

(No Model.)

J. B. ACKERSON.
SULPHURIC ACID CONCENTRATOR.

No. 453,801.

Patented June 9, 1891.

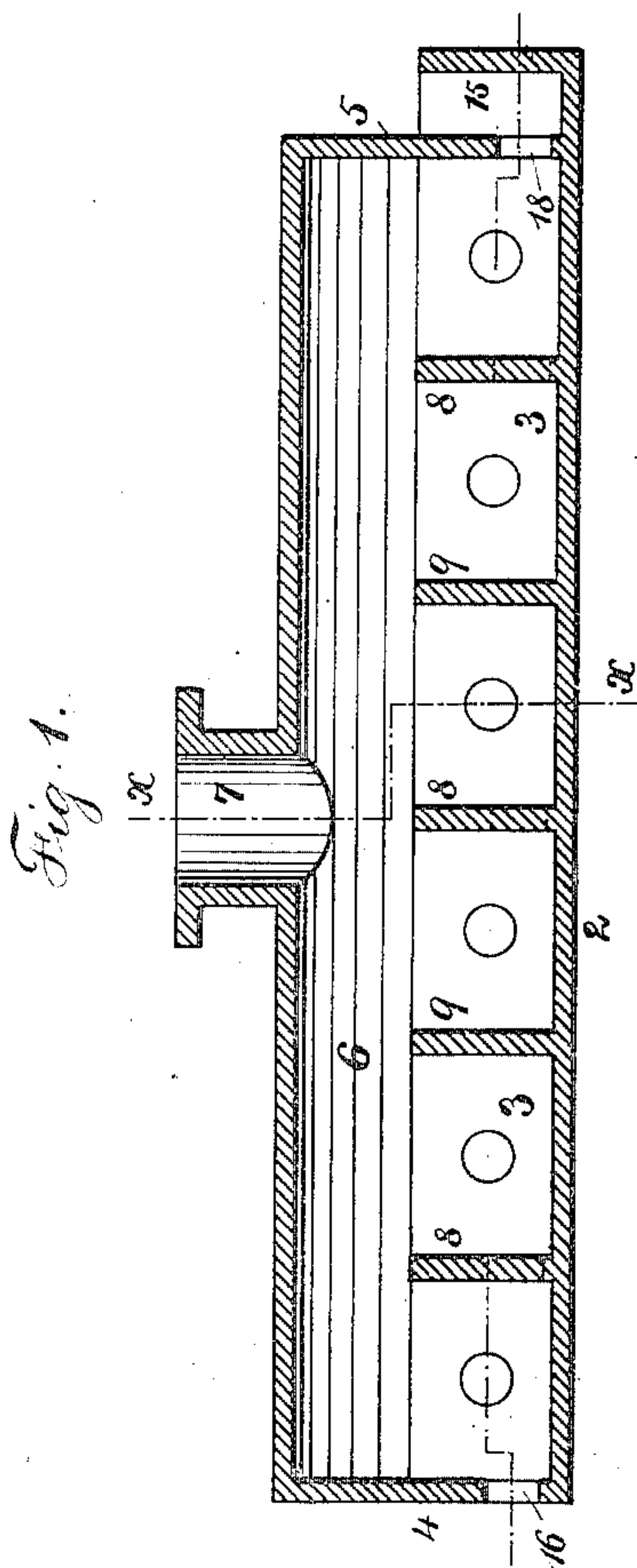
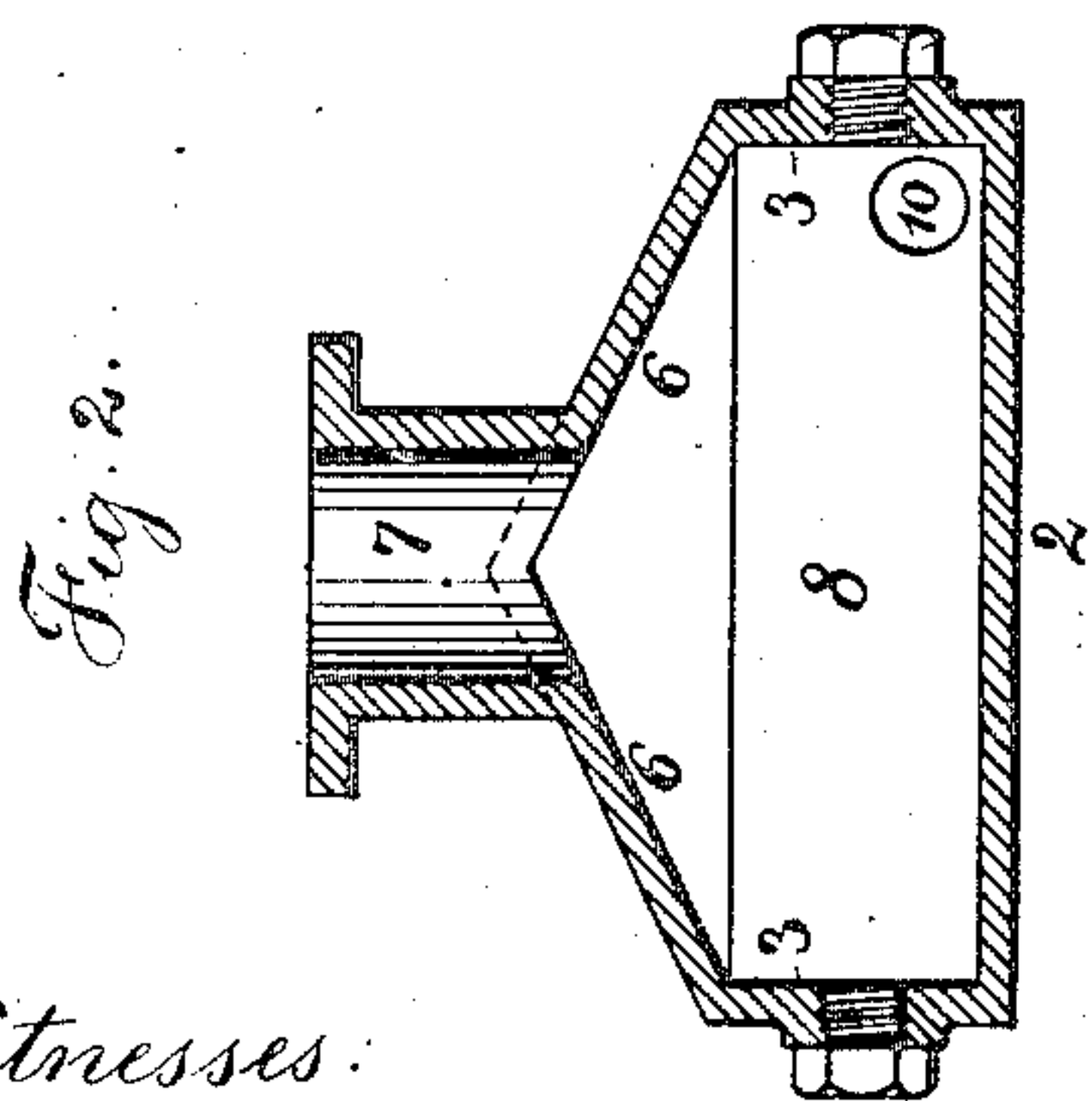
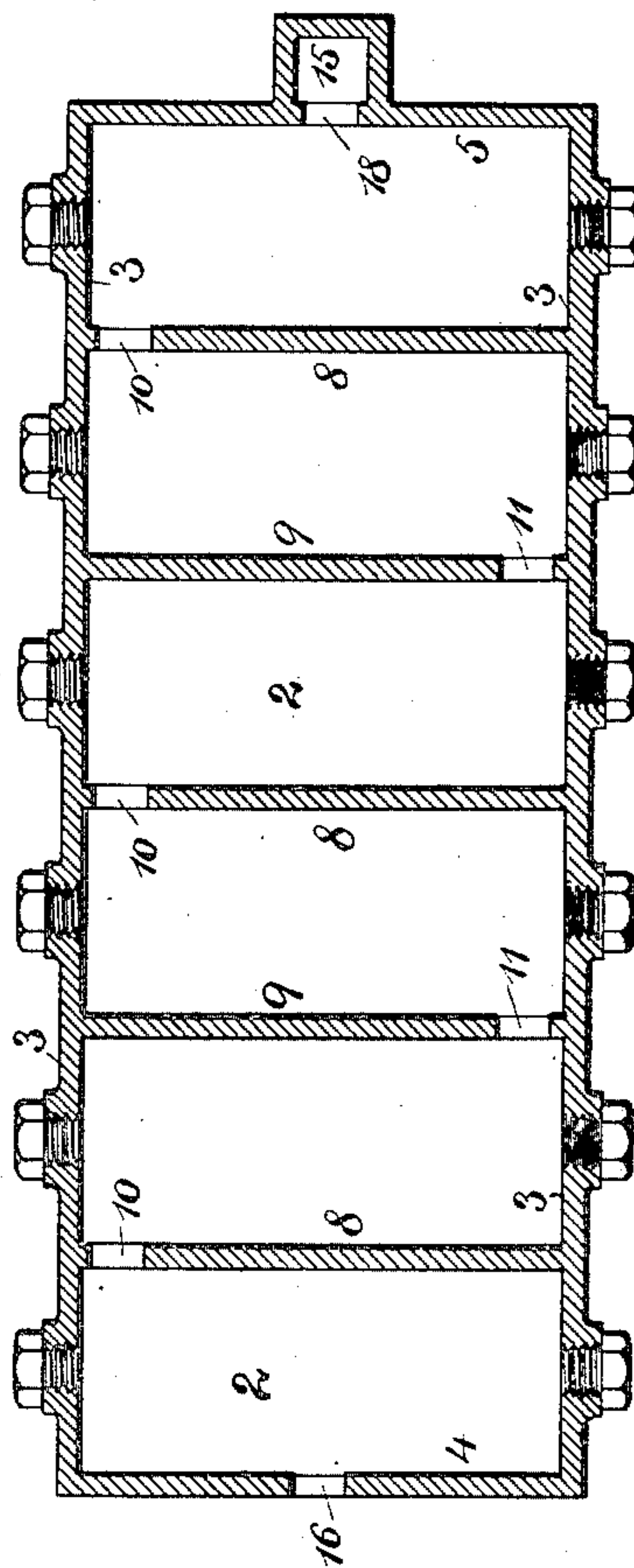


Fig. 3.



Witnesses:
J. Stait
Charles Smith

Inventor:
James B. Ackerson
per Lemuel W. Ferrell atty

UNITED STATES PATENT OFFICE.

JAMES B. ACKERSON, OF PASSAIC, NEW JERSEY.

SULPHURIC-ACID CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 453,801, dated June 9, 1891.

Application filed March 16, 1891. Serial No. 385,148. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. ACKERSON, of Passaic, in the county of Passaic and State of New Jersey, have invented an Improvement
5 in Sulphuric-Acid Concentrators, of which the following is a specification.

Sulphuric-acid concentrators are often made of platina and are expensive. My concentrator is adapted to be made of cast-iron
10 and is cheap and durable and not liable to become defective while in use, and my invention relates to the peculiarities of construction hereinafter set forth.

In the drawings, Figure 1 is a longitudinal
15 section. Fig. 2 is a cross-section at the line $x x$, and Fig. 3 is a sectional plan.

The still or concentrator is made of a single casting of iron, so as not to have seams or joints, and in practice I find that the more
20 concentrated the sulphuric acid is the less it acts upon the metal.

The general configuration of the still is rectangular, having a bottom 2, sides 3 3, ends
25 4 5, double inclined top 6, and escape-pipe 7, to which latter any suitable tube is connected to convey away the vapors driven off from the acid, as usual. The partitions 8 9 extend across from one side to the other and are in one with the bottom and sides; but there is a
30 free space above the partitions and within the peak of the top for the vapors to pass from all parts of the concentrator to the escape-pipe, and in these partitions there are openings 10 11, near opposite ends of such
35 partitions, so as to compel the acid to travel regularly through the tortuous passage from

the supply-cup 15 to the delivery opening or pipe 16. The openings 10 or 11 do not reach to the sides of the concentrator or to the bottom. This is advantageous, because the acid
40 is all brought closely into contact with the metal in passing through such holes, and its action tends to wear away such metal, and the sides and bottom would be rendered thin
45 and weak at these places if the openings extended to the same. Near the bottom of the supply-cup is an opening 18, and this is to be of such a size and placed so that the acid as it lies on the bottom of the still will cover this
50 opening to prevent the escape of vapors therefrom.

At the delivery-opening 16 a suitable pipe is connected to carry away the concentrated acid and prevent the escape of gases.

In use I find that the concentration is very
55 regular and rapid, because there is a large extent of surface exposed at the bottom of the still to the concentrating action of the heat.

I claim as my invention—

The acid-concentrator composed of a cast-
60 metal vessel in one piece with double inclined top and a vapor-discharge therein, a supply-cup and opening at one end, a discharge-opening at the other end, and transverse partitions having openings near their alternate
65 ends, substantially as set forth.

Signed by me this 10th day of March, 1891.

JAMES B. ACKERSON.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.