

UNITED STATES PATENT OFFICE.

JOHN N. WYCKOFF, OF NEW YORK, N. Y.

IMPROVED PROCESS OF AMALGAMATING GOLD AND SILVER.

Specification forming part of Letters Patent No. **50,296**, dated October 3, 1865.

To all whom it may concern:

Be it known that I, J. N. WYCKOFF, of the city, county, and State of New York, have invented a new and Improved Amalgamating Process; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to understand the same.

This improvement consists in desulphurizing and amalgamating ores by simply boiling the ore with the mercury in a solution of chloride of sodium, without roasting it with or without a chloride or salt previously. The ore, being first crushed to an impalpable powder or fine pulp, is introduced into a containing-vessel of any convenient size or form, with an equal amount of mercury and such a quantity of chloride of sodium that the whole mass may be suspended in the fluid, and sufficiently thin to allow the mercury to permeate the entire body. This object is obtained by boiling, it being well known that chloride of sodium requires a stronger heat to boil than pure water. This stronger heat has the effect of expanding the matrix and releasing the precious metal within it from the same, and taking the baser metals and other minerals—sulphur, arsenic, antimony, bismuth, phosphorus, which have heretofore been antagonistical in all previous modes of amalgamation—in solution. The higher temperature required has also the tendency to increase the

affinity of the mercury to the precious metals in the action of boiling, sending it in minute globules through the entire mass.

This discovery is the result of manifold experiments, and the process claimed has been successfully applied on both gold and silver ores with unbounded success by the applicant himself, and can be worked to any required extent.

By this process I am enabled to extract from auriferous or argentiferous ores a much larger percentage of the precious metals than by any process known to me, and my process can be carried out with little expense. It requires no expensive machinery and little attention.

I claim as new and desire to secure by Letters Patent—

The within-described process of separating gold and silver from the adhering impurities by mixing the whole with a solution of chloride of sodium, confining it together with mercury within suitable containing-vessels, and there by the action of heat commingling the chloride of sodium and mercury throughout the entire body of auriferous and argentiferous substances, substantially as set forth.

JOHN N. WYCKOFF.

Witnesses:

M. M. LIVINGSTON,
C. L. TOPLIFF.