

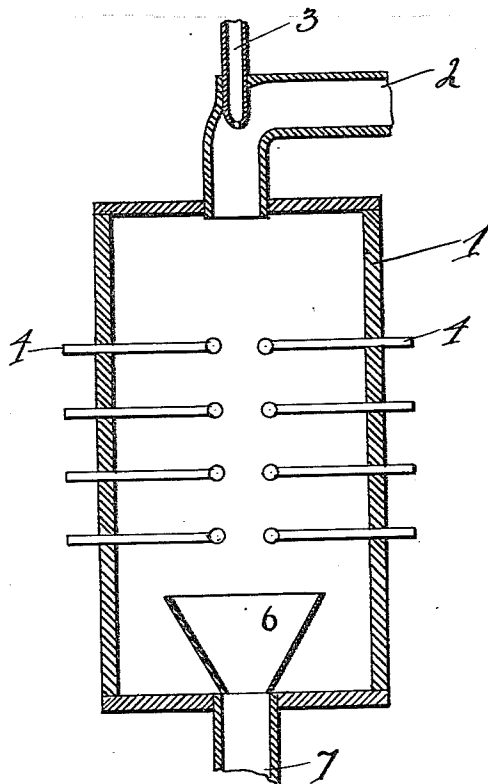
No. 869,094.

PATENTED OCT. 22, 1907.

I. KITSEE.

METHOD OF PRODUCING SULFURIC ACID.

APPLICATION FILED JULY 21, 1906.



WITNESSES:

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ISIDOR KITSEE, OF PHILADELPHIA, PENNSYLVANIA.

METHOD OF PRODUCING SULFURIC ACID.

No. 862,094.

Specification of Letters Patent.

Patented Oct. 22, 1907.

Application filed July 21, 1906. Serial No. 327,194.

To all whom it may concern:

Be it known that I, ISIDOR KITSEE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Methods of Producing Sulfuric Acid, of which the following is a specification.

My invention relates to an improvement in the method of producing sulfuric acid, or such other liquids needing oxygen or oxidized air for their production.

As is well known, sulfuric acid is now mostly manufactured by the so-called "contact process" from the sulfurous-acid gas generated now mostly from pyrites.

Instead of the catalytic action of the contact mass, the oxidation of air may be substituted, and it is the aim of my invention to produce sulfuric acid without the aid of the contact mass, by simply carrying or conveying the gases through ozonized air.

To ozonize the air, I prefer to have recourse to an arrangement, whereby this ozonation is accomplished with the aid of the electric current and I have, in preference, used a form of the device well known under the name of "electric ozonizer"; that is, a device whereby with the aid of induced or static electricity, a discharge takes place between two conductors separated from each other by an air-gap.

The drawing is a sectional view of an inclosure embodying my invention.

1, is the inclosure proper; 2, the pipe conveying the gases to the rear part of said inclosure; 4, 4, are the terminals of an electric generator. These terminals are provided with the end pieces 5, 5, here shown in the form of balls. The ends of these terminals may be of any shape, either round or pointed as the case may require. The pipe 2 is also provided with a pipe 3: this pipe has the office to convey, either under pressure or otherwise, the necessary air and super-heated steam, so that the generation of sulfuric acid shall be accelerated.

6, is a receptacle for the generated liquid and 7, a pipe to convey the liquid out of the receptacle.

It was found, that if the gases are heated with the addition of some super-heated steam, the formation of sulfuric acid takes place more rapidly than if these gases are dried.

It is well known that no matter how carefully the sul-

furous gas is purified before coming in contact with the catalytic mass foreign substances, such as arsenic, are carried over to the contact or catalytic mass, thereby retarding the catalytic action often to such an extent that the mass becomes entirely useless. To purify this mass, the same has to be taken out of the generating chamber.

In the method of producing sulfuric acid with the aid of an ozonizing apparatus, it does not matter what impurities these gases carry with them.

Persons versed in the art will readily see the advantage of this process, if they take into consideration the amount of labor and expenditure necessary to purify the gases before they come in contact with the platinum mass.

I have not illustrated the electric generator for generating the discharges, as the same is well understood and may consist of any of the well known apparatus.

It has to be taken into consideration that the steam should be very sparingly added and should not be too moist as otherwise a conducting path would be established between the different electrodes and this should be under all circumstances avoided.

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

1. The method of producing sulfuric acid, which consists in subjecting a continuous stream of sulfurous gas in the presence of necessary moisture to the action of an electric current adapted to modify the chemical constituents of said gas to convert the same into sulfuric acid.

2. The method of producing sulfuric acid, which consists in passing a continuous stream of sulfurous gas through a chamber into which is introduced oxygen, and subjecting said gas and oxygen, in the presence of the requisite moisture, to the action of an electric current adapted to modify the chemical constituents of said gas to convert the same into sulfuric acid.

3. The method of producing sulfuric acid, which consists in bringing a continuous stream of sulfurous gas into contact with a body of air, and subjecting the same in the presence of necessary moisture to the action of an electric current adapted to modify the chemical constituents of said gas to convert the same into sulfuric acid.

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

ISIDOR KITSEE.

Witnesses:

ALVAH RITTENHOUSE,
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