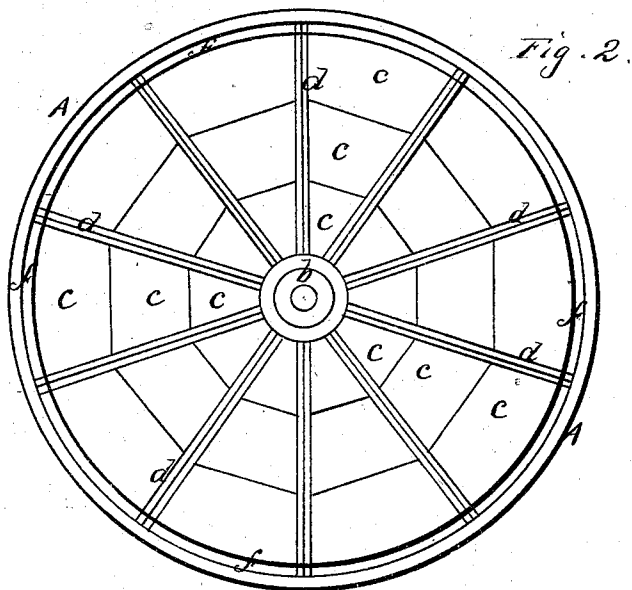
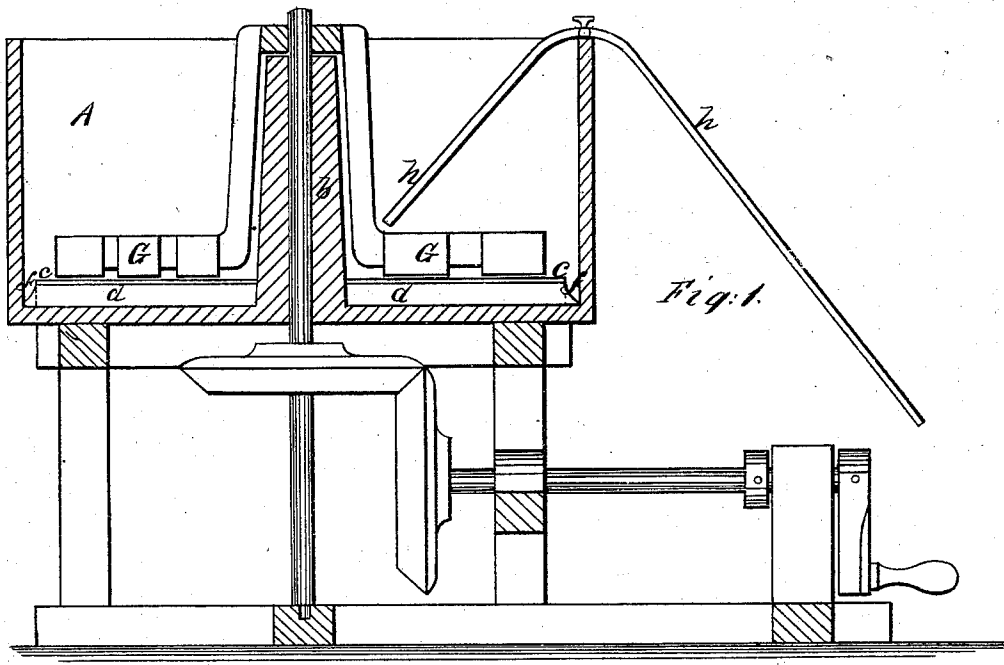


F. MORRIS.
Amalgamators.

No. 137,088.

Patented March 25, 1873.



Witnesses

John L. Boone
C. M. Richardson

Inventor

Frederick Morris
per Seway & Co.
Attys

UNITED STATES PATENT OFFICE.

FREDRICK MORRIS, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN AMALGAMATORS.

Specification forming part of Letters Patent No. 137,088, dated March 25, 1873.

To all whom it may concern:

Be it known that I, FREDRICK MORRIS, of San Francisco city and county, State of California, have invented an Improved Settler for Separating Gold and Silver; and I do hereby declare the following description and accompanying drawing 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 improvements in the vessels which are used for settling ore-pulp in order to separate the heavy particles from the mud and slime after the pulp has passed through the grinding and amalgamating process.

In order to more fully explain my invention reference is had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a sectional elevation of my settler. Fig. 2 is a plan view.

A represents a tub or vessel, which can be made of wood or iron, in the center of which rises the muller-supporting standard *b*. The bottom of this vessel I cover with a layer of wooden blocks, *c c*, placed with the grain standing vertically. Radiating wooden strips *d d* separate the sections of blocks *c c* at intervals extending from the center to the outer edge of the bottom. These strips *d d* consist of boards placed edgewise between the triangular sections of blocks and so that their upper edges will be somewhat lower than the surface of the blocks *c c*. Around the outer edge of the bottom I make a channel or deep groove, *f*, between this wooden bottom and the side of the vessel, for the purpose herein after explained. The muller *G* I also construct of wooden blocks secured to the muller-arms with the grain of the wood standing vertically, so that all of the wear upon the muller and bottom will be upon the end of the grain of wood.

By employing wood in this manner—for the bottom of the tub and for the muller—much better results can be obtained in the process

of settling. The channel formed by the depressed strips *d d* serves to convey any particles of quicksilver, which may become separated, to the annular channel *f* around the edge of the bottom of the vessel.

In order to draw off the water from the vessel I employ a siphon, *h*, which is secured upon the edge of side of the vessel so that its inside leg will come almost to the center of the pan. By means of this siphon I am enabled to draw off the tailings or slime from the center of the vessel, where, by reason of a less amount of agitation than at the sides, an eddy is formed, which is more favorable for allowing the heavier particles to settle than at any other point in the vessel, while at and near the sides the greater speed of the muller keeps the pulp in constant motion, so that a portion of the amalgam will always be drawn off with the tailings when the discharge is at the side.

By these improvements I greatly facilitate the separation of the gold and silver from the pulp.

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

1. The tub or vessel *A*, having its bottom covered with wood placed with the grain vertically, and having the depressed radial strip *d d* and outer annular channel *f*, substantially as and for the purpose above described.

2. The tub or vessel *A*, having its bottom covered with wood placed with the grain vertically, in combination with the wooden muller *G*, substantially as and for the purpose above described.

3. The siphon *h*, in combination with the settling-vessel *A*, substantially as and for the purpose above described.

In witness whereof I have hereunto set my hand and seal.

FREDRICK MORRIS. [L. S.]

Witnesses:

J. L. BOONE,
C. M. RICHARDSON.