

UNITED STATES PATENT OFFICE.

ALFRED ARTHUR LOCKWOOD, OF LONDON, ENGLAND, ASSIGNOR TO MUREX MAGNETIC COMPANY, LIMITED, OF LONDON, ENGLAND.

TREATMENT OF AURIFEROUS AND ARGENTIFEROUS ORES.

993,451.

Specification of Letters Patent.

Patented May 30, 1911.

No Drawing.

Application filed January 13, 1911. Serial No. 602,512.

To all whom it may concern:

Be it known that I, ALFRED ARTHUR LOCKWOOD, a subject of the King of Great Britain, residing at Baltic House, Leadenhall Street, in the city of London, England, have invented new and useful Improvements in the Treatment of Auriferous and Argentiferous Ores, of which the following is a specification.

10 This invention relates to the treatment of ores containing a precious metal (by which is to be understood an ore which contains gold or silver or compounds of the same) and also compounds of a baser metal easily

15 acted upon by a cyanid solution and such treatment has for its object to prevent loss of cyanid due to the formation of a cyanid of a baser metal. It has been discovered when such ores (especially copper ores) are

20 treated with a solution of a silicate of an alkaline nature it is possible to prevent or substantially prevent the baser metal from being acted upon by the cyanid solution. For example a copper sulfid auriferous ore

25 containing 1.3 per cent. of copper and assaying 10 dwts. gold was treated first with a solution of potassium silicate solution of 1.026 specific gravity and then with an equal part by weight of a .5 per cent. potassium

30 cyanid solution; the tailings assayed 2.4 dwts. of gold and there remained .2 per cent. of cyanid in the solution. Under the same conditions but without previous use of the silicate solution all the cyanid was used up

35 and this was the case also when substances known to prevent loss of cyanid such as caustic soda or calcium carbonate were present. Again copper sulfid tailings containing .25 per cent. copper and assaying 8 dwts.

40 of gold were treated as above with a solu-

tion of potassium cyanid alone a loss of .14 per cent. of potassium cyanid was shown; when however a solution of potassium silicate was also employed the loss was .08 per cent.

The silicate solution may be employed prior to the cyanid solution or simultaneously with it and the treatment may take place either in the cold or with the application of heat but not with heat and pressure.

The explanation of the fact is believed to be that a copper compound becomes coated superficially with silicate which is not acted upon by the cyanid solution.

What I claim is:—

1. The hereindescribed process which consists in treating ores containing a precious metal and compounds of a baser metal with a solution of a silicate of an alkaline nature and a solution of a cyanid.

2. The hereindescribed process which consists in treating ores containing a precious metal and compounds of a baser metal first with a solution of a silicate of an alkaline nature and then with a solution of a cyanid.

3. The hereindescribed process which consists in treating ores containing a precious metal and a compound of copper with a solution of a silicate of an alkaline nature and a solution of a cyanid.

4. The hereindescribed process which consists in treating ores containing a precious metal and a compound of copper first with a solution of a silicate of an alkaline nature and then with a solution of a cyanid.

ALFRED ARTHUR LOCKWOOD.

Witnesses:

EDWARD WATERS,

EDWARD NEEDHAM WATERS.

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