

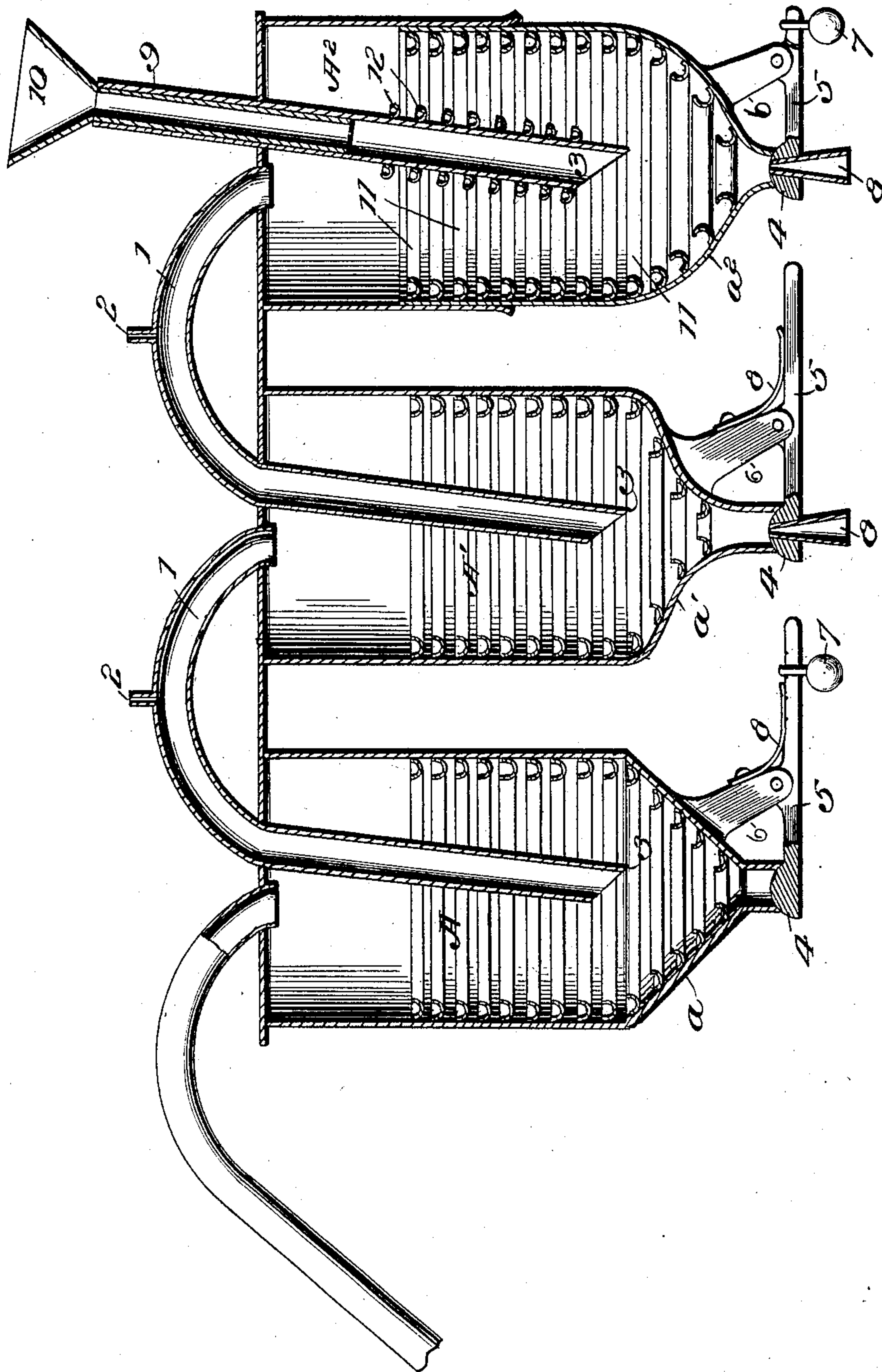
No. 763,444.

PATENTED JUNE 28, 1904.

C. VAN HOESEN.
ORE SEPARATOR AND CONCENTRATOR.

APPLICATION FILED JULY 23, 1903.

NO MODEL.



Inventor

Casper Van Hoesen

Witnesses

for Inve.
Geo. B. Co.

By

R. H. B. Racy, Attorney.

UNITED STATES PATENT OFFICE.

CASPER VAN HOESEN, OF NEW YORK, N. Y.

ORE SEPARATOR AND CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 763,444, dated June 28, 1904.

Application filed July 23, 1903. Serial No. 166,746. (No model.)

To all whom it may concern:

Be it known that I, CASPER VAN HOESEN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Ore Separators and Concentrators, of which the following is a specification.

This invention provides a novel mechanism specially designed for separating the precious metals, such as gold and silver, from ore, sand, and like medium containing the same, the separation being effected by gravitative action and amalgamation in a practically continuous operation.

In the practical operation of the invention a series of vessels or tanks are provided, each having a funnel-shaped bottom provided at its lowest point with a valve-controlled outlet or discharge, a supply-pipe for introducing the water and gold or silver bearing medium into the first vessel or tank of the series, an overflow-pipe connecting the upper portion of one vessel with the lower portion of the next vessel of the series and having an air-vent in its highest point, and amalgam-troughs ranged around the inner sides of the vessels and upon the portions of the pipes located within the vessels.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawing hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawing, which is a vertical central section of an apparatus embodying the invention.

Any number of vessels or tanks may be embodied in the apparatus, and said tanks may be of any size and capacity and disposed so that one will discharge into the other in successive order from first to last. As shown, three tanks A A' A² are employed and are arranged in approximately the same horizontal plane and are connected by overflow-pipes 1,

which are provided at their highest point with vent-openings 2 to prevent water-hammer and other disagreeable noise in the operation of the apparatus and to insure a steady and uniform flow of the water and medium bearing the precious metals to be separated. The vessels are preferably of similar construction, although this is not essential, and are closed, so that advantage may be taken of the initial head or pressure to cause positive circulation through the series of vessels. The overflow-pipes 1 connect the top of one vessel with the lower portion of the next vessel in order, and the connecting portion is arched and the upright portion extending within the vessel slightly inclined to the perpendicular, whereby the metal gravitates to the lower side and the slimes, gravel, and the like rise to the higher side, this separation taking place within the upright extension or leg of the overflow-pipe. The discharge end of the overflow and supply pipes is inclined, the lower end 3 supporting the metal until clear of the earthy matter, which escapes laterally by reason of the inclination of the discharge. The bottoms of the several vessels are funnel-shaped, and the sides may be straight, as shown at *a*, inwardly curved, as shown at *a'*, or outwardly curved, as shown at *a''*. Each vessel is provided at its lowest point with an outlet, which is controlled by means of a valve 4. The valves close upward against the outlets, thereby providing for automatic operation of the valves when the pressure within the vessel exceeds a given point, so as to relieve said vessel of the preponderance of force or pressure. The valves are carried upon one end of a lever 5, which is fulcrumed intermediate of its ends to a projection 6, extended from the vessel or a framework supporting the same. The valve may be held closed either by a weight 7 or a spring 8^a, or by both, and the weight 7 may be adjustable on the outer arm of the lever 5 to vary the resistance holding the valve closed, thereby providing for contingencies which may arise as to the advance in the specific gravity of the ores or metal to be separated or the pressure employed to effect circulation through the series of vessels. The valves of the vessels A' 100

