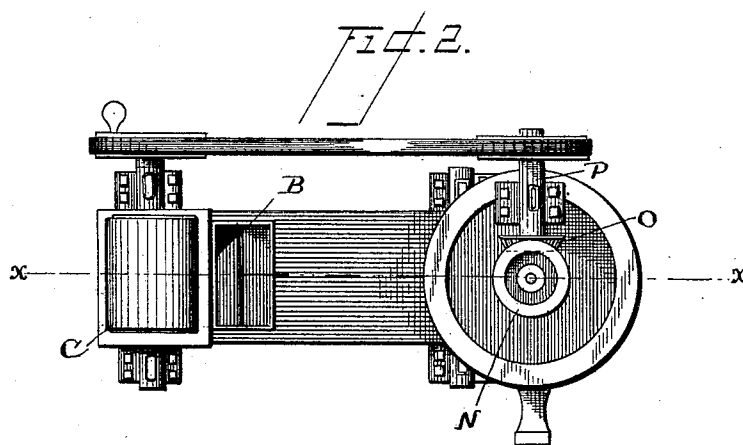
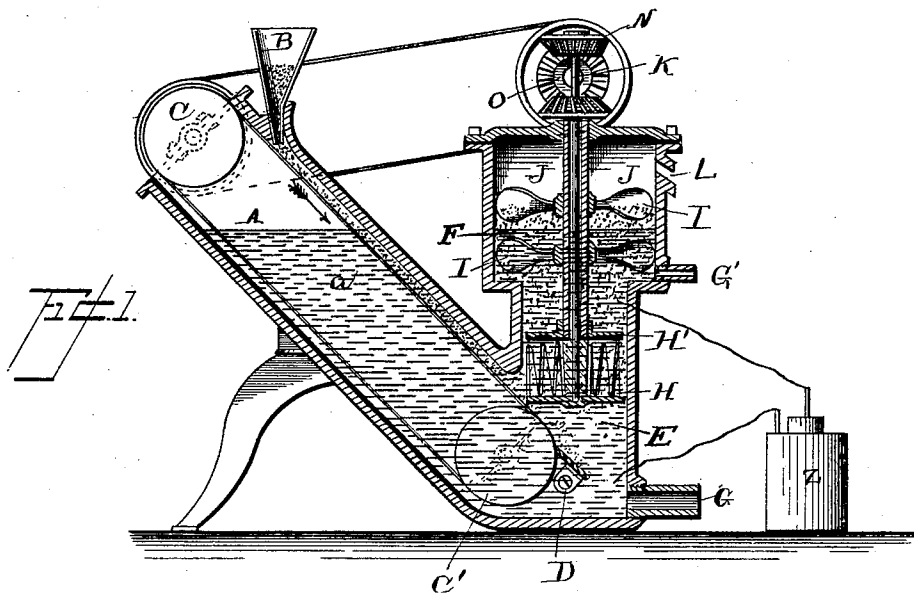


(No Model.)

J. M. THOMPSON.
AMALGAMATOR.

No. 475,360.

Patented May 24, 1892.



Witnesses
C. Johnson.
J. R. Nottingham

Inventor
James M. Thompson,
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UNITED STATES PATENT OFFICE.

JAMES M. THOMPSON, OF SAN FRANCISCO, CALIFORNIA.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 475,360, dated May 24, 1892.

Application filed January 12, 1891. Serial No. 377,580. (No model.)

To all whom it may concern:

Be it known that I, JAMES MERIDETH THOMPSON, a citizen of the United States, residing at the city and county of San Francisco, State of California, have invented a new and useful Amalgamator, of which the following is a specification.

My invention relates to that class of amalgamators in which the pulp, tailings, sand, or pulverized ore is distributed and forced to pass through a large body of mercury; and the objects of my improvements are, first, to provide means of diffusing the pulp through a large body of mercury without flouring it, and, second, to provide an apparatus at once substantial, inexpensive, and effective. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the entire machine, taken along the line *x x* of Fig. 2. Fig. 2 is a top view of the machine except the battery.

Similar letters refer to similar parts throughout both views.

The belt-box A is supplied with two pulleys C and C', which carry the endless belt *a*.

B is a hopper or funnel through which the pulp, sand, pulverized ore, or tailings is fed into the apparatus. From the hopper the pulp is deposited upon the upper surface of the belt *a*, which conveys it in the direction indicated by the arrow down into the mercury well or chamber E until it reaches the scraper D, which removes it from the belt and deflects it through the mercury in chamber E. As the pulp rises toward the top of the mercury it comes in contact with the agitators H and H', which revolve each in opposite directions and are for the purpose of separating the pulp into minute particles and mixing and diffusing it with the mercury, thus effecting a complete amalgamation by causing every particle of the pulp (and precious metal) to come in contact with the mercury.

F is a chamber for containing an excess of water and the pulp as it rises to the surface of the mercury. Its contents is kept in a state

of commotion by the paddles I I, which prevent a deposit of sand or sediment on the surface of the quicksilver. The paddles I I and the agitator H' are attached to the hollow shaft J, which shaft is caused to revolve by bevel gear-wheel M. The agitator H, attached to shaft K, revolves in direction opposite to agitator H'. Shaft K has bevel gear-wheel N attached and is caused to revolve thereby.

P is a shaft having attached bevel gear-wheel O and may be revolved by means of the belt and pulley shown or by other known and appropriate means.

L is an overflow or waste.

G is a draw-off pipe for chamber E.

G' is a draw-off pipe for chamber F.

Z is a battery the poles of which are connected with the mercury in chamber E above and below by means of wires, the mercury completing the circuit. It is for the purpose of keeping the mercury clean. Pulley C is caused to revolve, and thus the belt to move, by means of any suitable gearing with extrinsic power or by means of a crank.

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

The combination of an angular vessel having a vertical and an inclined chamber communicating at the bottom, an endless belt in the inclined chamber, a scraper in juxtaposition to the belt, pulleys upon which the belt runs, a vertical sleeve in the vertical chamber carrying a disk at the bottom provided with downwardly-projecting agitators and above said disk a series of radial paddles, a shaft within said sleeve, having a rotary disk at the bottom provided with upwardly-projecting agitators, a gear upon both sleeve and shaft, means for driving said sleeve, shaft, and endless belt, a battery, wire connections with said battery to the interior of the vessel above and below the agitators, and a mercury bath in said vessel, substantially as set forth.

J. M. THOMPSON.

Witnesses:

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