

(No Model.)

M. J. AMICK.

2 Sheets—Sheet 1.

AMALGAMATOR.

No. 332,473.

Patented Dec. 15, 1885.

Fig. 1.

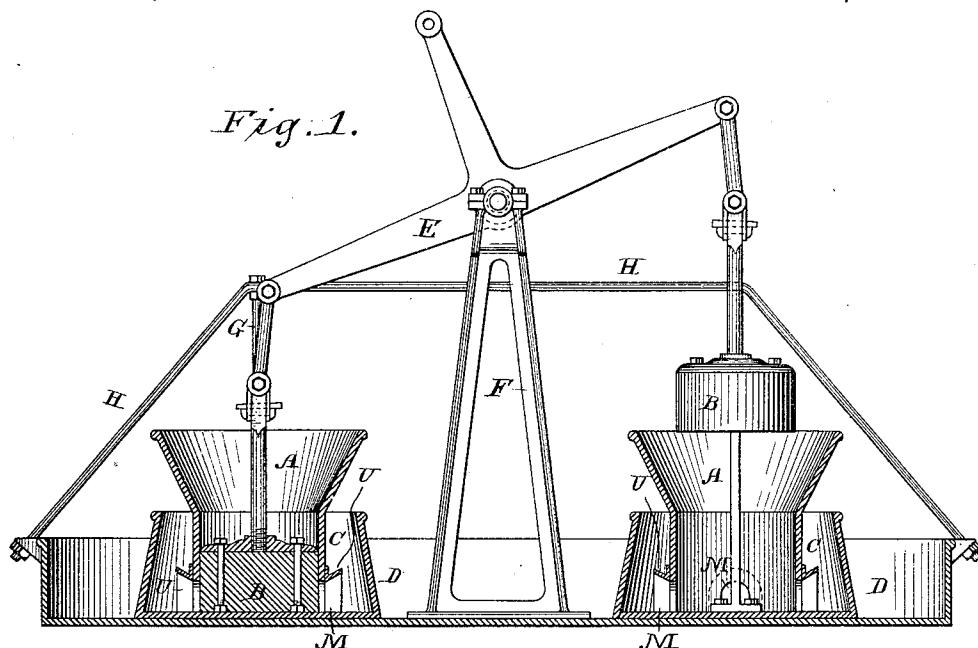
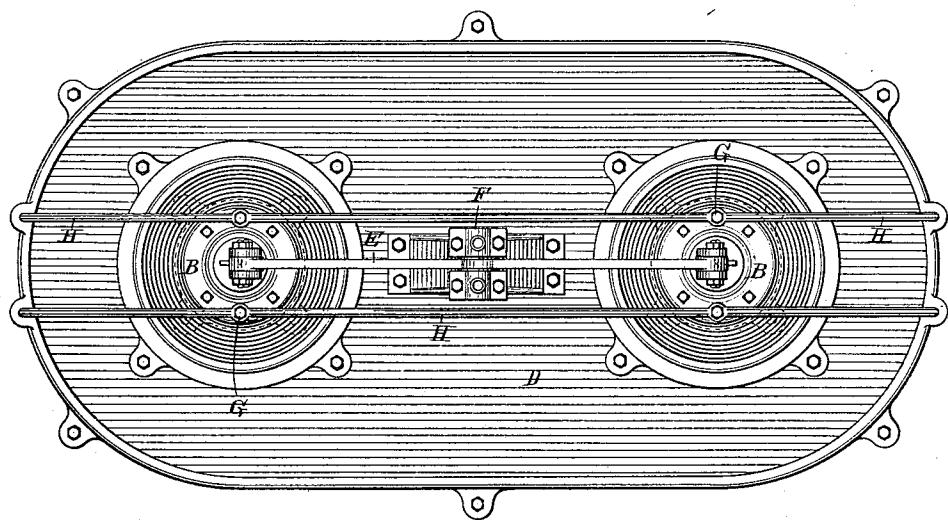


Fig. 2.



WITNESSES

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Al. C. Newman.

By his Attorneys

Baldwin, Hopkins & Peyton

INVENTOR

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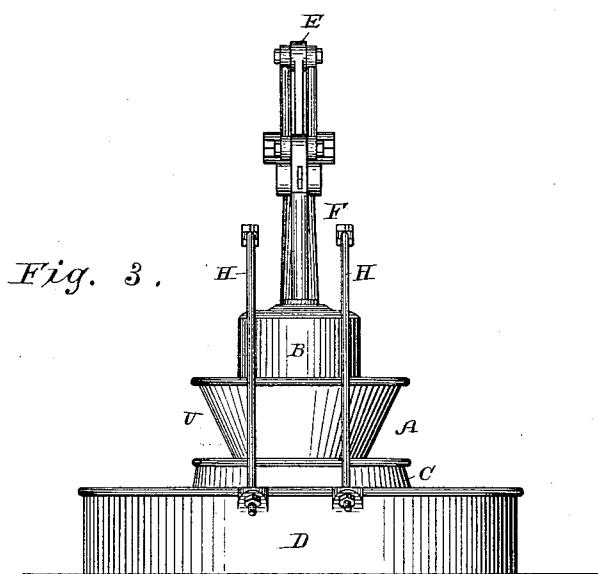


Fig. 3.

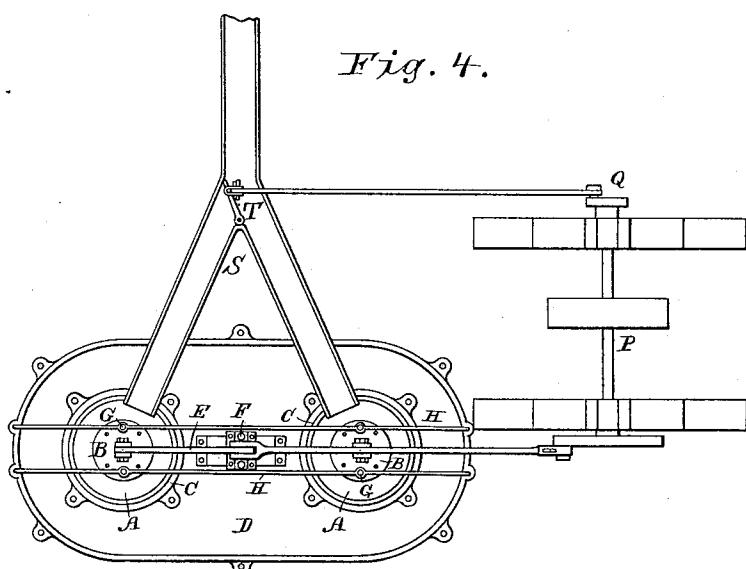


Fig. 4.

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UNITED STATES PATENT OFFICE.

MYRON J. AMICK, OF PORTLAND, OREGON.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 332,473, dated December 15, 1885.

Application filed October 15, 1885. Serial No. 120,011. (No model.)

To all whom it may concern:

Be it known that I, MYRON J. AMICK, a citizen of the United States, residing in the city of Portland, county of Multnomah and State 5 of Oregon, have invented certain new and useful Improvements in Amalgamators, which are set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to that class of devices 10 which are applied in saving the precious metals by amalgamation, more particularly in saving fine gold contained in the black sands deposited on the sea-beach; and it consists in a certain improved organization of mechanism 15 herein described, by which the entire pulp or sand is immersed in the quicksilver, thereby causing amalgamation and the retention of the precious metals and quicksilver, while the refuse matter is allowed to overflow and pass 20 off.

In the drawings, Figure 1 is an elevation of my amalgamator, partly in section. Fig. 2 is a top view; Fig. 3, an end view of the same, and Fig. 4 is a plan view with sluice and driving machinery attached.

The funnel-shaped cylinders A A, with open ports M at the bottom, are made of cast-iron or any other suitable metal. B B indicate pistons, made of wood or any other suitable 30 material, of such size as to work freely in the upright or bottom parts of cylinders A. C C are reservoirs intended to hold the quicksilver used in the operation. D is a receptacle or settler intended to receive and retain 35 particles of quicksilver that may escape from reservoir C. E is a walking-beam connecting and working the two pistons and their appendages. F is the standard of the walking-beam. G indicates guides to keep in place 40 the pistons B, and H the stays to brace the structure, and to which guides G are attached. P is the pulley-shaft and cranks to set the machinery in motion. S indicates the sluices, forked as shown, to bring in the material to 45 be operated upon, and T is a swinging gate to control the flow of said material alternately to the respective cylinders. U is a flange or hood encircling each cylinder-port, and extending to the center of reservoirs C, to conduct the pulp to the center of each column of 50 quicksilver.

The operation of the amalgamating-machine is as follows: The pulp or material coming through the upper end of sluice S falls into one of the cylinders A, the piston of that cylinder being elevated, so as to let the pulp pass it and reach the quicksilver. When a sufficient quantity has deposited on the top of the quicksilver in that cylinder, the gate closes by means of crank Q, thereby allowing the 60 pulp to flow into the other cylinder. At the same time, through the motion of the walking-beam E, the piston of the cylinder first filled descends, displacing the quicksilver and forcing the pulp down and out through the ports 65 M and into the reservoir C when it is at the bottom of the quicksilver. The pulp is then subject only to the action of gravitation and ascends with the assistance of a flow of water, which is combined with or is part of the pulp 70 through the column of quicksilver, and overflows reservoir C into settler D. The operation is alternately repeated in each cylinder, and an equal amount of pulp is received and discharged alternately from each cylinder, 75 making the operation continuous. The gate T is so regulated and the movements are so timed as to direct the feed into each cylinder at the time when its piston is up so that the pulp may pass under it.

Having thus described my apparatus, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In an amalgamator, the combination of the cylinders having funnels at their tops and 85 ports M at their bottoms, their pistons, the reservoirs C, and the forked sluice S, with its gate, substantially as set forth.

2. In an amalgamator, the combination of the cylinders and alternately-operating pistons, a sluice adapted to feed each cylinder alternately, quicksilver-reservoirs for the cylinders, and a receptacle or settler, D, substantially as set forth.

In testimony whereof I have hereunto sub- 95 scribed my name.

MYRON J. AMICK.

Witnesses:

M. M. ARANT,
W. H. WOOD.