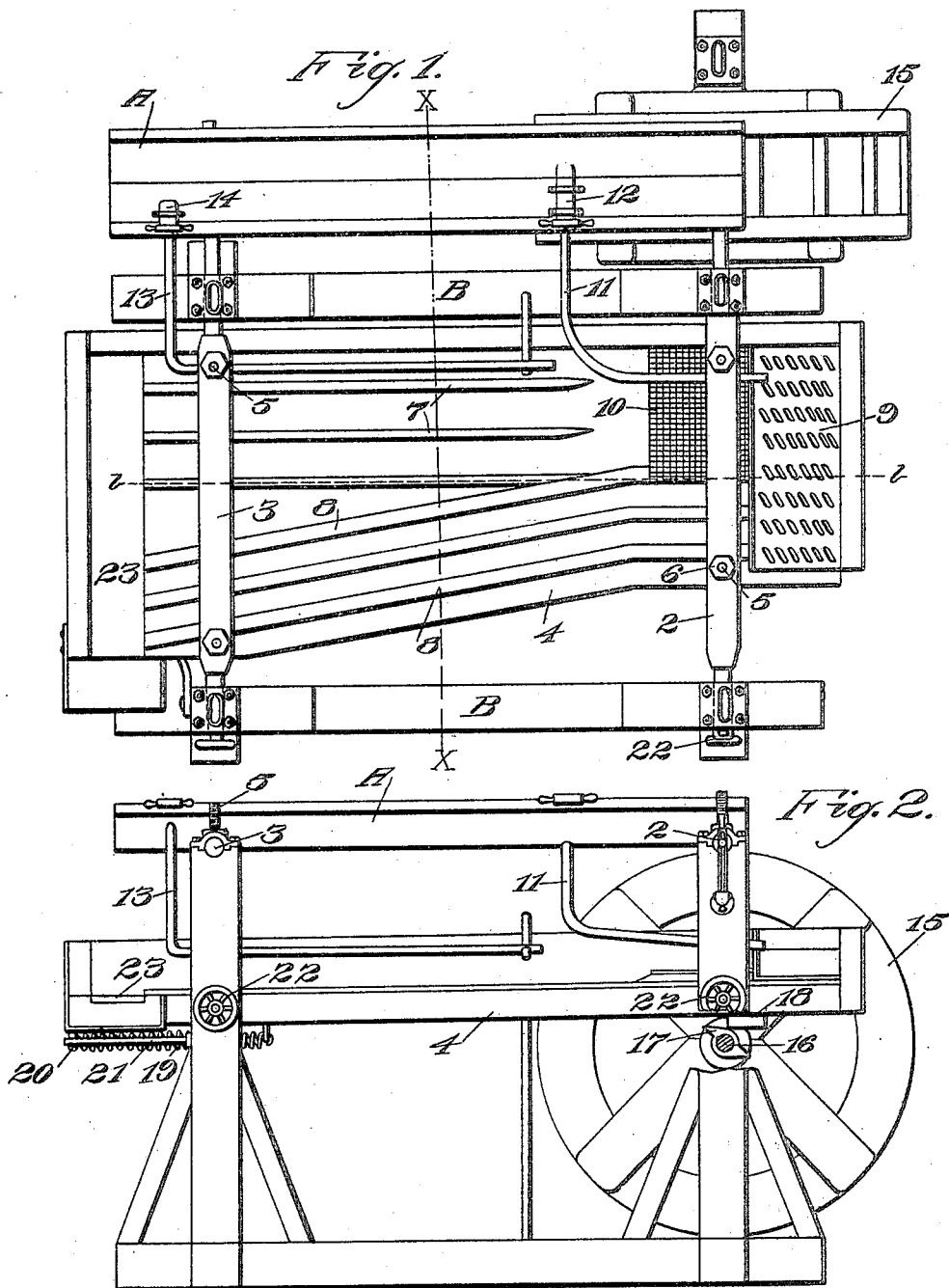


No. 812,474.

PATENTED FEB. 13, 1906.

O. H. BAGLEY.
GOLD SAVING APPARATUS.
APPLICATION FILED JUNE 19, 1905.

2 SHEETS—SHEET 1.



Witnesses.
E. J. Hastings
J. A. Moore

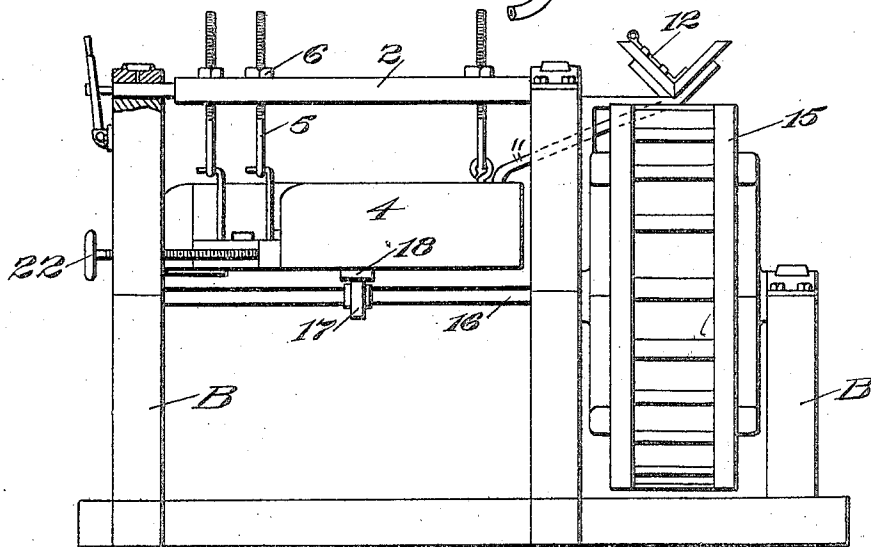
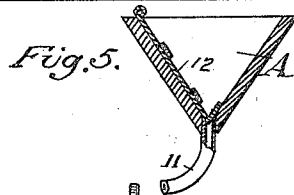
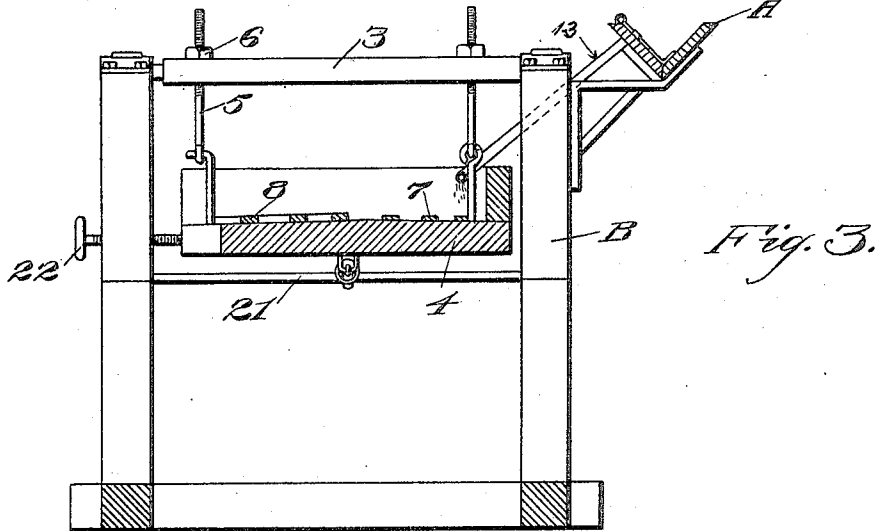
Inventor
Olin H. Bagley
By Geo. H. Strong atty

No. 812,474.

PATENTED FEB. 13, 1906.

O. H. BAGLEY.
GOLD SAVING APPARATUS.
APPLICATION FILED JUNE 19, 1905.

2 SHEETS--SHEET 2.



Witnesses.
J. Eastberg.
B. S. S. S.

Inventor.
Olin H. Bagley
By Geo. H. Strong. atty

UNITED STATES PATENT OFFICE.

OLIN H. BAGLEY, OF DEADWOOD, CALIFORNIA.

GOLD-SAVING APPARATUS.

No. 812,474.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed June 19, 1905. Serial No. 265,912.

To all whom it may concern:

Be it known that I, OLIN H. BAGLEY, a citizen of the United States, residing at Deadwood, in the county of Trinity and State of California, have invented new and useful Improvements in Gold-Saving Apparatus, of which the following is a specification.

My invention relates to gold-saving apparatus. Its object is to provide a cheap simple practical washer and concentrator for use either in quartz-mills for segregating and collecting the finely-pulverized sulfurets or in placer-mining where coarse gravel is handled and where there may be a considerable head of water available for washing purposes and for power.

The invention consists of the parts and the construction and combination of parts, as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a plan view of my invention. Fig. 2 is a side elevation. Fig. 3 is a vertical section on line X X, Fig. 1. Fig. 4 is a front end view. Fig. 5 is a cross-sectional view of the sluice A, showing the gate 12 and delivery-pipe 11.

In illustrating my invention I have shown it as applied in placer-mining, where the earth and gravel is first run through sluices and rifled boxes, the sands, gravel, and values which do not lodge in the riffles in the boxes being discharged through a grizzly or coarse screen along with a suitable quantity of water into a V-shape sluice A, whence the material is delivered onto the table through one pipe, wash-water through another, and the overflow of water used to operate the table, all in a manner hereinafter described.

B represents a frame of suitable construction, shown as supporting the trough-section A and carrying the two horizontal rockshafts 2 3, from which the table 4 is adjustably hung by means of the screw-threaded hooks 5 and nuts 6.

The table is of special design and is made narrower at the head end with the two ends and back closed, while only the front is open. The back is generally straight, or nearly so, with the ends about at right angles to the back. The front side, however, diverges from the back from a point a short distance from the head end toward the rear or discharge end of the table, so that the concentrating area enlarges toward the rear end of the machine and a wider range of action is

afforded to the material undergoing treatment.

The surface of the table is made slightly inclined downward toward front and back from approximately a central longitudinal apex line *b b* or surface on the table, while the transverse incline of the table is regulated by suitable means, as the nuts 6, on the screw-threaded hooks 5, which carry the table. Screwing up or loosening the nuts 6 on one side or the other of the table will correspondingly raise or lower that side.

The two portions of the table on either side of line *b b* (such line being more or less imaginary, since it may be a flat surface several inches, more or less, in width) practically constitute two different concentrating areas, the back portion carrying the majority of the values and having a series of straight riffles and the front portion widening out as before described, toward the rear of the table and being provided with a series of crooked riffles 8, running generally parallel with the front edge of the table.

A perforated feed-trough 9, having perforations corresponding to the size of the biggest particles to be allowed to come onto the table, extends across the head or narrower end of the table, and a screen 10 is disposed beneath screen 9 and over a portion of the table corresponding to the straight riffles 7. The purpose of the screen 10 is to break the force of the water and sand falling from trough 9 onto the table and prevent boiling, thereby assisting concentration.

The material to be treated is delivered from the sluice A through a pipe 11, opening into the bottom of the sluice and discharging onto the upper end of trough 9 near the back of the table. Flow through pipe 11 may be controlled by a gate 12, consisting of a plate sliding in suitable guides on the inside of the sluice and having a V-shaped end corresponding to the cross-section of the sluice.

Wash-water is delivered onto the table from sluice A through a perforated pipe 13, arranged to open into the sluice at a point well up on the sides of the sluice, so as to receive practically clear water. A gate 14 controls the flow through pipe 13.

Any suitable means may be employed to shake the table lengthwise. Where the water-supply at hand warrants it, I operate the table by means of an overshot wheel 15, arranged below the discharge of sluice A and suitably mounted on or in relation to frame

B, and the wheel-shaft 16 is provided with a cam 17 to engage a tappet 18 on the underside and near the head of the table.

The return movement of the table in opposition to the action of cam 17 is effected by a spring 19, such return movement being limited by means of a pin or projection 20 on the table engaging a cross-bar 21 or other suitable rigid stop on the frame.

The front hanger-shaft 2, which supports the head of the table and that end which is over cam 17, has a limited lengthwise-sliding movement, and the table is usually steadied and the tappet held in operative position relative to the cam by means of the adjusting set-screws 22 in the sides of the frame adapted to press on wearing-plates on the front edge of the table. By slacking up these screws, however, the table is shifted or shiftable to carry the tappet out of the path of the cam, so that the table may be brought to rest without cutting off the water-supply or otherwise affecting the power.

In operation with a machine equipped with water-wheel driving mechanism as above described the sand, gravel, concentrates, and other values and value-bearing matter, along with a sufficient supply of water, is fed by pipe 11 into the perforated trough 9. The table having been suitably adjusted by the side adjusting bolts or screws 22, the table is made to vibrate back and forth rapidly. The major part of the sand and values pass through trough 9 and screen 10 onto the back portion of the table, where it is gradually worked toward the back of the machine. The table having been given just the right tilt crosswise by means of the nuts 5, the water from pipes 11 and 13 carries the lighter worthless particles across riffles 7 and 8 and discharges over the front open edge of the table. The tilt of the latter, however, is very slight, since the heavier particles bank up more or less against the back of the table, the riffles preventing their movement crosswise of the table, while the volume of water is sufficient to overflow the riffles and to carry the aforesaid worthless lighter matters, silt, and gangue, &c., in suspension.

The heavier and coarser matters not falling immediately through trough 9 onto the back concentrating portion of the table are dropped through the lower half of the trough 9 onto the surface of the table occupied by the crooked riffles 8. This material is gradually advanced between these riffles to the back of the table, where all the values come into a transversely-extending sloping channel or groove 23, whence they flow off at the front of the table and are collected as desired.

The crooked riffles 8 by extending diagonally to the line of bump create a slight wave movement of the water and material to effect a more complete separation of the values from the non-values, and the latter pass off

over the side of the table, leaving the former behind.

The coarser stones and gravels which are too large to pass through trough 9 are discharged at the end of the screen onto the dump, and the table is therefore relieved of much unnecessary and unprofitable weight.

Where the machine is to be used in mills, the water-wheel may be dispensed with and the table shaken by the power used to operate the stamps. The material, though, is preferably delivered in all cases through a V-shaped sluice, which latter possesses exceptional advantages for concentration purposes.

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

1. A gold-washer comprising a table suitably mounted for reciprocatory movement, said table having a generally straight back portion with closed back and ends and opened at the front, the front edge of the table made divergent toward the rear of the table, whereby the latter has a generally flared appearance from front to rear, a series of riffles on the surface of the table extending approximately parallel with the front divergent edge of the table, means for delivering material onto the head or narrower end of the table, means for giving the table a longitudinal reciprocating movement, said table having its surface slightly higher at the center than at either side, and means for adjusting the transverse tilt of the table.

2. A concentrator-table, suitably mounted for reciprocatory movement and having a generally straight back portion with closed back and ends, and open at the front, the front edge of said table being divergent relative to the back whereby the table has a generally flared appearance from front to rear, riffles on one part of the table extending generally parallel with the back of the table, other riffles extending generally parallel with the flared front edge of the table, means for delivering material onto the several riffled portions of the table, and means for giving the table a reciprocatory movement in a line parallel with the back of the table.

3. A concentrator-table, having substantially a straight back edge and a longer front edge, and closed at the back and ends and open at the front, said table having its surface slightly higher at the center than at either side, riffles on the table, some of which riffles are arranged divergent with relation to the back edge, means for imparting a transverse tilt to the table, and a transversely-extending discharge-trough for the concentrates at the wider end.

4. In a gold-saving apparatus, the combination of a suspended table, means for reciprocating the same lengthwise, riffles on the table, means for tilting the table sidewise,

means for delivering material and wash-water to the table, a power-shaft, a cam on said shaft, a tappet carried by the table, and means including transversely-extending screws engaging the side of the table whereby the table may be shifted laterally into and out of the range of action of the cam.

5. In a gold-saving apparatus, a table suspended for reciprocatory movement, ruffles on the table, means for delivering material and wash-water thereto, a power-shaft, a cam on the power-shaft, a tappet carried by the table, means for shifting the table laterally to carry said table into or out of the path of said cam, said means including adjustable screws bearing on the side of the table and proximate to the head and rear thereof.

6. In a gold-saving apparatus, the combination of a frame, two rock-shafts journaled therein, one of which has a limited lengthwise movement, adjustable hangers carried by said rock-shafts, a table supported by said hangers, means for delivering material and wash-water to the table, means for collecting the values separate from the worthless matter, and means for shaking the table, said shaking means capable of being thrown into and out of operative relation with the table by means of said endwise-movable shaft.

7. In a gold-saving apparatus, the combination of a suitable framework, a table mounted thereon for reciprocatory movement, means for delivering material and wash-water onto the table, means for shaking the table, and means for collecting the values separate from the worthless material, said means for delivering the material onto the table including a V-shaped trough, a discharge-pipe for the material opening into the bottom of said trough, and a plate sliding in suitable guides on the inside of the trough and having a V-shaped portion corresponding to the cross-section of the V-trough to control the passage of material into said discharge-pipe.

8. In a gold-saving apparatus, the combination of a suitable framework, a table mounted thereon for reciprocatory movement, means for delivering material and wash-water onto the table, means for shaking the table, and means for collecting the values separate from the worthless material, said means for delivering the material to the table including a V-shaped trough, a discharge-

pipe for the material opening into the bottom of said trough, and a plate sliding in suitable guides on the inside of the trough and having a V-shaped portion corresponding to the cross-section of the V-shaped trough to control the passage of material into said discharge-pipe, a pipe for said wash-water entering said V-shaped trough at a point above the ordinary level of the material in said trough, a suitable gate for the wash-water pipe and an overshot wheel receiving the overflow from said trough and operating said table-shaking means.

9. In a gold-saving apparatus consisting of a framework, two rock-shafts thereon, one of which is arranged to have a limited lengthwise movement, a table suspended from said rock-shafts, said table closed on one side and two ends, and open on the other side, said table being narrower at one end than at the other, a perforated feed-trough extending across the narrower end, a screen arranged beneath a portion of said feed-trough and adapted to calm the water and material passing from the feed-trough onto that portion of the table, means for delivering material and water into the feed-trough, and means for shaking the table.

10. In a gold-saving apparatus, the combination of a suitable framework, two rock-shafts mounted thereon, one of which is adapted to have a limited lengthwise movement, a table adjustably hung from said rock-shafts, said table being closed on one side and at both ends, and open at the front, said table also being narrower at one end than at the other, means for delivering material at the narrower end of the table, a water-wheel, a shaft provided with a cam, a tappet on the table to be engaged by the cam, means for shifting the table and said lengthwise-shiftable rock-shaft to carry said tappet into and out of engagement with the cam, and a V-shaped trough, carrying the material which is delivered onto the table, discharging upon said water-wheel.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

OLIN H. BAGLEY.

Witnesses:

LEAS. DICKEY,
JAMES W. PHILLIPS.