

(No Model.)

H. N. BROWN & O. FIELD.

GOLD SAVING APPARATUS.

No. 307,174.

Patented Oct. 28, 1884.

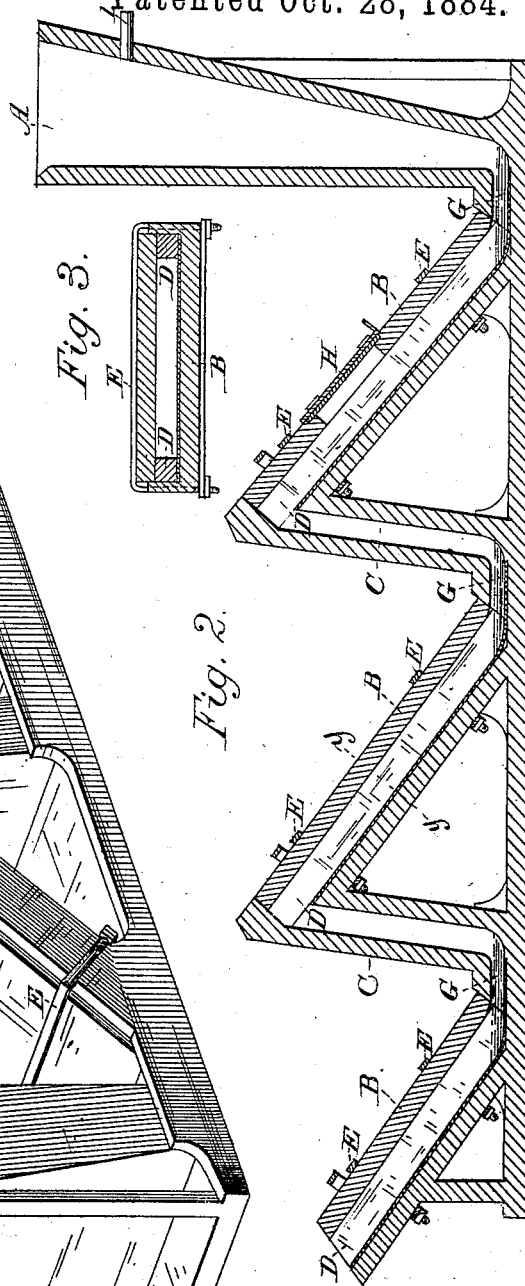
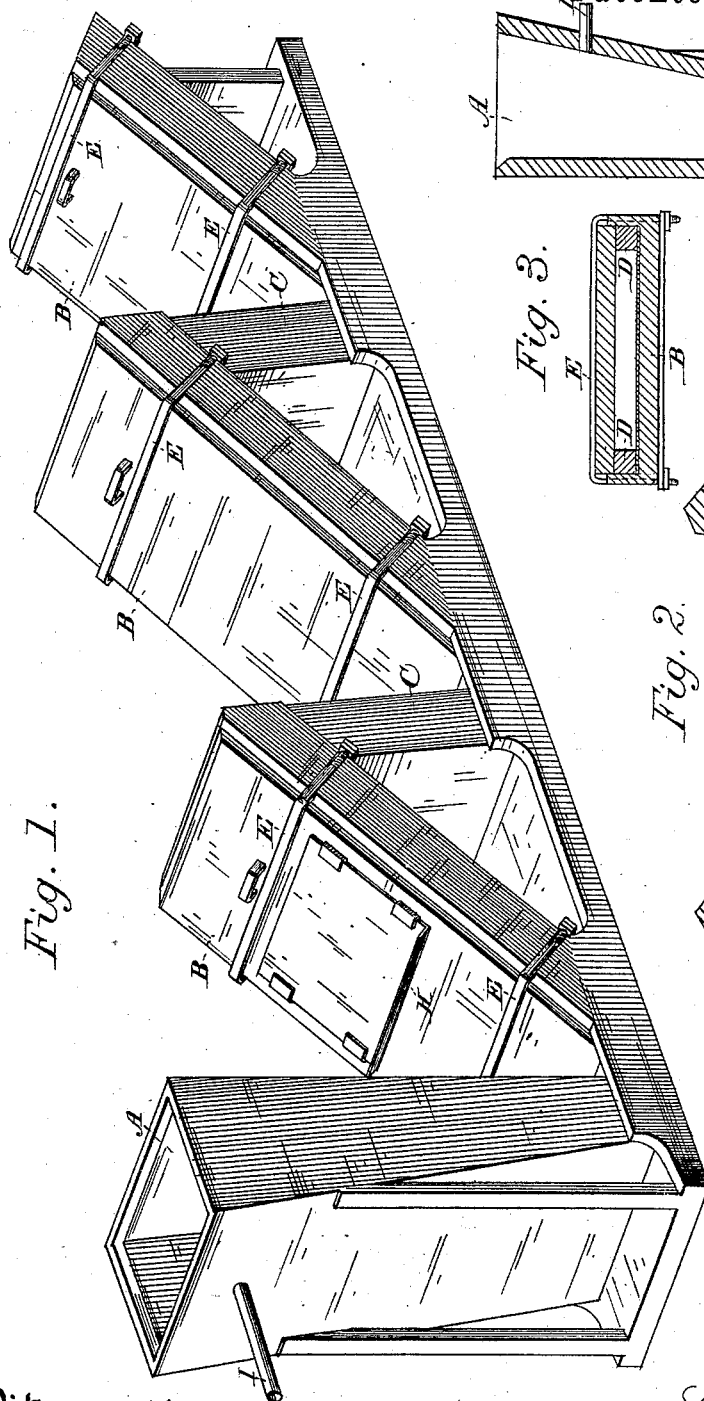
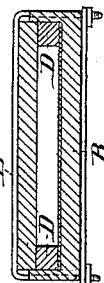


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY N. BROWN AND ORRIN FIELD, OF BYRON, CALIFORNIA.

GOLD-SAVING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 307,174, dated October 28, 1884.

Application filed July 21, 1884. (No model.)

To all whom it may concern:

Be it known that we, HENRY N. BROWN and ORRIN FIELD, of the city of Byron, in the county of Contra Costa and State of California, have invented an Improvement in Gold-Saving Apparatus; and we hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to an apparatus for amalgamating gold and other precious or valuable metals; and it consists of a series of inclined closed boxes, the lower end of the first being connected with a vertical chute or feed-pipe, through which the material is delivered, and its upper end with the foot of the next inclined one, and so on to the discharge end.

It also consists in a means for making tight joints at the edges, and also for adjusting a space between the top and bottom of this sluice, and in certain details of construction, all of which will be more fully described by reference to the accompanying drawings.

Referring to the accompanying drawings for a more complete explanation of our invention, Figure 1 is a perspective view of our apparatus. Fig. 2 is a longitudinal vertical section of our apparatus. Fig. 3 is a transverse vertical section on the line *yy*, Fig. 2.

A is a chute or hopper of considerable height, into which the material to be treated is placed. This material will be a pulp of sufficient substance to flow readily.

B B B are a series of inclined chutes or boxes closed at the top, bottom, and sides, so as to make a passage within them which may be lined upon one or more sides with amalgamated plates for the purpose of detaining any amalgam, quicksilver, or precious metal which may pass over them. The upper end of the first inclined chamber is connected with the foot of the next by a nearly or quite vertical passage, C, so that the material or pulp, after flowing up the first passage, drops down this passage C, and then from the foot of the second chute it passes to the upper end, dropping again through another vertical passage C, and passing up the third chute in the same manner, and so on until it may have passed over as many amalgamating-plates as may be considered necessary for the purpose of separating all the gold or precious metal from the

worthless material. In the bottom of each of the chutes is placed a mercury bath, (designated by G,) through which the pulp is forced, and in the inclined side of the first chute is let a window or light, H, through which the churning of the quicksilver may be observed, thus indicating and consequently enabling us to regulate the force of the flow of the pulp. A water-pipe, I, is let into the end of the feed-chute A, in order to supply any additional necessary water and to regulate the flow.

In order to provide an adjustment by which the depth of the passage may be varied to suit circumstances, the upper or covering plate fits down between the two side boards of the chute, and rests upon elastic strips D, which extend along the sides raised upon the bottom plate. Clamps E pass around the chutes, the upper portion forming staples which pass through the transverse bar below, and have nuts by which they may be pressed down, thus pressing upon the top board or plate of the chute and forcing it down, pressing the rubber strip so as to at the same time form a perfectly tight joint and allow of the adjustment before described. This adjustment enables us to make the passage larger or smaller to accommodate the pulp or material which may be flowing through, and to relieve it if there is any tendency to clog or choke.

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

1. A hydraulic sluice for saving precious or valuable metals, consisting of a series of closed chambers or passages, inclining upward from their receiving to their discharge ends, and provided with adjustable covering-plates, and each of the passages being connected with the receiving end of the subsequent one by a closed vertical passage, as herein described.

2. A hydraulic sluice for saving precious metals, consisting of a series of closed chambers or passages inclining upward from their receiving to their discharge ends, and provided with adjustable covering-plates and windows, each of the passages being connected with the receiving end of the subsequent one by a closed vertical passage, at the bottom of which is a mercury bath, through which the pulp is forced, as herein described.

3. A device for saving precious or valuable metals, consisting of a series of inclined closed chutes or chambers, and provided with adjustable covering-plates and windows, with an interior lining of inclined amalgam plates or surfaces, the discharge end of each chute being connected with the receiving end of the following one, together with a feed chute or passage connecting the first chamber, substantially as herein described.

4. An apparatus for saving valuable or precious metals, consisting of a series of connected inclined chutes having the interior surface

provided with amalgam plates, a vertical moving top plate resting upon elastic strips upon each side, together with the clamps or yokes by which it is held and adjusted, substantially as herein described.

In witness whereof we have hereunto set our hands.

HENRY N. BROWN.
ORRIN FIELD.

Witnesses:

GEORGE TALLEKSAR,
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