

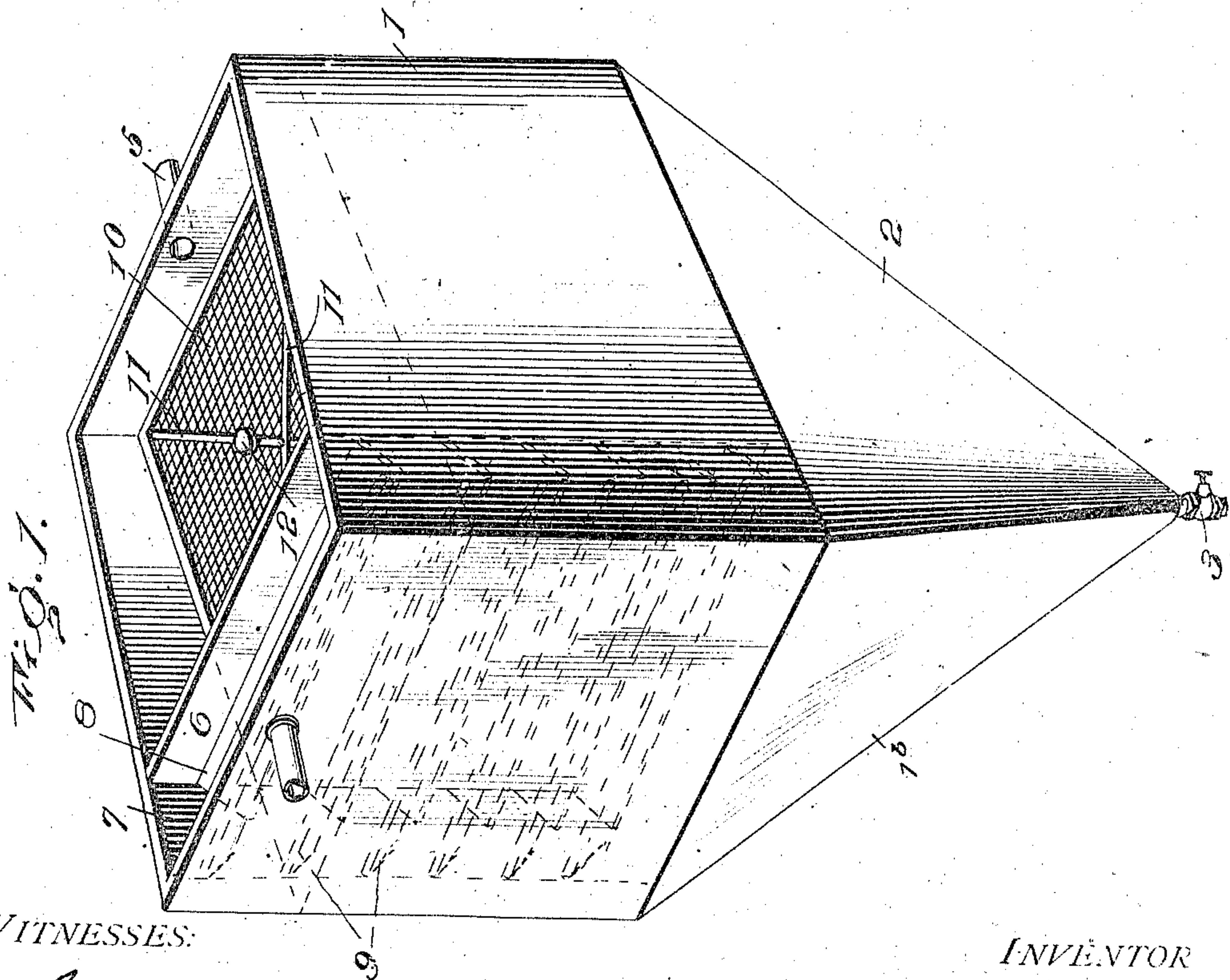
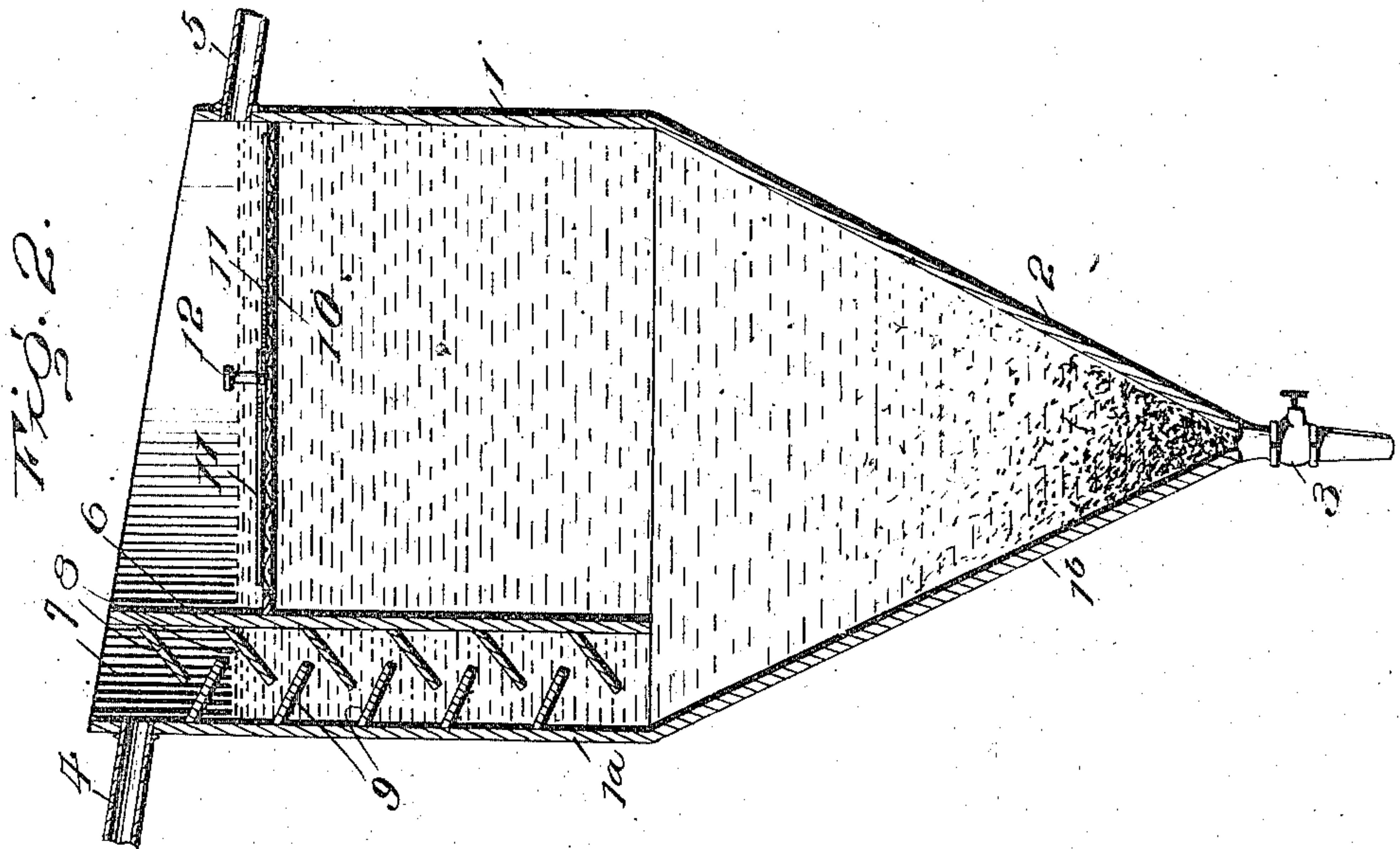
No. 756,305.

PATENTED APR. 5, 1904

C. G. WELLER.
ORE CONCENTRATOR.

APPLICATION FILED JUNE 17, 1903.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CALVIN G. WELLER, OF IDAHO SPRINGS, COLORADO.

ORE-CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 756,305, dated April 5, 1904.

Application filed June 17, 1903. Serial No. 161,906. (No model.)

To all whom it may concern:

Be it known that I, CALVIN G. WELLER, a citizen of the United States, residing at Idaho Springs, in the county of Clear Creek and State of Colorado, have invented certain new and useful Improvements in Ore-Concentrators, of which the following is a specification.

The chief intention of this invention is to devise a concentrator of novel construction for separating the very fine or floating slimes from the water and feeding it onto a suitable table with as little wash-water as possible, so as to save a good percentage of the precious metal that usually goes to waste in the ordinary operation of concentrating and stamp-mills.

In the drawings hereto attached and forming a part of the specification, Figure 1 is a perspective view of an ore separator or concentrator embodying the invention. Fig. 2 is a vertical central section thereof.

Corresponding and like parts are referred to in the following description and indicated in both views of the drawings by the same reference characters.

The device comprises a body portion 1 of rectangular formation and a sloping or tapering bottom portion 2, provided with a valve-controlled outlet 3. An inlet 4 and an outlet 5 are provided at opposite sides of the body, near the upper end thereof, the outlet being at a lower level than the inlet. A partition 6 is arranged a short distance from the wall or side of the body provided with the inlet 4, and provides a space 7, through which the water laden with ore passes into the device. A series of plates 8 project into the space 7 from the partition 6 and incline downward toward their free ends. A corresponding series of plates 9 project into the space 7 from the wall or side of the body having the inlet 4 and likewise incline downward toward their free ends. The plates 8 and 9 alternate and overlap, so as to compel the inflowing water bearing the ore to make a tortuous path, thereby materially assisting in separating the fine particles of precious metal and causing same to precipitate or settle into the tapered bottom portion 2, to be drawn off through the valved outlet 3. A fine-meshed screen 10 is arranged

near the upper end of the body 1, just below the plane of the outlet 5, and serves to catch any floating metal, such as flower of gold, tending to pass off with the outflowing water through the outlet 5.

The surplus water passing off through the outlet 5 is conveyed to a convenient point of discharge. The settlings and precipitates in the lower portion of the tapering part 2 are drawn off through the valved outlet 3 onto a suitable table (not shown) and are free from the excess or unnecessary amount of water which impedes the separating and concentrating process. The screen 10 may be of any fine-meshed material, such as wire cloth or fabric, and in order to dislodge matter adhering thereto, so as to prevent clogging, a knocker-frame may be applied thereto and consists of crossed strips 11. A pin 12 projects upward from the strips at their point of crossing and is adapted to transmit the blow or jar to the screen when it becomes necessary to violently agitate the same to dislodge matter adhering thereto.

The side 1^a of the body having the inlet 4 is vertical; but the side 1^b of the tapered end portion 2 is inclined inward, thereby deflecting the incoming current of water and ore from a perpendicular course and facilitating the separation of the light and heavy particles of metal as they glide over the inclined portion 1^b, the deflection serving to cause the initial separation, as will be readily comprehended.

Having thus described the invention, what is claimed as new is—

1. The herein-described device for use in connection with concentrating ore, the same consisting of a hollow body provided with a tapered lower portion having a valved outlet and having an inlet and an outlet at opposite sides, the outlet being at a lower level than the inlet and having the upper portion of the inlet side vertical and the lower portion inwardly inclined, a partition arranged a short distance from and parallel with the vertical portion of the said inlet side, oppositely-inclined plates projected into the space formed between said partition and the vertical portion of the inlet side of the body and alter-

nately disposed and having their inner ends overlapped, and a fine-meshed screen arranged near the upper end of the body just below the plane of the outlet, and a knocker-frame applied to said screen for receiving a light blow when it is required to jar the screen to dislodge material therefrom, substantially as set forth.

2. The herein-described device for use in connection with concentrating ore, the same consisting of a hollow body provided with a tapered lower portion having a valved outlet and having an inlet and an outlet at opposite sides, the outlet being at a lower level than the inlet, a partition arranged a short distance from the side of the body having the inlet, plates projected into the space formed be-

tween said partition and the adjacent side of the body and alternately disposed and having their inner ends overlapped, a fine-meshed screen arranged near the upper end of the body just below the plane of the outlet, crossed strips applied to the screen, and a pin projected up from the strips at the point of crossing to receive the blow when it is required to jar the screen, substantially as and for the purpose set forth.

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

CALVIN G. WELLER. [L. s.]

Witnesses:

GUY C. CHILDERS,
WILLIAM B. EDWARDS.