2 Sheets—Sheet 1.

W. H. PATTON.

ORE-SCOURER AND AMALGAMATOR.

No. 178,554. Patented June 13, 1876.

a. Fig. 1.

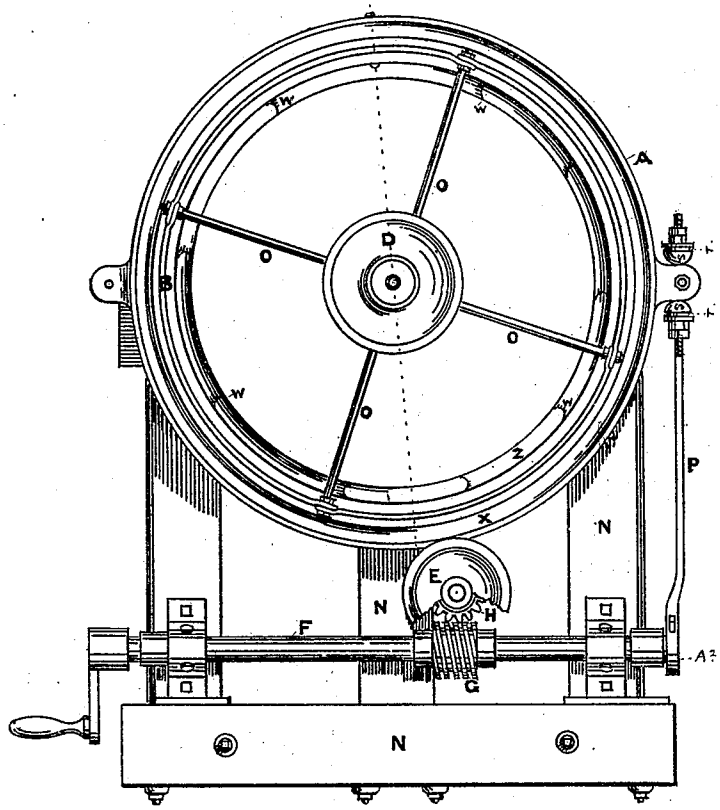
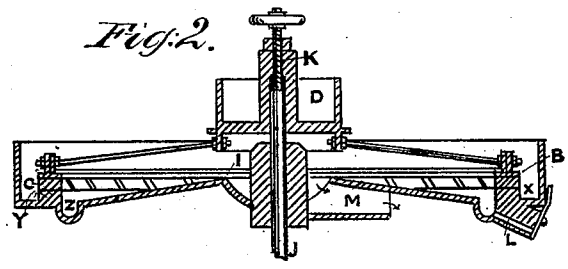


Fig. 2.



Attest,
John H. Redstone
Albert E. Redstone

Inventor:
Wm. H. Patton

2 Sheets—Sheet 2.

W. H. PATTON.

ORE-SCOURER AND AMALGAMATOR.

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Fig. 3.

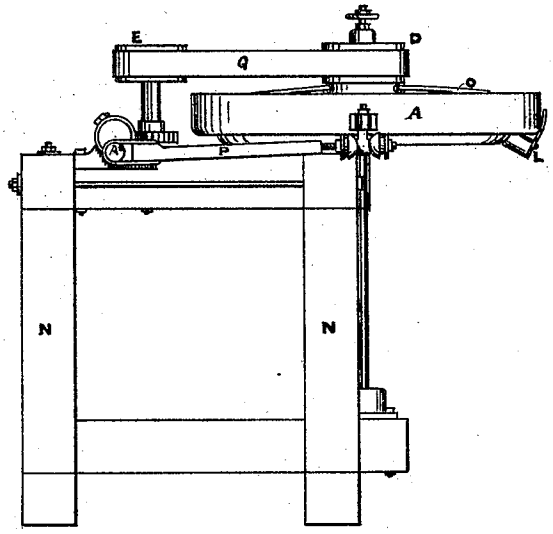


Fig. 4.

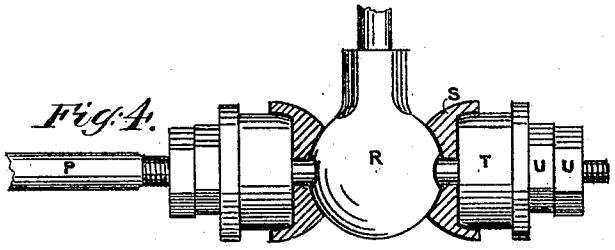
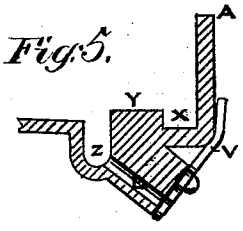


Fig. 5.



ATTEST.

John H. Redstone

Albert E. Redstone

Inventor

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UNITED STATES PATENT OFFICE.

WILLIAM H. PATTON, OF OAKLAND, CALIFORNIA.

IMPROVEMENT IN ORE SCOURERS AND AMALGAMATORS.

Specification forming part of Letters Patent No. **178,554**, dated June 13, 1876; application filed February 26, 1876.

To all whom it may concern:

Be it known that I, WILLIAM H. PATTON, of Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Ore-Scourers, Concentrators, and Amalgamators, of which the following is a specification:

Figure 1 is a plan view. Fig. 2 is a sectional view, showing the pan cut through at the dotted lines *a*, shown in Fig. 1. Fig. 3 is a side elevation. Fig. 4 is an enlarged sectional view, showing the construction of the joint by which the connecting-rod is attached; and Fig. 5 is a section, showing the construction and arrangement of the discharge-opening for the concentrations.

My invention relates to certain improvements in the ore-scourers, amalgamators, and concentrators for which Letters Patent of the United States, No. 152,044, were issued to myself under date of June 16, 1874.

The nature of said improvements consists in providing a more thorough scouring, amalgamation, and concentration, and a more ready discharge for the concentrations, and in the construction and arrangement of machinery for operating the same.

The object of my invention is to reduce the wear, and render the machinery more durable, and at the same time increase the capacity and efficiency of the same, as will be fully set forth.

The following is the construction of my improved ore-scourer, amalgamator and concentrator.

A represents the outer rim of the pan; B, an annular ring, to which the shoes are attached. C represents the shoes; D, the pulley, connected with the ring B by means of the arms O, for the purpose of driving the same. E is the outer driving-pulley; F, the driving-shaft; G, the worm to gear with the wheel H, as shown. I represents the highest point of the bottom of the pan. J represents the spindle or upright shaft, upon which the pan oscillates and the ring carrying the shoes revolves. K represents the adjusting-screw to adjust the bearing of the shoes over the die. L represents the discharge-opening for the concentrations; M, the discharge-opening for the tailings. N represents the frame; P, the connecting-rod; Q, the driving-belt; R, the ball; S, the bearings, and T the rubber springs; and U U, the jam-nuts forming the ball-joint. V represents the gate to the concentration-discharge opening; W, the riffles in the concentrating-channel Z, designed to keep back the quicksilver and amalgam. X represents the outer channel; Y, the annular die; Z, the inner channel.

The following is the operation of the same: As the pulp is fed into the outer channel X, where the concentration commences, the heavier particles settle to the bottom, while the lighter part passes over between the shoes C, across the die Y, and into the center of the pan, over the highest point I, where it drops and passes out at the tailing-discharge M. As it passes up the bottom of the pan, the heavy particles still remaining with the overflow are carried by the under current out into the inner groove Z, where they remain until discharged through the opening L. As soon as the groove X fills to the top of the die Y, the flow commences over the same under the shoe C, where it is thoroughly rubbed, the shoe C being adjusted to effect the same properly by means of the adjusting-screw K; and being delivered to the groove or channel Z at the extreme outside edge, it falls to the bottom by its specific gravity before reaching the inner edge of the same, and is finally discharged at the opening L, which the oscillating and centrifugal effect materially facilitates. The oscillations of the pan are effected in a superior manner, to operate in connection with the revolving muller and shoes C, by means of the well-known device of the worm and wheel, which effects, by a single gear, the required difference of motion. The worm G, being placed upon the same shaft with the crank A^2, which operates the connecting-rod P, gives the muller only six revolutions per minute, while the crank A^2 gives the pan two hundred revolutions per minute. To effect this I have devised the elastic ball-joint R, S, and T, and it will be readily understood that the springs T take the concussion of the pan in its rapid oscillations.

The oscillation of the pan and operation of the muller reduce the floured quicksilver that may be in the pulp to a metallic state, and it, together with the amalgam that may be

present, is, by the operation of riffles, moved back in the concentrating-channel Z—a point farthest removed from the opening L.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of shaft F, carrying the operating-worm G, the pulley E, driving-belt Q, pulley D, with its attached radial arms O, supporting the annular ring B, connecting-rod P, adjustable elastic universal joint R, and pan A, substantially as set forth.

2. The ball R, bearings S, springs T, jam-nuts U, and rod P, when combined and operated substantially as described.

WM. H. PATTON.

Witnesses:

JOHN H. REDSTONE,

ALBERT E. REDSTONE.