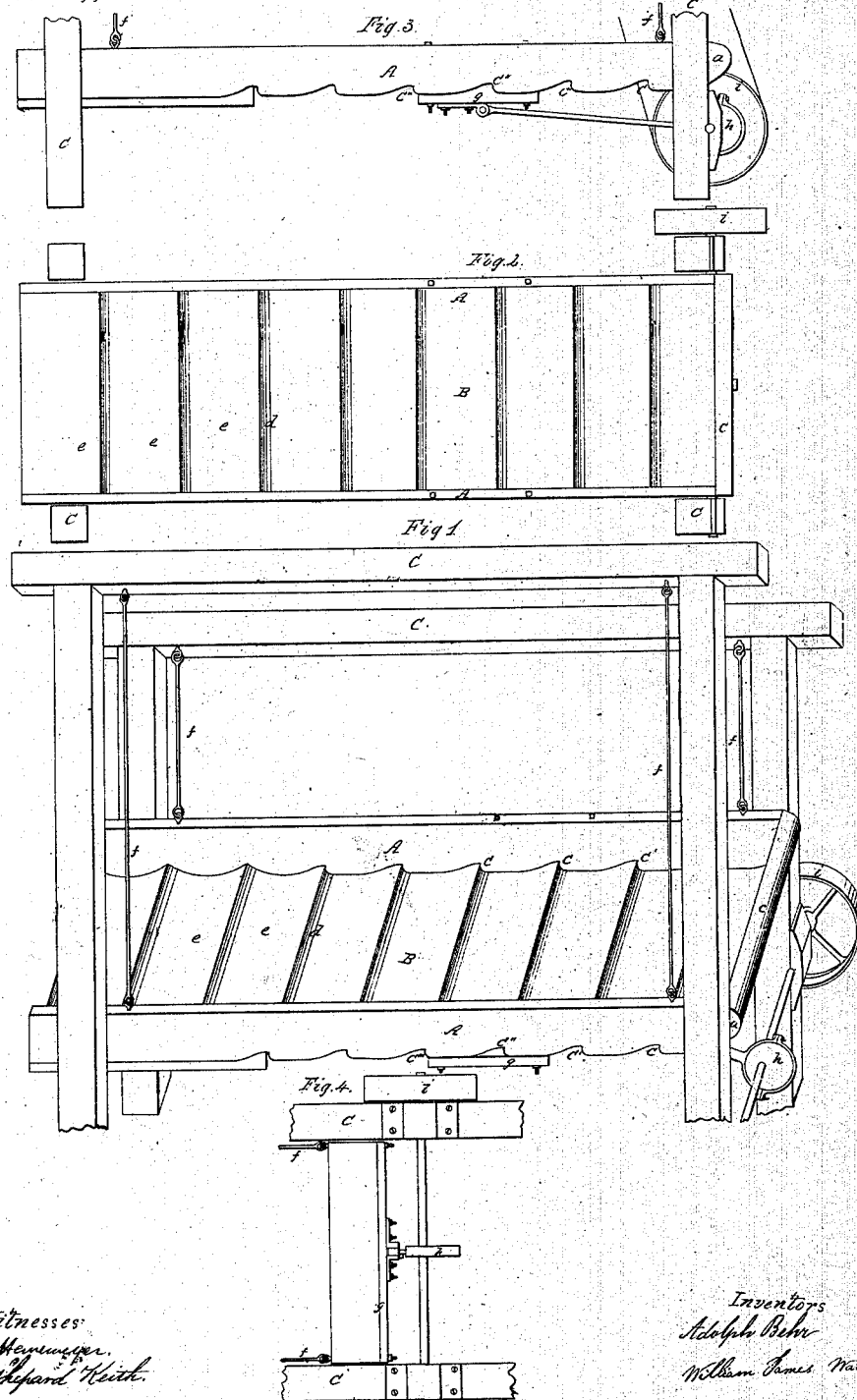


Behr & Ward
Ore Smalgamator

N^o 27,384.

Patented Apr. 25, 1865.



Witnesses
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UNITED STATES PATENT OFFICE.

ADOLPH BEHR AND WILLIAM JAMES WARD, OF BLACK HAWK, COLORADO.

IMPROVED SHAKING AND ROCKING TABLE FOR AMALGAMATING GOLD, &c.

Specification forming part of Letters Patent No. 47,384, dated April 25, 1865.

To all whom it may concern:

Be it known that we, ADOLPH BEHR and WILLIAM JAMES WARD, of Black Hawk, in the county of Gilpin, and the Territory of Colorado, have invented a new and improved shaking or rocking table for the amalgamation and extraction of gold and silver from ores, minerals, and substances containing those metals; and we do hereby declare that the following is a full and exact description of the same.

The nature of our invention consists in an amalgamated sheet of copper or brass, bent in such a manner as to form furrows with projecting ribs, and screwed on tight to wooden sides, which are carved out in the desired shape. The end of the copper or brass opposite the ribs is bent over to form half of a circle, while the other end is secured to a series of wooden grooves or gutters. The table thus formed is suspended by iron rods on a level, and set in motion by means of an eccentric, to which the table is connected.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a top view; Fig. 3, a side view, and Fig. 4 an end view.

Two planks, A, Fig. 1, of pine or other wood, fourteen to fifteen feet long, eight or nine inches wide, and two inches thick, are rounded off on one of their ends to half of a circle, *a*, and curved out on one of their edges in the shape as shown by C, Figs. 1 and 3, the deepest cuts being twelve inches apart, and placed on a sheet of copper or brass, B, five feet wide and twelve feet long, the end *c* of which is bent over and screwed tight to the round end *a*, while the edges are fitted and screwed closely to the curved edges of the planks. The shape of the curves is thus communicated to the sheet, and is made to extend across its whole width, thus forming grooves or riffles with projecting ribs, which have a height of one and one half inch. The other end, *d*, of the copper or brass is connected with three or more wooden grooves or gutters, *e*, which are one foot in width, hollowed out in the center to the depth of one and one-half of an inch, and fitted in tight between the two

planks A. These wooden grooves are added to collect any quicksilver which may be forced over by too heavy a feed of ore, &c. The table thus formed is suspended by the iron rods *f*, which are swinging in eyebolts fastened to the frame-work C.

g is a plank bolted to the sides A of the table, and connected with the eccentric *h*, Fig. 4, which has about a three-inch throw, and is set in motion by the pulley *i*, making one hundred and twenty revolutions in a minute. The upper side of the copper or brass is washed with a solution of concentrated lye to remove all grease, and by means of a solution of cyanide of potassium or ammonium zinc chloride quicksilver is evenly rubbed out on it till the copper or brass presents a bright quicksilver surface. The first copper or brass riffles or grooves are charged with liquid quicksilver—from ten to twenty pounds are sufficient—the table set in motion, and the powdered substances containing gold or silver are sluiced into the first copper or brass riffle by a moderate stream of water, five-eighths of an inch being sufficient. From this first riffle it passes into the second, third, and so on. The gold and silver coming in contact with the amalgamated copper or brass will adhere to it or be taken up by the liquid quicksilver, while the inert substances are carried away by the water. When sufficient amalgam is collected, it is, in connection with the liquid quicksilver, taken off the riffles and cleaned, separated as usual.

The advantages of our invention are as follows: First, a large quantity of substances containing gold or silver can be thus treated, as the apparatus can be worked continuously at the same time requiring but very little motive power; second, by the peculiar shape of the copper or brass riffles the gold-bearing substances suspended in the water not only are subjected to a sifting motion, but are also, by the splash produced by the projecting ribs, thrown and forced in contact with the amalgamated copper or brass or liquid quicksilver, which constantly renews the surface by being in motion; third, no quicksilver, and consequently no amalgam, can be lost, as, if quicksilver should be forced over by any cause, the wooden grooves will collect it and save it—they having the greatest depth in the center, where the least motion is, the quicksilver, by its higher specific gravity, goes to the center

and stays there; fourth, it offers a large amalgamating-surface, more so as every particle introduced therein is thrown to and fro again, and again before it can leave the table; fifth, it is cheap in its construction and durable.

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

A shaking or rocking table with amalgamated copper or brass riffles or grooves, which may be charged with more or less additional quicksilver, alone or in connection with one or more wooden riffles or grooves, in the shape

and manner above described, or constructed in any manner substantially the same, which will impart to substances suspended in water both the sifting and splashing motion, which throws and forces the particles in contact with the amalgamated surface of the copper or brass riffles or grooves.

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