O. ZWIETUSCH.

Improvement in Apparatus for Generating Carbonic-Acid Gas.

No. 130,001. Patented July 30, 1872.

Fig. 1.

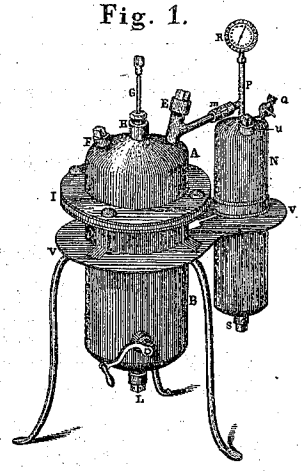


Fig. 2.

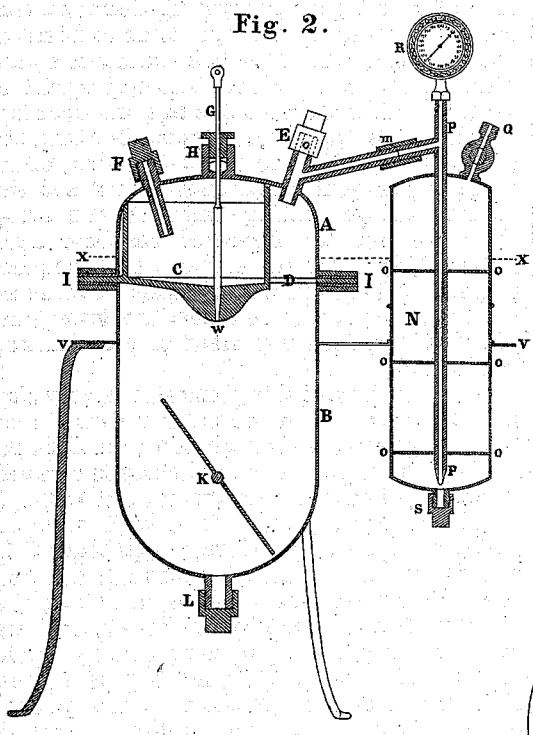


Fig. 3.

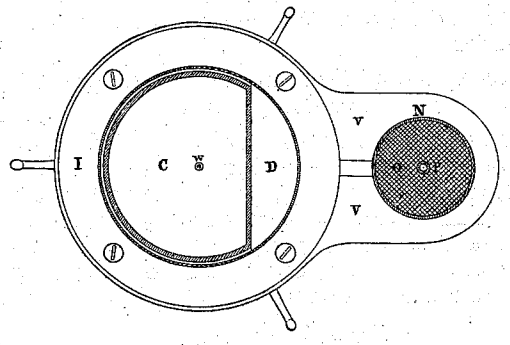
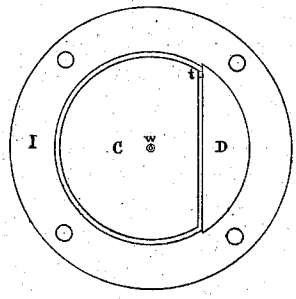


Fig. 4.



WITNESSES:

W. Schmitt

E. J. Smith

INVENTOR,

Otto Zwietusch

UNITED STATES PATENT OFFICE.

OTTO ZWIETUSCH, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN APPARATUS FOR GENERATING CARBONIC-ACID GAS.

Specification forming part of Letters Patent No. **130,001**, dated July 30, 1872.

SPECIFICATION.

I, OTTO ZWIETUSCH, of Milwaukee, in the county of Milwaukee, in the State of Wisconsin, have invented certain Improvements in Carbonic-Gas Generator, of which the following is a specification:

Nature and Object of the Invention.

My invention is a gas-generator, which is combined of lead and copper, so arranged that the lead protects all the parts which come in contact with vitriol, and made simple, the only opening for the marble-dust, vitriol, and the escape of gas, being all combined, and with a washer to wash the gas in a most perfect manner.

Description of the Drawing forming part of this Specification.

Figure 1 is a perspective view of the gas-generating apparatus; Fig. 2, a vertical section through the center of the generator, vitriol-chamber, and washer, showing the combination of the same; Fig. 3, a horizontal section in the line *x x*, Fig. 2; Fig. 4, a top view of the vitriol-chamber.

General Description.

A, the upper part of the generator; B, the lower part of the generator; C, the vitirol-chamber, made of lead, or part lead and part of other material; D, the opening in the vitriol-chamber; E, inlet and outlet pipe, with cap, with hole in its side; F, inlet-pipe to the vitriol-chamber; G, the plunger that closes the orifice in the bottom of the vitriol-chamber to let vitriol down on the marble-dust; H, stuffing-box; I, flanges of the generator and vitriol-chamber; the edges of the vitriol-chamber come out between these flanges and make a packing between the parts A and B; K, the agitator, operated by a crank, shown on Fig. 1; L, blow-off cap at the bottom of the generator; M, connecting-pipe between the generator and washer; N, the washer; O, sieve in the washer N; P, pipe in the washer, which conveys the gas to the bottom of washer N; Q, outlet-faucet; R, gage to tell the amount of pressure in the generator; S, cap on the bottom of the washer; T, opening half round to the vitriol-chamber; U, inlet to the washer; V, frame on which the generator stands; W, opening in the bottom of the vitriol-chamber, closed by plunger G.

This generator is made of copper and lined with lead; all its parts coming in contact with either gas or acid are securely protected by lead or tin. It consists of two distinct chambers, one for the reception of the oil of vitriol, the other being the generating-chamber, connected together by a flange so as to admit of reaching all parts of the two chambers by uncoupling one connection. The upper part of the generating-chamber has but one opening, which serves the triple purpose of being the equalizing-pipe for the vitriol-chamber, of introducing the charge of marble-dust and water into the generating-chamber, and being the outlet for the liberated carbonic acid. The oil-of-vitriol chamber is made of one piece of pure lead cast in a mold, which avoids all soldering; or it may be made, the lower part of it lead, and the cup made of glass sitting in the lead.

The operation of this generator is very simple: The marble-dust and water are introduced into the generator through the pipe E by removing the cap, and then the cap is screwed on again. The vitriol is introduced through opening F, the washer is filled with water up to and over the upper sieve, the plunger G is raised, and the vitriol falls through opening W onto the marble-dust and water below; the agitator K is revolved by the crank, and the gas is generated and passes up through opening D and through pipe M to pipe P, and down through pipe P to the bottom of washer N, when it is liberated and passes off through the water until it gets to the lower sieve, when it is severed into fine particles, passing through the water till it reaches the second sieve, when it is again severed and passes on through the water till it gets to the top, completely washed and purified, and then passes out through outlet Q to the point where wanted for use. The gage R on top can be consulted, and if the pressure is too great then turn the cap E a little, which will bring a hole in it above the end of the pipe, and the gas will escape enough to lessen the pressure sufficient.

Claims.

I claim as my invention—

1. Vitriol-chamber C, arranged so as to form packing between the parts A and B of the generator, with a partition running up to the top of the generator, forming opening D for the escape of the gas, and also for the introduction of water and marble-dust, substantially as described.

2. Cap on outlet-pipe E, with opening on its side, with which to discharge the gas when there is too much pressure, and in combination with pipe and generator A and B, substantially as described.

3. Washer N, with sieves O and pipe M, in combination with generator A and B, substantially as described.

OTTO ZWIETUSCH.

Witnesses:
J. B. SMITH,
E. L. SMITH.