(No Model.)

P. McELLIGOTT.

AMALGAMATOR.

No. 301,619. Patented July 8, 1884.

Fig: 1.

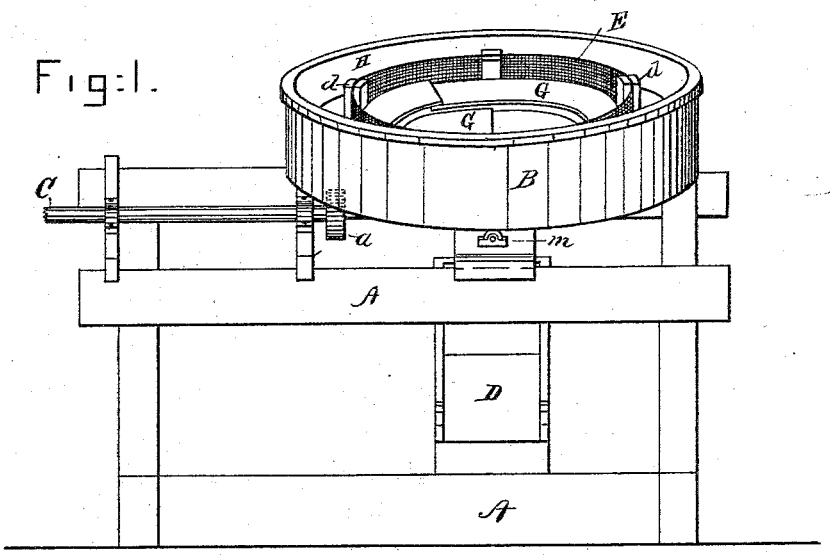


Fig: 2.

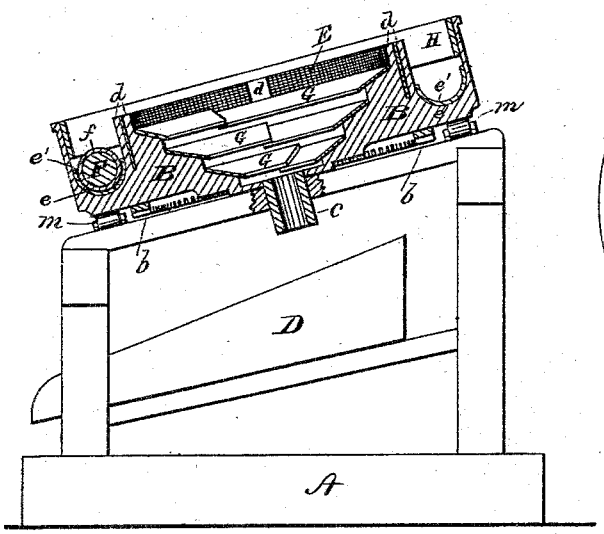
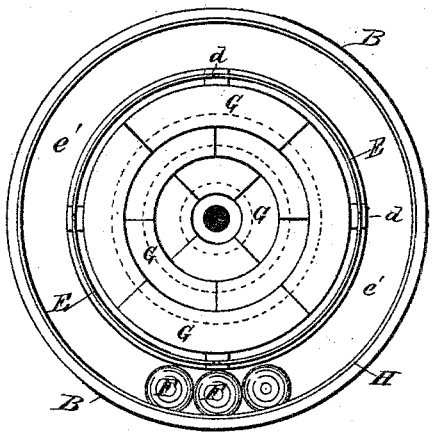


Fig: 3.



Witnesses,
Geo. H. Strong
J. Storrs

Inventor,
P. McElligott
By Dewey & Co.,
Attorneys

UNITED STATES PATENT OFFICE.

PATRICK McELLIGOTT, OF BEAR VALLEY, CALIFORNIA.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 301,619, dated July 8, 1884.

Application filed October 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, PATRICK MCELLIGOTT, of Bear Valley, county of Mariposa, and State of California, have invented an Improvement in Amalgamators; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a new and useful amalgamator for saving the precious metals from ores; and it consists in a rotating inclined pan or vessel having an annular channel or groove for the ore and pulp, and formed by the outer rim of the pan and a concentric screen, said groove having within it a circumferential amalgamating-ring within the arc tiers of annular amalgamating-plates leading to a central discharge made in the pan, all of which I shall hereinafter fully explain, reference being made to the accompanying drawings, in which—

Figure 1 is a front elevation of my machine. Fig. 2 is a sectional side view of same. Fig. 3 is a top view of the pan.

The object of my invention is to provide a simple and practical device for amalgamating, said device being adapted for light as well as heavy work.

A is a foundation-frame, upon which is mounted at an incline a pan, B, which may be rotated by suitable means—as, for example, gears *b* on its bottom meshing with a pinion, *a*, on the end of a driving-shaft, C. The pan is mounted by means of a central trunnion, *c*, hollow, as shown, providing for a central discharge into the underlying sluice D. Friction-rollers *m* support the pan. Within the pan is an annular groove or channel, *e*, formed by a concentric screen, E. This screen is preferably made in sections secured between lugs *d*, whereby any section may be removed and renewed when necessary. The bottom of the groove *e* is rounded out, and is provided with a suitable wearing-die, *e'*.

F are heavy metal spheres lying loosely in groove *e*. These are covered with shoes *f* for wear against the die *e'*. These spheres, in connection with such parts of the machine herein described as effect the result of pulverizing and discharging the ore, form the subject-matter of a separate application now pending in the office.

Within the screen are tiers of annular bands G, which are copper plates for amalgamating purposes. Each tier is made in sections, the end of one section overlapping the next, and this overlapping is primarily adjusted in such manner, according to the direction of revolution of the pan, that there may be a fall from one to the other, as I shall further explain. These amalgamating-bands have an inclination toward the center, and this inclination is sufficiently greater than that of the pan itself to make them slope downwardly at all points, even at the lowest, whereby there may be a fall to the center. They may be supported in position in any suitable way, as by annular rings set on edge.

Around the inner circumference of the outer rim of the pan is secured an amalgamating ring or band, H, fixed at a point just above the line of the circle of greatest diameter of the balls, whereby said balls do not touch it.

The operation of the machine is as follows: The ore and water are fed into the groove *e* and the pan revolved. The ore passes down to the lowest part of the groove, and there is pulverized by the action of the balls, which are set in motion, and continue rolling because of the revolution of the pan and its inclination. The fine pulp passes through the screen at such points where it rises high enough, and the precious particles are amalgamated on the bands G. It continually flows to the central discharge over the bands G, and because of the revolution of the pan and the sectional overlapping of the amalgamating-bands it has a tendency to flow partially around, dropping off the end of one section onto another. Such of the precious particles as lie on the outer edge of the body of pulp are amalgamated by the circumferential ring H.

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

1. In an amalgamator, the rotating pan B, mounted at an angle, and having a central opening or discharge, and an annular groove or channel *e*, formed by the screen E, for the ore and pulp, in combination with suitable amalgamating-plates, G, constructed as shown, and arranged between said groove and the central discharge, substantially as herein described.

2. In an amalgamator, the combination of the rotating pan B, mounted at an angle, and having a central discharge, the concentric screen E, composed of removable sections located within said pan, forming between itself and the rim of the pan an annular groove or channel, *e*, for the ore and pulp, and suitable amalgamating-plates, G, between said screen and the central discharge, substantially as herein described.

3. In an amalgamator, the combination of the rotating pan B, mounted at an angle, and having a central discharge, the concentric screen E, whereby the annular groove or channel *e* for the ore and pulp is formed, and the tiers of annular amalgamating-bands G between the screen and central discharge, said bands having a downward slope toward the central discharge at all points, substantially as herein described.

4. In an amalgamator, the combination of the rotating inclined pan having a central discharge, the concentric screen forming the annular groove *e* for the ore and pulp, and the tiers of annular amalgamating-bands, formed each tier of overlapping sections and having a downward slope at all points toward the central discharge, substantially as herein described.

In witness whereof I have hereunto set my hand.

PATRICK McELLIGOTT.

Witnesses:
THOMAS THERAMI,
LAFAYETTE CHOISSER.