(No Model.)

H. F. HICKS.

ORE CONCENTRATOR.

No. 477,934. Patented June 28, 1892.

Fig. 1.

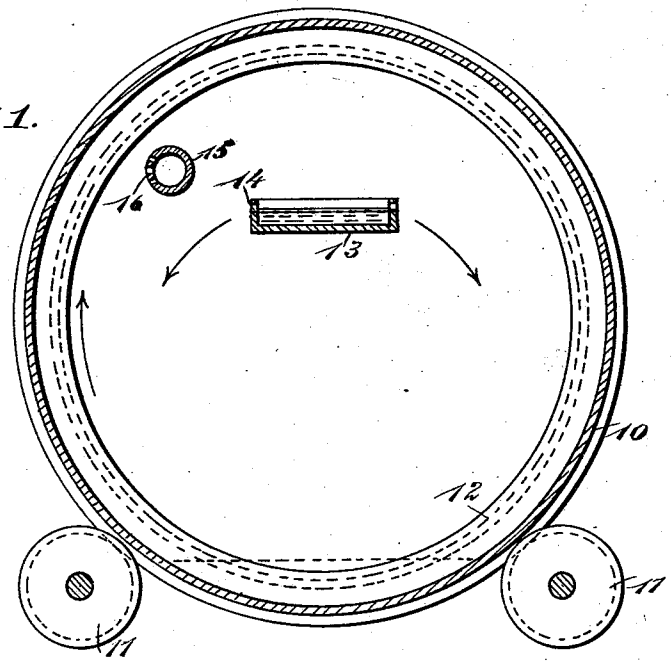
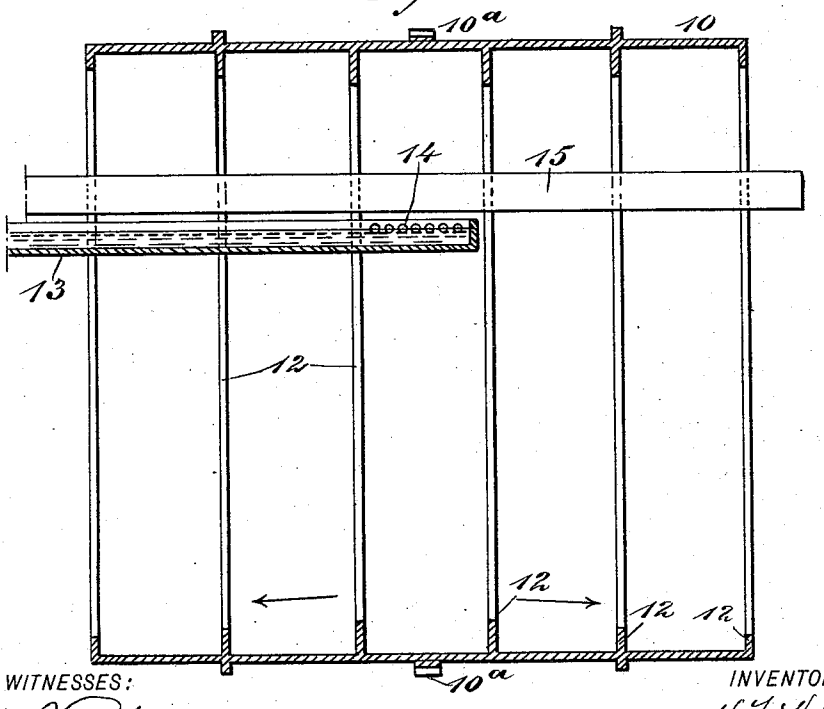


Fig. 2.



WITNESSES:

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HORATIO F. HICKS, OF ASHLAND, OREGON.

ORE-CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 477,934, dated June 28, 1892.

Application filed October 7, 1891. Serial No. 408,058. (No model.)

To all whom it may concern:

Be it known that I, HORATIO F. HICKS, of Ashland, in the county of Jackson and State of Oregon, have invented a new and Improved Ore-Concentrator, of which the following is a full, clear, and exact description.

My invention relates to improvements in ore-concentrators; and the object of my invention is to produce a simple and economical concentrator which will rapidly separate the precious particles of the metal from the light and worthless portion of the pulp, and which is especially adapted for separating the refractory metallic particles and sulphurets from the tailings of gold or silver extracting mills.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in both the views.

Figure 1 is a vertical cross-section of the concentrator, and Fig. 2 is a vertical longitudinal section of the same.

The concentrator is provided with a main open-ended drum or cylinder 10, which is provided with the usual body-cog 10^a to facilitate its rotation, and the cylinder is held to turn on the ordinary supporting-rollers 11. Within the cylinder and at the ends of the same are annular flanges 12, which project inward from the walls of the cylinder and which are of dissimilar height, the middle flanges being the highest and the height of the flanges gradually diminishing toward each end. The cylinder is fed by a flume 13, which delivers into the center of the cylinder and the delivery of which is preferably through the perforated sides 14. Near one side of the cylinder and adjacent to that side which turns upward is a pipe 15, which is adapted to supply clean water to the cylinder and which has on the side nearest the cylinder-wall jet-openings 16, so that jets of water will issue from the pipe against the wall, thus keeping the wall washed clean and supplying sufficient water to make the concentrator work efficiently.

The operation of the concentrator is as follows: The pulp which flows through the flume will be discharged through the side or jet openings 14 against the walls of the cylinder and above the water-line and the sulphurets will drop downward between the flanges of the cylinder. It will be seen that the water supplied to the cylinder will rise above the flanges so that it will flow outward at each end, and as the cylinder is constantly rotated there will also be a cross-current of water, and the two currents, together with the movement of the cylinder, will cause the pulp to be thoroughly agitated, so that the light and worthless matter will flow off while the concentrates will remain between the flanges, and the progressive decrease in the height of the flanges as they approach the ends of the cylinder will cause the tailings to be thoroughly worked over and all the concentrates will be retained in the cylinder.

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

1. An ore-concentrator comprising a revoluble open-ended cylinder having internal flanges and a feed-flume arranged to deliver centrally in the cylinder, said flume having a series of side openings at its delivery end, substantially as described.

2. In an ore-concentrator, the open-ended cylinder having a series of flanges therein, the flanges being highest in the middle and gradually diminishing in height toward the ends of the cylinder, substantially as described.

3. An ore-concentrator comprising an open-ended cylinder having a series of internal flanges, which flanges are highest in the middle of the cylinder and diminish in height toward the end, and a feed-flume arranged to deliver centrally within the cylinder, substantially as described.

HORATIO F. HICKS.

Witnesses:
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