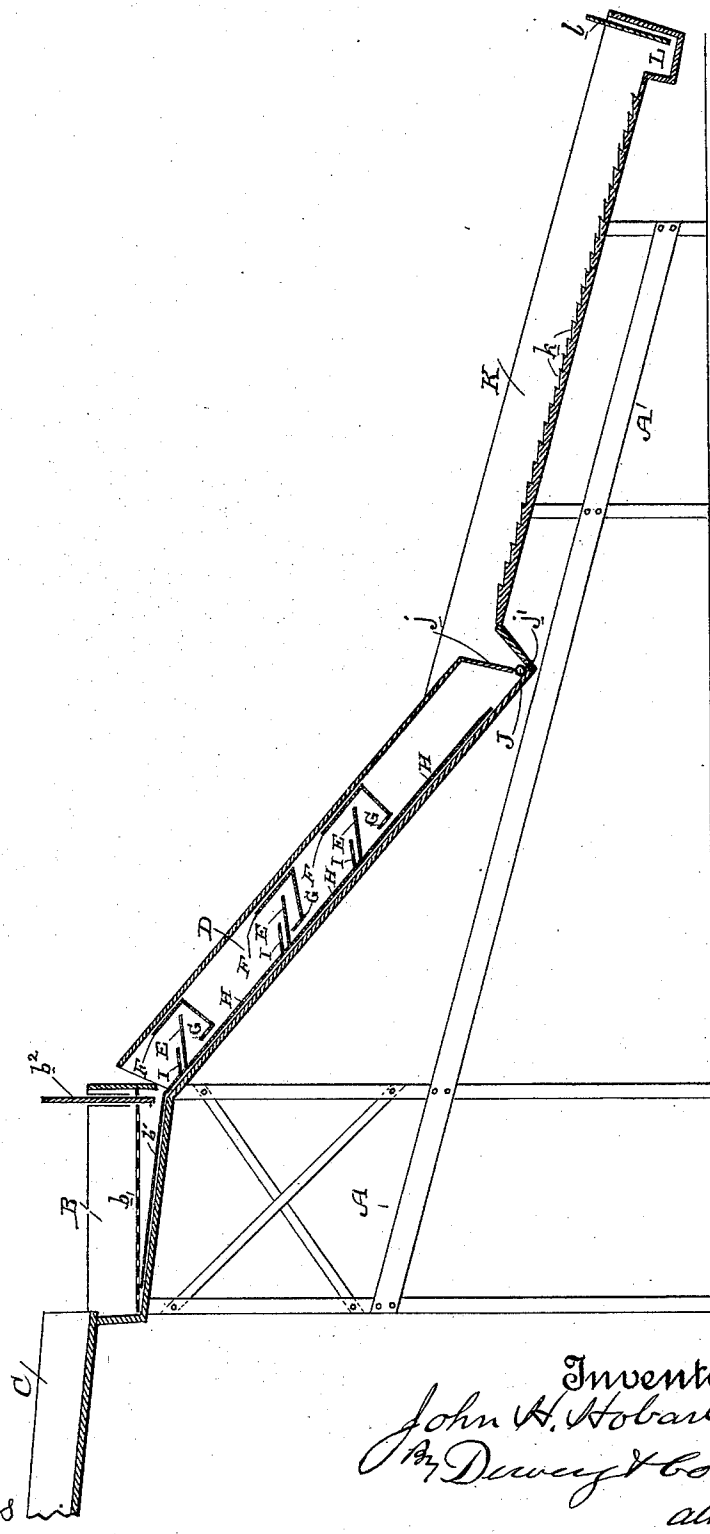


(No Model.)

J. H. HOBART.
GOLD SAVING APPARATUS.

No. 462,952.

Patented Nov. 10, 1891.



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UNITED STATES PATENT OFFICE.

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GOLD-SAVING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 462,952, dated November 10, 1891.

Application filed May 29, 1891. Serial No. 394,573. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. HOBART, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Gold-Saving Apparatus; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of gold-saving apparatus in which amalgamating or copper plates are employed for the purpose of catching the free gold.

My invention consists in the novel combination and arrangement of amalgamating or copper plates, hereinafter fully described, and specifically pointed out in the claims.

The general object of my invention is to provide a simple and effective device for saving the gold, especially the float-gold from tailings.

The particular object is to provide an arrangement of amalgamating or copper plates of such a character as to form barriers or impediments in the course of the pulp, causing a whirling or eddying of the flowing material very advantageous for the catching of the precious particles.

Referring to the accompanying drawing for a more complete explanation of my invention, the figure is a vertical longitudinal section of my apparatus.

A represents, generally, the frame-work of the device. At the upper portion of this frame-work is the receiving-hopper B, to which the tailings, with water, are delivered from a feed-chute C. Within the hopper B is an ordinary screen *b*, directly above the bottom of the hopper, on which is located an amalgamating or copper plate *b'*. The discharge of the hopper is regulated by a vertically-adjustable gate *b²*, and said discharge communicates with a covered sluice or box D. This sluice or box, to obtain the best results from the arrangement of the copper plates to be described, is preferably set an angle of forty-five degrees, as shown. Within the sluice is a series of copper plates, (represented by E.) These extend across the sluice transversely and meet its bottom at an angle, said

plates, on account of the inclination of the sluice, being approximately in a horizontal plane, or having a slight rise therefrom. They extend upwardly toward the cover of the sluice, but terminate short thereof, leaving a space above.

F is a series of amalgamating or copper plates located above the upper ends of the plates E, and said plates F are made of an angular shape, as shown, the upper portion extending along the top of the sluice over the tops of the plates E, while the lower portion extends downwardly across the sluice, either at right angles to its bottom, as shown in two instances, or at angle therewith, and parallel with the plate E, as shown in one instance. These lower portions or legs of the plates F terminate short of the bottom of the sluice, leaving a space under them, and to their lower ends are secured forwardly-projecting baffle-plates G, which are preferably perforated and lie above and parallel with the bottom of the sluice.

Along the bottom of the sluice is laid the series of amalgamating or copper plates H, and in front of the plates E are perforated guard-plates I. At the lower end of the sluice is a V-box J, with a partition *j* in it for catching the quicksilver that passes over the copper plates, and a discharge-hole *j'* permits the drawing off of said quicksilver from this box. Communicating with the lower end of the sluice is a tailing-slucie K, the bottom of which has riffles *k*, and at the lower end of this tailing-slucie is a drop-box L, with a partition *l*.

The operation of the apparatus is as follows: The tailings, with water, are passed from the feed-chute C into the hopper B and fall down through the screen *b* upon the amalgamating-plate *b'*, where some of the gold is caught. The material then passes on into the incline sluice D, and, meeting with the first inclined plate E therein, is checked in its rapid flow and directed upwardly and outwardly and against the upperside of the copper plate F. At this point in trying to pass around the upper end of the plate E a whirl or eddy is created, whereby the precious ma-

terial is thrown in perfect contact with the plate F, and the plate E, effecting at this point a large portion of the saving. The flow continues around the upper end of plate E and the material is dropped down upon the underlying plate H and against the lower portion of the plate F, where more of the gold is caught, and the flow then continues down rapidly once more until the next series of plates is reached, whereupon the same action takes place, and so on throughout the whole course of the inclined sluice.

The remainder of the operation is the ordinary one in apparatus of this kind.

The object of the baffle-plates G is to prevent the falling material from injuring the plates H by wearing off the amalgam, and the guard-plates I have the same object with respect to the inclined plates E. Thus it will be seen that this arrangement and combination of plates in a sluice is very effective in providing for perfect contact of the precious particles with the surface of the plates and a consequent saving of the gold. This is true whether the sluice D be horizontal or inclined, though I have found by experience that the inclined position is the best, and especially an angle of forty-five degrees.

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

1. In a gold-saving apparatus, a sluice through which the material is caused to flow, a series of amalgamating-plates within said sluice, extending at an angle from its bottom and terminating short of its top, and other amalgamating-plates of angular form extending above and below the first-named plates, separated therefrom and having their lower ends terminating short of the bottom of the sluice, substantially as herein described.

2. In a gold-saving apparatus, an inclined sluice having amalgamating-plates within it extending at an angle from its bottom and terminating short of its top and other amalgamating-plates secured to the top of the chute and having their lower portions extending behind the first-named plates and

terminating short of the bottom of the sluice, substantially as herein described.

3. In a gold-saving apparatus, the inclined sluice having within it the series of amalgamating-plates E, extending at an angle from its bottom and terminating short of its top, and the angular or bent amalgamating-plates above and behind and separated from the plates E, said bent plates terminating short of the bottom of the sluice, substantially as herein described.

4. In a gold-saving apparatus, the inclined sluice having the series of amalgamating-plates E, the series of angular amalgamating-plates F, and the series of bottom amalgamating-plates H, substantially as herein described.

5. In a gold-saving apparatus, the inclined sluice having the series of amalgamating-plates E extending from its bottom, a second series of amalgamating-plates F, of angular form, separated from the first-named plates and having their lower portions extending behind the plates E, a third series of amalgamating-plates H along the floor of the sluice, and baffle-plates G on the lower ends of the plates F, behind the plates E, substantially as herein described.

6. In a gold-saving apparatus, the inclined sluice, the series of amalgamating-plates E therein extending at an angle from the bottom and terminating short of the top, a series of angular amalgamating-plates F, separated from the first-named plates, having their lower portions extending behind said plates E to within a short distance of the bottom of the sluice, baffle-plates on the lower ends of the angular plates F below the plates E, the guard-plates I above the plates E, and the amalgamating-plates H along the floor of the sluice, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOHN H. HOBART.

Witnesses:

THOMAS M. GRAHAM,
JAS. T. MACDONALD.