(No Model.)

E. J. COWLEY.

GOLD WASHING MACHINE.

No. 563,021. Patented June 30, 1896.

Fig. 1.

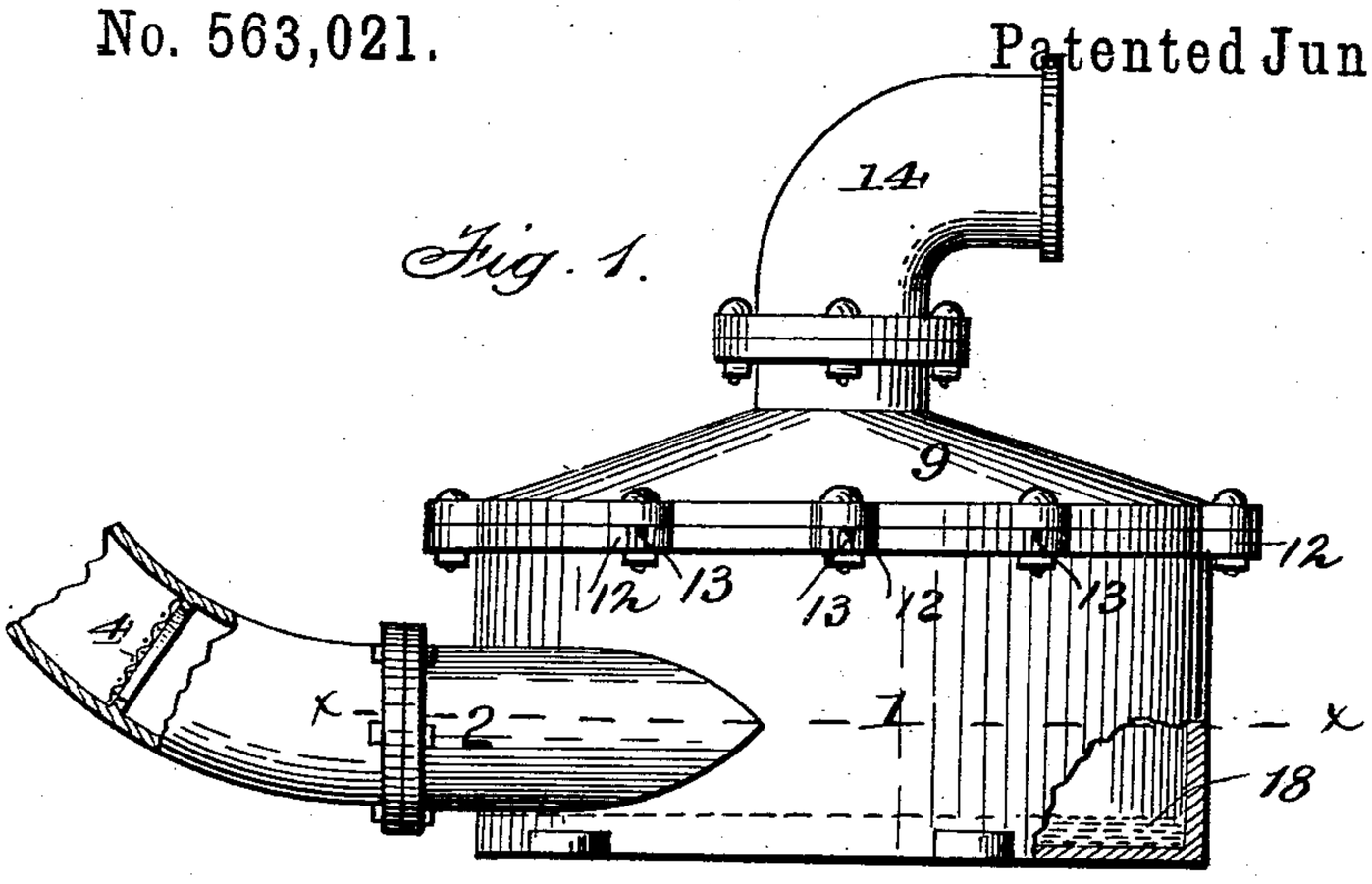


Fig. 2

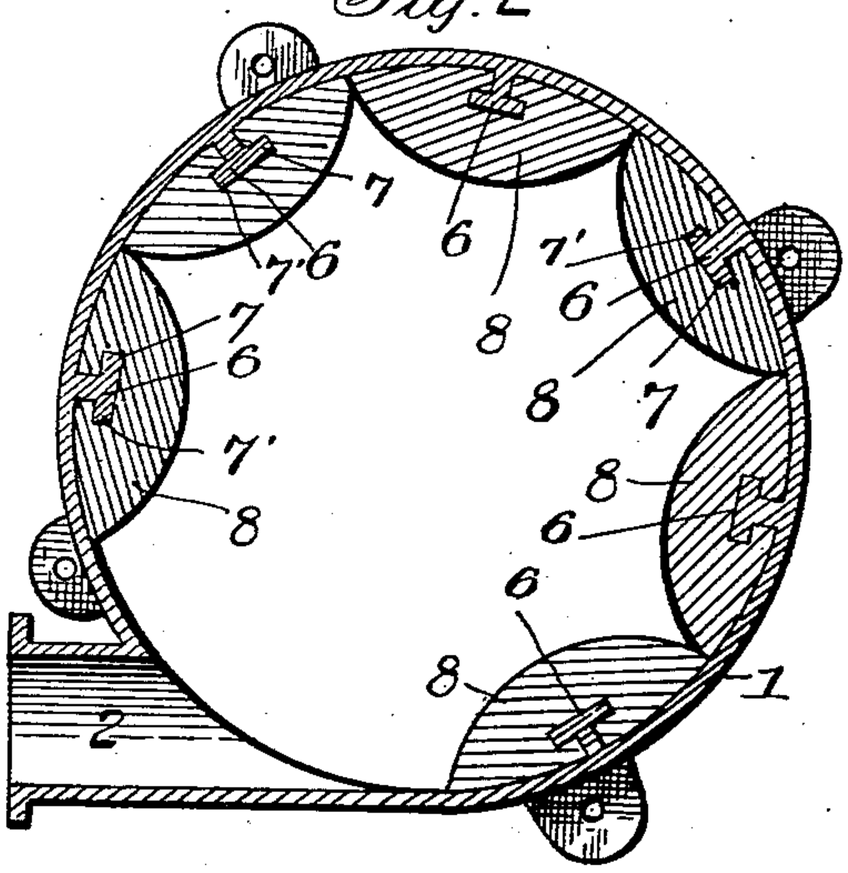


Fig. 3.

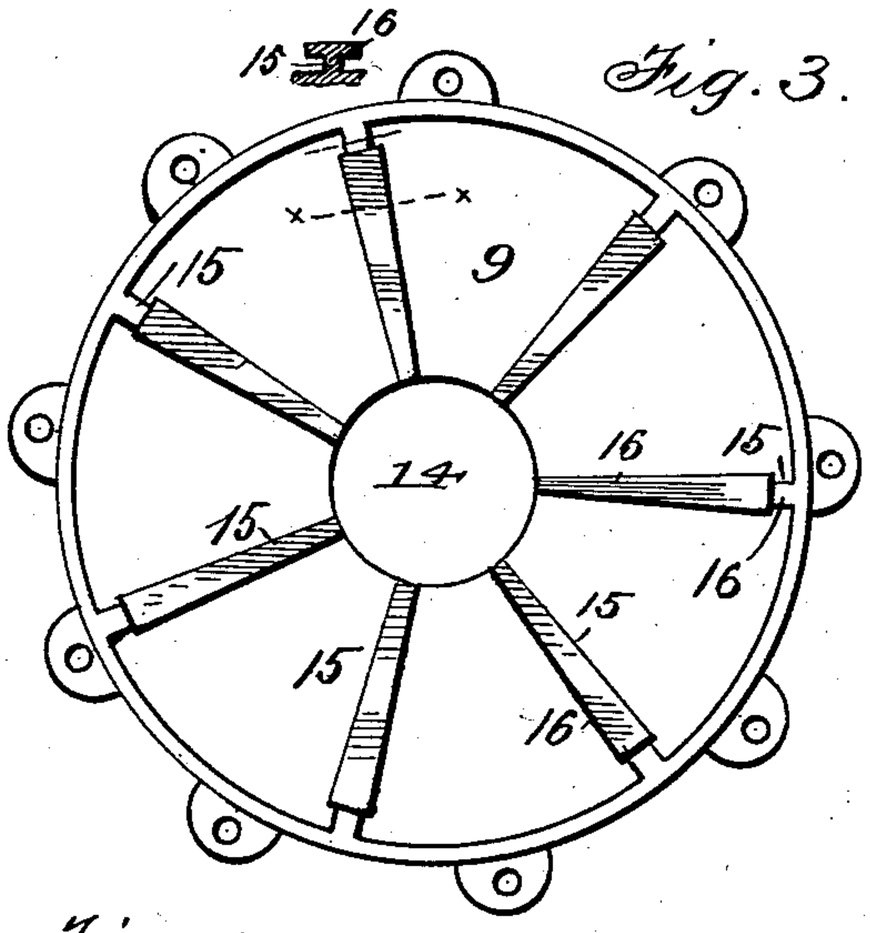


Fig. 4.

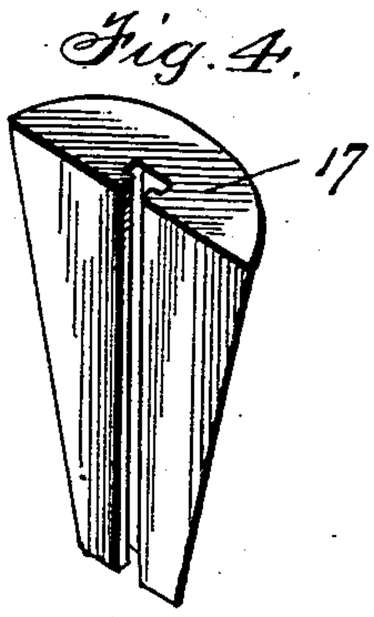
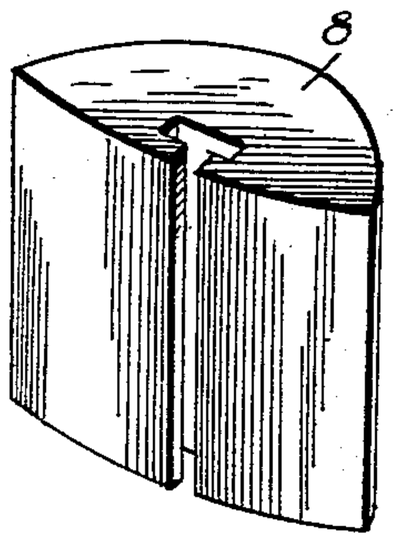


Fig. 5



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD J. COWLEY, OF BOISE, IDAHO.

GOLD-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 563,021, dated June 30, 1896.

Application filed September 11, 1895. Serial No. 562,191. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. COWLEY, a citizen of the United States, and a resident of Boise city, in the county of Ada and State of Idaho, have invented certain new and useful Improvements in Gold-Washing Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in machines for separating gold from gravel, and its object is to provide such a machine in which the gravel and gold are fed thereto by hydraulic power into contact with amalgamated plates which will catch and hold the precious metal while the tailings will pass off through the top of the machine.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 shows a side elevation of a gold-separating machine constructed in accordance with my invention. Fig. 2 is a horizontal section on the line *x x*, Fig. 1. Fig. 3 is a detail view of a portion of the top and cover, showing the radial ribs and flanges for holding the amalgamated plates in place. Figs. 4 and 5 are detail perspective views of one of the amalgamated top and side plates, respectively.

In the said drawings the reference-numeral 1 designates a cylinder closed at its bottom and provided at its lower end with a tangential feed-pipe 2, adapted to be connected with an elevated sluice-box. (Not shown). A screen or grizzly 4 is located in the sluice-box or feed-pipe. The inner surface of this cylinder is formed with a number of vertical ribs 6, having side flanges 7 7, forming guides to receive the removable segmental curved plates 8, coated with a suitable amalgam.

The numeral 9 designates the conically-shaped top or cover of the cylinder provided at its periphery with a number of lugs, through which and corresponding lugs 12 at the upper edge of the cover pass bolts 13, by which the cover is held in place. This cover is formed with a central opening, with which is connected a discharge-pipe 14 at a lower level than the sluice-box. Upon its inner or under side the cover is formed with a number of radial lugs 15, formed with side flanges 16, forming ways to receive the edges of the tapering amalgamated plates 17. The numeral 18 designates a quantity of quicksilver placed in the lower part of the cylinder, the surface or level of which is on a line with the lower part of the tangential feed-pipe.

The operation is as follows: The amalgamated plates are inserted in the ways formed for them in the cover and cylinder and the said cover is then placed in position and secured to the cylinder by means of the bolts. Water and gravel are then fed from the sluice-box to the feed-pipe and will enter the lower end of the cylinder on a tangential line, causing the gravel and water to strike the side of the cylinder, giving them an upward spiral movement and finally discharging them through the discharge-pipe at the top. As the water and gravel enter the cylinder they will be forced over and across the quicksilver in the cylinder, which will take and hold the gold. Any precious metal not so taken up by the quicksilver will adhere to the amalgamated plates in the cylinder and cover during the upward spiral movement of the gravel and water. When desirable or necessary, the top or cover can be removed and the amalgamated plates withdrawn and fresh ones inserted in their places.

Having thus described my invention, what I claim is—

1. In a gold-separating machine, the combination with the cylinder, the tangential feed-pipe and the amalgamated plates, of the removable cover the amalgamated plates connected therewith and the discharge-pipe, substantially as described.

2. In a gold-separating machine, the combination with the cylinder adapted to contain quicksilver, the internal vertical ribs with side flanges, the removable amalgamated plates engaging with said flanges, and the

tangential feed-pipe, of the removable cover having a central discharge-pipe, the radial ribs on the under side of said cover, having side flanges, and the amalgamated plates engaging with said flanges, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

EDWARD J. COWLEY.

Witnesses:
CORTLAND J. NORTHROP,
OLLIVER CASE.