

UNITED STATES PATENT OFFICE.

ALFRED E. JONES, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF,
JOHN T. ROWLAND, AND ROBERT GRAY, JR., OF SAME PLACE.

PROCESS OF COLLECTING THE FLOATING PRECIOUS METAL FROM QUARTZ OR CEMENT-ROCK TAILINGS.

SPECIFICATION forming part of Letters Patent No. 267,351, dated November 14, 1882.

Application filed June 25, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALFRED E. JONES, of Newark, in the State of New Jersey, have invented a new and useful Process of Collecting the Floating Precious Metal from Quartz or Cement-Rock Tailings, of which the following is a description.

My invention consists substantially in collecting float-gold from quartz or cement-rock tailings by first passing through such tailings a fibrous pulp, then withdrawing the fibrous material, with its adhering gold, and pressing the water from the same; and it further consists in collecting and obtaining the gold by employing the above-named steps for collecting it and then obtaining it from the adhering fibrous material by burning or otherwise destroying such material, all as hereinafter more fully set forth.

The fibrous material may be of any fiber which, when mixed with water, will form a pulp of such a consistency that when the floating gold is brought into contact with it it will readily adhere to it. I have found that any kind of vegetable matter, such as cotton, or of animal matter, such as wool, which, in combination with water, will form a pulp, may be employed successfully. It is necessary to have the fibrous pulp of such consistency that it will be very compact in its nature.

In the application of my process in the use of fibrous pulp I can employ the machine described in my patent, No. 251,718, dated January 3, 1882, and which will serve by way of illustration. In that patent I show a tank in which the fibrous pulp is formed by the mixture of water and vegetable or animal fiber. The pulp thus formed is brought into a mixing-box, and from this box is caught on a wire-gauze cylinder. The cylinder, which is thus coated with the fibrous material, revolves in a vat in which the gold is floating, and as this fibrous pulp collects the floating gold it is passed, with its adhering gold, onto an endless belt and thence to rollers, where it is scraped off into a receiving-receptacle. The fibrous pulp may be either discharged directly on the periphery of the gauze cylinder or directly into the vessel or mixing-box in which such cylinder revolves, or in both ways, the essential

thing being, when using this machine, that the fibers be gathered by the cylinder and that they and their adhering gold be together delivered from the cylinder. The pulp thus charged, if sufficiently filled, is then dried and burned. If not containing gold enough to pay to burn it, it is placed in another tank and again caused to pass through the same process and collect more of the metal.

Of course any other mechanism may be employed than that here described and set forth in said application. Numerous changes may be suggested in the appliance of machinery for using this pulp.

I am well aware that heretofore carbon has been used for the purpose of obtaining gold from its ore and other surroundings, and after the precipitation of gold is obtained the carbon is then reduced to an ash and the gold found; also, that heretofore the ore has been pulverized and saturated with solution of saltpeter, &c., and then uniting the same with carbon or niter, as a fuel, thus rendering it combustible, and by burning and desiccating it by fire thus desiccate and desulphurize the gold; also, that the gold has been gathered from the soapy matters contained in water by a bath of oil or hydrocarbon fluid; and also other means whereby precious metals contained in waste solutions of photographic establishments are saved; but I do not claim these. My invention relates entirely to the use of a pulpy mass into which the floating gold, passing over, is caught and held and passed out, and subsequently recovered by burning the dried pulp and thus leaving the gold separated. My process is only applicable to floating gold.

I am also aware that a method for recovering waste solutions of precious metals has been devised in which a stationary box within a mixing-tank prevents the solid particles from entering such box and prevents their discharge, leaving the same to drop and settle or be precipitated on the bottom of the tank, from which they must afterward be periodically removed. In my process, however, I employ no chemicals and no filter-box within the mixing-tank; and instead of retaining the quartz, cement-tailings, or ore in the tank, to be afterward dug out, I cause the floating gold to be picked up

out of the vessel or mixing-chamber by the agency of the pulp, and both the pulp and the metal are delivered out of such vessel commingled together in one and the same body.

5 What I claim, however, and desire to secure by Letters Patent, is—

1. The herein-described process for collecting float-gold from quartz or cement-rock tailings, which consists in, first, passing into such
10 tailings a fibrous pulp; secondly, withdrawing the fibrous material and the matter commingled therewith; and, next, pressing the water from the same.

2. The herein-described process for collecting and obtaining float-gold from quartz or
15 cement-rock tailings, which consists in, first, passing into such tailings a fibrous pulp; secondly, withdrawing the fibrous material and the matter commingled therewith; next, pressing the water from the same; and, finally, destroying the fibrous material.

ALFRED E. JONES.

Witnesses:

CHAS. R. CLARKE,
JOHN HOWARD CORWIN.