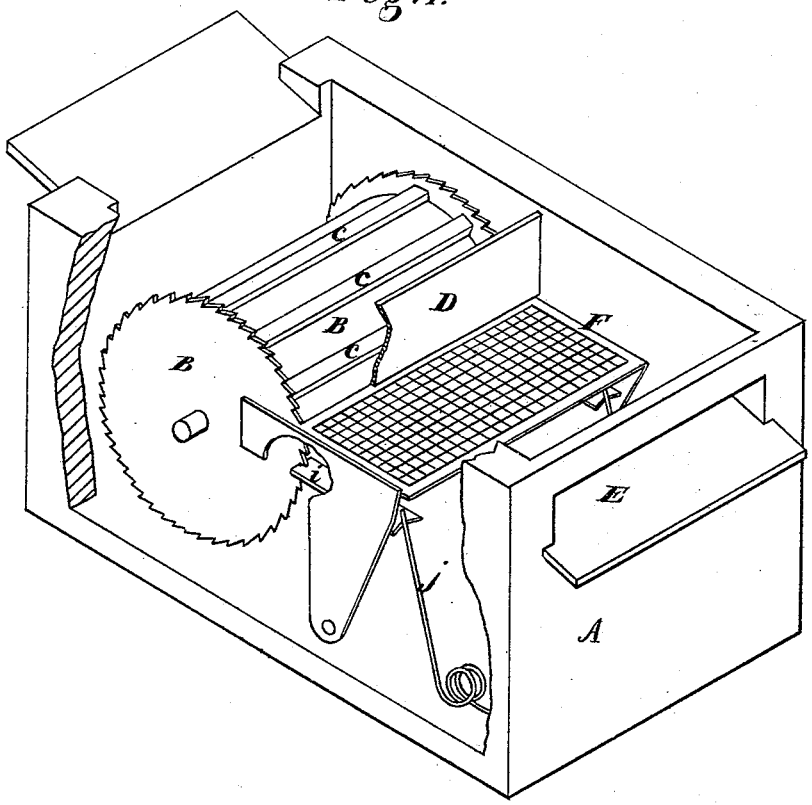
E. J. FRASER.

Amalgamator.

No. 166,356. Patented Aug. 3, 1875.

Fig. 1.



Witnesses
Geo. H. Strong.
Jno. L. Boone

Inventor
Edwin J. Fraser
by Dewey & Co
Attys

UNITED STATES PATENT OFFICE.

EDWIN J. FRASER, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN AMALGAMATORS.

Specification forming part of Letters Patent No. **166,356**, dated August 3, 1875; application filed February 10, 1875.

To all whom it may concern:

Be it known that I, EDWIN J. FRASER, of San Francisco city and county, State of California, have invented Improvements in Dry Amalgamators; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to an improvement upon the amalgamator for which Letters Patent were issued to me on the 5th day of January, 1875.

The machine described in my former patent consisted of one or more cylinders rotated inside of a box, which was partially filled with quicksilver. The cylinders were provided with projecting longitudinal wings or buckets, which served to carry the dry pulverized ore, as it was fed into the box, under the surface of the quicksilver and around to the opposite side of the cylinder, where it was released and allowed to rise through the quicksilver to the surface, the object being to insure the contact of the particles of metal with the quicksilver.

My improvement consists in the employment of a submerged shaking screen on the discharge side of the cylinder, through which the particles of ore will have to pass in rising to the surface of the quicksilver, and thus be separated or scattered, so as to insure the contact of every particle with the quicksilver, and prevent the too sudden rising of the particles in masses from carrying off quicksilver through the discharge-spout.

Referring to the accompanying drawings, Figure 1 is a perspective view of my amalgamator.

A is the box or tank, inside of which one or more cylinders, B, having wings *c*, are rotated, in the manner described in my former patent. D is the separating-strip, which divides two cylinders, or separates a single cylinder from the tailing-chamber and discharge-spout E. Below the surface of the quicksilver in the tailing-chamber of the box, or, if desired, next to every rotating cylinder in the box, I mount a wire screen, F, horizontally, and to this screen I impart a shaking motion, so that the particles of ore, when they leave the cylinder and attempt to rise to the surface of the quicksilver, will be caught by this shaking screen and scattered, and the force of their upward movement broken, for the purpose above mentioned.

Any suitable device can be used for giving motion to the screen; but in the present instance I have represented ratchet-teeth formed on the circular end plates of the cylinder, with which a fixed plate, *i*, engages at each end. The plate *i* is secured to the screen-frame, and a spring, *j*, forces it in contact with the teeth, so that when the cylinder is rotated the teeth and spring will alternately move the screen-frame and screen back and forth, and give it the desired shaking motion.

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

In combination with the cylinder or cylinders B, with their wings *c*, rotated inside of a tank which is partially filled with quicksilver, the shaking screen F, substantially as and for the purpose described.

EDWIN J. FRASER. [L. S.]

Witnesses:

GEO. H. STRONG,

C. M. RICHARDSON.