2 Sheets—Sheet 1.

J. & E. W. BARKER.

Ore Amalgamator.

No. 22,616. Patented Jan. 18, 1859.

Fig. 1.

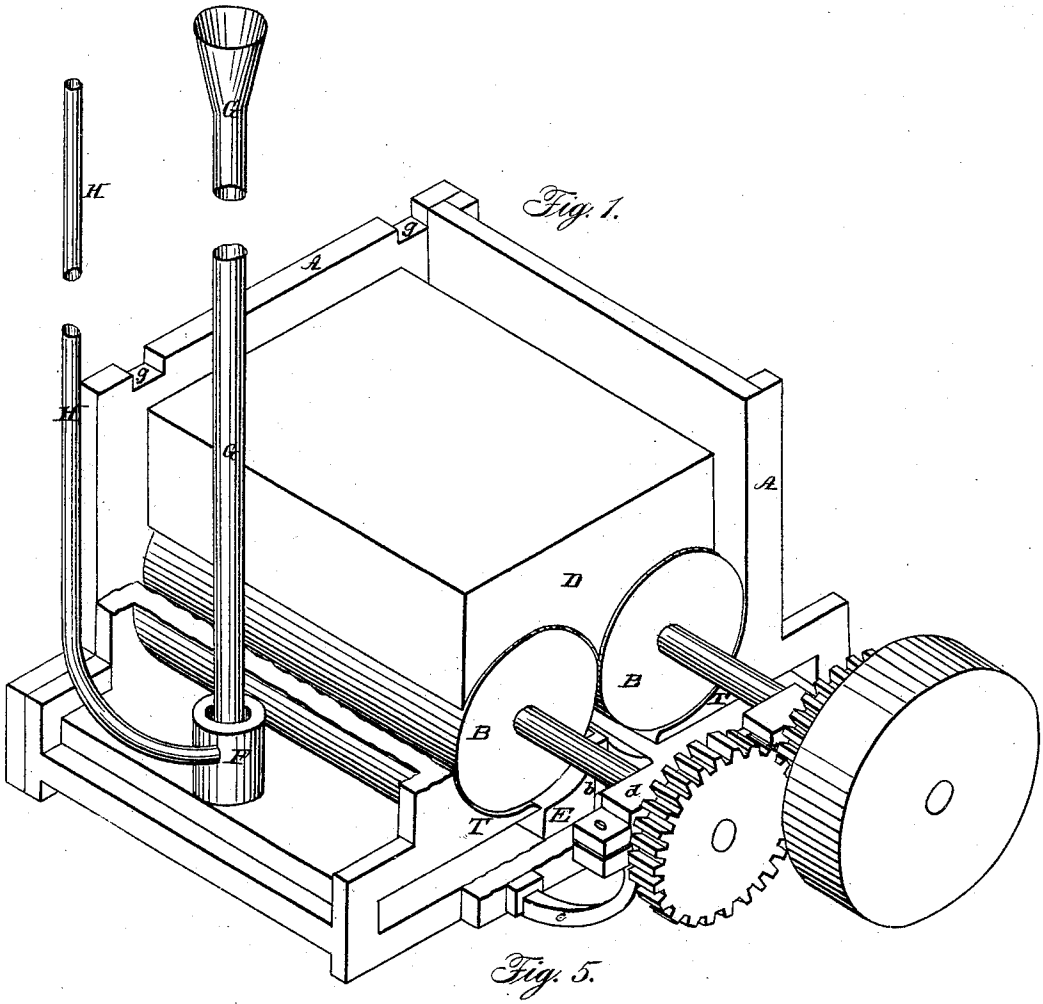
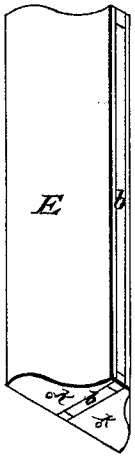


Fig. 5.



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A.M. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

2 Sheets—Sheet 2.

J. & E. W. BARKER.

Ore Amalgamator.

No. 22,616. Patented Jan. 18, 1859.

Fig. 2.

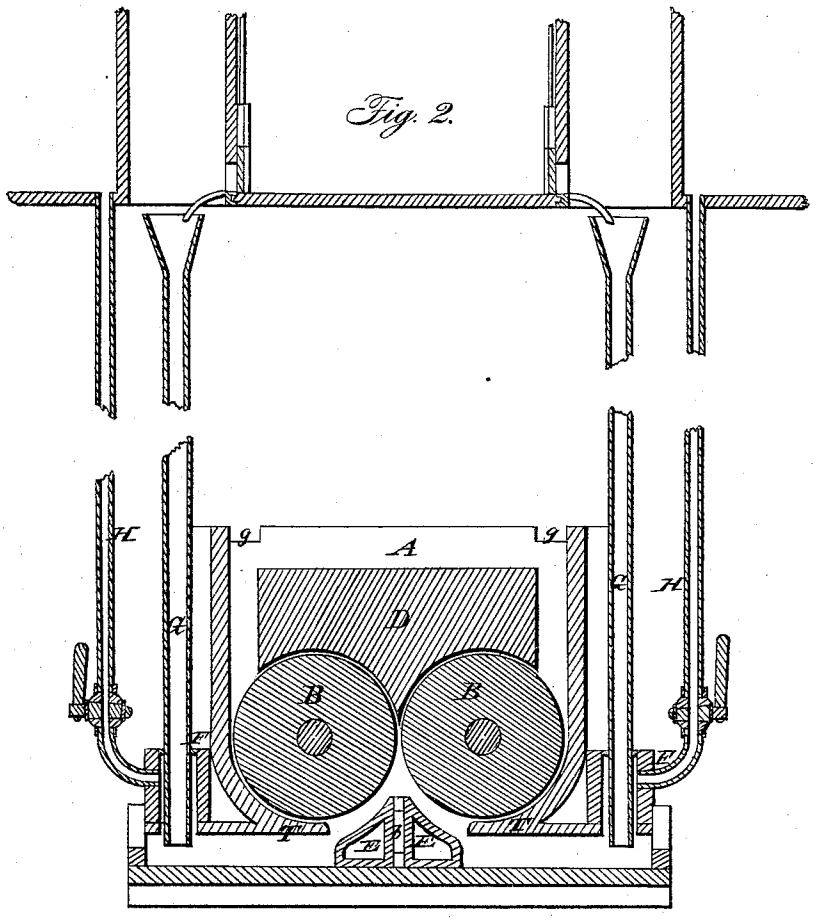


Fig. 3.

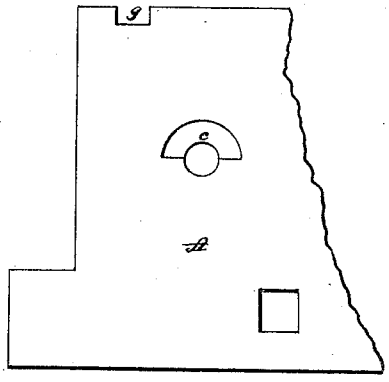
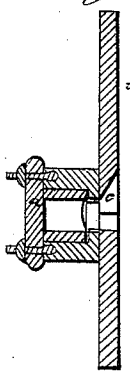


Fig. 4.



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UNITED STATES PATENT OFFICE.

JNO. BARKER AND EDWD. W. BARKER, OF BALTIMORE, MARYLAND.

AMALGAMATOR.

Specification of Letters Patent No. 22,616, dated January 18, 1859.

To all whom it may concern:

Be it known that we, JOHN BARKER and EDWARD W. BARKER, both of the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Amalgamators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a perspective view of the amalgamator with the side and a portion of the end of the case removed in order to show the interior and working parts. Fig. 2 represents a vertical transverse section of the same. Figs. 3 and 4 represent views of the roller bearings in the casing, and Fig. 5 represents a perspective view of the lower rubber.

The object of our improvements in amalgamators is to facilitate the separation of the precious metals, but more especially gold, from the gangue in which it is contained by the well known process of amalgamation.

The only effective mode heretofore practiced for separating gold from the metals, rocks or earths with which it is combined or mingled is to reduce the gangue to an impalpable powder and during the process of commutation, or after it has been reduced, to triturate the material in a wet state with quicksilver. It has been found absolutely essential to perfect the separation and to save the fine gold and those particles coated with sulfur or arsenic to remove all extraneous matter from, the surface and rub them with quicksilver before they will combine and form an amalgam. The machines by which this has been effectually accomplished are slow in their operations and limited in their capacity, so much so that in large works they have never been used with advantage. Other machines more rapid in operation but less efficacious in saving the gold being preferred. Heretofore the machines that have been invented to hasten this process have failed in saving the fine particles of gold, as the material in most of them passes over the surface or through a thin sheet of quicksilver, and in no instance within our knowledge has the material been subjected to a rubbing process while it is surrounded by or passing through a body of quicksilver.

Our improvements in amalgamators consist, first, in combining with levigating rollers a top and bottom rubber so arranged that the material as it passes through the amalgamator is carried between the rubbers and rollers, thereby reducing and separating the material from the gold more perfectly and rubbing and brightening the particles of gold so that they combine more readily with the quicksilver; second, in preventing the material as it passes through the amalgamator from settling on the bottom, clogging the rollers and rubbers and filling the amalgamator, by throwing an independent jet of water into the amalgamator, which is so arranged as to pass around the bottom of the feed pipe, mingle with and give the material greater fluidity and velocity; third, constructing the lower rubber hollow with openings to admit the quicksilver into its interior, whereby its buoyancy may be increased or diminished, in order to regulate its pressure against the under side of the rollers; fourth, forming a channel through the lower rubber at its apex, (the point which extends upward between the rollers) in order to admit the larger and heavier particles of gold and amalgam to pass downward instead of passing between and over the rollers; fifth, in directing the inflowing current of the material toward and between the two rollers by means of a concave plate, arranged to pass partially around and under each roller, and extend a short distance beyond their centers; sixth, forming a recess in the side of the casing, extending from above and partially around the journals of the rollers for the escape of the crushed quartz or other material which in passing upward is liable to enter and cut the journals and boxes of the rollers.

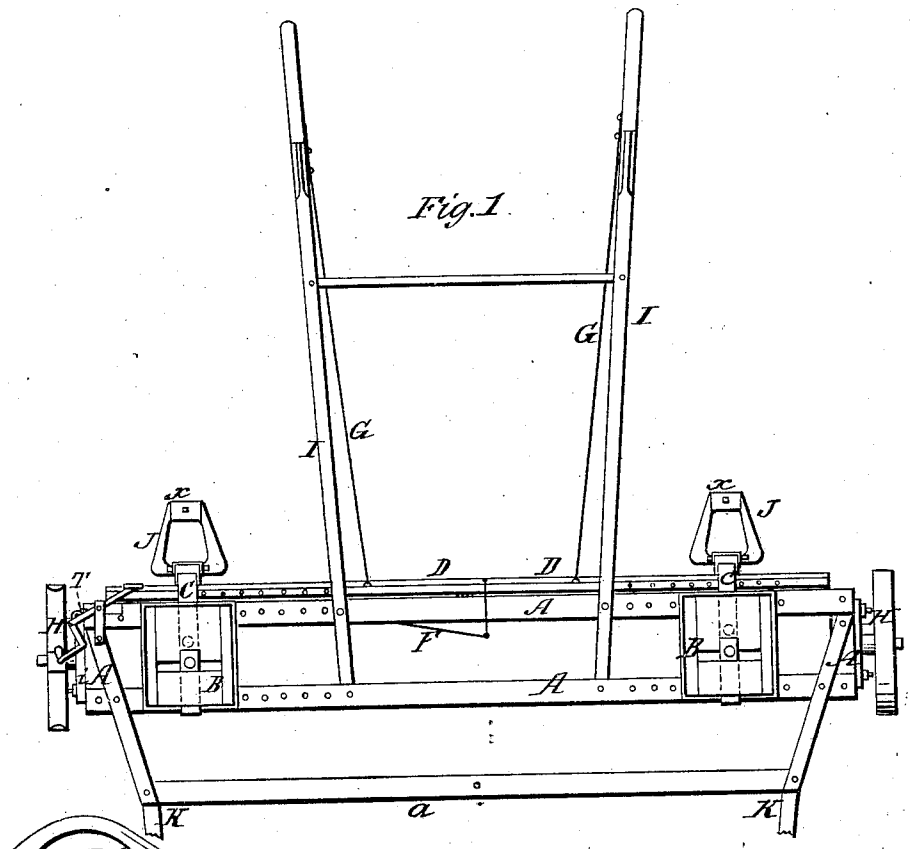
In the accompanying drawings is represented an amalgamator embracing our improvements and it consists of a rectangular case (A) of convenient size to hold the working parts of the machine. Within this case and placed side by side and close to each other are two iron case hardened levigating rollers (B B) the journals of which have their bearings at one end in the stuffing boxes (*a*) in the end of the casing and at the other end pass through stuffing boxes (*b*) and are supported by boxes (*d*) on brackets (*c*) extending upward from the bottom of the casing. A metallic rubber

BECKWITH & GAGE.

Seed-Planter.

No. 22,617. Patented Jan. 18, 1859.

Fig. 1.



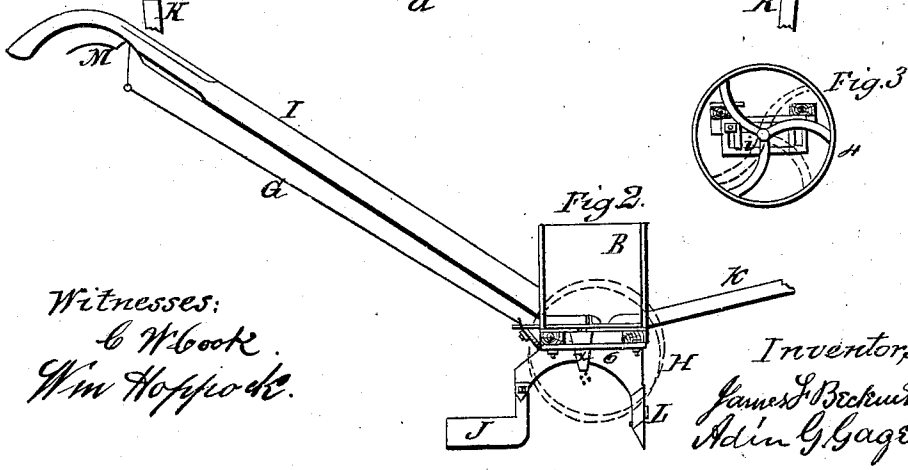


Fig. 3.

Fig. 2.

Witnesses:
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