

# UNITED STATES PATENT OFFICE.

CARL LUCKOW, OF COLOGNE-DEUTZ, GERMANY.

## PROCESS OF PRODUCING OXID OF COPPER.

SPECIFICATION forming part of Letters Patent No. 626,547, dated June 6, 1899.

Application filed December 31, 1897. Serial No. 665,213. (No specimens.)

*To all whom it may concern:*

Be it known that I, CARL LUCKOW, a subject of the King of Prussia, Emperor of Germany, residing at Cologne, Germany, have invented certain new and useful Improvements in Processes of Producing Oxid of Copper by Means of Electrolysis, of which the following is a specification.

The invention has been patented in England, No. 14,801, dated August 6, 1895.

The object of this invention is to produce oxid of copper by means of electrolysis.

It consists, essentially, in the use as electrolyte of a salt of boric acid with sodium, potassium, or ammonium in mixture with a salt of chloric acid with sodium, potassium, or ammonium in aqueous solution in connection with electrodes of copper. The mixture should be about ninety-five per cent. of one of the salts named above of boric acid and about five per cent. of one of the salts named above of chloric acid, and the aqueous solution should contain from 0.3 to three per cent. of the mixture, the quantities of salt always calculated free from water. This solution serves as electrolyte. The electrodes are of copper.

Under the influence of the electric current the copper of the anode is transformed into oxid of copper. The hydrogen of the water decomposed by the process escapes. The oxygen enters into the oxid of copper.

The process goes on continually with the

same electrolyte, as both boric and chloric acids remain undecomposed by the current and only the water consumed by the process has to be renewed.

Example: A diluted solution two per cent. strong of a mixture of ninety-five weight parts of borate of sodium and five weight parts of chlorate of sodium forms the electrolyte. Therein the anodes and cathodes are suspended and an electric current passes through. The current should be fifty amperes, its density 0.5 amperes per square decimeter, and its tension about two volts.

To facilitate the reaction and to keep the electrolyte in motion, air is carefully blown in during the process.

What I claim is—

The herein-described process of producing oxid of copper by means of electrolysis consisting in using an anode of copper an aqueous solution as electrolyte containing from 0.3 to three per cent. of the sodium, potassium or ammonium salts of boric acid in mixture with the sodium, potassium or ammonium salts of chloric acid, and passing the electric current through the solution.

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

CARL LUCKOW.

Witnesses:

WILLIAM H. MADDEN,  
OTTO STRECKER.