated by a tedious and expensive method, entailing loss of metal. The cause of this retention is due to the formation, at the high temperature, of oxides, which interpose between the particles of lead and zinc-silver, and thus prevent the separation. I have, however, discovered that an addition of, say, at most one-half of one per cent. of aluminium to the zinc very effectually hinders its oxidation, and by the employment of this means skimmings are produced, (without extra labor,) from which a homogeneous zinc-silver alloy

containing all the silver can be easily and completely separated, to be then treated electrolytically without requiring any separate and distinct treatment for the separation of the aluminium, the latter being in such small quantity as to disappear in the course of the process by oxidation. The whole of the zinc contained in the skimmings is recovered, and while effecting a saving of time, wages, fuel, zinc, and wear and tear of plant a much higher yield of silver is produced than by any method hitherto employed.

I am aware that the employment of a zinc-aluminium alloy in the desilverization of argentiferous lead is not new, and therefore I do not claim, broadly, the use of such alloy for that purpose; but

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

The within-described improvement in the process of desilverization of argentiferous lead, consisting in fusing the lead with an alloy of zinc and aluminium in the proportions of not more than one-half of one per cent. of aluminium to the zinc.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HEINRICH ROESSLER.

Witnesses:

F. TRAUB,
H. OPIFICIUS.