J. H. FISHER.

Ore Amalgamator.

No. 19,246 Patented Feb. 2, 1858.

Fig. 2.

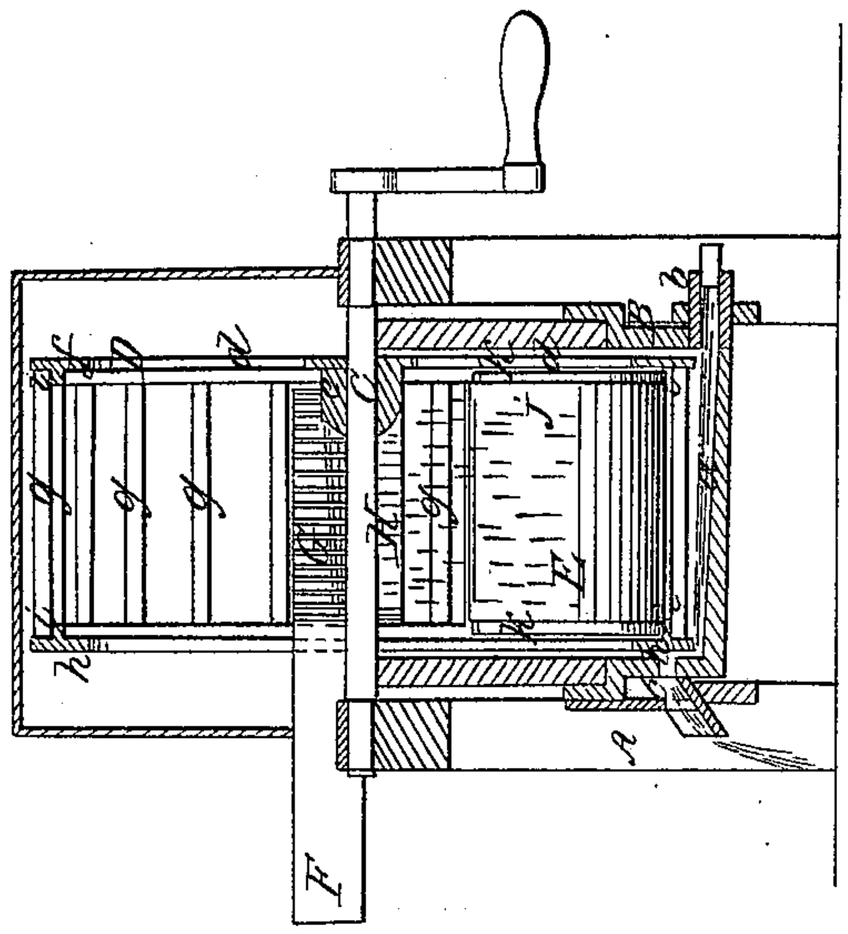
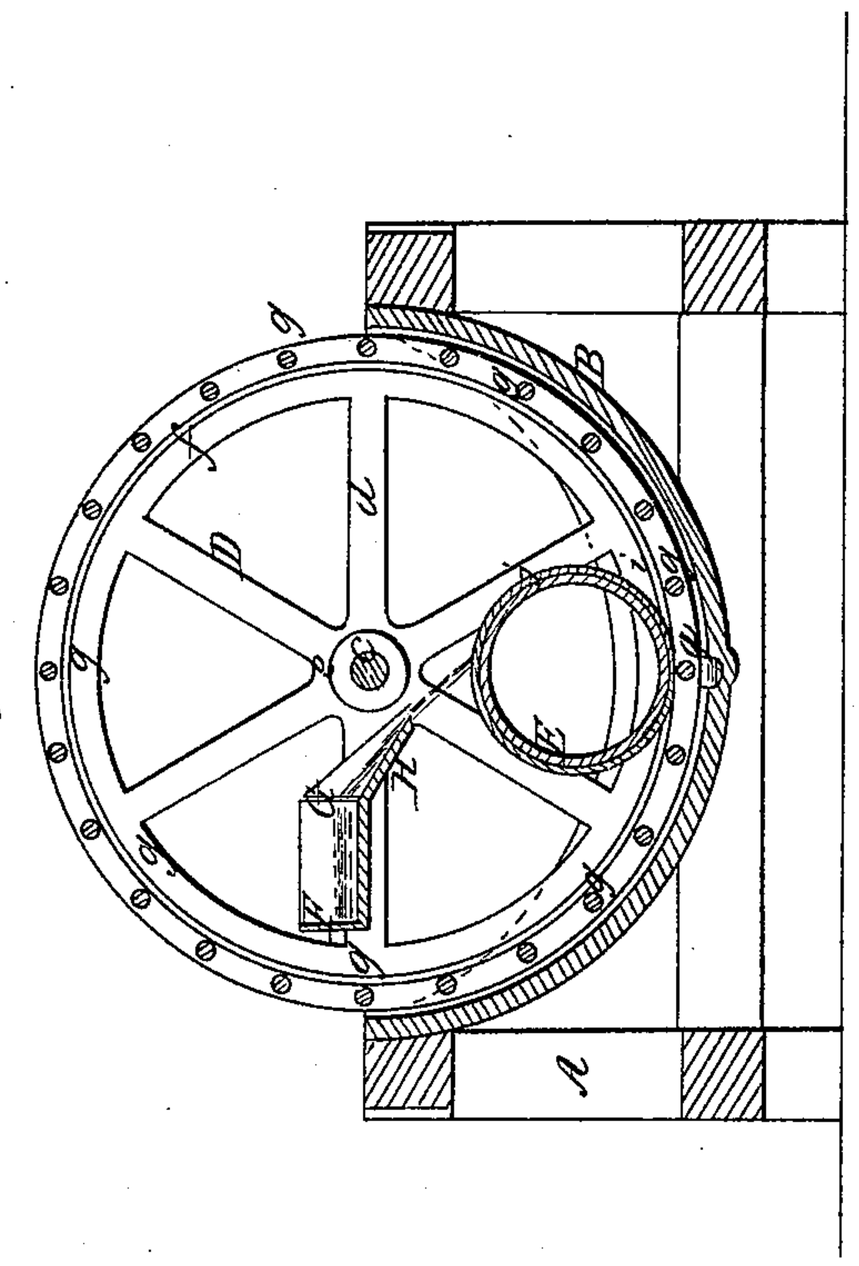


Fig. 1.



UNITED STATES PATENT OFFICE.

JOSEPH H. FISHER, OF PLACERVILLE, CALIFORNIA.

IMPROVED GOLD-AMALGAMATOR.

Specification forming part of Letters Patent No. **19,246**, dated February 2, 1858.

To all whom it may concern:

Be it known that I, JOSEPH H. FISHER, of Placerville, in the county of El Dorado and State of California, have invented a new and useful Amalgamating Attachment to be Applied to Gold-Quartz Crushers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figures 1 and 2 are vertical central sections of my improvement, the two planes of section crossing each other at right angles.

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

The object of this invention is to receive and retain the small globules of alloys (mercury and gold) which escape with the wash from gold-quartz washers. The globules in the aggregate are of considerable value, and have hitherto been allowed to escape, no means, so far as I am aware, having been devised to retain them.

The invention consists in placing a cylinder having a periphery or face of silver, or other metal which readily amalgamates with mercury, within a wheel which is placed within a box, the face of the wheel being open, or formed of bars or slats, and the whole so arranged that the wash from the crusher is made to fall upon the silver face of the cylinder, which is rotated slowly by rotating the wheel, and of course amalgamates with and unites the globules of alloys, thereby separating the same from the impurities of the wash.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a rectangular framing, within which a semi-cylindrical case, B, is placed. This case may be constructed wholly or in part of cast-iron, and at the center of the bottom of the case an inclined groove, *a*, is made, said groove communicating at its lower end with a faucet, *b*. At the opposite side of the case, and at a point somewhat higher than the faucet *b*, an opening, *c*, is made, as shown clearly in Fig. 2.

C represents a shaft, which is placed on the upper part of the frame A, at about its center, and D is a wheel, which is placed on said shaft. This wheel is formed of one series of arms, *d*, attached to the shaft C by a hub, *e*, the hub and arms being cast in one piece, and the ends of the arms having a rim, *f*, attached to them. This rim has horizontal bars *g* attached to it, the opposite ends of which are attached to a rim, *h*. The rims *f h* and bars *g* form the periphery of the wheel. The bars *g* are placed at suitable distances apart, and each rim *f h* is provided with a flange, *i*, at its inner side, to form ways for a hollow cylinder, E, which is placed within the wheel D.

The cylinder E is constructed of cast-iron, and is encompassed by a plate, *j*, of silver, which extends its whole length, with the exception of the ends or parts R R, that rest on the ways or flanges *i*. (See Fig. 2). The periphery of the cylinder E is a short distance above the bottom of the case B, as shown in Fig. 2.

F is a trough or spout, through which the wash escapes from the crusher. This spout extends within the wheel D, and a grating, G, is formed at one side. Directly below the grating G an inclined plate, H, is attached at such an angle that the wash is conducted directly upon the cylinder E.

The operation is as follows: As the wash from the quartz-crusher falls upon the cylinder E, the silver plate or surface *j*, which forms the face or periphery of the same, will amalgamate with the globules of quicksilver or other alloy of quicksilver and gold which the wash contains, and said globules will be united in a mass as they fall upon the silver *j*, the cylinder E slowly rotating, in consequence of the rotation of the wheel D, and the amalgam or alloy falling from the surface *j* of the cylinder as it increases in weight and passing out through the faucet *b*, which is opened for that purpose, the light impurities of the wash passing out through the opening *c*. By this improvement it will be seen that all the fine globules of alloys will be retained in consequence of being united into one mass by means of the cylinder E.

The bars *g* of the wheel D serve to agitate any sediment which may collect at the bottom of case B, so that any globules of alloy which it may contain will be brought in contact with the face *j* of cylinder E.

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

The employment of a rotating cylinder having its face or periphery *j* of silver or other suitable metal, and placed within a wheel, D, or arranged in any suitable or equivalent way so as to receive the wash from the crusher, and unite by amalgamation the globules of alloy that escape with the wash from the crusher, as herein described.

JOSEPH H. FISHER.

Witnesses:
C. Y. DORRANCE,
C. P. ALTREE.