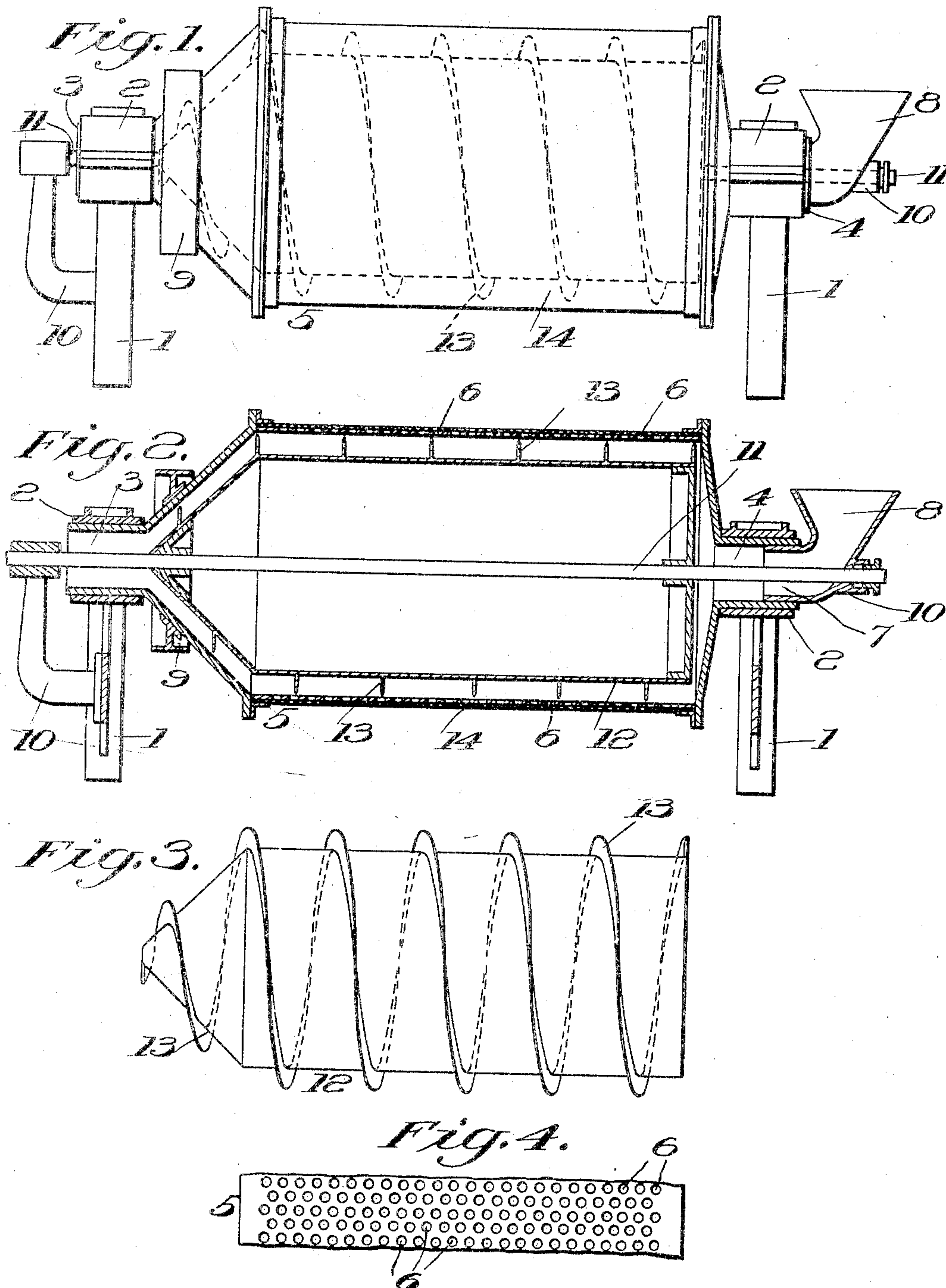


No. 894,414.

PATENTED JULY 28, 1908.

E. J. WHITE.
FILTERING APPARATUS.
APPLICATION FILED DEC. 17, 1907.



Witnesses
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UNITED STATES PATENT OFFICE.

ELISHA JAMES WHITE, OF GUANAJUATO, MEXICO.

FILTERING APPARATUS.

No. 894,414.

Specification of Letters Patent.

Patented July 23, 1908.

Application filed December 17, 1907. Serial No. 406,877.

To all whom it may concern:

Be it known that I, ELISHA JAMES WHITE, a citizen of the United States, residing at Guanajuato, in the State of Guanajuato and Republic of Mexico, have invented certain new and useful Improvements in Filtering Apparatus, of which the following is a specification.

My invention relates to filtering apparatus and is especially adapted to filtering slimes or other material resulting from the treatment of gold and silver ores by cyanid or other processes.

The object of my invention is to provide a simple apparatus which may be constructed without excessive cost and which will operate continuously and effectively to discharge the water or liquid from the other material by means of centrifugal force.

In the drawings, Figure 1 is a side elevation of my apparatus, interior parts being indicated by dotted lines. Fig. 2 is a vertical section through the center of the apparatus. Fig. 3 is a side view of the stationary inner drum and the helical blade secured thereto. Fig. 4 is a detail view of a section of the outer rotating cylinder showing the apertures therein.

Referring to the drawings, 1 are standards or uprights supporting trunnion bands or bearings 2 for the hollow trunnions 3 and 4 which are secured to the ends of the cylinder 5 which has perforations or apertures 6 throughout its periphery. Entering the hollow trunnion 4 is the discharge end 7 of feed hopper 8. Secured to one end of cylinder 5 is the pulley 9. Suitable supports 10 hold the stationary shaft 11 to which is secured the inside water-tight drum 12. Attached to the outside surface of drum 12 is the helical blade 13, said shaft 11, drum 12 and blade 13 all being stationary. On the outside of the rotating cylinder 5 and covering the entire surface thereof is a coating 14 of canvas or other filtering medium.

The operation of my filter is as follows: The material from which it is desired to filter water or other liquid is continuously fed into the machine at the feed hopper 8. By means of the pulley 9 and the usual belt (not shown) the outer cylinder is continuously rotated and coöperates with the stationary helical blade 13 to feed the material continuously

towards the discharge end through the hollow trunnion 3. During its course through the machine the liquid is expelled through apertures 6 in the cylinder 5 and through the canvas or other coating. The liquid may be collected if desired by a suitable hood and drip tank not shown. The helical blade 13 is nearly in contact with the inside surface of cylinder 5 so that the material will not adhere to the cylinder but be moved constantly towards the discharge. The material from its entrance into the machine to its discharge therefrom is subjected to feeding by the conveying means and also to centrifugal action for expelling the liquid.

What I claim as new and desire to secure by Letters Patent is:

1. In filtering apparatus, an inner stationary water-tight drum encircled by a fixed helical blade, and an outer rotating perforated cylinder.

2. In filtering apparatus, an inner water-tight drum having a fixed spiral rib, an outer rotating perforated cylinder, and a filtering covering for the outer cylinder.

3. In filtering apparatus, an inner water-tight drum, an outer perforated cylinder, and means to feed the material between said drum and cylinder while under the influence of centrifugal force.

4. In filtering apparatus, an inner drum and an outer perforated cylinder forming between them a path for the material to be filtered, means to feed the material from the inlet to the discharge, and means to subject the material to centrifugal force during its progress through the machine to expel the liquid.

5. In filtering apparatus, an outer perforated cylinder, a hollow trunnion at each end thereof, bearings for said trunnions, a fixed shaft extending into said cylinder and a helical member upon said shaft within said cylinder.

Signed at Guanajuato Mexico in the city of Guanajuato and State of Guanajuato this tenth day of August A. D. 1907.

ELISHA JAMES WHITE.

Witnesses:

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