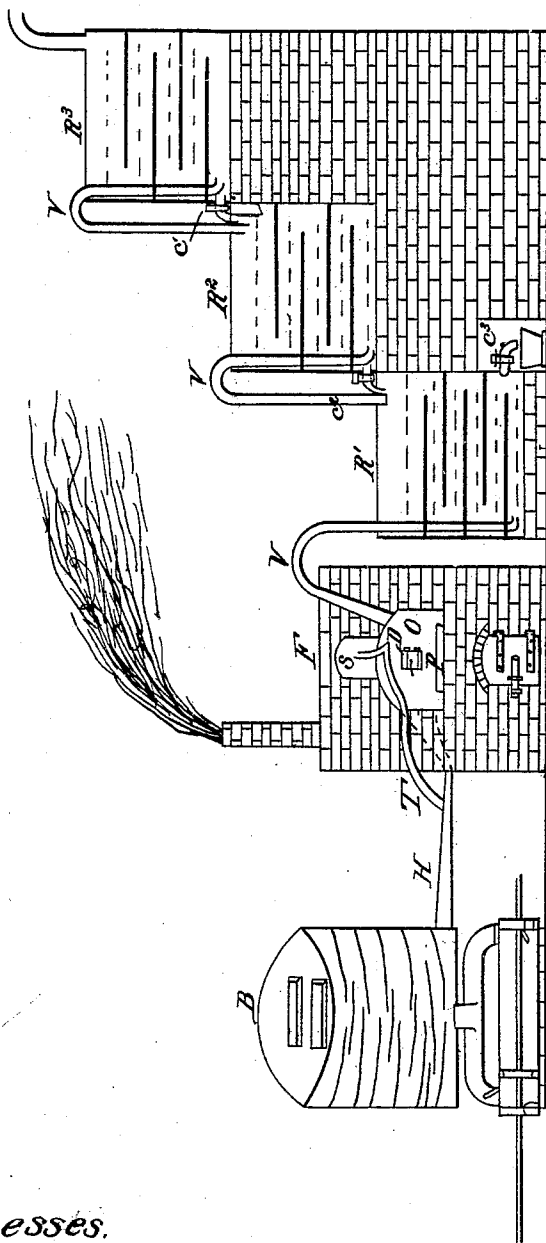


J. HARGREAVES.
Making Sulphuric Acid.

No. 1,303.

Patented Aug. 24, 1839.



Witnesses.
Ph. Dickerson
Frank Gould

Inventor.
James Hargreaves.

UNITED STATES PATENT OFFICE.

JAMES HARGREAVES, OF PATERSON, NEW JERSEY.

METHOD OF MANUFACTURING SULFURIC ACID.

Specification of Letters Patent No. 1,303, dated August 24, 1839.

To all whom it may concern:

Be it known that I, JAMES HARGREAVES, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and
5 Improved Method of Making Sulfuric Acid; and I do hereby declare that the following is a full and exact description of the method of making the same.

I cause the sulfur to be burned in a pan
10 in a close furnace by fire below the same, and the vapor arising from the combustion of the sulfur is forced and driven by a blast of atmospheric air from the furnace through a tube leading from the furnace to a closed
15 receiver filled nearly full of water, and discharged near the bottom of the receiver in such manner that the vapor ascends through the water to its surface, and by combining with the water forms sulfuric acid. I also
20 cause the vapor to be met by a blast of steam and atmospheric air while yet in the furnace and before passing into the receiver to cause the vapor of the sulfur or sulfurous acid gas to combine with one more equivalent of oxy-
25 gen, a dry atmosphere being unfavorable to the combination, and the vapor after passing through the water in the first receiver rises through another tube, fixed in the top of that receiver, and passes through another
30 receiver in the same manner, and so through a third or more, as may be found expedient, and as the acid in a concentrated state is drawn from the first receiver by a cock at the bottom the weaker acid from the second
35 receiver is drawn into the first and that of

the third into the second, and thus the water being placed in the last receiver passes through the several receivers, becoming more and more concentrated until it is drawn from the first receiver in the form of sulfuric acid. 40

In order to render the process more effect-
tual I insert in the receiver horizontal
shelves to cause the vapor to pass a greater
distance through the water, and these shelves,
45 as well as the receivers, should be covered with lead. The blast of atmospheric air may be made with a cylinder with double blast or in any other manner to make a steady and uniform blast, and the blast of steam may be made by a boiler over the
50 sulfur furnace.

What I claim as my invention and desire to secure by Letters Patent is—

The manufacturing of sulfuric acid in the manner herein set forth—viz., by introduc-
55 ing a blast of air to force the vapor of the burning sulfur through the water in the receiver, and by introducing a jet of steam with atmospheric air into the furnace to meet the vapor of the burning sulfur as here-
60 in described.

The drawings hereto annexed with the references thereto more fully explain my method of making sulfuric acid according to the foregoing specification.

JAMES HARGREAVES.

Witnesses:

SAMUEL P. WHITE,
H. M. LANE.