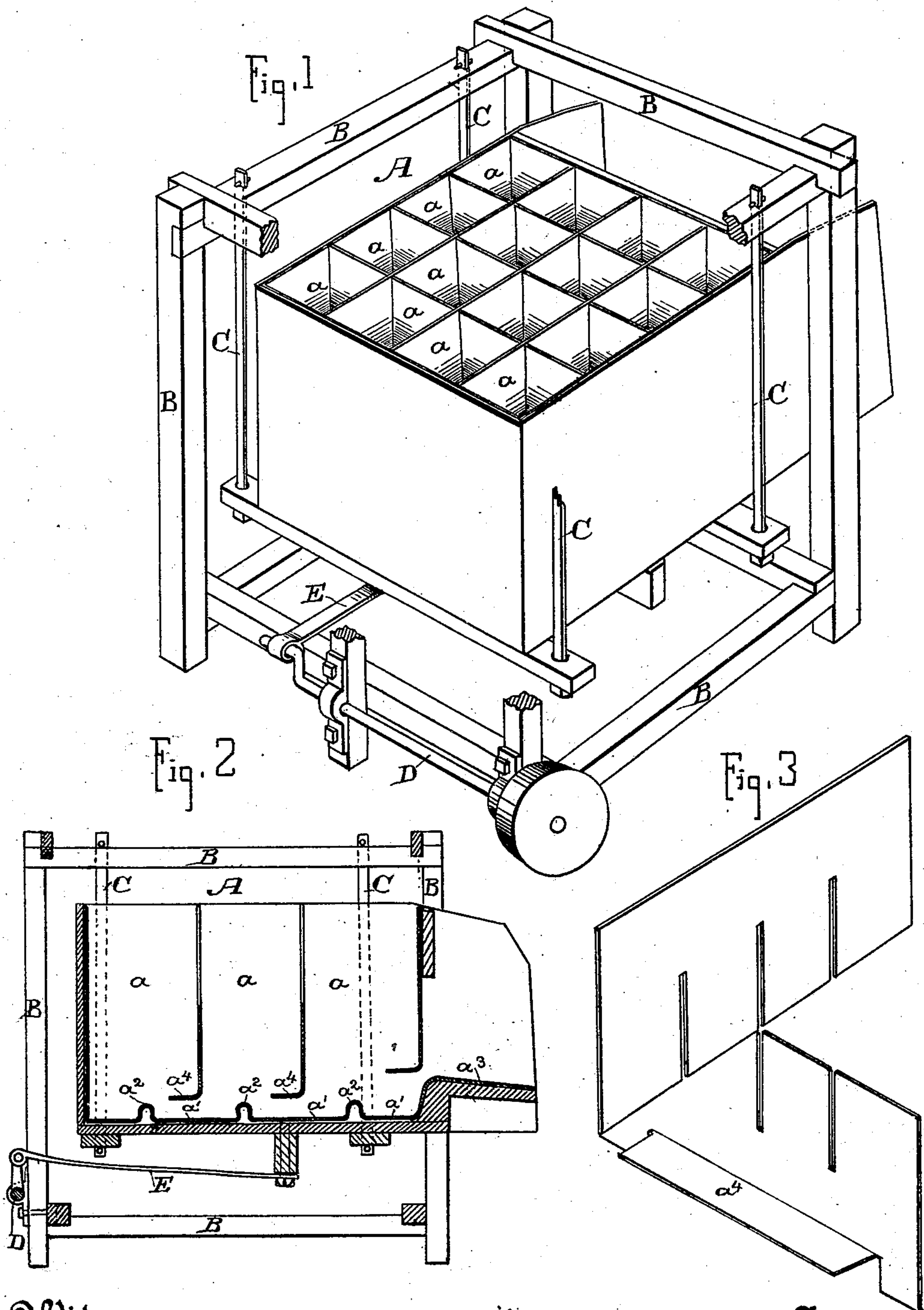


(No Model.)

R. WING.
AMALGAMATOR.

No. 548,792.

Patented Oct. 29, 1895.



Witnesses,
J. A. Bayless

Inventor
Rodney Wing,
By Deway Co.

UNITED STATES PATENT OFFICE.

RODNEY WING, OF BUTTE, MONTANA, ASSIGNOR OF ONE-HALF TO JONATHAN C. BAKER, OF SAME PLACE.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 548,792, dated October 29, 1895.

Application filed August 8, 1895. Serial No. 558,654. (No model.)

To all whom it may concern:

Be it known that I, RODNEY WING, a citizen of the United States, residing in the city of Butte, county of Silver Bow, State of Montana, have invented an Improvement in Amalgamators; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to amalgamators; and it consists in the novel cellular and riffled pan hereinafter fully described.

The object of the invention is to provide a simple and effective device to amalgamate gold and catch quicksilver adapted for use in gold and silver mills or in connection with concentrators or for saving fine gold in gravel mining.

Referring to the accompanying drawings, Figure 1 is a perspective view of my amalgamator. Fig. 2 is a vertical section of same. Fig. 3 is a view showing the relative arrangement of the plates which form the walls of the cells.

The pan A is formed with a number of independent cells or compartments a , extending from the top to a point near the bottom. The walls of these cells are made of electroplated or quicksilvered copper plates. The bottom a' of the pan is also coppered and is provided with transverse riffles a^2 directly under the compartments or cells, and said bottom is dropped down or recessed below the level of the discharge a^3 , the extent of said drop being about three or more inches or according to the size of the machine, thus making a receiving space for gold, quicksilver, or amalgam. All ore, gravel, or material and water worked in the mill or concentrator must pass down through the copper cells a .

The pan is suspended from a suitable frame B by means of hangers C, and it has imparted to it a shaking or vibratory motion, which is preferably an end shake, by means of a crank-shaft D and connecting-rod E, said crank-shaft being driven by suitable power. The motion thus imparted is horizontal, the object being to more certainly bring all the water, ores, metals, &c., coming into the pan into contact with the quicksilvered or plated surface of the copper plates, thereby rendering it more certain to amalgamate all float-

gold and collect all granulated quicksilver and dry amalgam which may be floating off with the water, ore, tailings, gravel, or whatever material is being worked through the machine.

The ore, gravel, or tailings are to be fed in the top of the rear end of the machine by means of a suitable sluice-box with water sufficient to handle it. The pan being in motion the material passes down through the copper cells and out at the lower end of the machine continuously and automatically, requiring no labor and but a small amount of power, which can be supplied by a small water-wheel driven by the water or tailings worked through the machine.

The horizontal motion of the machine is partly to keep the sulphurets or concentrates from packing in the bottom of the pan or cells, which being dropped or recessed receives the quicksilver or amalgam. The bottom of each cell is provided with a shelf a^4 , adapted to catch the descending material, thereby increasing the contact-surface and better distributing said material over the bottom of the pan. The copper plates forming the cells and the other plates of copper are all made movable, so that they can be taken out of the pan quickly when necessary for cleaning, dressing, repairs, or for any other purpose.

In the use of this pan all the material passing through the machine, especially the slimes and water containing float-gold, quicksilver, or amalgam, must come a number of times in contact with the electroplated or quicksilvered surfaces of the copper plates while passing through the machine, and assisted by the motion the amalgamation is increased, thereby increasing the saving of floating gold, quicksilver, amalgam, or any precious metals susceptible of amalgamation held in suspense during the process of wet-milling of gold or silver ore or sluicing in gravel mining.

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

1. An amalgamating pan, the body of which is composed of a longitudinal and transverse series of electro-plated or quick-silvered plates set on edge and fitted together to form inde-

pendent, vertically disposed cells, said plates terminating short of the bottom of the pan and said transverse plates having their lower edges bent at approximately right angles to form shelves adapted to catch the material and increase the contact surface, and facilitate the distribution of the material over the bottom of the pan.

2. An amalgamating pan, the body of which is composed of a frame the bottom of which is dropped below its outlet or discharge to form a receptacle for catching quicksilver and amalgam, and a series of intersecting electro-plated or quick-silvered plates, set on edge to form a plurality of vertically disposed cells, said plates terminating short of the bottom of the pan and the plates of one series having their bottom edges formed with horizontal shelves which project into the cells and constitute means for catching the material and increasing the contact surface, and distributing the material upon the bottom of the pan, and means for vibrating the pan.

3. An amalgamating pan, the body of which is composed of a frame whose bottom is depressed below its outlet or discharge to form a receptacle for catching quicksilver and amalgam, and a series of intersecting electro-plated or quick-silvered plates, set on edge, and removably fitted one to another, to form a series of vertically disposed cells, said plates

terminating short of the bottom of the pan and said transverse plates being provided with inwardly turned lower ends forming shelves at the bottom of the cells for catching the material and facilitating its distribution upon the bottom of the pan, said pan body having its bottom electro-plated or quicksilvered and provided with transverse riffles lying directly under the cells.

4. An improved amalgamator consisting of a pan having its bottom electro-plated or quick-silvered and dropped below the level of its outlet or discharge, to form a receptacle for catching quicksilver and amalgam, and having said bottom provided with transverse riffles, a series of vertically disposed cells formed of longitudinal and transverse plates set on edge and terminating short of the bottom of the pan, said transverse plates having their lower edges bent inward to form shelves for catching the material and facilitating its uniform distribution upon the bottom of the pan, means for suspending the pan within a main frame and means for vibrating the pan.

In witness whereof I have hereunto set my hand.

RODNEY WING.

Witnesses:

A. A. McMILLAN,
P. L. MILLER.