HISTORY AND CHEMISTRY OF THE CYANIDE PROCESS.

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HISTORY OF THE PROCESS

It has been stated that jewelers and alchemists of the middle ages were aware of the fact that gold, in a finely divided state, was soluble in a solution of potassium cyanide; and that they made use of it in the gilding of metals. In the year 1806 Hagen stated the same fact, and an English patent (No. 8447) issued in 1840 by Elkington, shows that he made use of cyanide in his galvano-plastic operations. Prince Bagration in 1843 gave notice that the gold was more soluble at the surface of the solution, or where there was a free access of air. In the year 1846 Elsner gave the equation for the reaction as follows:

 $\operatorname{Au}_{2} + 2\operatorname{KCy} + \operatorname{H}_{2}O + O = 2\operatorname{KAuCy}_{2} + 2\operatorname{KOH}.$

For the next few years many chemists and metallurgists such as Faraday, Glassford and Napier experimented with it, and have given us their results. In 1867 a patent was issued to Julia H. Rae, of Syracuse, N. Y., (Feb. 5, 1867. No. 61866 U. S. A.), which made use of potassium cyanide in connection with an electric current. This, however, did not prove to be economical in practice, and hence never got beyond the experimental stage. Jerome W. Simpson, Newark, N. J., who was a very energetic metallurgist, obtained a patent in 1885 (July 28, 1885, No. 323222 U. S. A.), making use of potassium cyanide, ammonium carbonate, and sodium chloride for the extraction of gold and silver from their ores. He evidently used the sodium chloride to chloridize a portion of the silver and thus render it more susceptible to the action of the cyanide. He stated that the cyanide solution was to be very weak, and that zinc might be used in the subsequent precipitation of the gold.

From this time till the present a great number of patents have been issued, making use of potassium cyanide for the extraction of gold and silver; many also for the precipitation of the same metals

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