

(No Model.)

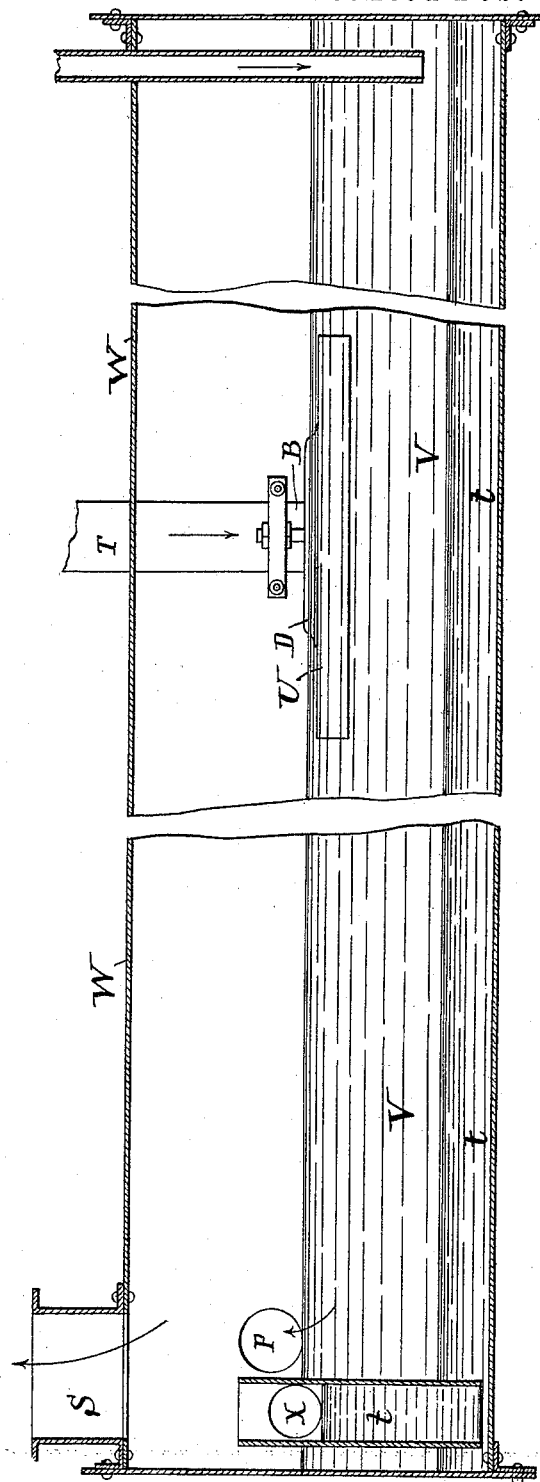
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F. A. M. ALAVOINE.
GAS WASHER.

No. 422,173.

Patented Feb. 25, 1890.

Fig. 1



Witnesses:
John J. Rennie.
J. H. Caplinger.

Inventor,
François A. M. Alavoine
By Henry Cornwell
Attorney.

(No Model.)

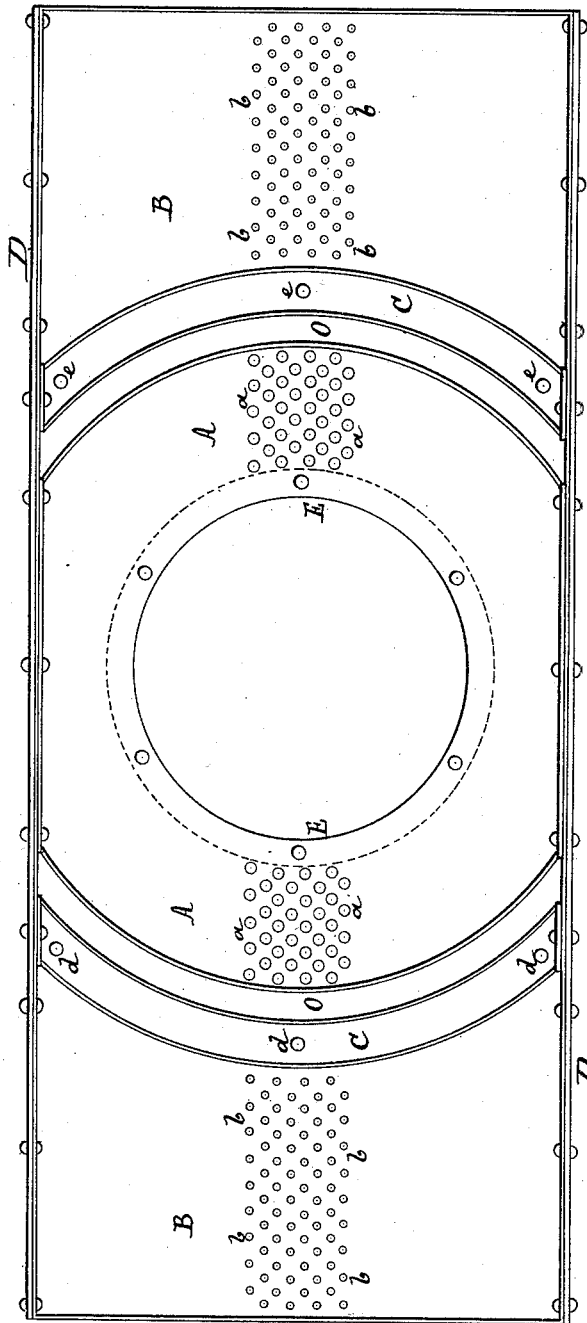
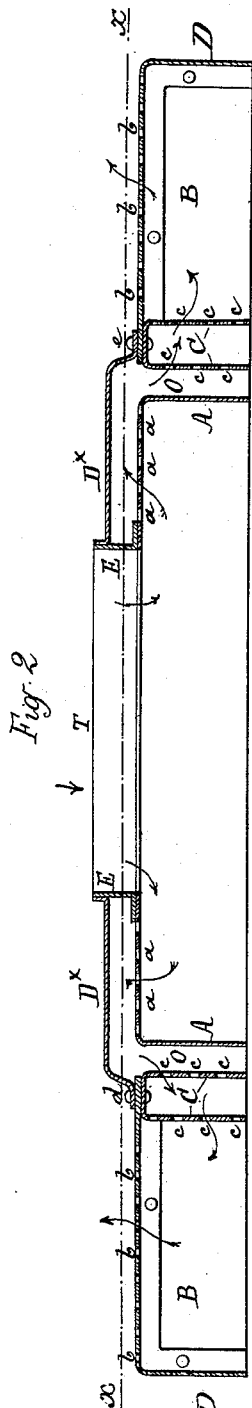
2 Sheets—Sheet 2.

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GAS WASHER.

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No. 422,173.

Patented Feb. 25, 1890.



Witnesses:
John A. Rennie
J. B. Daplinger

Inventor;
Francis A. M. Alvord
By Henry Comstock
Attorney.

UNITED STATES PATENT OFFICE.

FRANÇOIS ARMAND MARIE ALAVOINE, OF BEAUVAIS, FRANCE.

GAS-WASHER.

SPECIFICATION forming part of Letters Patent No. 422,173, dated February 25, 1890.

Application filed July 20, 1889. Serial No. 318,095. (No model.) Patented in France January 10, 1885, No. 166,338; in England May 21, 1885, No. 6,257; in Belgium June 6, 1885, No. 69,166; in Italy June 15, 1885, No. 18,492, XXXVI, 393; in Austria-Hungary June 16, 1885, No. 22,842 and No. 42,937, and in Spain June 19, 1885, No. 5,142.

To all whom it may concern:

Be it known that I, FRANÇOIS ARMAND MARIE ALAVOINE, a citizen of the French Republic, residing in Beauvais, France, have invented certain Improvements in Gas-Washers, (for which patents have been granted in France, No. 166,338, dated January 10, 1885; in Great Britain, No. 6,257, dated May 21, 1885; in Belgium, No. 69,166, dated June 6, 1885; in Austria-Hungary, Vienna, No. 22,842, and Buda-Pesth, No. 42,937, dated June 16, 1885; in Italy, Reg. Gen., No. 18,492, and Reg. Att., Vol. 36, No. 393, dated June 15, 1885; and in Spain, No. 5,142, dated June 19, 1885,) of which the following is a specification.

My invention relates to that class of purifiers which receive the gas directly from the retort, known as "barillet" purifiers; and the object of my invention is to provide the gas-inlet of the purifier with a submerged screen or foraminous distributor, whereby the gas is compelled to pass through the wash-water for a considerable distance before it escapes at the surface thereof. The volume of gas is divided by foraminous partitions or plates as it flows along the tortuous course from the point where it enters to the point where it leaves the water; but the construction is such that there is no appreciable loss of pressure.

In the accompanying drawings, illustrative of my improvements, Figure 1 is a longitudinal vertical section of the purifier as a whole, the submerged distributing-screen being represented in elevation. Fig. 2 is a longitudinal vertical mid-section, and Fig. 3 is an under side plan view of the distributing-screen detached, and on a larger scale than Fig. 1.

In Fig. 1, W represents the drum of the purifier; V, the water therein; P, the overflow outlet for the water; T, the gas-inlet; U, the submerged distributing-screen, as a whole; S, the gas-outlet, and X the outlet for the tar \bar{t} , which collects in the bottom of the drum.

The submerged purifying-screen (illustrated in Figs. 2 and 3) consists of a bell D, provided with an elevated central crown-plate D^x. In this crown-plate is fixed a collar E to receive the gas-inlet pipe T. This collar extends below the plate D^x, and to its inner end is secured a bell A of parti-circular

form, as seen in plan in Fig. 2. Exterior to the bell A, on both sides thereof, are annular pendent partitions C, arranged as shown.

B are end chambers within the bell D.

The dotted lines $x\ x$ in Fig. 2 indicate the water-level and the extent to which the screen will be submerged. The bell D will of course be full of water. The gas, under pressure and directly from the retorts, descends through the pipe T and enters the inner bell A through the water. It rises and flows out from the bell A through the larger perforations a in the crown-plate or roof of said bell and enters the space under the plate D^x. Thence it flows downward into the annular space O, exterior to the imperforate wall of drum A, thence laterally through the perforations c in the pendent partitions C into the end chambers B. It rises in these chambers and escapes from the bell D through the finer perforations b in the roof of said end chambers. The gas now rises to the surface of the water and flows off at the gas-outlet S. In its flow through the screen U the gas is submerged, and being divided or broken up by the perforations through which it must pass, every part of it is brought into contact with the water and thoroughly washed. The passage of the gas successively through perforations of less and less diameter prevents any material loss of pressure. In its passage through the purifier the gas parts with nearly all of its tar, the major part of its sulphydric acid, a large percentage of its carbonic acid, and a considerable proportion of its ammonia. The tar falls to the bottom and may be removed at the outlet X, and the ammoniacal water overflows at the outlet P, which serves to preserve a uniform level of the water in the cylinder.

This apparatus is very uniform in its action, and the body of gas is so subdivided as to present every molecule or portion of the same to the washing action of the water.

To avoid unnecessary repetition, I have only represented in Fig. 2 a portion of the perforations a and b .

Having thus described my invention, I claim—

In a gas-purifier, the combination, with

the drum or water-receptacle of the purifier and the gas-inlet pipe T, of a foraminous gas-distributing screen U, connected with said inlet-pipe, said distributing-screen consisting
5 of the bell D, having end chambers B, provided with perforations *b*, an inner bell A, having perforations *a* in its roof, and pendent foraminous partitions between the wall of said inner bell and said chambers B, the per-

forations *a* being larger than the perforations *b*, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRANÇOIS ARMAND MARIE ALAVOINE.

Witnesses:

J. L. RATHBONE,

CHARLES MARDEBS.