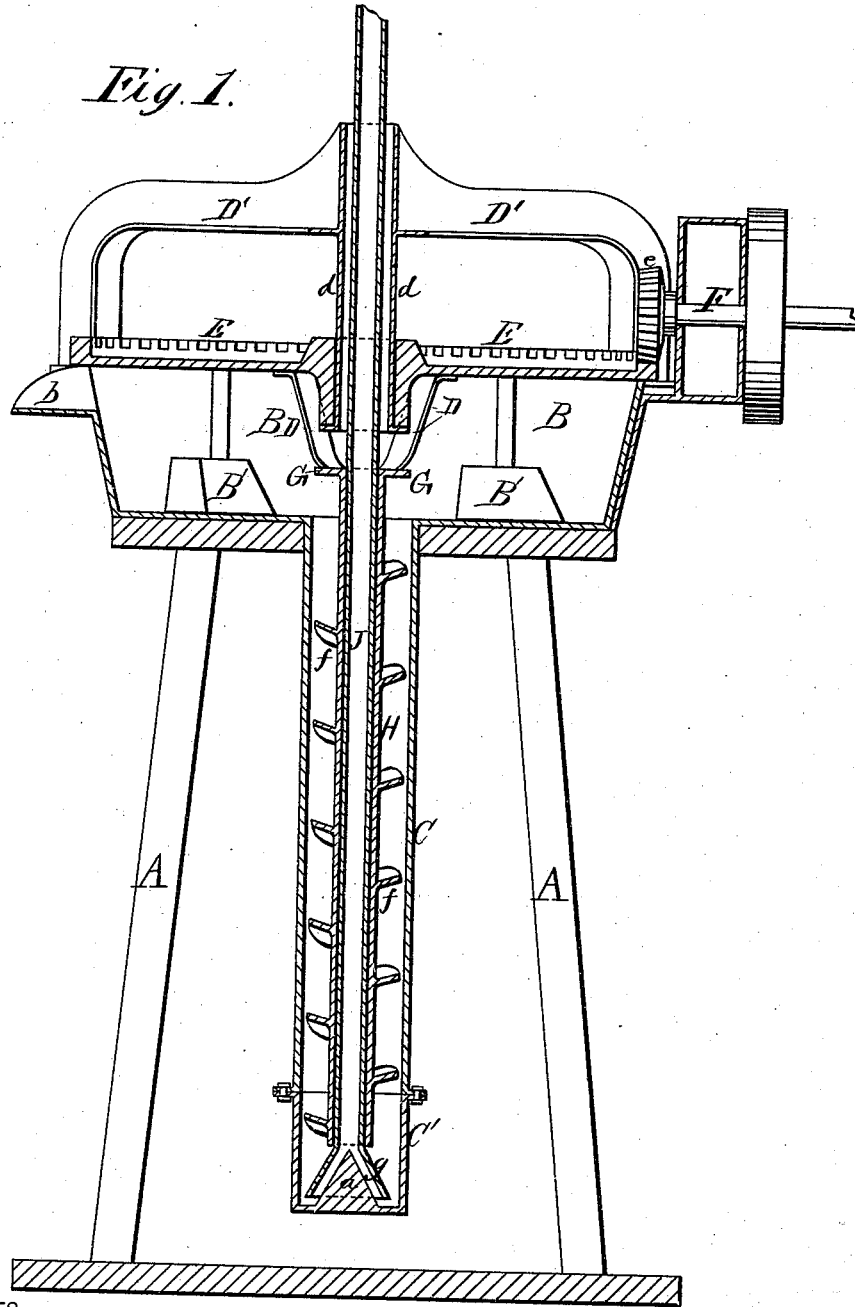


W. McCOURT.  
AMALGAMATORS.

No. 182,027.

Patented Sept. 12, 1876.

*Fig. 1.*



WITNESSES

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Fig. 2.

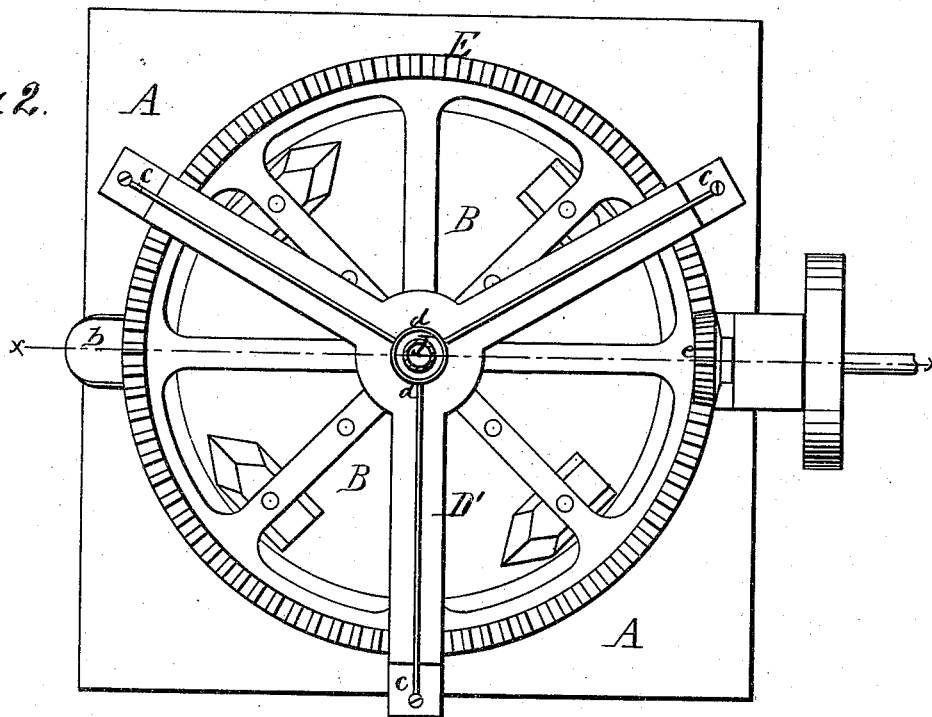


Fig. 3.

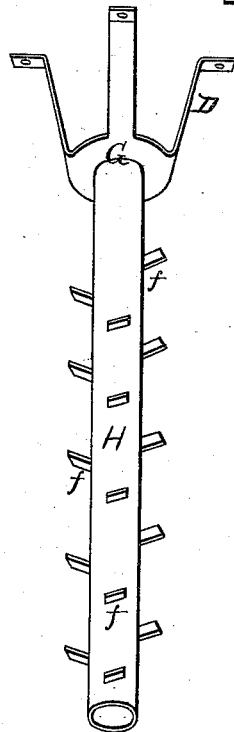
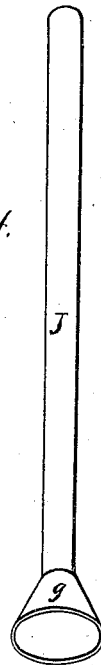


Fig. 4.



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# UNITED STATES PATENT OFFICE.

WILLIAM McCOURT, OF VIRGINIA CITY, NEVADA.

## IMPROVEMENT IN AMALGAMATORS.

Specification forming part of Letters Patent No. 182,027, dated September 12, 1876; application filed August 22, 1876.

*To all whom it may concern:*

Be it known that I, WILLIAM McCOURT, of Virginia City, Storey county, and State of Nevada, have invented a new and useful Improvement in Amalgamators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a vertical section taken centrally through the improved amalgamator. Fig. 2 is a top view. Figs. 3 and 4 are details.

Similar letters of reference indicate corresponding parts in the several figures.

This invention has relation to means for separating, by amalgamation, gold and other precious metals from their sands; and the nature of my invention consists, mainly, in the machine hereinafter described, for compelling the gold-bearing sand to descend to the base of a column of mercury, and discharging the sand at such point, whereby a much larger percentage of the metal will be extracted from the sand than by any other process with which I am acquainted.

In the drawings hereunto annexed, A designates a frame of suitable construction, on top of which is an overflow-pan, B, fixed rigidly in its place. From the center of this pan B depends a tube, C, seven feet, more or less, in length, and of any desired diameter, which tube is designed to be filled with mercury, and its lower end terminates in a removable section, C', containing at its base a conical distributor, *a*. The pan B has an overflow-spout, *b*, and it is constructed with wings or brackets *c*, to which the limbs of a spider, D', are rigidly secured in any suitable manner. The hub of this spider receives through it a tubular axle, *d*, which is flanged, as shown in Fig. 1, and which suspends a large beveled wheel, E, arranged to rotate in a horizontal plane. This wheel E receives slow rotation from a beveled pinion, *e*, on the shaft of a belt-wheel, F, which latter may be driven by any convenient motive power. G

designates a spider with four limbs, the upper ends of which are attached concentrically to the arms of the wheel E. The lower end of this spider G is secured rigidly to a pipe, H, which extends down into the section C'. This pipe H is provided with feathered blades *f*, the object of which will be hereinafter explained, and it receives its rotation from the wheel E.

J designates a tube which passes freely through the pipe H, and terminates at its lower end in a cone, *g*, of greater diameter throughout than the cone *a*. The upper end of this tube J communicates with a pump of any well-known kind, which will force sand through it.

In practice I shall apply to the beveled wheel E, plows B', the object of which is to stir the sand in the overflow-pan B, and move the sand toward the tube C, so that it may flow back into the mercury therein.

My invention is especially applicable to the treatment of "tailings;" and in the treatment of tailings preparatory to subjecting them to my process, I shall desulphurize them, and thus allow a free amalgamation.

The blades on the tube H are arranged so as to resist the ascending current, and to direct the gangue downward, at the same time to stir and agitate the mercury in the tube C, as well as the sand, thereby aiding in the separation and amalgamation of the gold.

Water and gold-bearing sand are forced down through the tube J to the bottom of a long column of mercury contained in the tube C, and the removable cup C'. At the lower terminus of the tube J, the "pulp" is distributed over the cone *a*, the light particles rising into the pan B, and being washed off therefrom, while the gold will amalgamate with the mercury, and precipitate into the section or cup C'.

Owing to the great pressure of mercury on the atoms or "spangles" of gold in the sand, amalgamation will take place rapidly and completely.

What I claim is—

1. In combination with a discharging-tube,

J, a cone, *a*, and a tube, C, substantially as and for the purpose described.

2. In an amalgamator, having the tube C, the agitating-tube H, and the discharging-tube J, the overflow-pan B, and the plows B', substantially as and for the purpose described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM McCOURT.

Witnesses:

FRED. D. STUART,

R. T. CAMPBELL.