(No Model.) 2 Sheets—Sheet 1.

J. WILKINS.

AMALGAMATOR.

No. 345,096. Patented July 6, 1886.

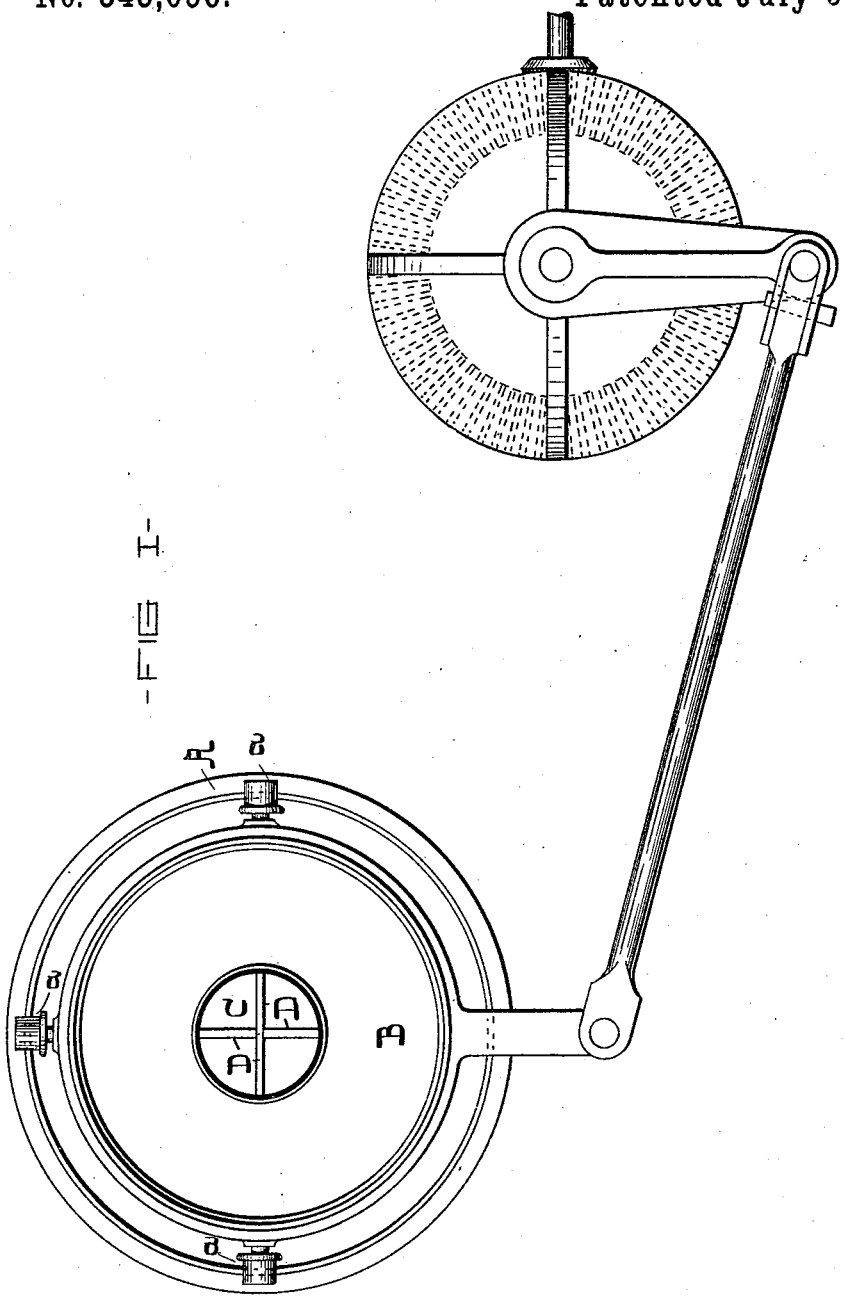

FIG. 1.

WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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FIG II.

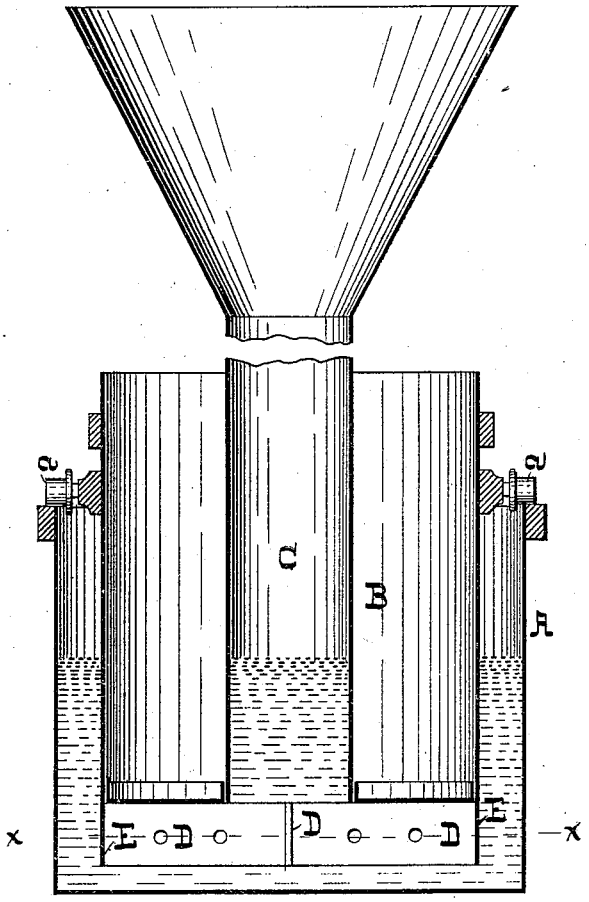
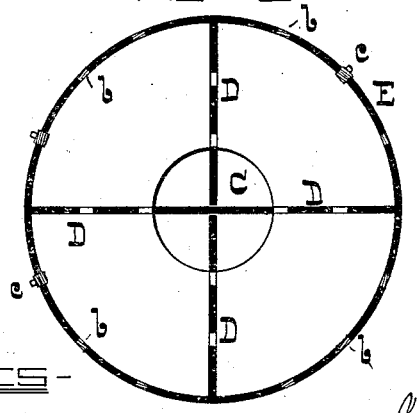


FIG III.



WITNESSES

David Fisher

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UNITED STATES PATENT OFFICE.

JOSEPH WILKINS, OF BALTIMORE, MARYLAND.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 345,096, dated July 6, 1886.

Application filed March 5, 1886. Serial No. 194,125. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WILKINS, of the city of Baltimore and State of Maryland, have invented certain Improvements in Amalgamators, of which the following is a specification.

This invention relates to certain improvements in that class of amalgamators in which the ore is conducted through a suitable pipe to the bottom of a rotative vessel and discharged through a body of mercury contained in a space between the said rotative vessel and an outer stationary one. Amalgamators of the above-described class are generally provided with wings secured to the bottom of the inner vessel to agitate the ore as it passes through the mercury.

It is found in practice that in amalgamators constructed as described the wings, while necessary to effect the agitation of the ore and mercury, cause the too rapid discharge of the ore, the same not being retained for a sufficient length of time near the bottom of the body of mercury.

My present invention is for the purpose of retarding the liberation of ore in the body of mercury; and to this end the said invention consists in providing the wings with a circumferential hoop which is perforated to admit of the exit of the ore, the combined areas of the said holes being equal to the discharge-opening necessary to effect the proper amalgamation. The wings may be also perforated, if desired, to give means of communication between the spaces formed by the crossed wings.

In the accompanying drawings, forming a part hereof, Figure I is a plan of the amalgamator without the hopper, hereinafter described. Fig. II is a vertical section of the amalgamator. Fig. III is a cross-section taken on the dotted line *x x*, Fig. II.

A is a stationary vessel formed of iron, so as to not amalgamate with the mercury contained therein.

B is an inner rotative, or partially rotative, vessel supported by rollers *a a* from the upper edge of the outer vessel, A.

C is a central pipe having a hopper at its upper end, which extends to the bottom of the vessel B, where it is open. The height of the pipe C is such that the weight of the column of ore, or ore and water, will overcome the pressure of the resisting body of mercury and allow the ore to pass to the surface of the mercury.

D D are wings secured to the bottom of the inner rotative vessel, B, to agitate the ore in the body of mercury; and E is a hoop which surrounds the wings D D and is secured to their ends. This hoop has a number of holes, *b*, for the exit of the ore which is thrown off by centrifugal force from the wings, and, in order that the area of the combined holes may be alterable or adjustable, the said holes, or some of them, are threaded, to admit of screw-plugs *c* being inserted in them, as shown in Fig. III.

The wings D D may also have holes in them if such perforations are found necessary to allow of the passage of ore from one triangular space to another.

With the perforated hoop E surrounding the wings D D, as described, the ore is held for a much greater length of time in contact with the mercury and better results obtained.

I claim as my invention—

In an amalgamator, an outer stationary vessel, an inner rotative or partially rotative one, having a central supply-pipe for the ore, wings projecting from the bottom of the inner vessel, and a perforated hoop which surrounds the said wings, all combined substantially as and for the purpose specified.

JOS. WILKINS.

Witnesses:
WM. T. HOWARD,
DANL. FISHER.