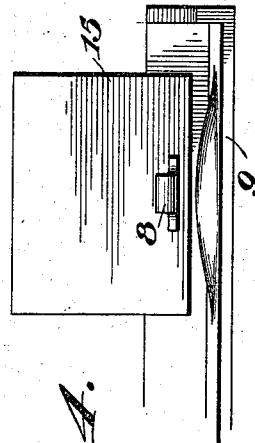
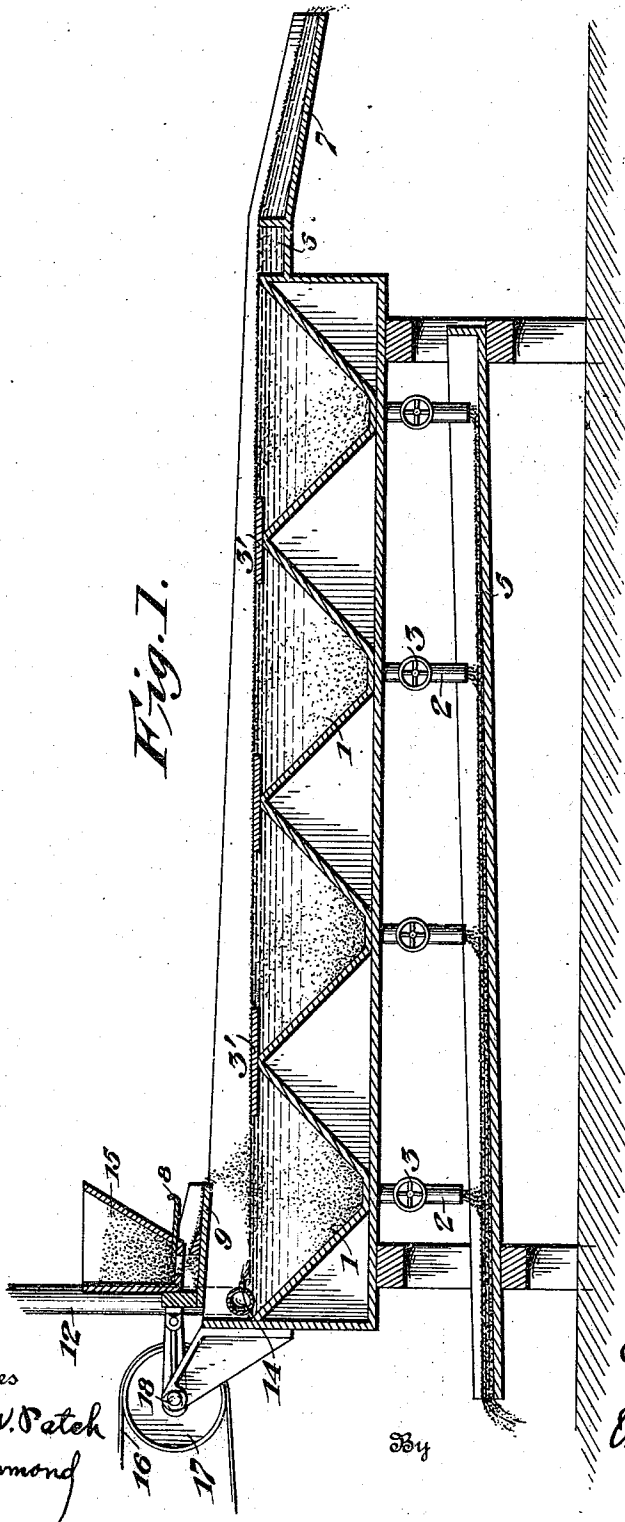


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 FLOTATION TANK FOR ORE DRESSING.
 APPLICATION FILED MAY 7, 1910.

979,820.

Patented Dec. 27, 1910.

2 SHEETS—SHEET 1.



Witnesses
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By

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 his Attorney

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Fig. 2.

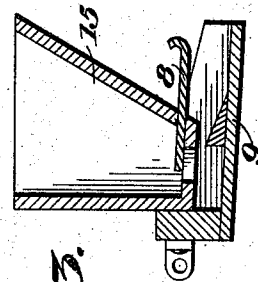
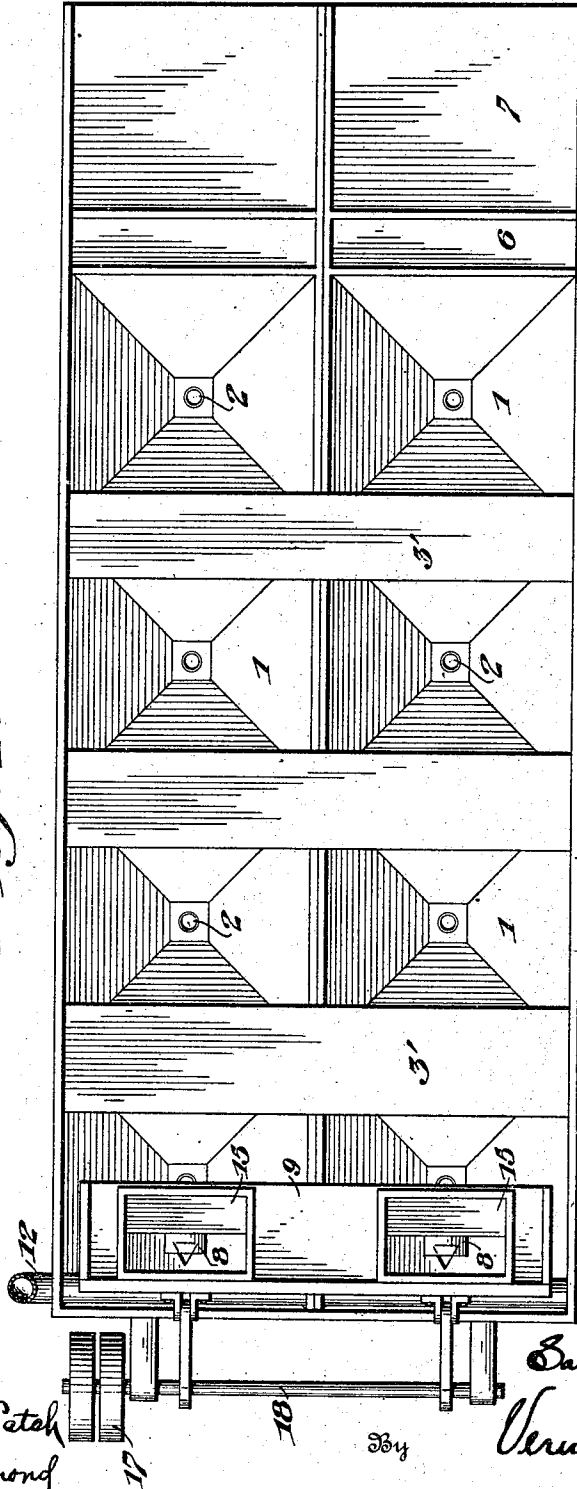


Fig. 3.

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UNITED STATES PATENT OFFICE.

SAMUEL K. BEHREND, OF NEW YORK, N. Y.

FLOTATION-TANK FOR ORE-DRESSING.

979,820.

Specification of Letters Patent.

Patented Dec. 27, 1910.

Application filed May 7, 1910. Serial No. 559,999.

To all whom it may concern:

Be it known that I, SAMUEL K. BEHREND, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Flotation-Tanks for Ore-Dressing, of which the following is a specification.

My invention relates to an improvement in flotation tanks for ore dressing, and the object is to provide means for thinning out the superficially moving water stratum, and creating a slight agitation or riffling action therein, whereby to create a more complete and efficient separation.

With these objects in view, my present invention consists in a flotation tank subdivided into a number of cells in connection with transversely and horizontally disposed plates located at intervals over which the upper stratum carrying values passes in the progressive movement through the tank or from one compartment of the tank to another.

My invention further consists in certain novel features of construction and combinations of parts which will be more fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal, vertical sectional view, Fig. 2 is a top plan view, Fig. 3 is an enlarged sectional view of the feed hopper, and Fig. 4 is a view in front elevation of the feed hopper.

The numerals 1, 1, indicate a plurality of tanks or compartments arranged adjacent to one another, and tapering at the bottom to outlets, 2, 2, having valves 3, 3, for controlling the discharge.

Plates 3', 3', extend across the tanks or compartments, preferably immediately over the partitions, as well as between them. These are flat, of considerable width and placed approximately horizontally, and with their upper surfaces practically a trifle below the superficial stratum of the water flowing through the tanks or compartments so that the floating particles on the water have to travel over these plates in their passage through the machine, and preferably from one tank or compartment to another, thus thinning the water into a thin film, and creating a very slight agitation in the water passing over the plates, thus causing a separation to take place from one

edge of a plate to the other, and the material adhering to and accumulating on the plates eventually working over and dropping to the bottom of the tank or compartment. There are as many of these tanks or compartments and plates as the conditions of the ore in separation require, although by far the largest portion of the separation, of course, takes place in the first two or three tanks, the heavier and absorbent particles always descending to the bottom and finding vent through the outlet pipes to a trough or launder 5, below, whereas the flaky floating material at the top passes through a launder 6, and thence to a trough 7, whence it is taken care of for any future treatment required.

A feed hopper 15 at the top contains the ore. This has a sliding gate 8 for regulating the size of opening, and a spreader 9 at the bottom having a transverse curved riffler thereon, which distributes the ore practically across the entire area of the flotation tank below; and water is supplied from a tank (not shown), through a pipe 12 and discharges through a nozzle 14 at the surface of the tank. The feed hopper is reciprocated by means of an eccentric on the shaft 18, it being provided with a pulley 17, driven by a belt 16.

More or less slight changes might be resorted to in the form and arrangement of the several parts described, without departure from the spirit and scope of my invention, and hence I do not wish to be limited to the exact construction herein set forth, but:—

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

1. The combination with a flotation tank adapted to contain water, and means for feeding ore to the surface of the water, of a plate extending substantially horizontal, and located just below the surface of the water in the tank, and over which the floating material passes, and is slightly agitated in a thin film in its passage through the machine.

2. The combination with a plurality of flotation tanks adapted to be filled with water and have ore fed upon the surface thereof, of plates extending horizontally over the dividing partitions between the tanks, or compartments, slightly below the superficial stratum of water over which a thin film of

water and the light floating particles pass, and upon which the heavier and absorbent particles passing over the plates settle, due to the thinness of the film and the slight agitation caused in the films during their passage across the plates.

3. The combination with a plurality of flotation tanks, one of which flows into another, of horizontally disposed plates located over the partitions between tanks and approximately coincident with the water-

level, the edges of the plates extending well beyond the dividing partition, whereby the particles caught on said plates discharge into the tanks some distance beyond the dividing wall. 15

In testimony whereof I affix my signature, in the presence of two witnesses.

SAML. K. BEHREND.

Witnesses:

DAVID HAAR,

PHILIP M. BROMBERG.