P. DICKSON.
Amalgamator.

No. 212,907. Patented Mar. 4, 1879.

Fig. 1.

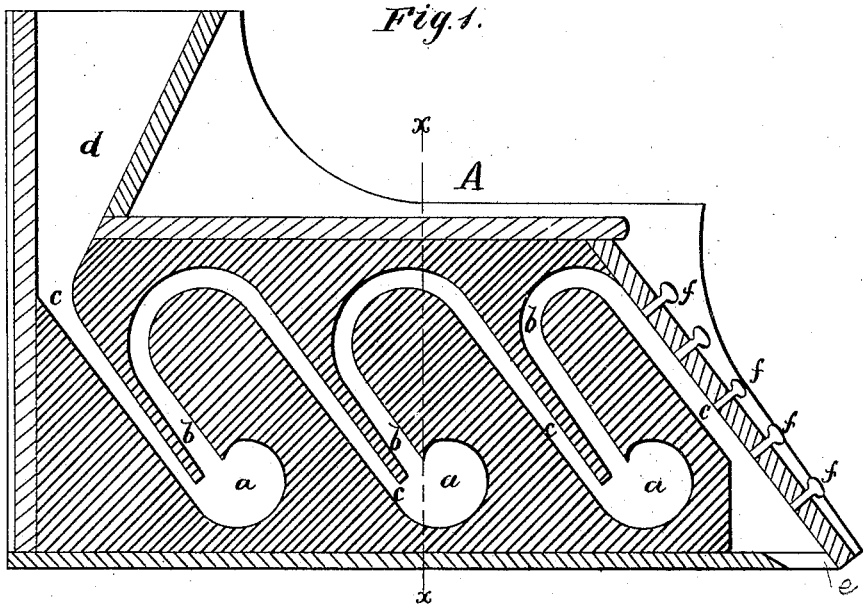
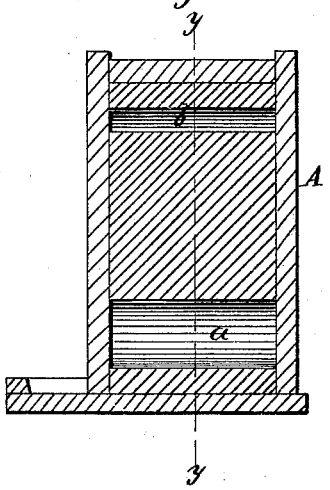


Fig. 2.



WITNESSES:
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UNITED STATES PATENT OFFICE.

PERRY DICKSON, OF SPEARFISH CITY, DAKOTA TERRITORY.

IMPROVEMENT IN AMALGAMATORS.

Specification forming part of Letters Patent No. **212,907**, dated March 4, 1879; application filed October 4, 1878.

To all whom it may concern:

Be it known that I, PERRY DICKSON, of Spearfish city, in the county of Lawrence, Dakota Territory, have invented a new and Improved Gold-Amalgamator, of which the following is a specification:

My invention relates to machines for the separation of gold from the ore after it has been passed through the stamp-mill.

My invention consists in an apparatus having a supply-hopper and a series of downward and upward passages connecting with scroll-shaped receptacles, arranged in such position that the pulp from the stamp-mill is spread out in thin sheets, and the current caused to revolve with great velocity, whereby the gold and quicksilver are brought thoroughly and intimately into contact, and remain in the receptacles, while the current carries off the mud and particles of lighter bulk than the gold.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of my amalgamating apparatus. Fig. 2 is a cross-section of the same at the line *x x*.

Similar letters of reference indicate corresponding parts.

The body A of the apparatus is in one piece, or made up of a number of pieces, secured together in any desired manner.

a a a are circular or scroll-shaped receptacles in the body A, connected with each other by ascending ports or passages *b* and descending ports *c*. The first one of the series of receptacles *a* is connected by its port *c* with the hopper *d*, that is at the upper side of the apparatus.

There may be more of the receptacles *a*, or they may be less in number than shown, according as circumstances may require.

The pulp from the stamp-mill is to be fed to the hopper *d* in a regular and constant stream, and, running down the first port, *c*, it will be spread out and caused to flow with great velocity, in consequence of the small comparative size of the port *c*, and the stream entering the first receptacle, *a*, to which the quicksilver has been previously supplied, is caused to whirl around, and the gold and mercury are brought intimately in contact throughout the mass in every part and the amalgamation facilitated.

The stream will rise in the ascending port *b*, and from thence over and down to the second receptacle, *a*, where the operation is similar.

The ports *b* are larger than the ports *c*, for the purpose of lessening the velocity of the current from the receptacles, and thereby preventing, as far as possible, any gold or quicksilver from passing over. The velocity should be just sufficient to carry off everything that is of less specific gravity than gold or quicksilver.

The receptacles *a* are to be each supplied with quicksilver, and the number in the series and the size of the parts are to be such that nothing of value shall pass out the discharge-opening *e*.

To facilitate the regulation of the velocity, the walls of the last descending port are perforated, and the holes filled by plugs *f f*, as shown. By removing the plugs or a number of them the suction in the ports will be diminished, and the velocity of the current checked. Little or no mud will be left in the receptacles *a* to accumulate and prevent contact of the gold and quicksilver. The velocity of the current will carry off the heavy as well as the light mud.

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

The herein-described apparatus for amalgamating ores, consisting of the body A, provided with the circular or scroll-shaped receptacles *a*, and the ascending and descending passages *b c*, constructed substantially as and for the purpose described.

PERRY DICKSON.

Witnesses:
WALKER DICKSON,
J. L. WOODBURN.