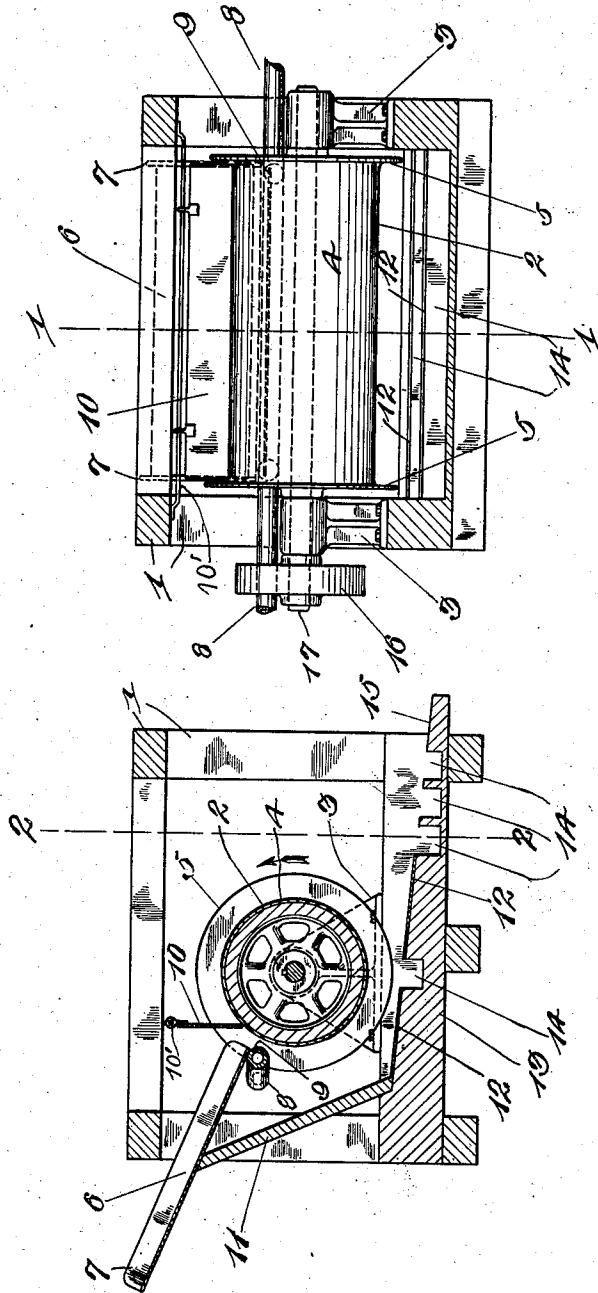


C. C. ELLIS.
AMALGAMATOR.

APPLICATION FILED NOV. 20, 1911.

1,027,244.

Patented May 21, 1912.



WITNESSES:
A. S. McIndie
Mr. R. Stern.

INVENTOR.
C. C. Ellis.
BY Watson E. Coleman
ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES C. ELLIS, OF CHATTANOOGA, TENNESSEE.

AMALGAMATOR.

1,027,244.

Specification of Letters Patent.

Patented May 21, 1912.

Application filed November 20, 1911. Serial No. 661,263.

To all whom it may concern:

Be it known that I, CHARLES C. ELLIS, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Amalgamators, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to new and useful improvements in amalgamators and has for its object to provide an amalgamator for use in free milling or partially free milling gold ore.

Another object of the invention is to provide an amalgamator in which steam or compressed air is used to force the particles of gold contained in the pulp from the stamp battery onto the amalgamated surface of a revoluble cylinder.

Another object of the invention is to provide an amalgamator which will possess advantages in points of efficiency, durability, is inexpensive of manufacture and at the same time is simple in construction and operation.

With the above and other objects in view the invention consists in the novel features of construction and the combination and arrangement of parts hereinafter described, pointed out in the claims and shown in the accompanying drawings in which—

Figure 1 is a transverse sectional view of my improved amalgamator, and Fig. 2 is a longitudinal sectional view.

Referring more particularly to the drawing 1 indicates the body or frame having a revolving cylinder 2 disposed therein and mounted on suitable bearings 3. This cylinder is provided on its outer periphery with a silvered copper plate 4 which is provided with a coat of amalgam to which the particles of gold will adhere, and an annular flange 5 is formed on each end of the cylinder to prevent any overflow of the pulp when discharged thereon.

A conveying trough 6 is provided which comprises a flat inclined bottom running the full length of the cylinder and provided with the side pieces 7, said trough being provided to convey the water and pulp containing the particles of gold from the crushing mill onto the cylinder.

A pipe 8 is longitudinally disposed within the body and arranged beneath the inner end

of the trough 6, said pipe being provided with a longitudinal slot 9 through which steam or compressed air escapes to force the pulp against the cylinder so that the gold will adhere to the amalgam on the silvered copper plate 4. By using this steam or compressed air to force the pulp against the cylinder very little of the gold will be lost. A splash board or apron 10 is provided having one of its longitudinal edges pivotally secured to the cross rods 10' suspended from the top of the body, said splash board being disposed above the cylinder and arranged adjacent to the inner end of the trough 6 to prevent any of the pulp from splashing over the other side of the cylinder.

An inclined guide board 11 is arranged beneath the trough 6 to guide the pulp after striking the cylinder onto the amalgamating plates 12 secured to the inclined bottom of the body. These plates 12 are formed of silvered copper and run the full length of the cylinder. A coating of amalgam is placed on these plates to prevent any loss of the gold.

Longitudinally disposed riffles or troughs 14 are arranged in the bottom forming amalgam traps to receive any amalgam that might be detached or escape from the cylinder and carried along with the water and pulp, it will be understood that the amalgam being heavier than the pulp or ore which is being carried off by the water will drop into these traps as it passes over them and the water and pulp is discharged out over the discharge board 15. A pulley 16 is arranged on the outer end of the shaft 17 whereby a belt may be used to drive the cylinder, although any suitable means may be used to drive the cylinder such as electricity, water or compressed air.

The operation of this device is as follows, the water and pulp which is conveyed down to the cylinder by the trough 6 is forced against the amalgam coated cylinder by means of the steam or compressed air from the pipe 8 where the gold will adhere to the amalgam and the water and pulp will drop down and be carried along the bottom through the amalgam traps 14, and pass off over the discharge board 15.

While I have shown and described the preferred form of my invention it will be obvious that various changes in the details of construction and in the proportions may

be resorted to for successfully carrying my invention into practice without sacrificing any of the novel features or departing from the scope thereof.

5 What I claim is:—

1. In an amalgamator, the combination of a frame, a rotatory amalgamating cylinder mounted therein, a feed trough adapted to deliver a free-falling stream of ore in proximity to the cylinder, and a pipe parallel to the cylinder in proximity to the path of the falling material, having outlets along the portion in proximity to the cylinder and adapted to deliver a current of fluid against the falling material toward the cylinder.

2. In an amalgamator, the combination of a frame, a rotatory amalgamating cylinder mounted therein, a feed trough discharging the pulp onto the cylinder along one side thereof, a pipe arranged immediately below and in advance of the trough discharge and having outlet openings directed toward the falling stream of pulp and cylinder, means to supply to said pipe a fluid under pressure, and a splash board suspended above the

trough discharge on the opposite side from the pipe.

3. In an amalgamator, the combination of a frame, a rotatory amalgamating cylinder mounted therein, a feed trough adapted to deliver a free-falling stream of ore in proximity to the cylinder, a pipe parallel to the cylinder in proximity to the path of the falling material, having outlets along the portion in proximity to the cylinder and adapted to deliver a current of fluid against the falling material toward the cylinder, a splash board on that side of the trough delivery opposite the pipe, a substantially horizontal amalgamating plate arranged beneath the cylinder, and an apron arranged beneath the pipe and trough discharge and extending at an inclination from a point at the rear of the pipe to the horizontal plate.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CHARLES C. ELLIS.

Witnesses:

A. S. McLUNDIE,

WILLIAM ROSENHEIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."