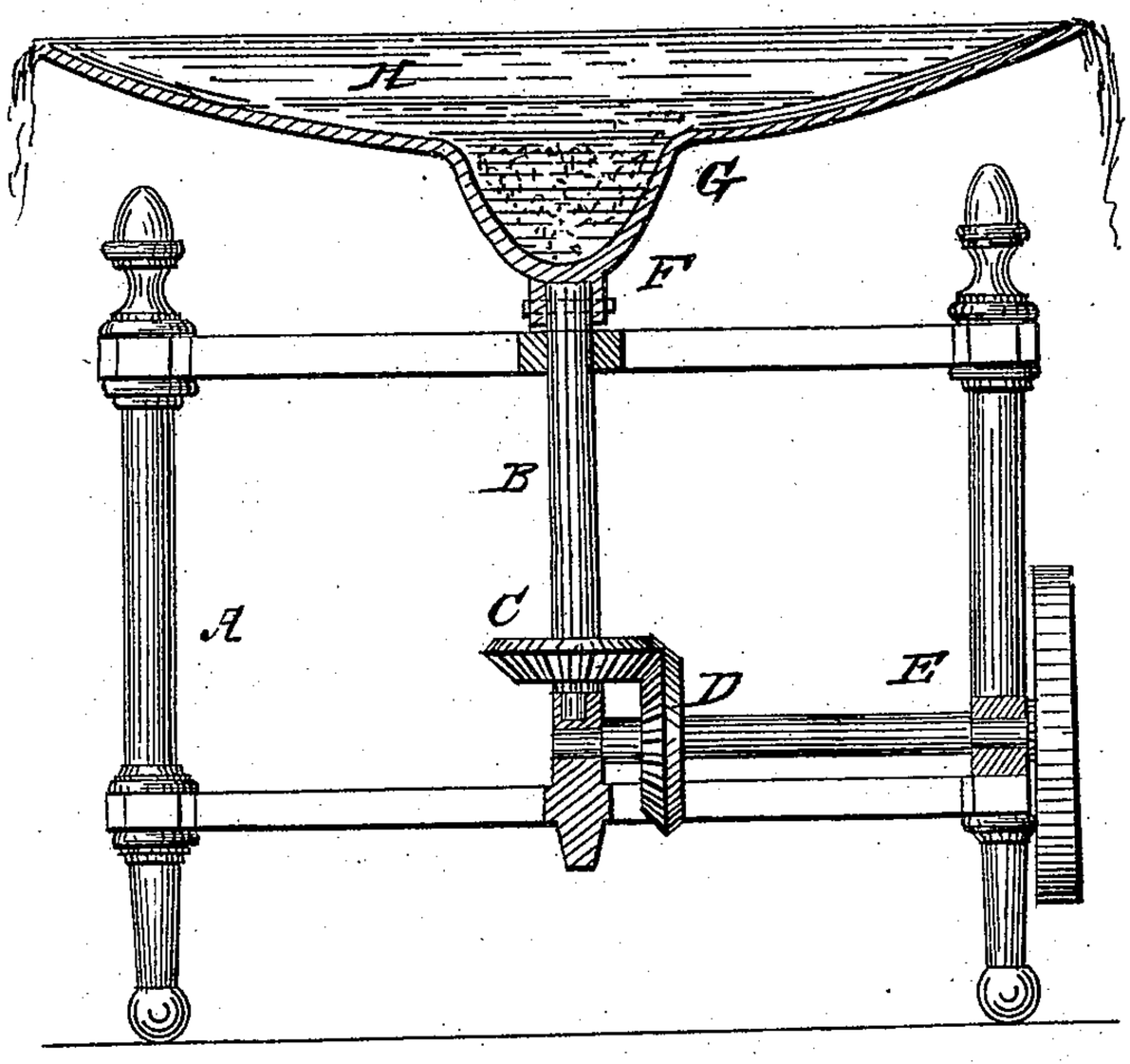
J. M. HILL.

Ore Amalgamator.

No. 31,063. Patented Jan. 1, 1861.



Witnesses
J. W. Coombs
R. S. Spencer

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UNITED STATES PATENT OFFICE.

JAMES M. HILL, OF ANGEL'S CAMP, CALIFORNIA.

IMPROVEMENT IN AMALGAMATORS.

Specification forming part of Letters Patent No. **31,063,** dated January 1, 1861.

To all whom it may concern:

Be it known that I, JAMES M. HILL, of Angel's Camp, in the county of Calaveras and State of California, have invented a new and improved device for separating gold and other precious metals from the impurities with which they are mixed in a natural state, and which device I term a "gleaner;" and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, said drawing being a side sectional view of my invention.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a framing which may be constructed in any suitable way to support the working parts. B is a vertical shaft placed centrally in the framing, and having a bevel-wheel, C, secured on it near its lower end, said wheel C gearing into a corresponding wheel, D, which is placed on the inner end of a horizontal shaft, E, to which the driving-power is applied.

On the upper part of the shaft B just above the top of the framing there is secured a hub, F, above which there is a vessel or chamber, G, in the form of a semi-ellipsoid. This vessel or chamber forms a vat at the center of a dish-shaped vessel or basin, H, as shown clearly in the drawing. The basin and vat may all be formed in one piece of metal. Copper would be the preferable material as it readily admits of having its surface amalgamated. The basin H may be about six feet in diameter, and the vat G may be about six inches deep and six inches in diameter at its upper end. The basin H may be about six inches deep at its center exclusive of the vat. The inner surfaces of the basin H and vat G are amalgamated, and the vat G is about half filled with mercury. The machine or device is then ready for operation. If the tailings of a stamping-mill (gold-bearing quartz, for instance) are to be separated, the pulp is allowed to flow into the basin H from a spout about nine inches above the bath and about four inches in diameter. The basin H is rotated, making about twenty revolutions per minute, and the gold amalgam settles to the bottom of the vat on account of its superior gravity, the amalgam being effected by the contact of the gold with the amalgamated surface of the basin, the excess of mercury also on account of its spheroidal form meets with little or no resistance in its descent to the bath and forms a part of the same. The light foreign substances of the pulp, however, are held in suspension by the water aided by the centrifugal force which is generated by the rotation of the basin, and said foreign substances are discharged over the edge of the basin effecting a complete separation of the foreign substances from the gold.

I do not claim the employment or use of amalgamated plates or surfaces for the separation of the precious metals from foreign substances; but

What I claim as new, and desire to secure by Letters Patent, is—

The device herein shown and described for collecting precious metals which I term a "gleaner," and which consists of a rotating basin, H, provided with a central mercury-vat, G, mounted above a driving-shaft, B, and frame A, the whole constructed and operating as herein set forth, whereby the water, quartz, and other impurities will be expelled over the edges of the basin by centrifugal force, while the precious metals of superior gravity will fall into the central mercury-vat, all as specified.

JAMES M. HILL.

Witnesses:

JOHN C. SANBURN,

B. R. COON.