No. 676,905. Patented June 25, 1901.

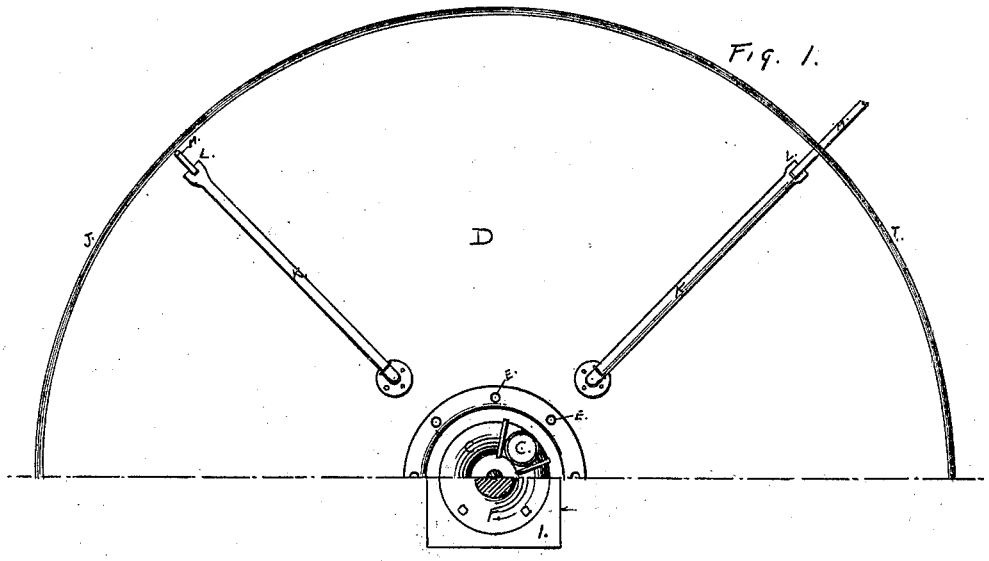
W. O. MILLER.

ORE WASHING MACHINE.

(Application filed July 14, 1900.)

(No Model.)

Fig. 1.



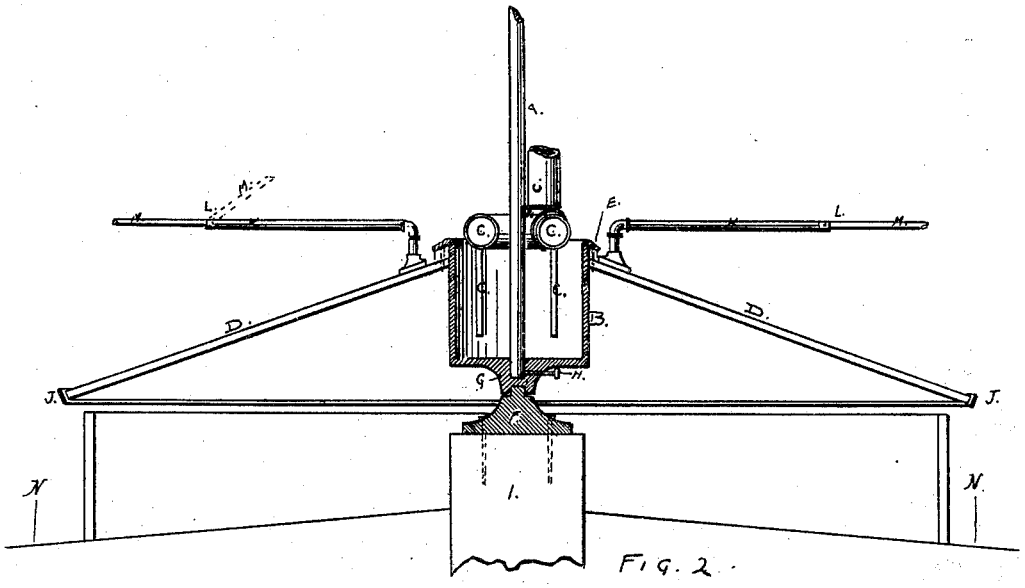


Fig. 2.

SECTION.

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WITNESSES.

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WILLIAM OWEN MILLER, OF GALENA, KANSAS.

ORE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 676,905, dated June 25, 1901.

Application filed July 14, 1900. Serial No. 23,591. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM OWEN MILLER, a citizen of the United States, residing at and whose post-office address is Galena, in the county of Cherokee and State of Kansas, have invented a new and useful Ore-Washing Machine, of which the following is a specification.

My invention is a machine to be used for the separation of valuable minerals from other material substances with which they are mechanically mixed and for the separating of one valuable mineral from another where the minerals to be separated are of different density or specific gravity, carried in the "sludge" or "slime" or tailings running from the crushing-mills used in connection with the mining for valuable minerals. I attain these objects by the mechanism illustrated in the accompanying drawings.

Figure 1 is a half top view of the machine. Fig. 2 is a vertical section of the entire machine.

A circular concentrating-tank N is constructed, having two walls at such distance apart as will bear a proper proportion to the size of the ore-washer desired to be constructed. In the center of the inner wall of the concentrating-tank a solid foundation I is laid, upon which foundation is permanently attached a metal cap from which projects upward a pivot, this plate and the pivot therein forming the lower bearing F, upon which the machine invented by me rests and revolves, and which machine consists of a cast-metal feed-cup B, open at top and the bottom solid, with a socket in the outside of bottom and in the center of it, such socket to fit over the pivot in the foundation-plate and constituting the upper bearing G, the power-shaft A entering a socket in the bottom of feed-cup B, in which it is fastened by a set-screw H. To this power-shaft is firmly attached a rotating distributing-cone D above the separating-surface, the said cone being provided at its apex with a cup B, which lies generally below the surface of the cone and is provided with flanges overhanging said cone and a delivery device comprising a closed hollow ring C and spray-tubes depending from said ring nearly to the bottom of the cup, said cone being fastened to said cup by bolts E and said feed-pipe C, surrounding the power-shaft A, being firmly suspended just above the mouth of the cup B. The material to be worked is fed into feed-pipe C through an opening in its upper side from an elevated conveyer, and from feed-pipe C is fed into cup B through the spray-tubes attached to feed-pipe C, the spray-tubes serving to further agitate the material in feed-cup B as it revolves. The rotating distributing-cone may be made of either metal or wood, and the slope and size of said cone may vary in proportion to size of feed-cup and feed-pipe. To the outer rim of this cone is attached a band J, extending slightly above and below the rim of the cone, to which it is attached by bolts, upon which there are washers between the rim of the cone and the band, leaving an open space for the material fed upon the cone from the feed-cup to pass and fall into the concentrating-tank. Said cone is further supported and strengthened by a skeleton or framework beneath it. To the top of said cone and a short distance from its place of attachment to feed-cup and at equal distances apart are attached four arms, rising a short distance perpendicularly from the said cone and then extending out horizontally from said feed-cup to within a short distance of lines imaginarily extended perpendicularly upward from the band J, called "broom-arms" K, upon which are hinges or knuckles L, to which are attached broom extensions M, from which are hung into the concentrating-tank canvas brooms. The number of arms, extensions, and brooms can be varied with the size of the machine constructed.

The machine is operated by the power-shaft A coming down into feed-cup B and being screwed upon the threaded socket therein and fastened with the set-screw H, this shaft being attached at its upper end by pulley and belting or cog-wheels and suitable gearing to the motive power, and the machine is fed by an elevated inclined supply-pipe running from the opening in the top of the feed-pipe C to the elevator, that raises the material to be treated from its place of deposit.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an ore-washing machine the combination of a separating-surface, a rotating dis-

tributing-cone above said surface, provided at its apex with a cup which generally lies below the surface of the cone, and is provided with flanges overhanging said cone, and a delivery device comprising a closed hollow ring, and spray-tubes depending from said ring nearly to the bottom of the cup, substantially as described.

2. In an ore-washing machine the combination of a separating-surface, a rotating distributing-cone above said surface, carrying sweep-arms and attachments, and provided at its apex with a cup which lies generally below the surface of the cone, and is provided with flanges overhanging said cone, and a delivery device comprising a closed hollow ring, and spray-tubes depending from said ring nearly to the bottom of the cup, substantially as described.

WILLIAM OWEN MILLER.

In presence of—
S. A. PARSHLEY,
J. G. MCKELVY.