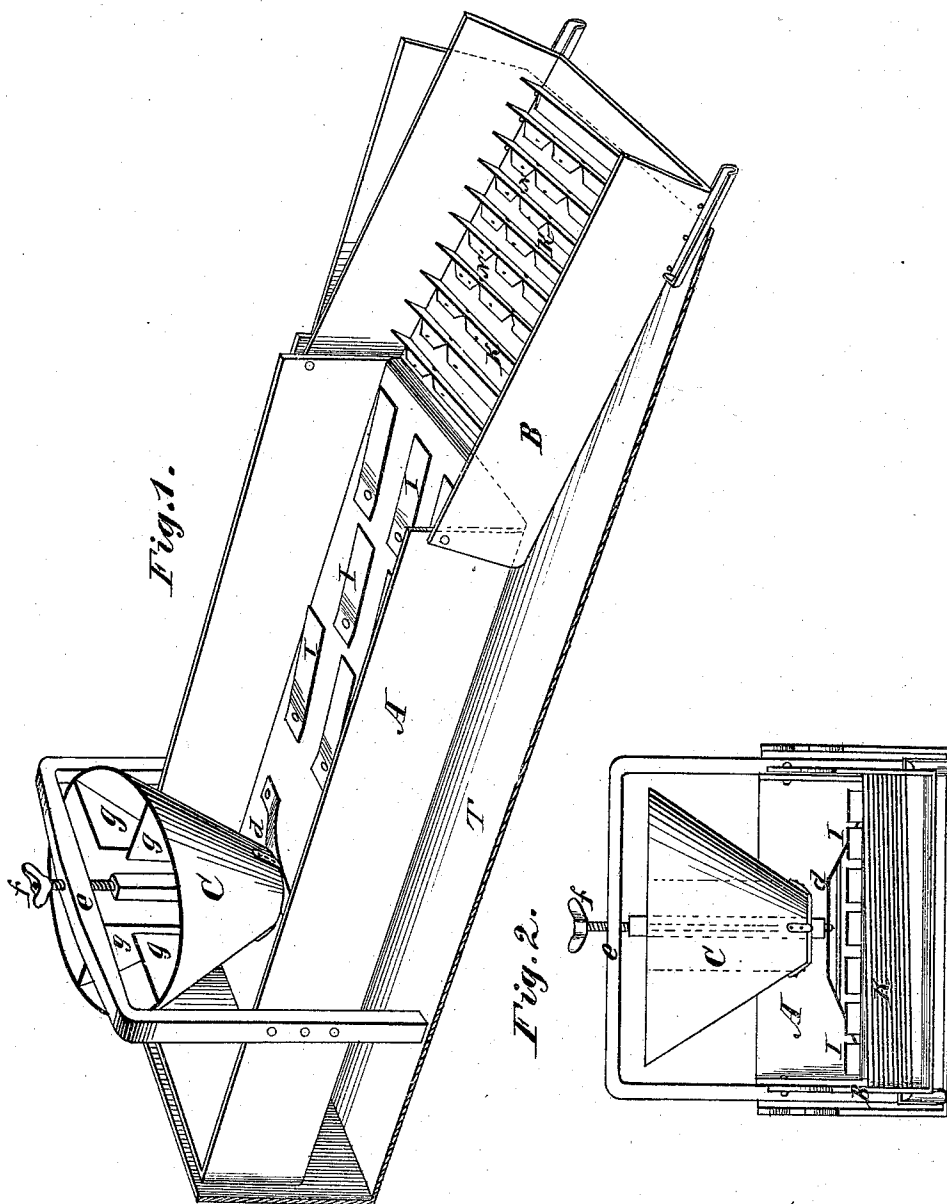


J. POTTS.

Improvement in Electro-Galvanic Quicksilver and
Amalgam Saving Apparatus.

No. 130,658.

Patented Aug 20, 1872.



Witnesses.

Wm. B. Blodgett
Wm. E. Raymond

Inventor.

Joseph Potts
by his Attys:
A. H. & R. K. Evans

UNITED STATES PATENT OFFICE.

JOSEPH POTTS, OF TREASURE HILL, NEVADA.

IMPROVEMENT IN ELECTRO-GALVANIC QUICKSILVER AND AMALGAM SAVING APPARATUS.

Specification forming part of Letters Patent No. **120,658**, dated August 20, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, JOSEPH POTTS, of Treasure Hill, White Pine county, State of Nevada, have invented Improved Electro-Galvanic Quicksilver and Amalgam Saving Apparatus; 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.

The object of my invention is to provide a means of saving quicksilver and amalgam in mining operations, especially that portion which usually escapes down the sluices on account of its fineness or state of subdivision. My method of accomplishing this, as will be seen, is by passing the pulp or tailing through a box-sluice, or section of a sluice, which is provided with peculiarly-arranged riffles, the pulp or tailing being first distributed upon the floor or bottom of the sluice or box by means of a revolving hopper of novel construction.

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

Figure 1 is a perspective view of my machine. Fig. 2 is an end view.

A represents a copper box, one end of which is open. Secured to the open end of this box is a short section, B, of a sluice, which descends at an angle from the sluice, as shown. This section is riveted to the box A, so that one side will be one inch, and the other side one inch and a half lower than the bottom of the box. The opposite end of the box is properly supported in order to level its bottom; or if desired, a very slight inclination toward the open end can be given to it. Inside of the box A, near its closed end, I mount a conical hopper, C, by means of a vertical shaft, the lower end of which steps in the center of an arched copper plate, *d*, the ends of which are secured to the floor or bottom of the box. The upper end of this shaft is supported in a transverse copper beam, *e*, which passes above the box, and which may be a simple frame, the turned-down ends of which can be riveted to the sides of the box in the manner shown. A

set or thumb-screw, *f*, serves as a bearing for the upper end of the shaft. The hopper itself is made of copper, and is provided with radial copper flanges *g g*, which are widest at the upper end, and gradually taper to the lower opening of the hopper. Along the bottom of the box A are placed ten rows of riffles, *I I I*, which are also made of copper. Each riffle is riveted to the bottom of the box at an angle of about thirty degrees from the horizontal plane, and extends lengthwise of the box, as shown. A space of about one inch is left between the riffles in each row. The riffles in each alternate row are riveted between the spaces of the upper row, so that there are five rows containing five of such riffles and five rows containing only four.

Upon the bottom of the section B are riveted a series of riffles, *K K*, which are also made of copper plate. These, however, run across the width of the box, and are set at the same inclination as the box itself, so that they, too, are one and a half inch in height at the one side and one inch only at the other. At the higher side these riffles are perforated at *N N*, so as to allow the quicksilver and soft amalgam, (which by gravitation would naturally fall to this side,) to pass through, and finally run into the reservoir or vessel for receiving it. The lowest of these riffles is not perforated, and the main quantity of water and sand is allowed to pass over it into the sluice below. The interior of these copper boxes, as well as the riffles and the hopper or revolving-wheel, are all well coated with amalgam and quicksilver. These copper boxes are inclosed in another of zinc plate, *T*; thus in the admission of any tailings or water, however slightly acidulated, a galvanic action is set up.

For the better protection of these boxes the whole apparatus may be inclosed in a stout wooden box and kept under lock and key.

This apparatus is so placed as to receive the tailings at the upper end in the hopper or revolving wheel *cc*. The tailings are thus distributed along the course of the riffles and finally discharged from the sluice B. In passing through these boxes and over the riffles the tailings are subjected to a galvanic action which adds intensity to the volume and favors the amalgamation of the particles.

The whole apparatus is charged with an additional current of electricity by ordinary batteries.

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

1. The apparatus above described, consisting of the box A with its distributing hopper C and longitudinal riffles I I I, in combination with the descending sluice section B, having one side lower than the other, and provided with the transverse perforated riffles K K, all

constructed and arranged substantially as and for the purpose above described.

2. The revolving hopper C with its radial flanges *g g*, which are made widest at the upper end and gradually taper to the lower opening, for the purpose described.

In witness whereof I have hereunto set my hand seal.

JOSEPH POTTS. [L. S.]

Witnesses:

THOMAS NICOLL BROWNE,
JOSHUA ELLIOTT CLAYTON.