

(No Model.)

J. MAIT.
GOLD SAVING DEVICE.

No. 581,425.

Patented Apr. 27, 1897.

Fig. 1.

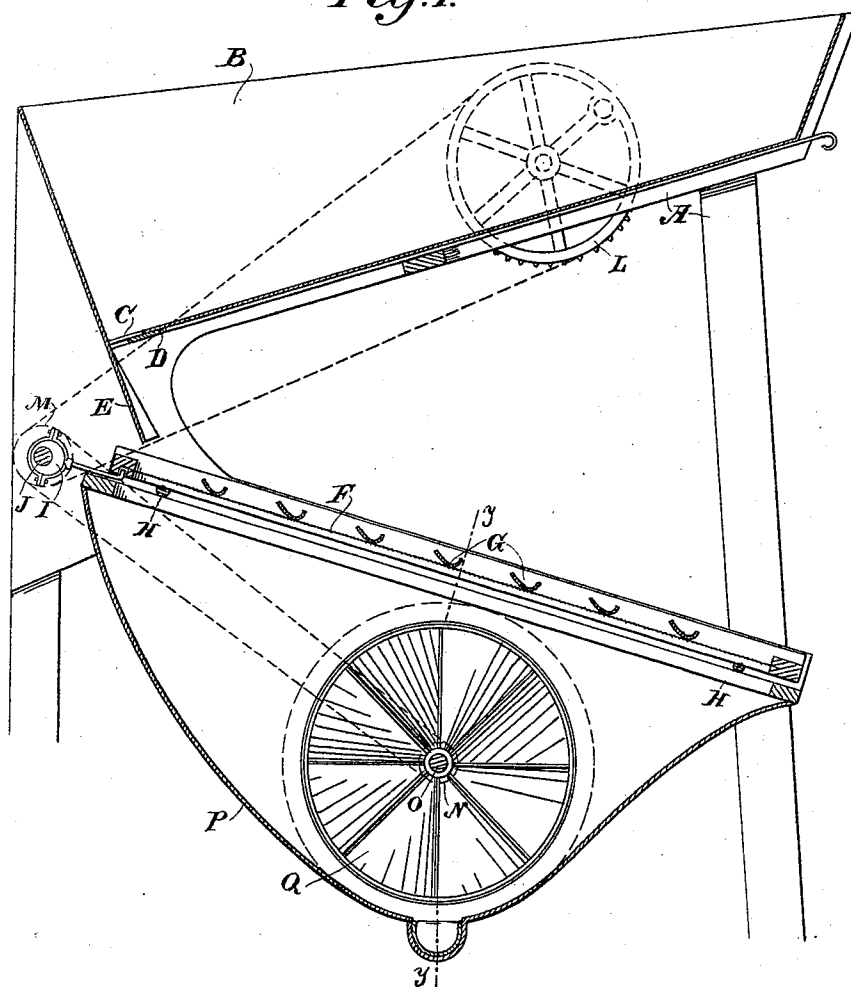
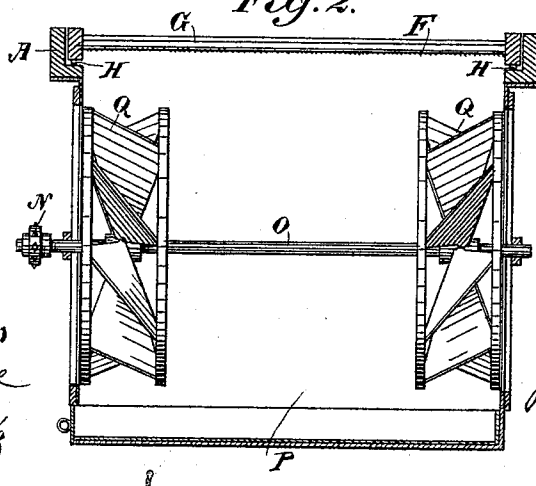


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOSEPH MAIT, OF OAKLAND, CALIFORNIA.

GOLD-SAVING DEVICE.

SPECIFICATION forming part of Letters Patent No. 581,425, dated April 27, 1897.

Application filed January 5, 1897. Serial No. 618,004. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MAIT, a citizen of the United States, residing at Oakland, county of Alameda, State of California, have
5 invented an Improvement in Gold-Saving Devices; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an apparatus for
10 separating gold and valuable heavy substances from lighter sand and worthless material.

It consists of the parts and the constructions and combinations hereinafter described
15 and claimed.

Figure 1 is a longitudinal vertical section. Fig. 2 is a cross-section on line *y y* of Fig. 1.

The object of my invention is to provide certain improvements in that class of apparatus which is especially designed for the
20 dry separation of light worthless sand from heavier gold and valuable particles.

In the construction of my apparatus I employ any suitable framework A of proper
25 shape and size, and in the upper portion of this framework is a hopper B, having an inclined bottom and a discharge slot or channel C at the lower end or apex, with a movable
30 sliding gate D, by which the passage of the sand is regulated. The opposite side E of the hopper is more nearly vertical than the side which practically forms the bottom and through which the discharge-slot is made, and the lower end of the side E is continued
35 at the same angle to a point below the slot C, so as to form a guide to deliver the sand properly upon the upper end of the screen F. This screen stands at an angle beneath the
40 bottom of the hopper B and declining downwardly in the opposite direction, so that the upper end of the screen is nearest to the discharge-opening C and receives the sand and material therefrom. Across the screen F are
45 fixed a series of segmental troughs G, having the longest incline directed upwardly along the screen to increase the holding capacity of the riffles, and a short upturned lower edge, as shown in cross-section.

The screen F is mounted upon suitable
50 rollers or supports H, resting upon the frame, so that the screen may be given a longitudinal movement upon these supports. This

movement is effected by means of an eccentric I, fixed upon a shaft J, which is journaled transversely across the frame, as shown. 55 Power is transmitted to rotate this shaft at any desired rate of speed by means of a chain extending around a sprocket-wheel upon the end of the shaft J and thence around a chain-driving wheel L, fixed to a shaft suitably
60 journaled to the frame and having a crank or other means for applying power thereto.

The difference in the size of the sprocket-wheels is such as to multiply the speed of the eccentric-shaft to any desired degree. 65

Upon the opposite end of the eccentric-shaft is a chain-pulley M, from which a chain passes around a sprocket-wheel N, fixed to the fan-shaft O. This shaft extends through a casing P, which incloses the lower surface
70 of the screen F, and the casing has openings upon each side within which the fans Q are adapted to revolve. These fans are made with propeller-blades which are fixed at opposite angles, so that when the fans are rotated each of them draws air in from the outside and forces it into the receiving-chamber P, where it will accumulate under considerable pressure by reason of its being driven
75 in from opposite sides. This air thus accumulated under pressure passes out through the meshes of the screen F and thus keeps the material upon the screen in an agitated condition, the lighter portion being lifted by the steady pressure of air and eventually discharged over the lower end of the screen, 85 while the heavier particles are retained by the transverse receivers or riffles G and from which these heavier particles may be readily removed. 90

The operation of the machine is extremely effective in separating the gold from the sand.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 95

1. A device for separating heavier and lighter particles consisting of the inclined longitudinally-oscillating screen, an oppositely-inclined hopper and a regulating-gate through which the material is supplied to the
100 upper end of the screen, and an extension or guide between the discharge and the screen, an air-chamber supported below the screen and having inlet-openings in the sides, and

an open discharge covering the lower surface of the screen, fans having oppositely-inclined blades journaled to rotate within said openings whereby air is forced in from opposite sides, and riffles fixed transversely across the screen-surface, having a short upturned lower edge and having the longest incline directed upwardly along the screen.

2. A device for separating heavier and lighter particles of gold and sand consisting of a hopper having a discharge-slit at the bottom, a gate by which the discharge is regulated, an extension from one side of the hopper serving to guide the discharged material, a screen supported upon bearing-rollers, an eccentric mounted upon a shaft to which motion is transmitted to rotate it, a link connecting the eccentric with the screen, transverse riffles made in the form of upwardly-presented segments fixed to and extending

across the upper surface of the screen at intervals, having their longest inclines directed upwardly along the screen and their lower edges upturned, said riffles forming troughs or receivers for the heavier particles of material, a casing or air-receiver situated below the screen opening directly therethrough at the top, said casing having supply-openings in the sides, a shaft extending therethrough having mounted upon it fans which rotate within the supply-openings, said fans having the oppositely-inclined blades whereby air is forced into the receiver and thence through the screen.

In witness whereof I have hereunto set my hand.

JOSEPH MAIT.

Witnesses:

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