

Sir Robert Stout, as I affirm; but it certainly appears that my affirmation is correct—viz., that the question put did instigate him as I say.

Now, Sir, I suggested the question to our lawyer, Mr. Button, telling him that I had good reasons for believing that cyanogen in water would not dissolve either gold or silver, and Mr. Button admits this, and has been kind enough to write me a letter stating the fact. He also says no one else suggested the question to him, or ventilated the subject in any way to him. Further, Mr. Button, anxious that I should have any credit there is due to me in the matter, asked Professor Black if this suggestion had not put him on to the investigation in question. Professor Black only gave the answer that "he did not know," when Sir Robert spoke to say that he (Professor Black) was *told* to do the experiments a week before. So, any way, here is some evidence that Professor Black did start on the work to some one's suggestion or wish.

This evidence is on record for legal purposes, but it may not, as there, be of the use it should be to me.

I feel certain that it was my suggestion that started Professor Black to his investigations in this matter.

The best chemists in England and Germany never doubted but that this gas would dissolve gold, else they probably would have torn the cyanide patent up years ago, or, any way, have made it hard for the cyanide monopolists to maintain their patents.

Sir, I have evidence twenty years old to show I was then so informed by investigations of my own as to be in that position which would enable me—nay, *force* me—to doubt the power of cyanogen to dissolve gold; and, as this evidence was only in the Transactions of the Philosophical Society here, I was practically about the only man, in this world at least, who could have *doubted* in this matter. These researches of mine led up to this doubt, but it was only when Sir Robert pressed *cyanogen* to the fore in his defence that it occurred to me to test the question.

In conclusion, I may inform you that I have papers read to the Philosophical Society here—26th August and 23rd September for this year—stating that cyanogen does not dissolve either gold or silver. I do not think the matter requires further investigation than I have made to establish the assertions I make. If cyanogen is really the only substance patented, the cyanide patent is, I think, completely broken up both here, in England, and Australia.

The Under-Secretary, Mines Department.

I have, &c.,

WILLIAM SKEY.

PATENT RIGHTS GRANTED.

IMPROVEMENT IN THE CYANIDE PROCESS OF EXTRACTING GOLD.

We, Edward Holland, engineer, and George William Horn, mine-manager, both of Kuaotunu, Auckland, New Zealand, do hereby declare the nature of our invention for "Improvement in the Cyanide Process of extracting Gold," and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The object of our invention is to extract the precious metals from crushed and reduced ores and from slimes with greater facility and with a reduced consumption of cyanide.

In carrying out our invention we make use of the ordinary vats filled with cyanide and water, which is allowed to soak into the ore in the usual manner. At the bottom of the said vats are placed battens 2 in. in depth, laid on the bottom of the vat at a sufficient distance apart to support laths, which are nailed to them at equal distances apart, the whole forming what is called the "filter-bed." Above the said laths, and over the filter-bed, is placed a stout piece of cloth covering the whole surface, and grouted around its edges, forming what is called the "filter-cloth."

By our invention we then pass a pipe preferably through the centre of the bottom of the vat, and lead it into a chamber placed also in the centre and above the filter-cloth, which chamber is fitted with a series of air-pipes projecting out horizontally. In these air-pipes are formed small exit-holes which are so constructed as to allow the air to impinge upon the filter-cloth at about an angle of 20° to the horizon, thus forcing the air upon the filter-cloth, and greatly assisting the percolation through the said cloth.

We prefer to draw the supply of compressed air from a compressed-air accumulator supplied with compressed air by any suitable means, such as an ordinary air-pump, the accumulator allowing the air to pass into the vat smoothly and regularly at any required pressure. The air, after impinging on the before-mentioned cloth, passes upwards through the solution of cyanide and ore, causing the cyanide to act with greater energy on the precious metal contained in the ore, thus reducing the time required for the extraction of the precious metal, and in most cases reducing the consumption of cyanide, and thus minimising the cost of the treatment; moreover, in treating fine slimes the force of the air percolating through the fine material causes the solution to come more freely in contact with the precious metal, thus facilitating its extraction.

We wish it to be understood that our invention admits of its many variations in the details of carrying it into effect.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is: In the extraction of precious metals by the use of cyanides and the like, the introduction of compressed air as and for the purposes substantially as described herein.

Dated this 1st day of June, 1896.

HENRY HUGHES, F.A.I.P.A.,

Agent for the Applicants.