

(No Model.)

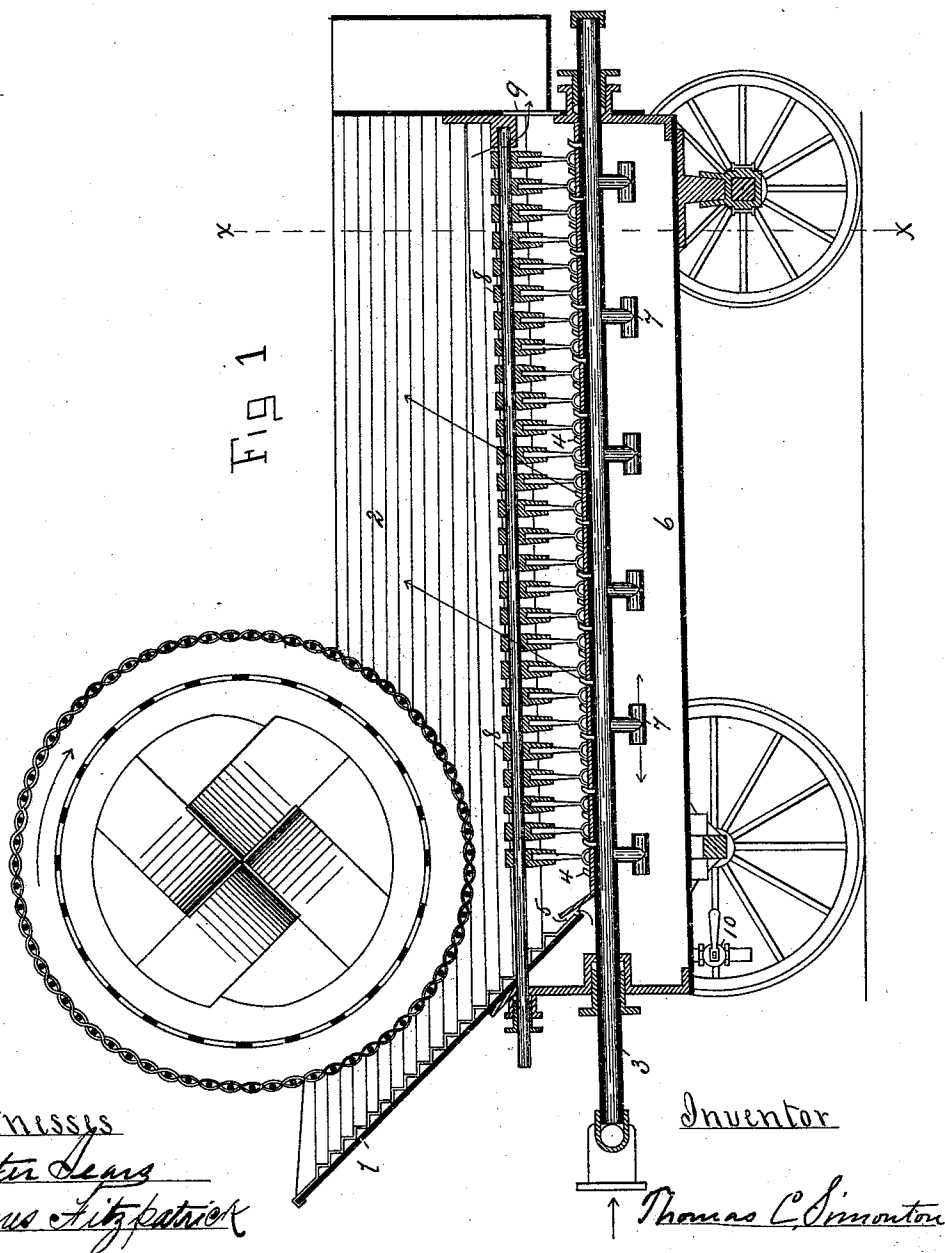
2 Sheets—Sheet 1.

T. C. SIMONTON.

MACHINE FOR EXTRACTING GOLD FROM PULVERIZED ORES, &c.

No. 478,971.

Patented July 12, 1892.



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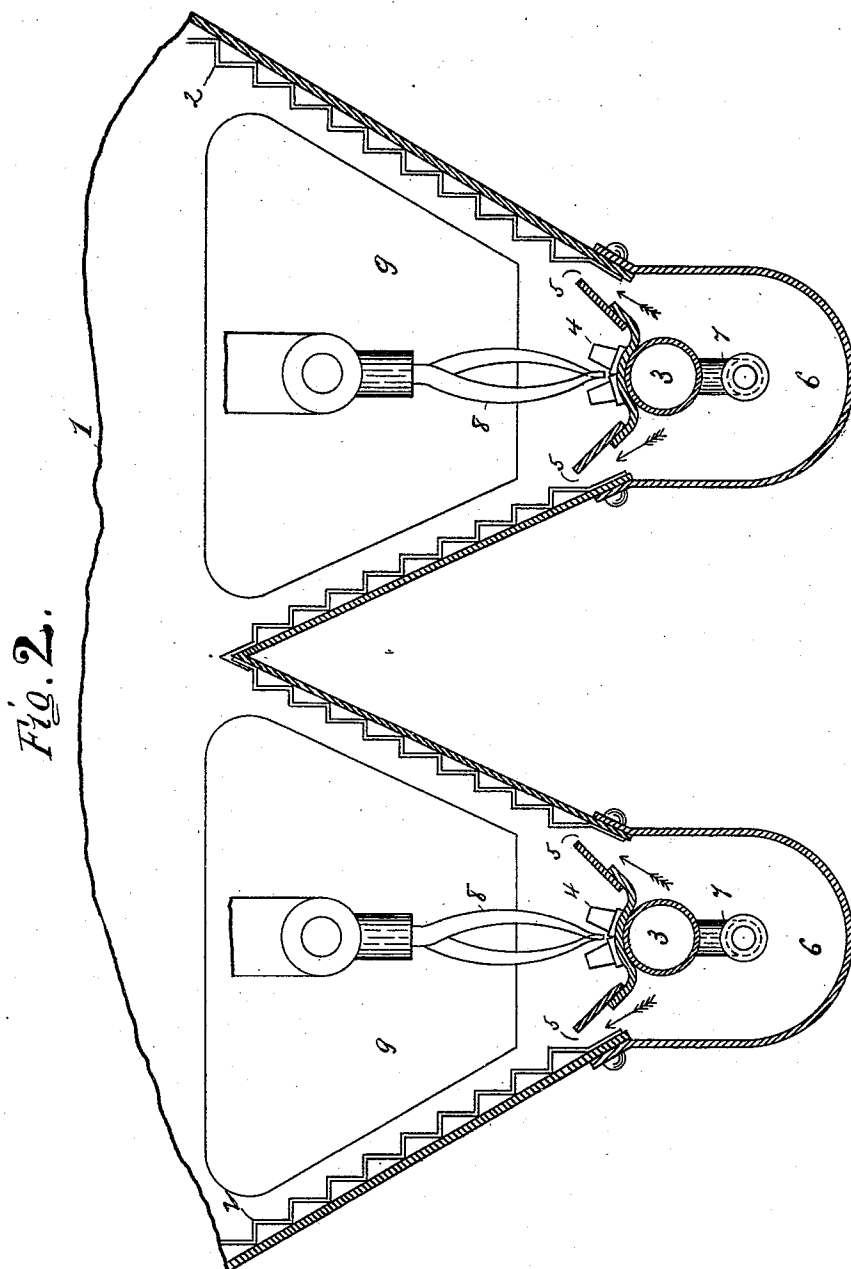
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No. 478,971.

Patented July 12, 1892.



Witnesses

Rich. J. Briody
William C. McKee

Inventor

Thomas C. Simonton

UNITED STATES PATENT OFFICE.

THOMAS C. SIMONTON, OF PATERSON, NEW JERSEY, ASSIGNOR OF ONE-HALF
TO THOMAS C. SIMONTON, JR., OF SAME PLACE.

MACHINE FOR EXTRACTING GOLD FROM PULVERIZED ORES, &c.

SPECIFICATION forming part of Letters Patent No. 478,971, dated July 12, 1892.

Application filed May 16, 1891. Serial No. 392,970. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. SIMONTON, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented new and useful Improvements in Machines for Extracting Gold from Pulverized Ores and Gold from Auriferous Sands and Gravels, of which the following is a specification.

My improvements relate to a class of machines for this purpose shown and described in Letters Patents of the United States issued June 23, 1885, and November 3, 1885, and numbered 320,655 and 329,832, respectively, the first granted to Jacob L. Hayward and the second to Jacob L. Hayward, Thomas C. Simonton, and Thomas C. Simonton, Jr., and to such other machines of like kind wherein upward currents of water are forced through a body of water confined in a tank lined with amalgamated plates to carry the material being treated from the time it is fed into the machine until discharged to the surface of the water and there allow it to gravitate and come in contact with the said amalgamated plates. In these machines, and especially in the two embraced in the said two Letters Patent, there is a mercury-receptacle, (and in some there may be more than one,) which is separated from the main body of the tank or the bottom of it. Into this mercury-receptacle the surplus mercury fed upon the amalgamated plates lining the machine runs and carries with it more or less gold. I have found from actual experience that not only the surplus mercury but a great deal of the pulverized ore or the sand and gravel being treated and passed through the tank also finds its way into these receptacles and mixes with the mercury, closes up the openings from the tank into the mercury-receptacle, and prevents the mercury from running in, and also closes the receptacle up entirely, and thus a great deal of the mercury is lost and with it whatever gold it contains.

My invention therefore consists in overcoming this difficulty, which I do and attain by the introduction of a current or currents of water forced under pressure into the mercury receptacle or receptacles of such ma-

chines, and the water so forced into the mercury receptacle or receptacles produces a current from the receptacle out into the main body of the tank, and while it is not of sufficient force to prevent the mercury from passing from the amalgamated plates or the main tank, does prevent the ore, gravel, or sand being treated, being of less specific gravity, from passing into the receptacle or receptacles and from closing up or lodging in the openings from the main tank to them.

For the purpose of illustrating my invention I show the same as adapted and applied to the machines shown and covered by the two Letters Patent above referred to; but I do not confine my invention to these machines. I attain the objects named by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the machine, showing only one valley. Fig. 2 is a cross-section of the same near the tailings-tank, showing the main tank divided into two longitudinal valleys and two bottoms and showing the openings into the tailings-tank.

Like numbers refer to like parts throughout the views.

1 represents the tank; 2, the amalgamated plates lining the inside of the tank. 3 are the water-supply pipes. 4 are the jet-nozzles on the supply-pipes. 5 are the longitudinal spaces or openings from the tank above into the mercury-receptacles 6 below. 7 are the T-nozzles on the underside of the supply-pipes 3. 8 are the agitators. 9 are the openings from the main into the tailings-tank. 10 is the draw-off cock for the mercury.

The mode of operating these machines, except so far as relates to my improvements, is well known and is described in the Letters Patent above referred to. My said improvements consist, as I have above stated, in introducing water under pressure into the mercury receptacle or receptacles, and this, as shown in the drawings, is done through the T pipe or nozzles 7 on the under side of the supply-pipes 3, and the reason I show and prefer to use a T pipe or nozzle is to distribute the force of the water and to keep the currents from striking the bottom of the recep-

5 tacle and flouting the mercury that may be
 there. The water to run the machine and
 carry the gravel, sand, or other material to be
 treated is fed under pressure into the machine
 10 through the supply-pipes 3 and jet-nozzles 4,
 and that used to create the pressure in the
 mercury-receptacles 6 is fed therein through
 the T-nozzles 7, and the water so introduced
 into the mercury-receptacles produces an up-
 ward current, as indicated by the arrows in
 the drawings, through the spaces 5 into the
 tank above, for the purposes set forth above.

15 I do not confine myself to any particular
 manner of introducing the water under press-
 ure into the mercury-receptacle for the pur-
 pose aforesaid. That shown in the drawings
 is the most convenient mode, but the water
 may be introduced by means of a separate
 pipe or pipes.

20 Having thus described my invention, what
 I claim, and desire to secure by Letters Pat-
 ent, is—

25 1. In a machine for extracting gold and sil-
 ver and lined with amalgamated plates, the
 combination of a supply pipe or pipes having
 a series of jet-nozzles on the upper side of the
 pipe attached thereto, and such pipe or pipes
 running through the tank longitudinally at
 or near the bottom thereof, with a mercury
 30 receptacle or receptacles partly separated
 from the main tank and supplied with a pipe
 or pipes through which water may be forced,
 for the purposes above set forth.

35 2. The combination of tank 1, lined with
 amalgamated plates 2 and having supply-
 pipes 3 running longitudinally along the val-
 ley or valleys of the tank and having jet-noz-
 zles 4 on the upper surface and agitators 8 be-
 40 tween the jet-nozzles 4 with the mercury-re-
 ceptacles 6, provided with T-nozzles 7 and

connected with tank 1 through spaces 5, sub-
 stantially as and for the purposes above set
 forth.

45 3. In a machine for extracting gold from
 auriferous ores, a tank lined with amalgam-
 ated plates and having a longitudinal angu-
 lar bottom or bottoms and having a supply-
 pipe in each bottom, upon the upper surface
 of each of which is a row of diagonal jet-noz-
 zles, between which latter are agitators, in
 50 combination with a mercury-receptacle in the
 bottom of the tank, connected therewith by
 slight openings and having a pipe or pipes
 connected with the said mercury-receptacle
 for the supplying of water therein under press-
 55 ure, substantially for the purposes above set
 forth.

60 4. In a machine for extracting gold and
 lined with amalgamated plates, the combina-
 tion of a mercury-receptacle having connected
 therewith a pipe or pipes through which water
 may be introduced therein with a tank lined
 with amalgamated plates and said tank con-
 nected with the mercury-receptacle through
 spaces or openings, substantially for the pur-
 65 poses hereinabove set forth.

70 5. In an amalgamating-machine the tank
 of which is lined with amalgamated plates,
 the combination of a supply pipe or pipes hav-
 ing upon its or their upper surfaces a row of
 diagonal jet-nozzles and upon its or their un-
 der surface a series of jet-nozzles with a mer-
 cury-receptacle connected with the main tank
 by small openings, substantially for the pur-
 poses above set forth.

THOMAS C. SIMONTON.

Witnesses:

JAMES N. MATTHEWS,
 CHAS. C. WOOD.