

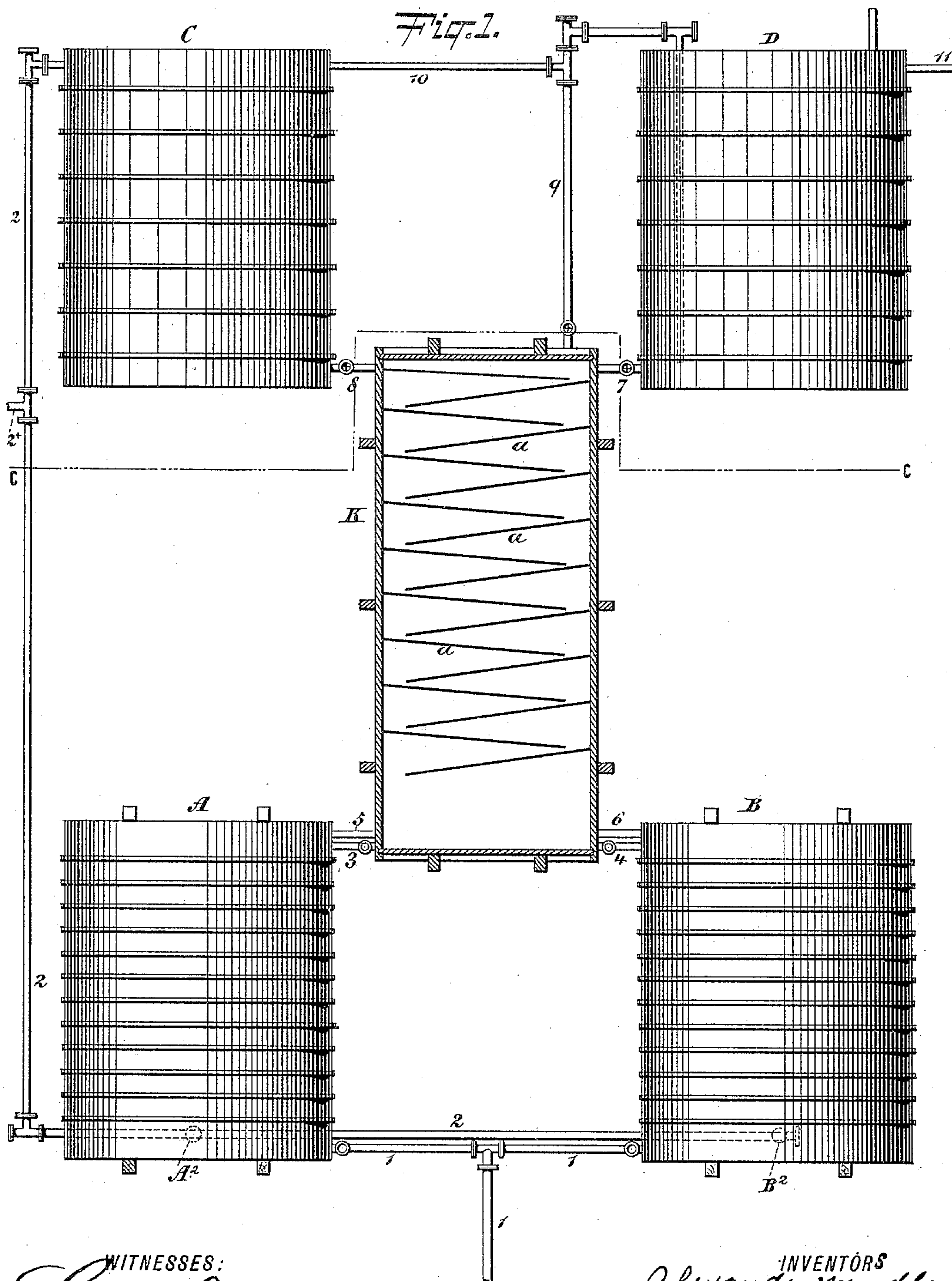
(No Model.)

2 Sheets—Sheet 1.

A. WENDLER & J. SPIRO.
APPARATUS FOR MAKING SULPHITE LYE.

No. 446,652.

Patented Feb. 17, 1891.



WITNESSES:
Gustav Peterich
H. C. Mitchell

INVENTORS
Alexander Wendler
Julius Spiro
BY
Briesen & Knauth
THEIR ATTORNEYS.

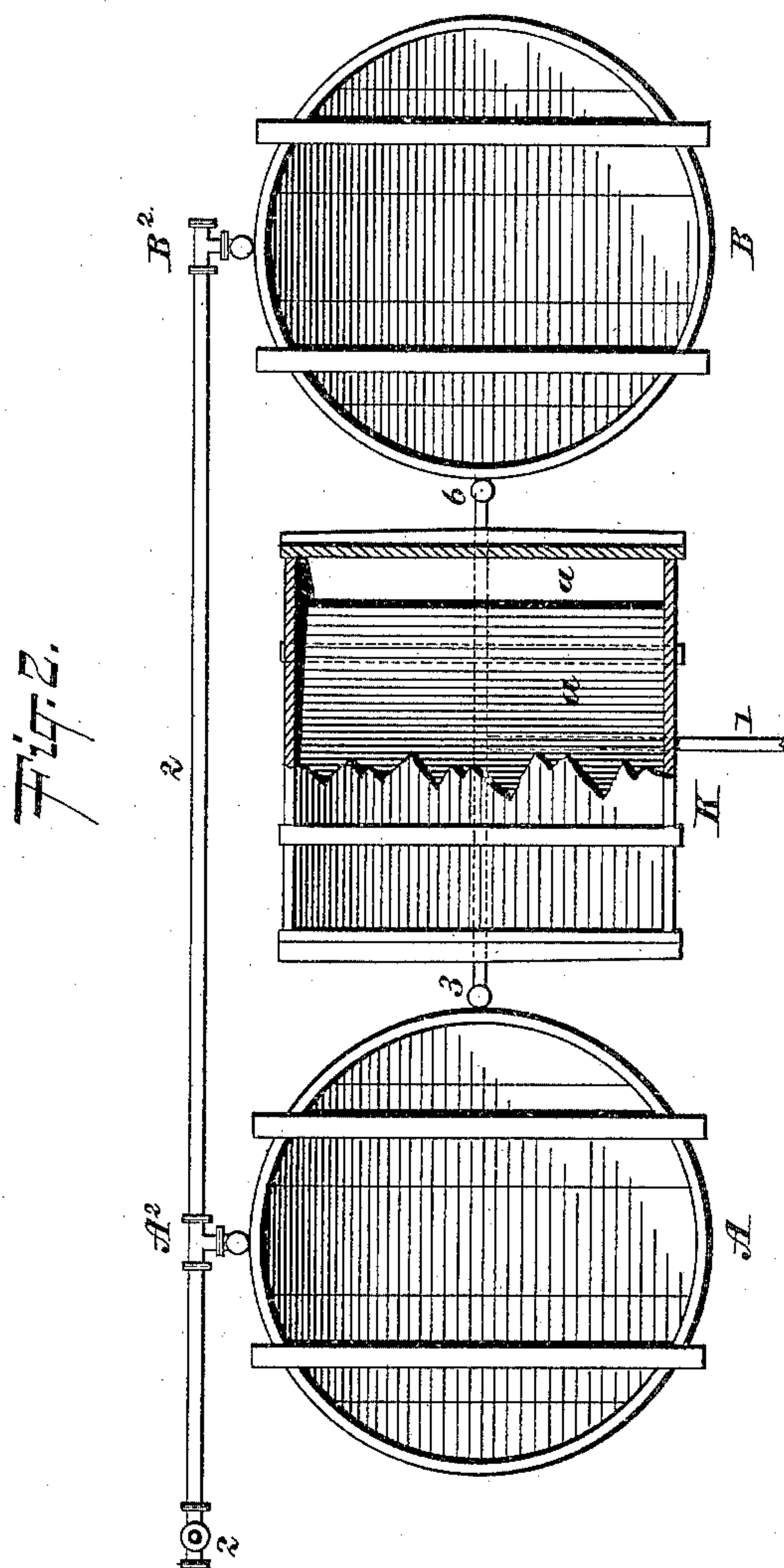
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BY *Brisson & Knauth,*
THEIR ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALEXANDER WENDLER AND JULIUS SPIRO, OF WATERTOWN, NEW YORK.

APPARATUS FOR MAKING SULPHITE LYE.

SPECIFICATION forming part of Letters Patent No. 446,652, dated February 17, 1891.

Application filed December 4, 1890. Serial No. 373,542. (No model.)

To all whom it may concern:

Be it known that we, ALEXANDER WENDLER and JULIUS SPIRO, both residents of Watertown, Jefferson county, and State of New York, have invented an Apparatus for the Continuous Manufacture of Sulphite Lye, of which the following is a specification.

This invention relates to a mechanism whereby sulphite lye may be manufactured continuously.

The object of this invention is to provide a system of vats or the like, in combination with an absorption-chamber, whereby the continuous manufacture of sulphite lye is effected.

Reference is had to the accompanying drawings, wherein Figure 1 represents a sectional elevation of our apparatus. Fig. 2 is a top view of the lower part of the same, partly in section.

A B C D are vats.

K is the absorption-chamber, provided with drip-shelves *a a*, the vats and the chamber being connected by a system of pipes herein-after referred to. The lime-water necessary for the lye enters the vat D by the pipe 11. The sulphurous-acid gas enters the vats A B under pressure by the pipe 1, and passes either through A, K, and D, or B, K, and D, the lime-water passing either through D, K, and A, or D, K, and B. The gas cannot be completely absorbed by the liquid in the vats A B on account of the rapidity with which it passes through the same, and therefore the absorption-chamber K, provided with drip-shelves *a a*, is put in, which affords the gas the largest possible plane of attack. It is our object to let the weak lye which is still able to absorb a large quantity of sulphurous acid run as often as possible over the shelves in the saturating-chamber K, whereas the strongest lye, which is unable to absorb much more sulphurous acid, (SO_2) is finally charged with gas in the lower vats. The incomplete lye passes from A or B through pipe 2 to C, and from C through K back to A or B. The lye is completed in either A or B, and then passes through pipe 2 2* to the place of consumption. The vat D is used for the reception of lime-water and the vat C for the reception of the weaker lye. The system of piping by which the vats A B C D and the

chamber K are connected is as follows: The gas is conducted to vats A B by pipe 1, and from A B to the saturating-chamber K by pipes 5 6, from K to vats C D by pipes 9 10, the partial object of 10 being to allow the free flow of the liquid from the vat C when the valve 8 is opened. The liquids are conducted through pipes 7 and 8 into K, from there by pipes 3 4 to A B, and from these vats they may be carried to the outlet 2* or to the vat C by pipe 2.

In operation we will suppose the vats A and B are already filled with weak lye. C is empty, and D contains lime-water. The gas enters through pipe 1 into the vats A and B and up through the saturating-chamber K to D. The valves in pipes 7, 8, and 9 are then closed and the valve B² in pipe 2 opened. Pressure will then increase in A, B, and K until it is sufficient to force the weak lye from B to C. As soon as this is accomplished the valve 8 is opened and the weak lye allowed to pass from C over the shelves in the saturating-chamber K, and then through pipe 4 to the vat B. On this passage it will absorb the gas which is in K. The outflow of C is regulated in such a manner that as soon as B is nearly filled the lye in A will also nearly have absorbed the wished-for amount of sulphurous acid, (SO_2). As soon as this is accomplished the gas is switched over to B, and the outlet-valves from K are again closed, and the completed lye is forced over from B to pipe 2 2* to the place of consumption. As meanwhile chamber K is under pressure of sulphurous acid, (SO_2) the lime which has settled in chamber K will be dissolved, and thus it is possible to obtain a lye containing an equal percentage of lime, and also in this manner the drip-shelves of the chamber K will be kept clean, thus excluding the possibility of an obstruction in the chamber K. When all the completed lye has been forced out of the vat A or B, fresh lime-water will be conducted into such empty vat, opening the valve in pipe 7 and allowing the lime-water to run over the shelves *a* of the chamber K to the vat A or B. By closing the gas-outlet valves of K the weak lye is forced from A to C. Then by opening the valve 8 the weak lye is allowed to pass from C over the saturating-shelves *a a* of the chamber K to A. After the same liquid

from one of the lower vats—say A—has passed over the saturating-shelves in K twice the lye in the other lower vat—say B—is nearly completed. The gas is then switched over and
5 conducted through vat A, the outlet-valves from K are closed, and the completed lye is forced from B through pipe 2 2* to the place of consumption. In like manner further charges are manipulated.

10 In the above-described case the apparatus is worked under gas-pressure; but the same effect would be obtained by suction. The circulation of the liquids could likewise be obtained by pumping.

15 Having described our invention, what we claim is—

1. The combination of a saturating-tank K, having drip-shelves *a a*, with the lower vats A B, gas-supply pipe entering said vats, weak-
20 lye pipe 2, leading from said vats, upper

weak-lye-supply pipe 8, vat C, communicating with pipes 2 and 8, with the top of tank K, and lime-water-supply pipe 7 to upper part of tank K, as described.

2. The elevated vats C D, combined with 25 the saturating-tank K, having drip-shelves *a a* and connecting-pipes at its upper end leading to said vats, and with the lower vats A B, pipes connecting them with the lower part of the tank K and with the gas-supply pipe 30 1, leading into the vats A B, and with the pipe 2, connecting the lower vats A B with the elevated vat C, substantially as herein shown and described.

ALEXANDER WENDLER.
JULIUS SPIRO.

Witnesses:

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JOS. H. SPRATT.