

No. 783,048.

PATENTED FEB. 21, 1905.

E. Z. KIDD.

PLACER WASHER.

APPLICATION FILED AUG. 1, 1902.

3 SHEETS—SHEET 1.

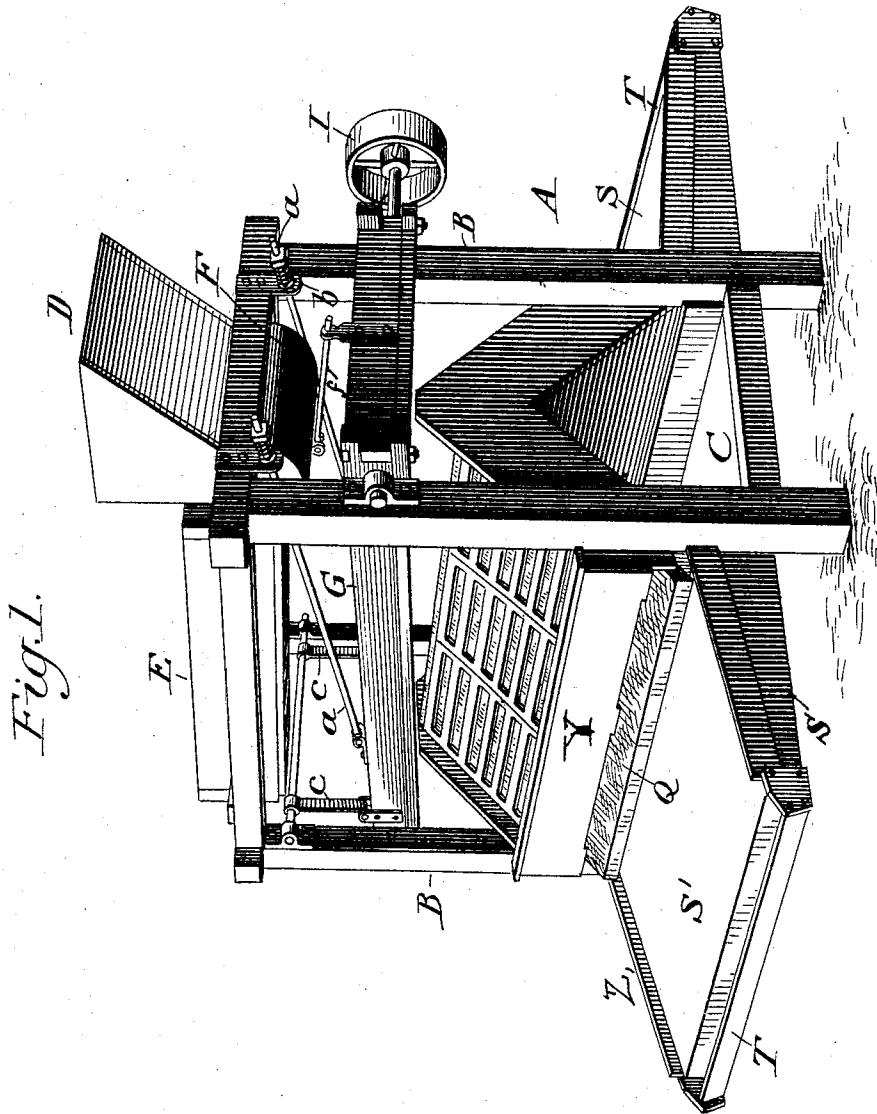


Fig. 1.

Witnesses:

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Milton F. Baldy

Inventor.

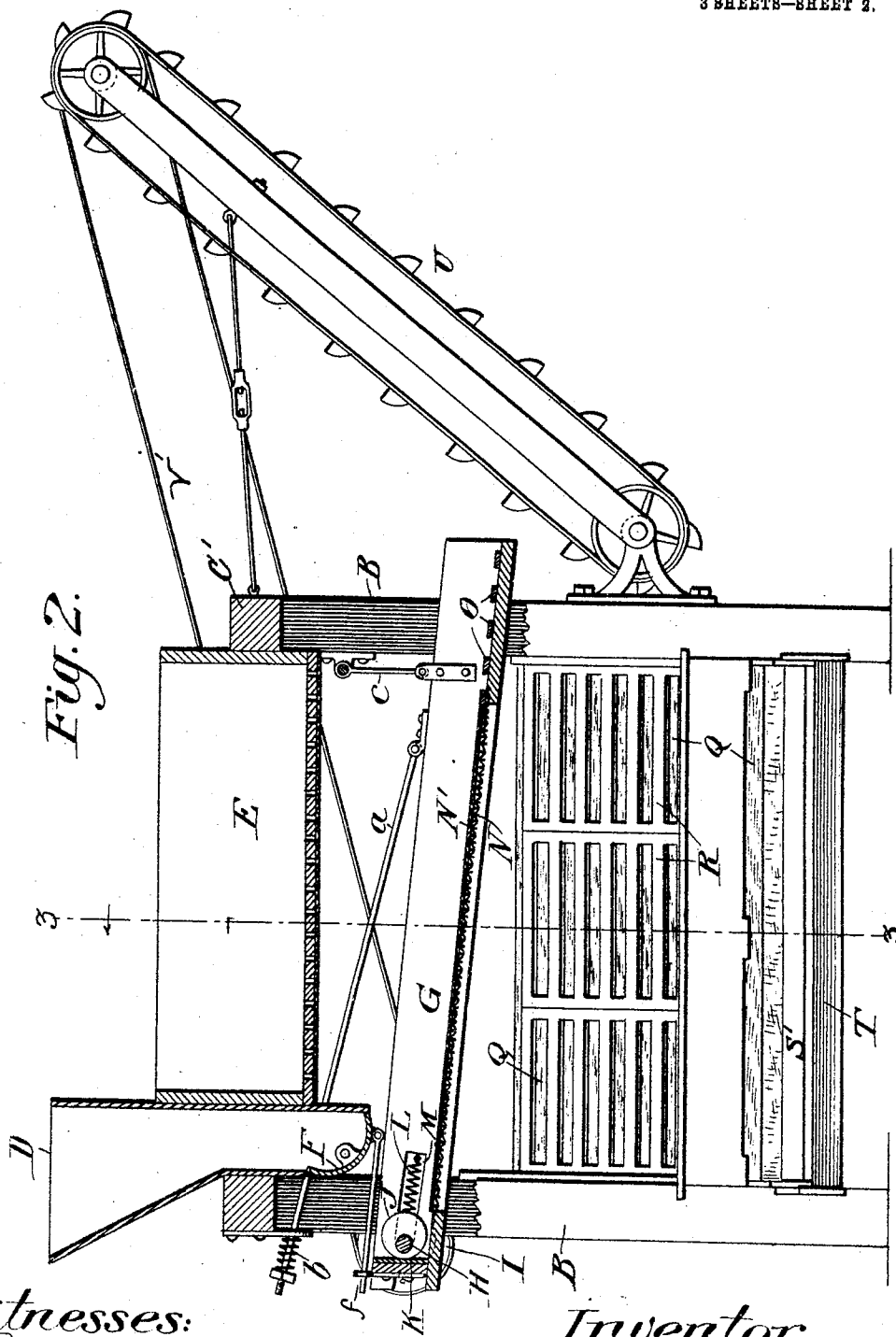
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3 SHEETS—SHEET 2.



Witnesses:

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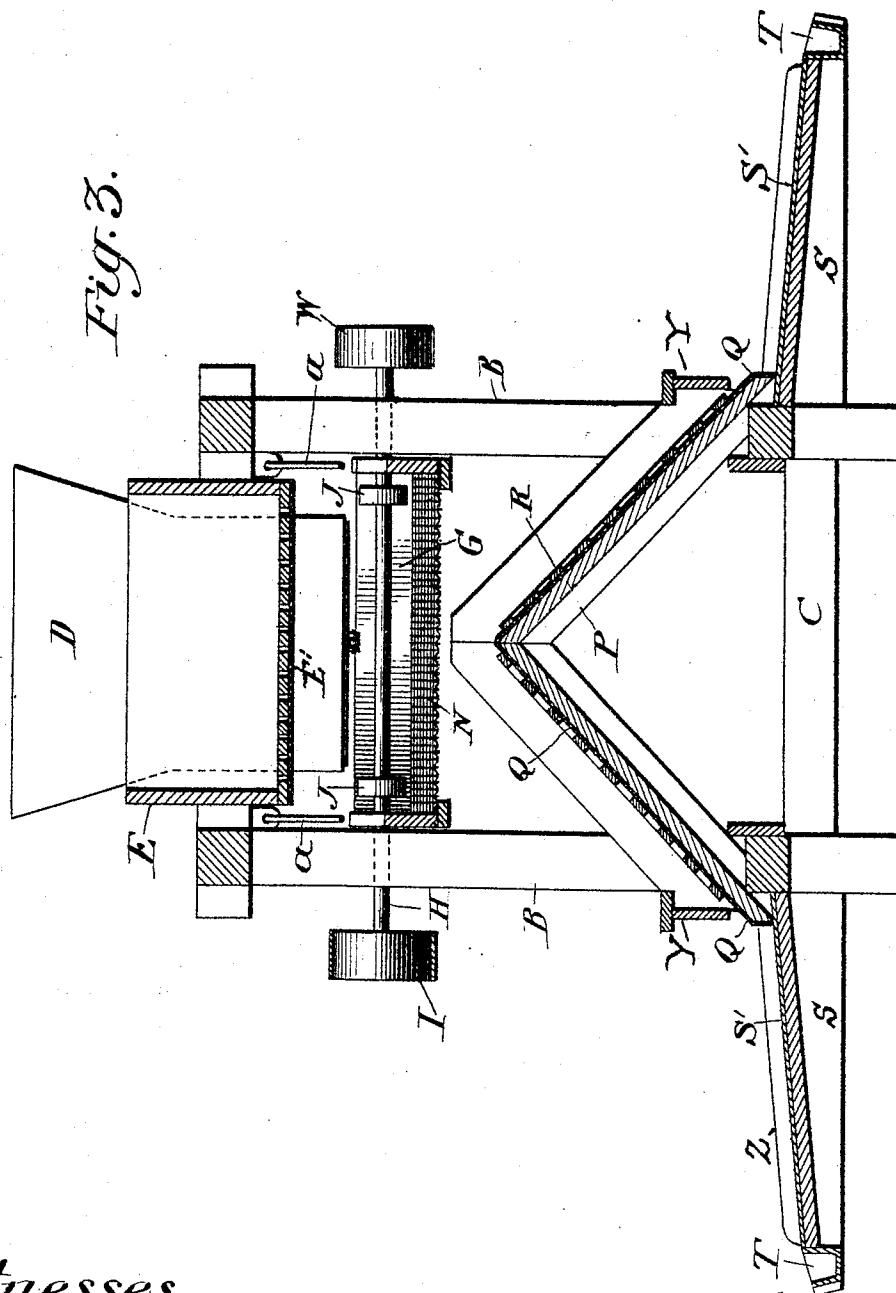
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3 SHEETS—SHEET 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD Z. KIDD, OF DEADWOOD, SOUTH DAKOTA, ASSIGNOR TO KITTY KIDD, OF DEADWOOD, SOUTH DAKOTA.

PLACER-WASHER.

SPECIFICATION forming part of Letters Patent No. 783,048, dated February 21, 1905.

Application filed August 1, 1902. Serial No. 117,986.

To all whom it may concern:

Be it known that I, EDWARD Z. KIDD, a citizen of the United States, residing at Burnham avenue, Deadwood, in the county of Lawrence and State of South Dakota, have invented certain new and useful Improvements in Placer-Washers; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in placer-washers, and has for its object a machine completed in all parts, yet compact in character and adapted to be readily transported as an entirety, so that it can be easily removed from place to place when desired and quickly set up and put in operation and for this purpose it consists of the combination and arrangement of parts hereinafter set forth and claimed.

In the accompanying drawings, which form a part of this specification, Figure 1 represents a perspective view of a machine embodying my invention. Fig. 2 represents a partial side view and a partial longitudinal section thereof, and Fig. 3 represents a transverse section of the same.

Similar letters indicate like parts in the several figures of the drawings.

A designates the portable frame of the machine, consisting of four upright corner-posts B B B B, having the lower connecting-bars C and the upper bars C'. Supported on the upper part of the said frame is the hopper D and a water-tank E. The former is provided with a sliding gate or bottom F, which is connected, as hereinafter described, to the jigger-screen G, so as to be operated by the movement of the latter, and thereby control the feed of the ore, dirt, or gravel from the hopper to the screen. The perforated bottom of the tank E has a covering E', of cloth or other suitable reticulated material, through which the water from the tank is sprayed in a continuous shower upon the material in the screen.

The screen G is loosely mounted on a transversely-extending horizontal shaft H, which is journaled in bearings on two of the uprights B B at one end of the frame A and projects through the slots M, which extend lengthwise in the sides of the said screen, so as to permit of a longitudinal movement of said screen.

Rigidly secured on the shaft H are the cams J, adapted to bear against the inner face of the end of the screen, and so impart the longitudinal movement in one direction thereto, while the coil-springs L L, secured to two loose collars on the shaft and to the end walls of the slot M, impart motion in the opposite direction. These coil-springs are preferably inclosed in sleeves to protect them from contact with the ore, dirt, or gravel. The screen is suspended at its free end by the rods *a* and *c c*, the former being also connected with the uprights B and having on their outer upper ends the contractile springs *b*, aiding in the work of the springs L, while the rods *c*, which are pivoted to the frame A and to the screen, permit a vibrating and swinging motion to the front end of the latter.

The screen is provided with a reticulated or wire bottom N to within about a foot of its free end, where a series of riffles O are laid. Underneath the screen is an angle-floor P, in cross-section of the form of an inverted V— $\frac{1}{2}$ *e.*, inclined downward on both sides of the frame from its longitudinal center to the sides of the frame—and over which burlap or other coarse cloth, as gunny-sacking, is placed and on which the detachable riffle-bars R, formed in sections, are placed, as shown, so as to be readily displaced, so that the burlaps Q underneath may be readily removed when desired.

On each side of the frame is an inclined bottom extension S, supporting the copper plates S', which are charged when in operation with quicksilver, and at the outer ends of said copper plates and connected with said bottom extensions are the troughs T, adapted to receive the flow therefrom.

Connected with the frame and adapted to receive the tailings from the screen G is an elevator U of any usual construction. The said elevator is operated by a belt V', connected with

a pulley W on the screen-shaft H, and motion is conveyed to said shaft by a pulley I thereon, which receives its motion from any suitable source of power.

5 At the sides and at the lower ends of the angle-floor and above the same and connected with the uprights B are the guards Y, which guide the water from the said angle-floor to the plates S', and on the sides of said plates
10 are guides Z, extending above the same for directing the water to the troughs T.

In operating the device the ore or other material to be worked is fed into the hopper D and from it fed on the jigger-screen G, the feed from the hopper being regulated by
15 the movement of the mouth F, which is pivoted to the hopper and also pivotally connected by the rod f' with the said screen, so that the vibratory movement of the latter alternately opens and closes the said mouth, so
20 controlling the flow or feed therefrom. At the same time the water is sprayed on the ore, dirt, or gravel in the screen from the perforated bottom of the tank E, and the finest
25 gold is taken up on the burlap or gunny-sacking N', placed over the wire-netting N, any too coarse to be caught in the burlap or gunny-sacking being caught by the riffles O at the end of the screen. The finer particles escaping
30 through the screen fall upon the inclined floor and are caught by the riffles R and are taken up by the burlap or gunny-sacking Q thereon. Any particles escaping the riffles R are saved on the copper plates S' on each side of the
35 frame. The water passing into the troughs T can be conveyed to a sump and then pumped into the water-tank to be used again and again. (The device can be used in a country where there are placer-mines, but no running water,
40 by using a well or tank in connection with a pump.) When the burlap or gunny-sacking used is full of gold, the machine is stopped, the burlap or gunny-sacking removed and fresh ones substituted, and the machine re-
45 started. The burlaps or gunny-sacking is treated by any well-known chemical bath for extracting the gold therefrom and is then ready for reuse.

50 In Fig. 3 the gunny-sacking N' is not shown, in order that the part N may be more clearly disclosed.

The elevator is of use to carry away the tailings from the end of the screen to prevent the same from becoming clogged, thus avoiding
55 the necessity of frequently changing the location of the machine. The whole device can be operated with a small gasoline-engine; but any suitable motor may be used.

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

1. A mining-machine having an upright frame with a hopper and a water-tank with perforated bottom on the upper part of said
65 frame, a jigger-screen directly below said hop-

per and tank and within said frame, a riffle-floor within said frame and directly below said screen and inclined from its longitudinal center to the sides thereof and provided with detachable sections and mechanism on said
70 frame for operating said screen and in connection therewith a discharge-gate of said hopper, said parts being combined substantially as described.

2. A mining-machine consisting of a frame
75 having a hopper and a tank on its upper part, a jigger-screen on said frame, operating mechanism for said screen, and in connection therewith a discharge-gate of said hopper, a riffle-floor directly below said screen having detach-
80 able sections, said riffle-floor being inclined from its longitudinal center downwardly to the sides of the frame, a reticulated covering on said floor below said detachable sections, bottom extensions on the sides of said frame
85 with troughs at their outer ends and vertical guides on said extensions, said parts being combined substantially as described.

3. A mining-machine consisting of a frame formed of corner-posts with upper and lower
90 connecting-bars, a hopper and a water-tank on the upper part of said frame, said hopper having a sliding gate, a jigger-screen loosely mounted on a transverse shaft on said frame, means for imparting a reciprocatory move-
95 ment to said screen, a rod connection pivotally secured to said gate and screen, a riffle-floor within said frame directly below said screen, said floor being inclined downward from its longitudinal center to the sides of the
100 frame, and side extensions on the lower ends of said frame having troughs at their outer ends and provided with guides extending above plates on said extensions, said parts being combined substantially as described.
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4. A mining-machine consisting of a frame formed of uprights and connecting-bars, a hopper and a water-tank on the upper part of said frame, a jigger-screen in said frame below
110 said hopper and tank, mechanism for operating said screen and in connection therewith the discharge-gate of said hopper, an inclined riffle-floor within said frame and below said screen, sloping downward from its longitudinal center to the sides of said frame, detach-
115 able riffle-sections on said floor, extensions on the sides of the lower end of the frame having troughs at their outer ends and provided with guides extending above plates on said extensions, and guards at the lower ends of
120 the riffle-floor and above the same, said guards being connected with said uprights; said parts being combined substantially as described.

5. A mining-machine, consisting of a frame formed of corner-posts and upper and lower
125 connecting-bars, a hopper and a water-tank with a perforated bottom on said frame, a jigger-screen loosely mounted on a shaft on said frame directly below said hopper and tank, mechanism for operating said screen and in
130

connection therewith a discharge for said hop-
per, an inclined riffle-floor sloping downward
from its longitudinal center to the sides of the
frame, detachable riffle-sections on said floor,
5 extensions on the sides of the lower end of the
frame having troughs at their ends and pro-
vided with guides extending above plates on
side extensions, guards at the lower ends of
the riffle-floor, extending and connected at
10 their ends with said corner-posts and an ele-

vator at one end of said frame having an op-
erating-belt connected with a pulley on the
screen-shaft; said parts being combined sub-
stantially as described.

In testimony whereof I have affixed my sig- 15
nature in presence of two witnesses.

EDWARD Z. KIDD.

Witnesses:

RAY D. HUBBARD,
MILTON L. BALDY.