

Young & Vaughn,

Ore Washer.

No. 111,713.

Patented Feb. 7. 1871.

Fig. 1.

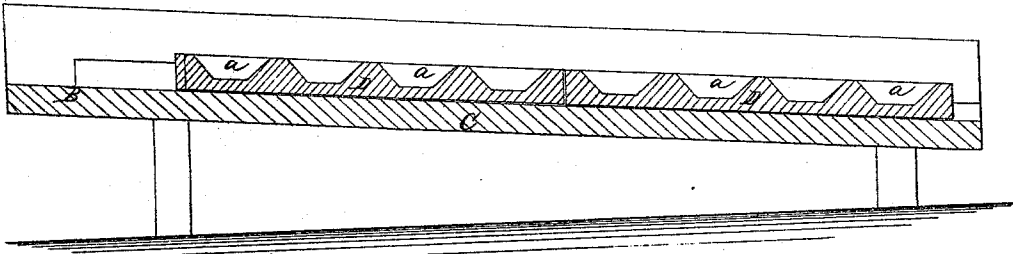
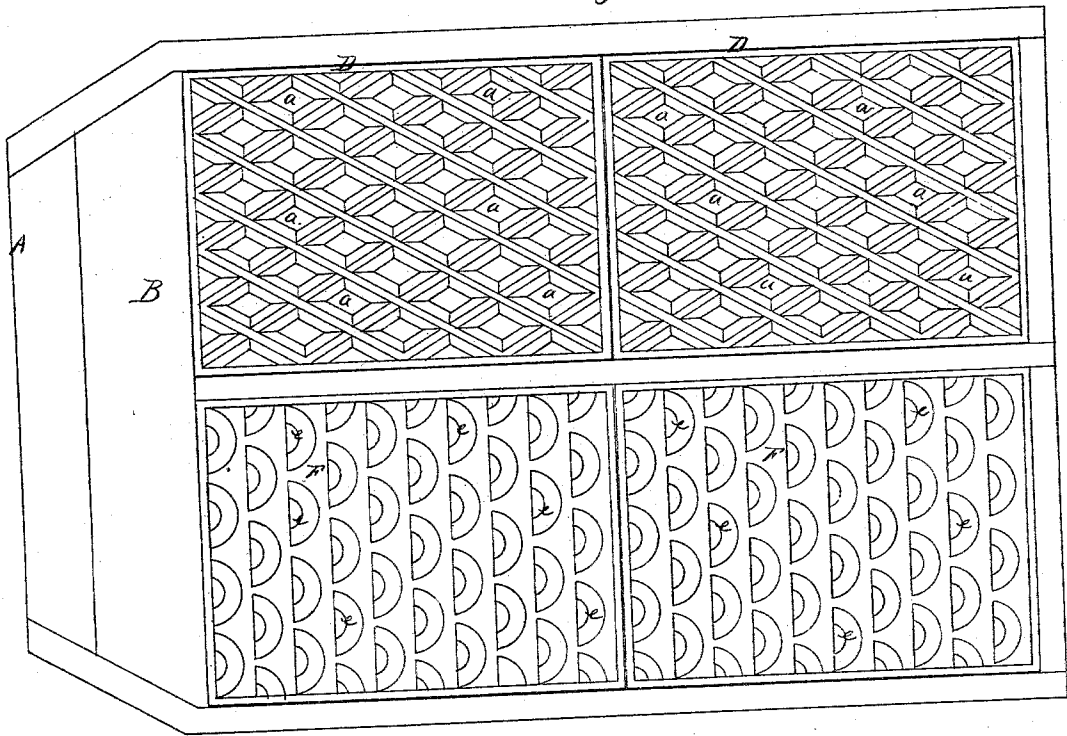


Fig. 2.



Witnesses.
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United States Patent Office.

OLIVER H. YOUNG AND DANIEL J. VAUGHN, OF WISCONSIN HILL,
CALIFORNIA.

Letters Patent No. 111,713, dated February 7, 1871.

IMPROVEMENT IN DEVICES FOR SAVING GOLD AMALGAM AND QUICKSILVER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, OLIVER H. YOUNG and DANIEL J. VAUGHN, of Wisconsin Hill, county of Placer, State of California, have invented an Improved Device for Saving Gold Amalgam and Quicksilver; and we do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use our said invention or improvement without further invention or experiment.

Our invention relates to an improved device for arresting the particles of gold amalgam and quicksilver which escapes after the pulp has been subjected to the usual amalgamating process.

It is a well-known fact among mill men that a large proportion of the quicksilver used in amalgamation is lost by passing down the sluice with the tailings, having become floured or finely divided, in which condition it follows the current and is finally lost.

Our device is intended more particularly to arrest these particles, as well as any escaping gold and amalgam, by causing the tailings to pass over a floor in which are arranged peculiarly-shaped pockets or cavities in which a portion of quicksilver is contained.

In order to explain our invention, reference is had to the accompanying drawing forming a part of this specification, in which—

A represents a section of a sluice, down which the tailings are passed after the ore has been subjected to the usual amalgamating process.

At some suitable point in the length of this sluice I place a gradually-widening floor, B, upon which the tailings will flow, and spread out in a thin layer.

From the floor B the tailings will flow upon another slightly inclined floor, C, which is provided with our plates, and by means of which we catch the escaping quicksilver and metal.

The plates D are made of any suitable shape, and have on their upper surface diamond-shaped pockets or cavities, a.

The sides of these cavities slope toward each other at the bottom, so that a small quantity of quicksilver will serve in each.

The floor C is covered with the plates D, so that a large number of cavities or pockets will be presented for the tailings to pass over.

A stream of water may be introduced into the sluice above the floor C, in order to dilute the tailings sufficiently to cause it to flow freely.

The shape of the diamond given to the pockets or

cavities secures a double incline, which throws the flow of the water to the sharp angle of the pocket, while the incline itself allows a free flow of the water and causes the lighter impurities to be carried off, while the heavier particles are precipitated and held in the pocket.

In passing over these the finely-divided quicksilver and other heavy particles, which are being carried down the sluices, will precipitate into the pockets and, amalgamated with the quicksilver in them, thus permanently arresting them.

Below the floor C we place at an incline a plate or series of plates, F, which have D-shaped pockets similar to those shown at c.

The upper or straight sides of these pockets are vertical, while the curved or lower sides slope from the bottom of the recess, so that any valuable particles which may have escaped over the floor C will be settled in these pockets by the sudden fall over the vertical side and consequent eddy at its base, which is rendered more complete by the incline of the plates, while the water and other light particles will flow out of the pockets over the lower sloping side.

Holes may be made in the metal between the pockets e, if desired.

In the rocky beds of rivers where auriferous sands or earths have been borne along by the water, it is known that the heavy metals are collected in pockets in the rocks, where frequently large quantities of gold have been found.

Our device is intended to imitate nature by placing in the track of the passing tailings pockets or reservoirs resembling those constructed by nature, and thus accomplish the same purpose.

Having thus described our invention,

What we claim, and desire to secure by Letters Patent, is—

1. The plates D, provided with diamond-shaped pockets or reservoirs a, substantially as and for the purpose described.

2. The D-shaped pockets or reservoirs e, when constructed as above described, for the purpose above set forth.

In witness that the above-described invention is claimed by us we have hereunto set our hands and seals.

OLIVER H. YOUNG. [L. s.]
DANIEL J. VAUGHN. [L. s.]

Witnesses:

GEO. H. STRONG,
J. L. BOONE.