

(No Model.)

J. J. PAYNE.
GOLD SEPARATOR.

No. 537,353.

Patented Apr. 9, 1895.

FIG. 1.

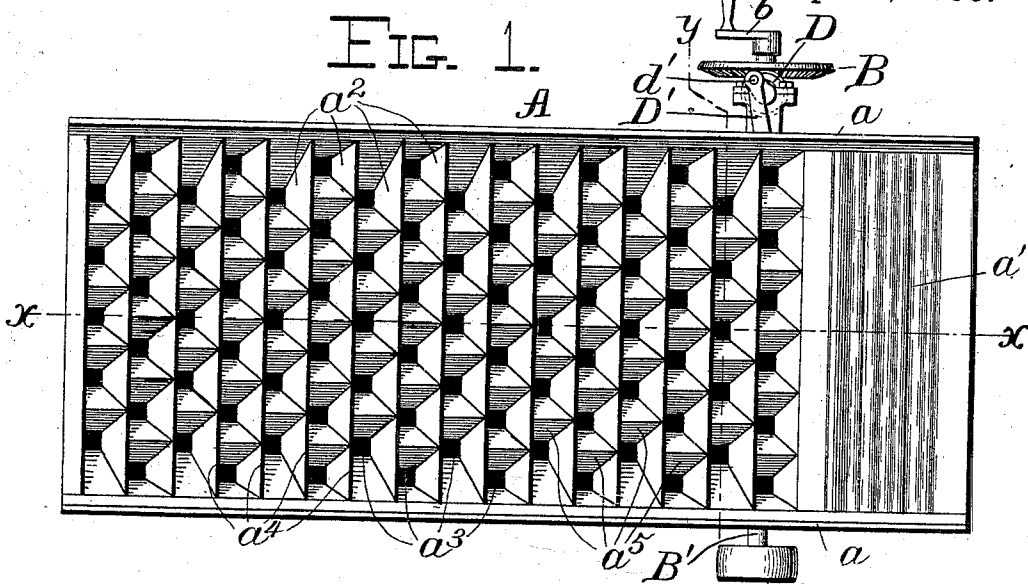


FIG. 2.

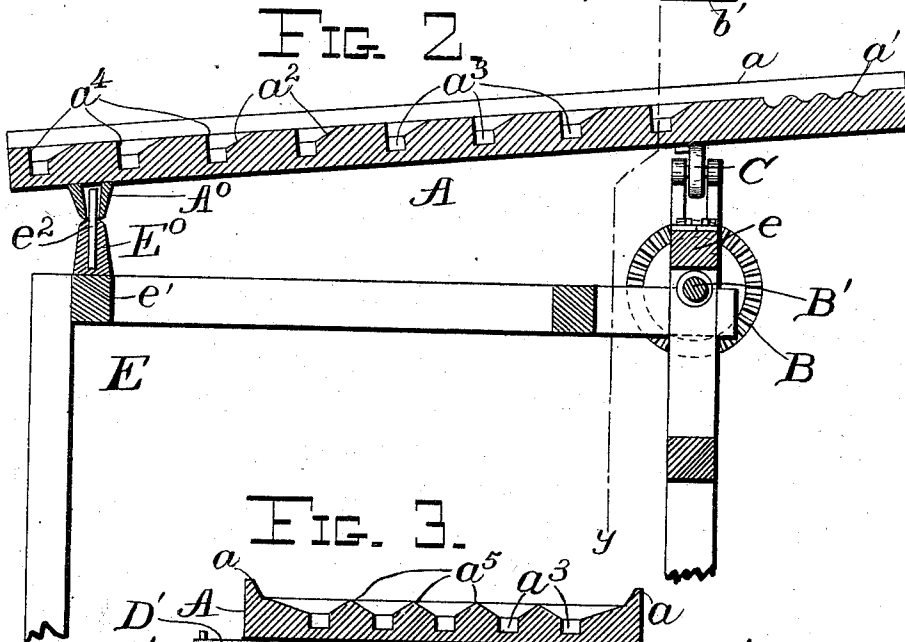
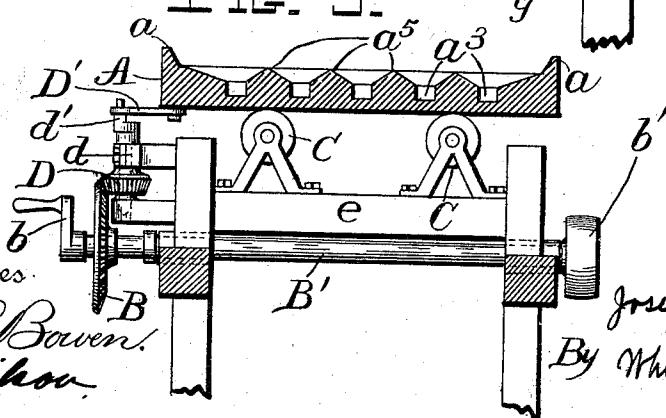


FIG. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOSEPH J. PAYNE, OF DENVER, COLORADO.

GOLD-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 537,353, dated April 9, 1895.

Application filed July 17, 1894. Serial No. 517,828. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH J. PAYNE, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Gold-Separators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in gold separators for use in placer mining, and it consists in certain novel features hereinafter described and claimed.

Reference is had to the accompanying drawings, wherein the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a plan view of the improved gold separator. Fig. 2 represents a section of the same along the line $x x$ of Fig. 1, and Fig. 3 represents a section of the upper part of the machine along the line $y y$ of Figs. 1 and 2.

A represents a plate made of cast iron, or other suitable material, provided with side rails a to prevent the escape of the water and wet ore laterally, and preferably having near the head thereof a series of ordinary riffles a' . The body of this plate is provided with a series of pockets a^3 which terminate at one side in the sloping wall a^2 and in the rear in the vertical wall a^4 . The other two sides of these pockets slope upward as at a^5 , forming wedge-shaped partitions between the said pockets.

The lower end of the plate A is provided with a bearing piece A^0 which rests upon the top of the lug E^0 secured to the cross piece e' of the frame E. This lug E^0 carries a pin e^2 which serves as a pivot for the rear or tail end of the plate A, and steadies the same in position while it is being vibrated. The front or head of this plate A rests on two or more rollers C journaled above the cross piece e . These rollers are independent of each other and serve only as bearers for the plate A in its lateral vibrations. The front or head of this plate is given a lateral vibratory motion about the pivot near its rear or tail end by means of the link D' connected to the crank

d' on the shaft d which shaft carries a gear wheel D meshing in the gear wheel B. This gear wheel B is fast on the shaft B' journaled in the frame work E, which may be driven by the hand crank b , or the pulley b' , or in any other convenient way.

The quicksilver or other material used for amalgamating or gathering the gold is placed in the various pockets a^3 .

For fine gold the position of the plate would normally be approximately that indicated in Fig. 2, the gangue being fed on the upper end.

In cleaning, raise the head of the plate at any desired angle for the purpose of clearing the table of the coarse debris, and when all is off but the amalgam, lower the head of the plate down and sponge off with a wet sponge from the foot to the head end, gathering the gold wiped off in any suitable receptacle.

The peculiar shape of the hopper-like pockets enables a large mass of material to be superimposed over each pocket, and as the gold settles during the vibrations it either comes in contact with one of the amalgamated sloping edges or accumulates in the mercury in a longitudinal direction and vibrated laterally the gold is more likely to catch on some one of the amalgamated inclined surfaces, either of the longitudinal or the transverse partitions, than where the only motion was directly down the sloping surface of the board.

The various other advantages of the herein described construction will readily suggest themselves to any one skilled in the art.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a gold separator, the combination with a plate provided with side rails and a plurality of rectangular pockets having a vertical rear wall and inclined front and side walls, the said rails and pockets being in the working surface of said plate, of means to vibrate the said plate laterally, substantially as described.

2. In a gold separator, the combination with a plate provided with side rails and a plurality of rectangular pockets having a vertical rear wall and inclined front and side walls in the working surface thereof, the said pocket-

ets being adapted to contain mercury or other material for collecting the gold, and the said plate being pivoted at or near one end thereof; of a plurality of rollers arranged beneath the
5 opposite end of said plate, a link connected to said plate near the said rollers, a crank connected to said link, a driving shaft and gear wheels for revolving said crank and so

imparting a vibratory motion to said plate about its pivot, substantially as described. 10

In testimony whereof I have affixed my signature in presence of two witnesses.

JOSEPH J. PAYNE.

Witnesses:

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JAMES H. THOMAS.