No. 643,233. Patented Feb. 13, 1900.

F. C. PINNELL.

GOLD WASHING MACHINE.

(Application filed Aug. 22, 1898.)

(No Model.)

Fig. 1.

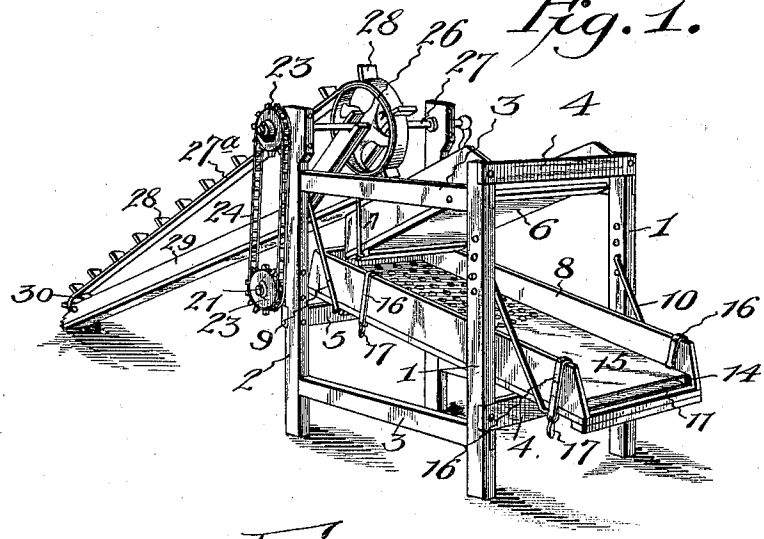


Fig. 2.

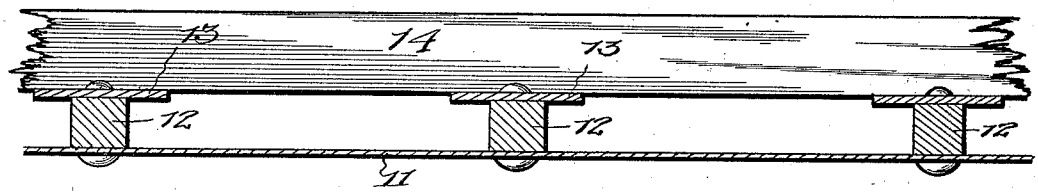


Fig. 3.

Fig. 4.

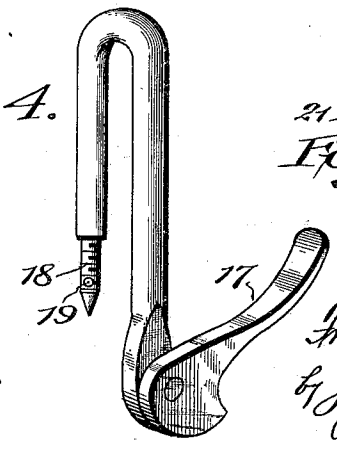
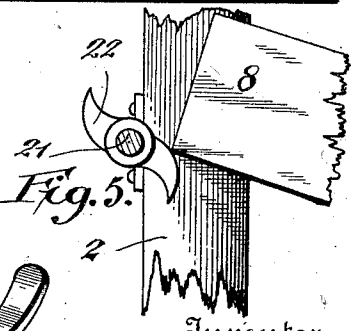


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANK C. PINNELL, OF LODGE, CALIFORNIA.

GOLD-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 643,233, dated February 13, 1900.

Application filed August 22, 1898. Serial No. 689,269. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. PINNELL, a citizen of the United States of America, residing at Lodge, in the county of Fresno and State of California, have invented certain new and useful Improvements in Gold-Washing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in ore-washers, and has for one object the provision of novel means for operating the pump and the riffle-box carrying the screen by a common shaft, a further object being to provide a riffle-box having advantages in points of capacity and efficiency.

A still further object of the invention is to provide means for holding the screen and riffle in the riffle-box by a clamp, whereby the parts may be readily assembled or removed. Furthermore, when the conditions warrant a change in the size or shape of the riffle the clamp is so formed as to be adjusted to engage parts of varying sizes.

Furthermore, the invention has for its object the production of an ore-washer which shall be strong, durable, and satisfactory in use, as well as comparatively inexpensive to produce and sustain.

With the above and other objects in view the invention consists in the novel details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and specifically claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters of reference denote corresponding parts in the several views, in which—

Figure 1 is a view in perspective of an ore-washer embodying my improvements. Fig. 2 is a sectional view of a portion of a riffle. Fig. 3 is a sectional view of a portion of the screen. Fig. 4 is a perspective view of a modified form of clamp. Fig. 5 is an elevation of a detail.

In the drawings I show a suitable frame consisting of front and rear uprights 1 and 2, respectively connected by rails 3, the uprights 1 being joined by transverse rails 4 and the uprights 2 by suitable rails 5. A hopper 6 is suspended by a hanger 7, depending from the rails 3, said hopper being set on an incline and having its lower end discharging into the riffle-box 8. The riffle-box 8 is suspended by hangers 9 and 10, pivoted to the uprights, the hanger 10 being vertically adjustable for the purpose of varying the angle of inclination of the riffle-box, so that the material acted upon may be accelerated or retarded, according to its condition.

The riffle consists of a metallic base-plate 11, having transverse square strips 12, each having a sheet-metal cap 13 protruding over the sides and forming, with the edges thereof, a series of pockets to receive the deposits. The riffle is provided with longitudinal stiffening-rails 14, attached to the transverse strips to facilitate handling. These rails have a further function in that they support the screen 15, and the perforations of the screen are so made as to cause the metal to slope toward the apertures, thus forming a series of concavities which direct the gravel toward and into the apertures. The screen and riffles are secured in place by a clamp 16, approximately U-shaped, one end of which is adapted to engage the screen and bind it to the riffle and the riffle in turn to the bottom of the riffle-box. On the opposite end of the clamp I provide a cam-lever 17, which engages the under edges of the side of the riffle-box. As it might be desirable to employ riffles of varying sizes, I have provided a modified form of clamp in which a movable extension 18 is screw-threaded in the end of the clamp, thus permitting an adjustment to accommodate riffles having increased or diminished capacities. The extension is turned by any suitable tool fitting in the opening 19.

The riffle-box is agitated by a knocker 22 on the shaft 21, which is driven, through the sprocket-wheels 23 23 and chain 24, by the power-shaft 27, which is actuated by any suitable means.

A pulley 26 is secured on the shaft 25 and has a belt 27, provided with blocks 28, which are adapted to slide in a trough 29, said trough having a pulley 30 at its end, over which the belt operates. The upper end of the trough leads into the hopper at about its discharging end, thus applying means for moistening the material and washing out the gold.

The construction, operation, and advantages will, it is thought, be understood from the foregoing description, it being noted that various changes may be made in the proportions and details of construction without departing from the spirit of this invention.

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

1. The herein-described riffle consisting of a base-plate, transverse strips secured thereto, sheet-metal caps secured to the strips, forming pockets, longitudinal rails secured to the transverse strips, a screen supported by said rails, and U-shaped clamps each having one end provided with a cam-lever, said levers operating against the bottom of the riffle-box, drawing the opposite end downward against the screen, as and for the purpose described.

2. In combination, a riffle-box, a riffle consisting of a plate, transverse strips secured thereto, a metal cap secured to each of said strips and projecting beyond the sides thereof forming pockets, longitudinal rails provided on the top of the strips, a screen having a series of concavities with perforations formed therein, U-shaped clamps each having a cam-lever journaled in one end thereof, said clamps being arranged to have their cam-levers operate against the bottom of the box drawing the opposite ends downward to clamp the screen and riffle-plate, substantially as described.

3. In combination with a machine of the character described, a riffle-box, screens and riffles therein, a clamp having one end bent over the edge of the side of the riffle-box and bearing against the screen, with its opposite end lying against the side of the box, and a cam-lever pivoted to the end and bearing against the bottom of the riffle-box, substantially as described.

4. In combination with a machine of the character described a riffle-box, a screen having concavities at the openings, riffles in the box clamps embracing the sides of the box and having one end bearing against the screen and means whereby the clamp may be adjusted to admit screens and riffles of varying sizes, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

FRANK C. PINNELL.

Witnesses:
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LOUISE HARVEY.