

(No Model.)

H. COOK.
AMALGAMATOR.

No. 375,733.

Patented Jan. 3, 1888.

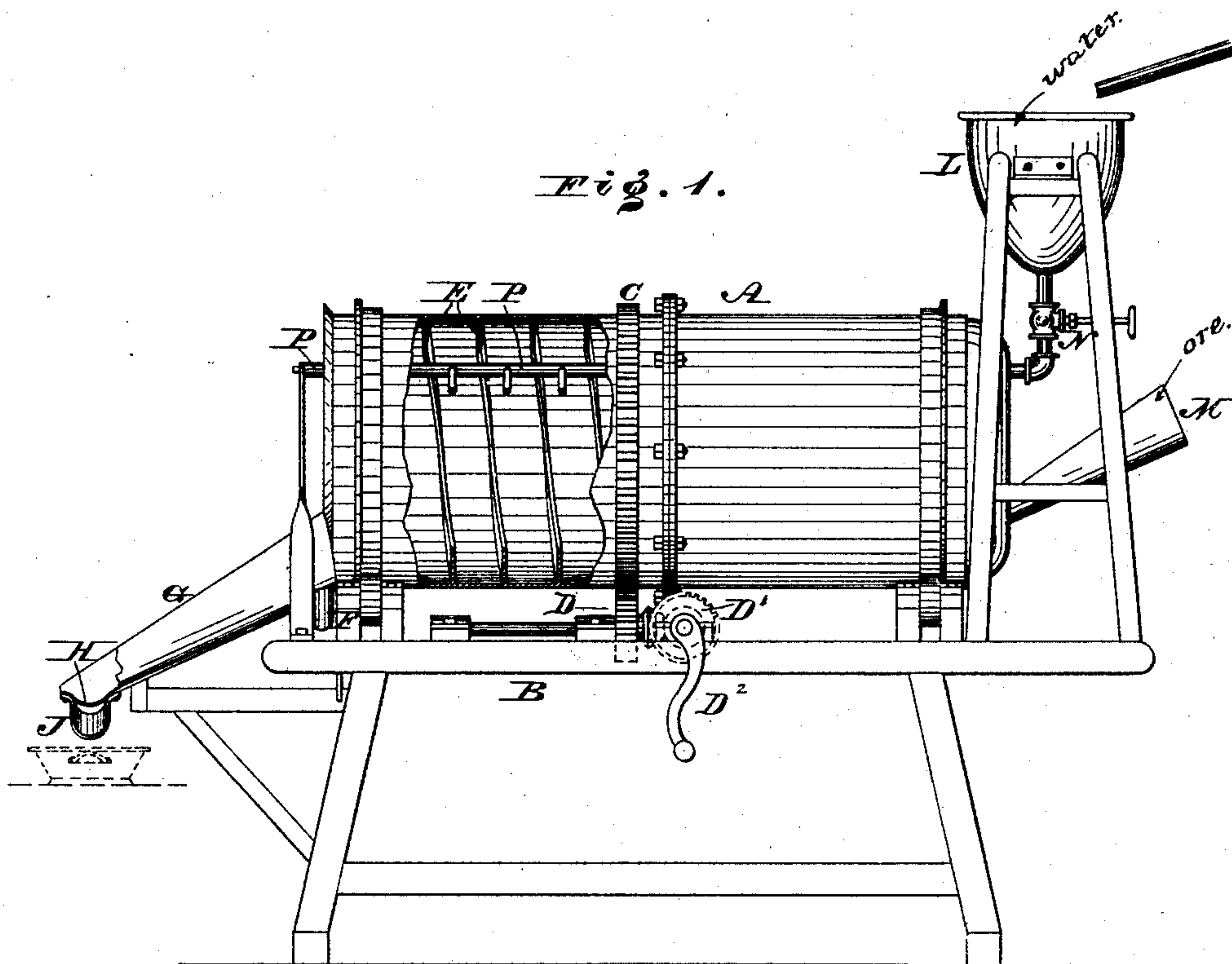


Fig. 2.

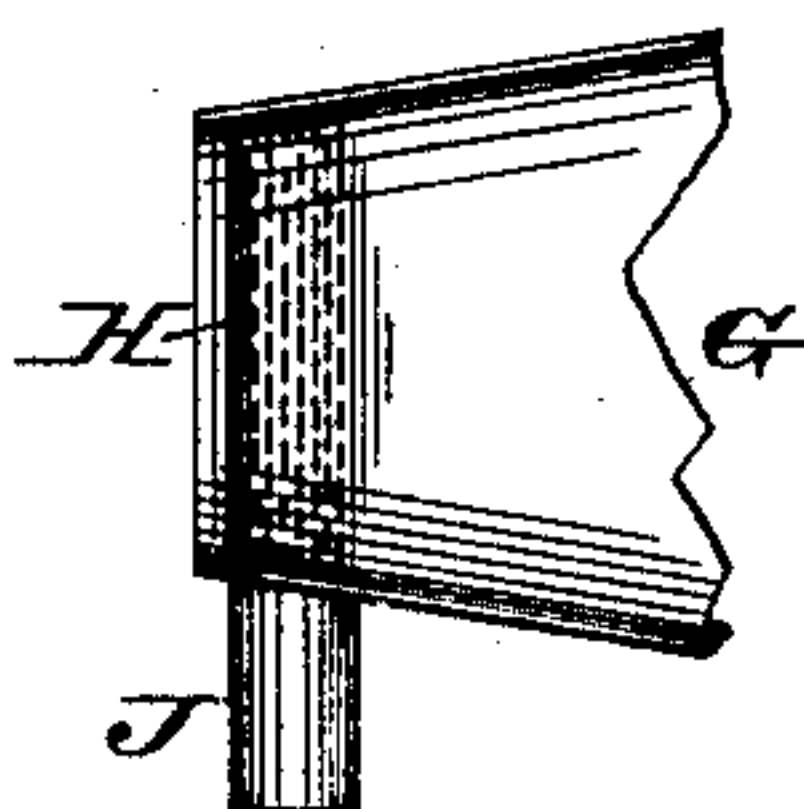
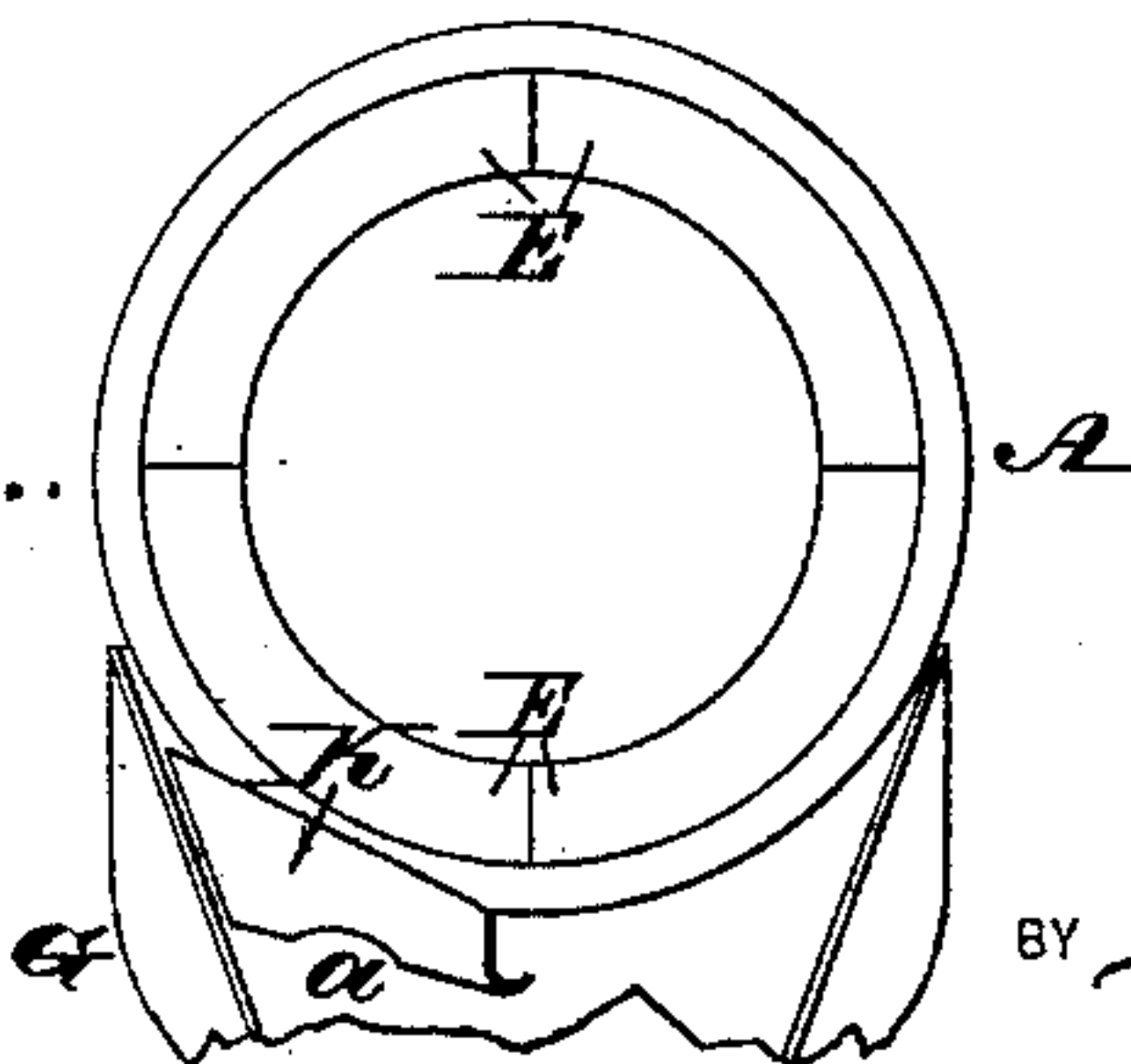


Fig. 3.



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HENRY COOK, OF PHILADELPHIA, PENNSYLVANIA.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 375,733, dated January 3, 1888.

Application filed October 2, 1886. Serial No. 215,132. (No model.)

To all whom it may concern:

Be it known that I, HENRY COOK, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Amalgamators, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a partial side elevation and partial vertical section of an amalgamator embodying my invention. Fig. 2 represents a top view of a detached portion thereof. Fig. 3 represents an end view of a portion thereof.

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

My invention consists of an amalgamator having means for saving the mercury that flows or escapes from the mercury bath.

It further consists of means for effectually washing the amalgamating-table, as will be hereinafter fully set forth.

Referring to the drawings, A represents a cylindrical or other shaped receiver, which is mounted on a suitable frame or stand, B, so as to be capable of rotation thereon, motion being communicated to said receiver by means of a toothed annulus, C, which is connected with the periphery of the receiver and meshes with a pinion or gear-wheel, D, the latter having its bearings on the frame B and receiving power by means of the bevel-gearing D', operated by the handle D²; but any other suitable mechanism may be employed instead of the annulus pinion or bevel gearing for imparting rotary motion to said amalgamator, such mechanism being in itself no part of the invention herein described.

The receiver is lined with metal suitable for purposes of amalgamation, and has secured to its interior a spiral flange, E, which is also formed of metal suitable for purposes of amalgamation. The discharge end of the cylindrical receiver has a flanged rim which dips into the mercury bath F, both of which features are shown and claimed in the application filed by me May 26, 1886, Serial No. 203,272.

Secured to the frame B at the discharge end of the receiver is an inclined amalgamating-table, G, which is formed of metal suitable for amalgamating purposes, and is preferably wider at the top than at the lower end, the said lower part having a raised end portion,

and is provided with a number of slits or slots, H, extending through the same. Beneath said slots H is a spout, J, which is secured to the end of the table G, and in the present case extends transversely thereto.

To the upper or inner end of the table G is secured a water-deflector, K, the same being somewhat of channel form, open at the lower end and pointed toward the side of the table, the bottom of the deflector having a perforation, a, which is above the table and facing downwardly.

The supply end of the receiver has a water-tank, L, and a feed-chute, M, for sand or ore to be admitted into the receiver, said tank having a cock, N, for regulating the flow of water into the receiver. Within the receiver is passed a stationary pipe, P, with jets or branches for distributing the water from the tank into the receiver. The said pipe is connected at one end with a tank, which is supported on a raised portion of the frame B, the other end of the pipe resting on arms of the said frame. It will be seen that as the pulp leaves the receiver the mercury that is carried over the mercury bath reaches the table G and temporarily adheres thereto, and then flows down the same until it reaches the slots H, into which it enters. The mercury drops through the slots as fresh supplies reach the same, the slots, however, being constantly filled, so that pulp, &c., flows over the slots and is discharged at the lower end of the table. The mercury falling from the slots enters the spout J, and is directed by the latter to a tank or place of collection, the mercury thus being saved.

Owing to the rotation of the receiver, the pulp leaving the same is thrown in a measure to the side of the table G and collects irregularly thereon. The water which leaves the receiver enters the deflector K, and is discharged therefrom both through the perforation a and the open end of said deflector, the water thus being directed against the collected pulp at the side of the table as well as that on the other parts of the table, whereby the table is thoroughly washed and mercury permitted to come in contact with the face of the same, producing superior results.

I am aware that it is old to provide a mercury-receiving vessel at the discharge end of the amalgamator, and such I do not claim;

but I am not aware that an amalgamating-table as herein set forth, secured to the frame of the amalgamator and provided with a water-deflector which receives its supply of water from the receiver, emptying it upon the table, has been used before my employment thereof. The advantage of said deflector is readily seen in directing a stream of water upon the side of the table where the greater quantity of the mercury is deposited, owing to the rotary action of the receiver-cylinder of the amalgamator, and thereby causing the mercury to readily flow to the slotted portion of the table, where it escapes to the trough beneath.

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

1. An amalgamating-cylinder and gearing for rotating the same, in combination with a mercury-cup at the discharge end of said amalgamator, an amalgamating-table wider at the upper than at the lower end and provided with slots at its lower end, and a trough beneath the slotted end, substantially as described.

2. An amalgamating apparatus consisting of the frame B, having thereon an amalgamating-cylinder with gearing, substantially as described, for rotating the said amalgamating-cylinder, having at its discharge end a flaring rim and a mercury-cup, into which said rim

dips, an inclined amalgamating-table with slotted lower end, and a trough, substantially as described.

3. An amalgamating-cylinder having gearing for rotating the same, an amalgamating-table having slots at its lower end, and a perforated water-deflector attached to the upper end of said table, said parts being combined substantially as described.

4. The frame B, having a raised tank supported thereon, an amalgamating-cylinder with gearing for rotating the same, a pipe with branches leading from said tank through said amalgamating-cylinder and supported at one end on arms of the frame B, an inclined amalgamating table, and a water-deflector secured to said table, substantially as described.

5. An amalgamator consisting of a receiving-cylinder with gearing for rotating the same, in combination with a chute at the receiving end of the cylinder, a tank with water-pipe leading into said cylinder, the said pipe provided with branches or jets, an amalgamating-table at the discharge end of said receiving-cylinder having slots therein, a perforated water-deflector, and a trough, substantially as described.

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