

UNITED STATES PATENT OFFICE.

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PROCESS FOR THE TREATMENT OF ALLOYS CONTAINING COPPER AND IRON.

No Drawing.

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To all whom it may concern:

Be it known that I, HARALD PEDERSEN, a subject of the King of Norway, residing at Trondhjem, Norway, have invented certain new and useful Improvements in Processes for the Treatment of Alloys Containing Copper and Iron; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its object a process for the treatment of iron-containing copper alloys whereby it is made possible in an economical and advantageous manner to separate copper from iron on an industrial scale.

An important characteristic feature of this process consists therein that the alloy in a liquid condition is washed with liquid lead. The iron in the technical copper iron alloy contains carbon and does not dissolve copper, while on the other hand the copper is easily dissolved in the liquid lead at the temperature at which the alloy melts. By washing the alloy with lead an iron free from copper is obtained said iron being directly saleable.

The resulting liquid lead copper alloy may be further treated by subjecting it to cooling to about the melting point of lead, whereby a lead alloy rich in copper is separated, while a lead which is substantially free from copper remains. This lead can be suitably used anew in the process.

The lead alloy rich in copper may be further treated by known means to produce copper.

The described process for the separation

of copper and iron is more especially adapted for use in the treatment of such alloys, which are obtained by fusing sulphur containing materials with bauxite and carbonaceous materials but the process can also be used with advantage in the treatment of alloys of other origin.

The iron, in the technical alloys referred to in this connection, as above mentioned, always contains carbon and can be treated according to the present invention without any preparatory treatment. In the few instances in which alloys free from, or poor in, carbon are to be treated, it may however be of advantage, before the washing with lead, to introduce some carbon into the alloy. This may be effected in any known manner.

Claims:

1. Process of treating iron containing carbon and copper alloys to obtain copper, characterized therein that the alloy is subjected to washing with lead in a liquid condition whereby a lead alloy, rich in copper, and iron, free from or poor in copper, results.

2. Process according to claim 1 in which the resulting copper alloy is treated to separate the lead which is thereupon used to treat further quantities of the iron, carbon and copper alloy.

3. Process according to claim 1 employed for the treatment of alloys free from or poor in carbon in which some carbon is introduced into the alloy previously to the washing operation.

In testimony that I claim the foregoing as my invention, I have signed my name.

HARALD PEDERSEN.