CITO Camille

(1871 - 1936)

Bascharage

Patents (details)

1 - Process for the treatment of silver-nickel-cobalt-arsenic ores

US patent	949058
Application date	13 October 1909

The invention relates to the treatment of Canadian or other ores which contain, besides silver, considerable quantities of nickel, cobalts, and especially arsenic. Generally, such ores run as follows: silver 300 to 10,000 ounces to the ton; nickel and cobalt 10 to 30%; arsenic 5 to 40%; lead none.

The invention consists in the process and sub-processes hereinafter more particularly set forth, whereby through electrolysis of an anode of the alloy produced by smelting said ore in the presence of copper, the metals are separated, so that all of the silver may be recovered as a high grade product from the slimes, all of the nickel and cobalt is dissolved in the electrolyte together with the larger part of the arsenic, and all of the copper is deposited in substantially pure state on the cathode.

(no drawing)

Corresponding patent

CA

2 - Process for the smelting of silver-nickel-cobalt-arsenic ores

US patent	949059
Application date	13 October 1909

The invention is a process for the smelting of Canadian or other ores which contain, besides silver, considerable quantities of nickel, cobalt, and especially arsenic. Generally, such ores run as follows: silver 300 to 10,000 ounces to the ton: nickel and cobalt 10 to 30%; arsenic 5 to 40%; lead none.

In carrying out my process I proceed as follows: The ore is smelted in a reverberatory furnace without any preliminary treatment, such as roasting, etc. I add to said ore a percentage of copper, preferably equal to two thirds of that of the nickel and cobalt and at least the same as that of the arsenic, and not less in amount than the silver. Thus I may put in 20 per cent of copper, but if there is 25 per cent of arsenic present, the copper percentage should be increased to 25 per cent. If the silver present amounts to a certain number of ounces per ton, the amount of copper should not be less. Besides the copper the necessary quantity of usual fluxes is to be added.

(no drawing)

Corresponding patent

CA, FR, GB, US

3 - Process for the treatment of copper sweeps and scraps

US patent	1367768
Application date	10 April 1919

The invention relates to the treatment of copper sweepings and scraps containing besides copper, zinc, iron, silica or other impurities.

These sweepings and scraps, which are generally the residues of the dressing of sweepings of foundries and copper smelting works, vary in composition according to their origin, … The drawback to treating these copper materials by the ordinary metallurgical process resides generally in the fact that they do not pay for the high working expenses, on account of their low value in copper. Moreover the copper sweepings, being in a state of fine powder, present many difficulties when treated by dry processes.

For a wet process the material is unsuitable, in the first place because the material usually contains too much oily organic matter; and in the second place because all the copper contents are exclusively in the metallic state which resists strongly the solvents generally used.

The new process may include both a dry treatment and a wet treatment.

The first operation consists in a chloridising roasting process, having two objects:

1. *To destroy and expel the oily organic matters ;*
2. *To transform the entire copper contents present in the state of metal into a copper salt from which the copper is easily recovered.*

For this purpose the sweepings and scraps are mixed with a quantity of crude common salt calculated upon the percentage of copper and silica, SiO_2. This quantity, however, must not be smaller than 15 per cent. of the gross weight of the material to be treated.

This roasting process is carried out in a two-part furnace, the upper one being a reverberatory furnace and the lower one a muffle furnace.

(no drawing)

Corresponding patent

FR, GB