

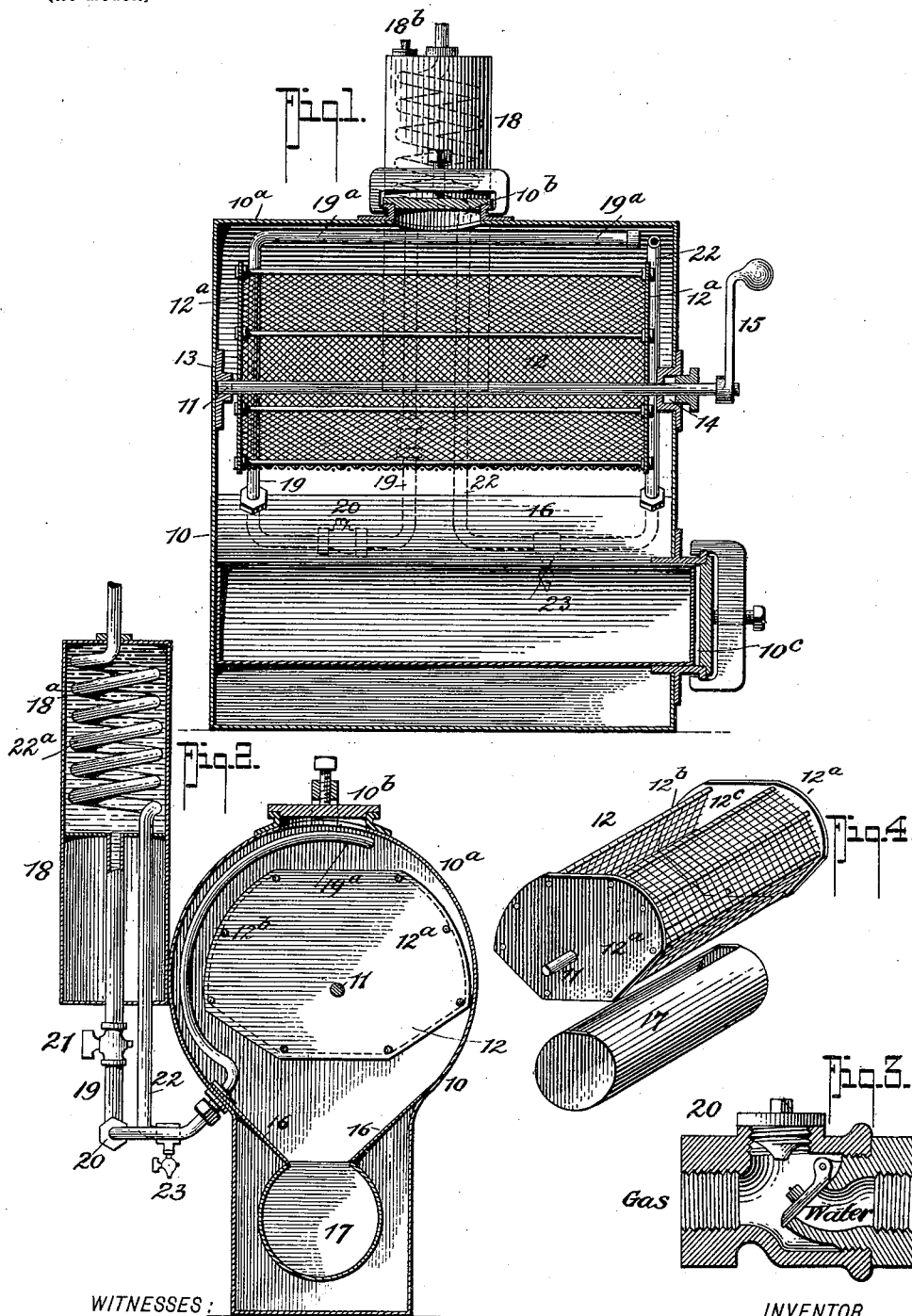
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Patented Apr. 17, 1900.

S. JEWELL.  
ACETYLENE GAS GENERATOR.

(Application filed May 29, 1899.)

(No Model.)



WITNESSES:

*W. E. Dieterich*  
*Louis Dieterich*

INVENTOR

*Samuel Jewell*

BY

*Fred G. Dieterich*  
ATTORNEY

# UNITED STATES PATENT OFFICE.

SAMUEL JEWELL, OF VANCOUVER, CANADA.

## ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 647,922, dated April 17, 1900.

Application filed May 29, 1899. Serial No. 718,719. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL JEWELL, a citizen of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented certain new and useful Improvements in Gas-Generators, of which the following is a specification.

My invention relates to improvements in acetylene-gas generators, consisting of a cage designed to hold carbid within a closable generating-chamber and a check-valve worked automatically by the pressure of the water on one side and the pressure of the gas on the other, which controls the supply of water and consequently the generation of gas.

The invention also embodies further important advantages, which will be fully set forth in this specification and the appended claims.

The object of my invention is to so arrange the various parts that the necessity of a gasometer is practically overcome, this being accomplished by a check-valve inserted between the water-supply and the generating-chamber, which allows the water to flow to the carbid until a sufficient pressure is established in said chamber, when such pressure will close the check-valve and stop the water. By dispensing with the gasometer and having perfect control of the generation of the gas the machine is very much simplified and reduced in the number of parts, and consequently the cost of construction, which is also a desideratum. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section through the generating-chamber. Fig. 2 is a vertical cross-section through the water-chamber and generator. Fig. 3 is a detail of the check-valve in the water-pipe, and Fig. 4 is a perspective view of the cage for the carbid and the receptacle for the residue from same.

Similar numerals refer to similar parts throughout the several views.

In the construction of my invention, 10 indicates a closable vessel having its upper portion of semicylindrical form, as 10<sup>a</sup>, placed on a horizontal plane. Suitably mounted on a rod 11, passing through the upper portion of the vessel 10<sup>a</sup>, hereinafter called the "generating-chamber," is a cage 12 for the recep-

tion of the calcium carbid. This cage 12 is composed of flat end pieces 12<sup>a</sup>, connected together by rods 12<sup>b</sup>, and an opening 12<sup>c</sup> is provided at its upper side for the introduction of the carbid, which is inserted through the hand-hole 10<sup>b</sup> in the upper shell of the generating-chamber 10<sup>a</sup>. This hand-hole is of the usual pattern employed to make a tight cover and resist the pressure from within. The rod 11 is pivoted at one end in a fixed piece 13 on the inner side at one end of the chamber 10<sup>a</sup> and passes through a gland 14 at the other end of said chamber, and to impart the desired shake of the cage 12 to cause the residue to fall therefrom a handle 15 is fixed to the projecting end of said rod.

Sloping downward and inward from the lower opposite inner sides of the generating-chamber 10<sup>a</sup> are plates 16. These plates are guides for transferring the ash or residue from the carbid to a receptacle 17, which is designed to be removed through an opening 10<sup>c</sup> when desired, which is closed by a cover in a similar manner to the cover 10<sup>b</sup> at the top of the generator.

Laterally disposed and fixed to the upper part of the generating-chamber 10<sup>a</sup> and extending upward therefrom is a vessel 18, the upper part of which is provided with a closable water-chamber 18<sup>a</sup>. Connecting with this chamber 18<sup>a</sup> is a pipe 19, which communicates with the generating-chamber 10<sup>a</sup> after first passing downward and thence upward around one side of the carbid-cage 12 and passing horizontal and parallel with and over the same, as 19<sup>a</sup>. This horizontal portion of the pipe 19<sup>a</sup> is perforated, so that the water will spray the carbid suspended beneath by the cage 12, and consequently will generate gas very fast. Arranged at the lowest plane of the pipe 19 between the water-chamber 18<sup>a</sup> and the generating-chamber 10<sup>a</sup> is a flap check-valve 20 of the ordinary type. This valve 20 allows the water to flow to the generating-chamber so long as the pressure is greater from that side; but as soon as the gas-pressure is the greater the same is closed thereby, and thus the supply is shut off until further required. At a further point along the pipe 19 toward the water-chamber is a stop-cock 21. This is employed for closing the water-supply altogether.

From a point above the carbid-cage 12 the gas is carried off by a pipe 22, which is passed through the water-chamber 18<sup>a</sup> in a spiral form, as 22<sup>a</sup>. This cools the gas before being  
5 passed off for use.

When the machine is in operation, a small plug 18<sup>b</sup> is removed from the top of the water-chamber to allow the water to gravitate to the generating-chamber.

10 In the operation of my invention the carbid is inserted in the cage 12 through the opening 10<sup>b</sup> and the cover fastened down tight, the chamber 18<sup>a</sup> is filled with water, and the stop-cock 21 is opened. This allows the water  
15 to pass to the carbid until sufficient pressure is generated to stop the flow, after which the gas drawn off will regulate the flow of the water.

To draw off any moisture that will accumulate in the gas-pipe 22 by condensation in the coil 22<sup>a</sup> and prevent an interference with the steady flow of the gas, I provide a drain-cock 23 on the lowest point of said gas-pipe. (See Figs. 1 and 2.)

25 Having now described this invention, what I claim, and desire to be protected in by Letters Patent, is—

In a gas-generating apparatus; the combi-

nation with the body portion, consisting of a semicylindrical upper part 10<sup>a</sup>, and bottom 30 inclined plates 16; a detachable receptacle 17, adapted to slip endwise of the body of the apparatus under the plates 16 16, the upper section of the body having a carbid-feed inlet, and the cage 12, held to rock under the feed- 35 opening, said cage being open at the top its full length; of a water-holder 18, disposed in a plane above the carbid-holder; a valve feed-pipe extending pendently from the water-holder, said pipe entering the body of the ap- 40 paratus and bent to pass between the wall of the said body and the cradle and extending over one end of the said cradle, said pipe terminating in a spray member projected length- 45 wise over the cradle-opening; a gas-offtake having its inlet at the top of the generating-chamber, said pipe curving downward and passing out of the body portion at a point below the water-holder; and a valve 23, in the extension of said pipe, said extension pass- 50 ing up through the water-holder, all being arranged substantially as shown and described.

SAMUEL JEWELL.

Witnesses:

W. G. TRETHEWEY,  
ROWLAND BRITTAIN.