

(No Model.)

R. M. McDERMOTT.

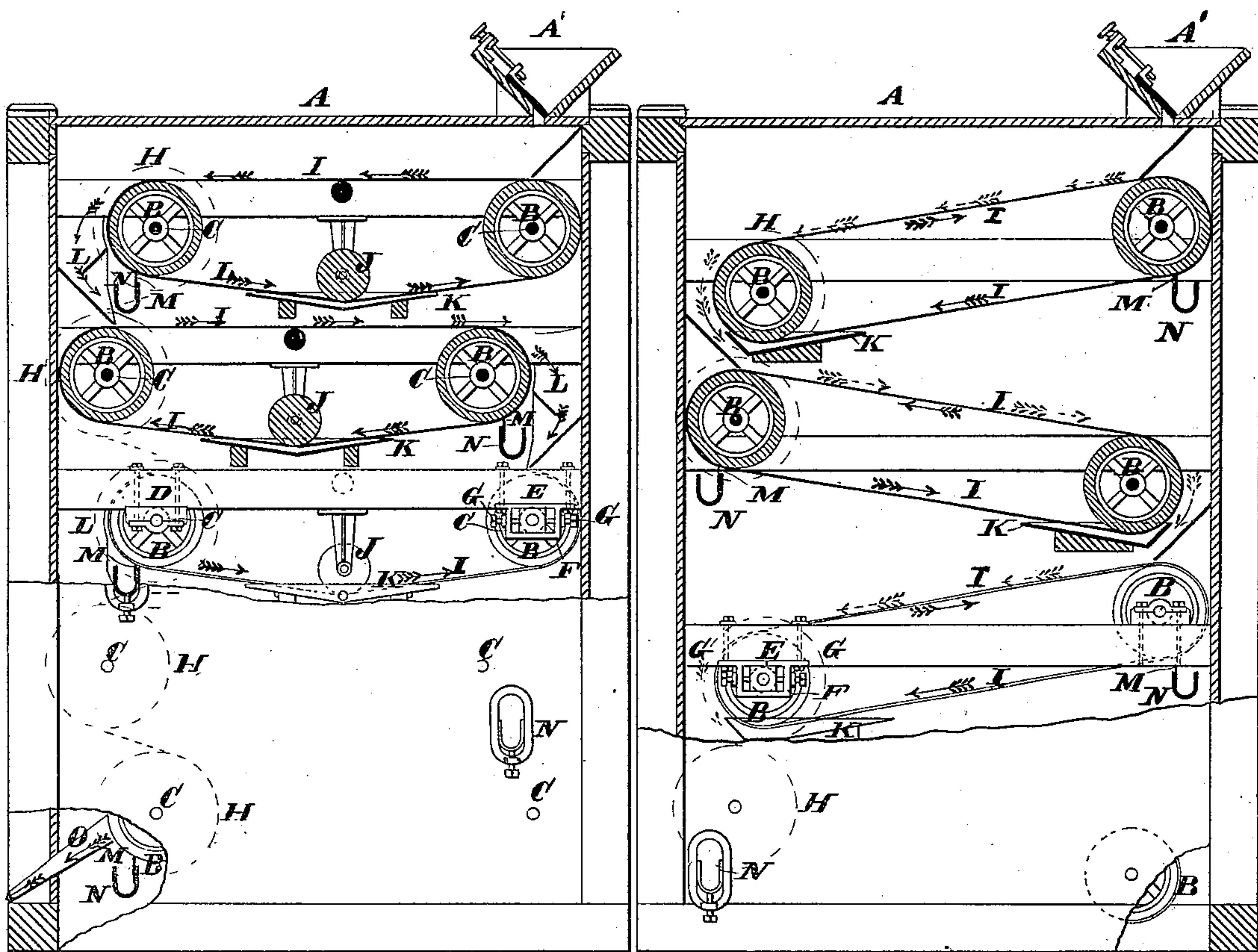
AMALGAMATOR.

No. 246,530.

Patented Aug. 30, 1881.

*Fig. 1.*

*Fig. 2.*



*Attest.*

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# UNITED STATES PATENT OFFICE.

ROBERT M. McDERMOTT, OF ST. LOUIS, MISSOURI.

## AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 246,530, dated August 30, 1881.

Application filed February 24, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT M. McDERMOTT, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Amalgamators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My improvement relates to a machine for amalgamating disintegrated gold ore in either a dry or wet condition.

My improvement consists in a depressing-pulley for causing the immersion of the apron in the mercury as the apron is passed through the vessel, as hereinafter described.

In the drawings, Figure 1, part in side elevation, with portions of the outside broken out to show the interior, and part of the figure—viz., the upper part—is in longitudinal section, the machine in this view being for dry ore. Fig. 2 is a similar view, showing the machine for use with wet ore or slime.

A is a case or frame, of any suitable construction, serving to support the rollers B, upon which the endless copper aprons I are carried.

A' is a hopper or chute, by which the material enters the machine and falls upon the top of the endless apron.

The shafts or gudgeons C of the rollers supporting the aprons turn in bearings D and E at the sides of the machine. The bearings E are made adjustable in the direction of the length of the endless apron, to take up any slack in the apron. To enable this adjustment the journal-boxes F are inclosed in housings G, in whose sides screw screws H, whose ends bear against the journal-boxes.

The rollers B may be turned by belt-pulleys H, as shown, upon their shafts, or by other suitable means.

The endless aprons are shown at I. They consist of sheet-copper or of plates of copper

overlying other flexible material. They are stretched upon two pulleys, B B, and pass beneath a pulley, J, which turns in a vessel, K, containing mercury, the pulley J causing the immersion of the apron in the mercury as it passes through the vessel. The apron in Fig. 1 turns so as to carry the dry material away from the hopper A', as shown by arrows, and drops it into a hopper, L, at the other end. All the particles of gold which come in contact with the surface of the copper apron are amalgamated by the mercury on said surface and stick to the same. Then, after the discharge of the rest of the material into the hopper L the amalgamated gold adhering to the apron is removed by a scraper, M, and falls into a chute or receptacle, N. The hopper L discharges the material upon another apron, and so the material may be carried from right to left and left to right until it reaches the discharge-chute O at the bottom.

I have shown a number of aprons; but it is evident that a single apron would operate effectively.

When used for amalgamation of slime, or where water is used, the bearing-surface of the apron would move toward the place where the material is fed upon the apron, and the upper part of the apron would incline downward from said place sufficiently to cause the material to flow forward on it, overcoming the tendency of the movement of the apron to carry it back to the place of reception. This arrangement is shown in Fig. 2, the arrows showing the direction of movement of the material and of the apron, as they do in Fig. 1.

I claim as my invention—

The depressing-pulley J, in combination with endless metal apron I and mercury-vessel K, as and for the purpose set forth.

ROBERT M. McDERMOTT.

Witnesses:

SAML. KNIGHT,  
GEO. H. KNIGHT.