No. 676,615. Patented June 18, 1901.

W. J. BAULIEU.

ACETYLENE GAS GENERATOR.

(Application filed Nov. 27, 1899.)

(No Model.) 2 Sheets—Sheet 1.

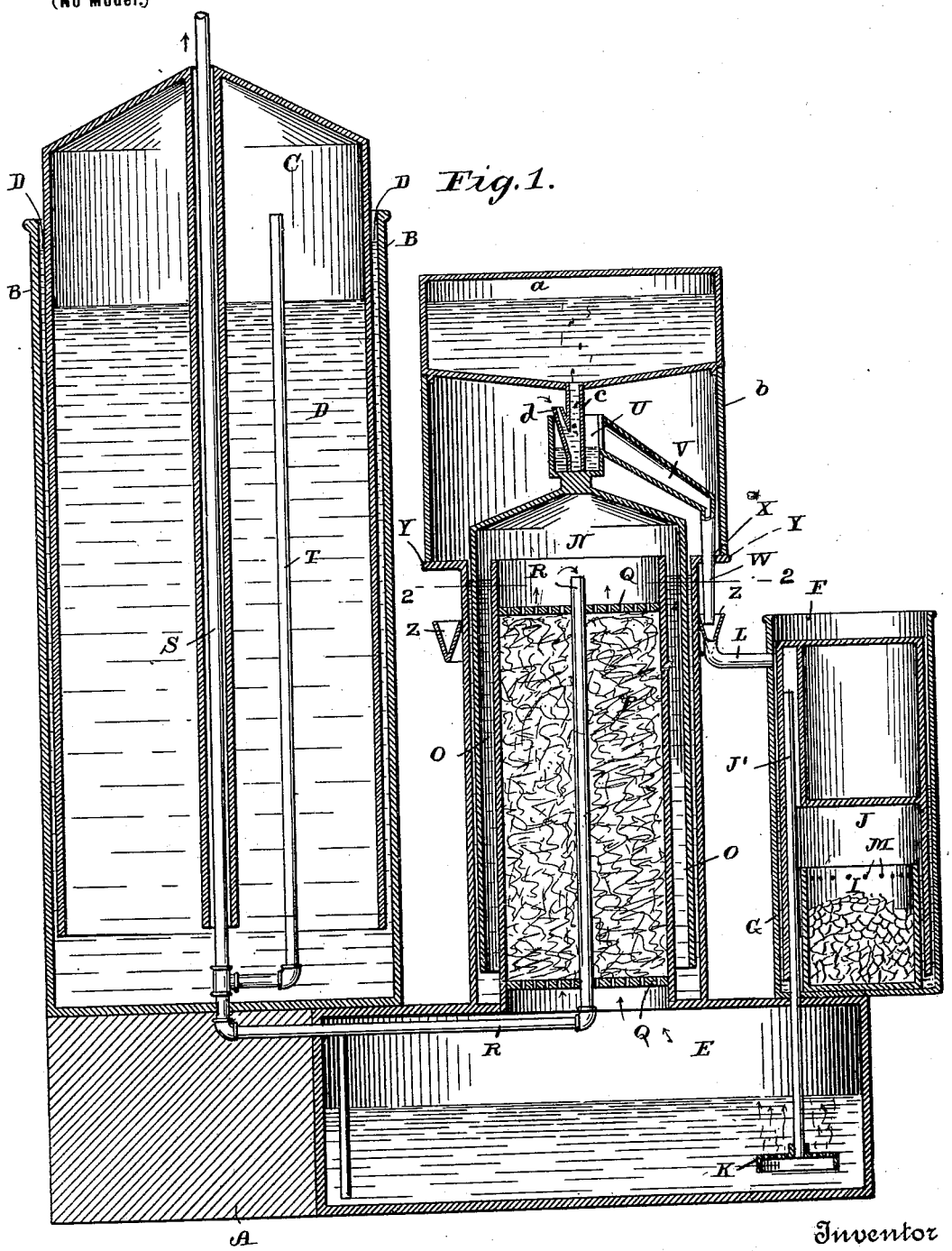


Fig. 1.

Witnesses
John L. Carpenter
Edward N. Nicholson

Inventor
William J. Baulieu
By Chamberlain & Newman
Attorneys

No. 676,615. Patented June 18, 1901.

W. J. BAULIEU.

ACETYLENE GAS GENERATOR.

(Application filed Nov. 27, 1899.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

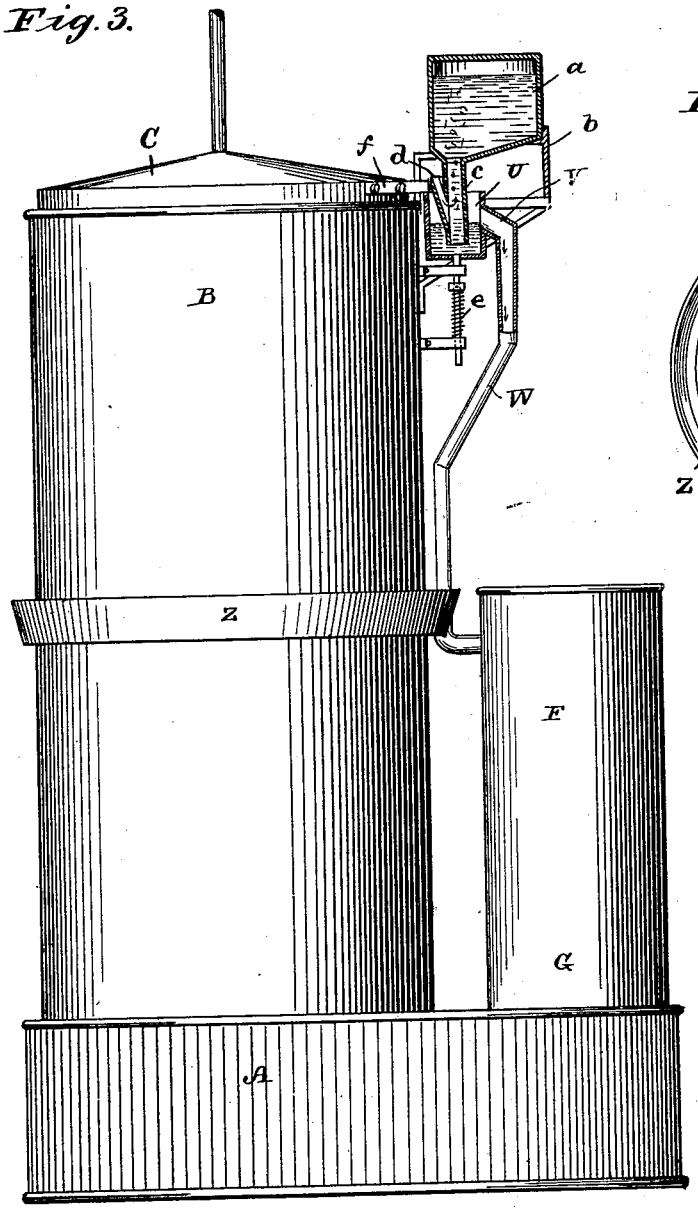
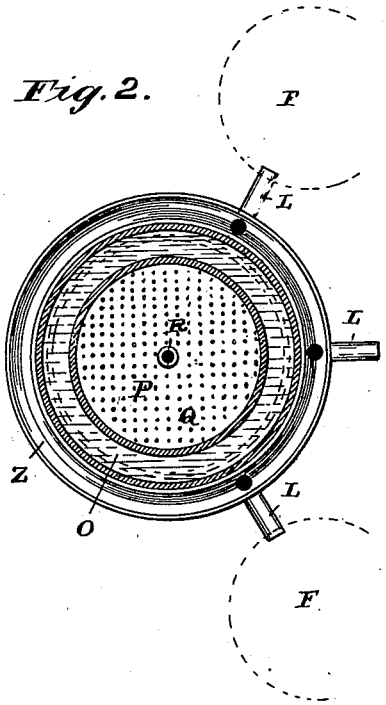


Fig. 2.



Witnesses

John L. Carpenter.

Edward K. Nicholson

Inventor

William J. Baulieu

By Chamberlain & Newman

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM J. BAULIEU, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR OF ONE-HALF TO JOHN D. CARPENTER, OF SAME PLACE.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 676,615, dated June 18, 1901.

Application filed November 27, 1899. Serial No. 738,313. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. BAULIEU, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

This invention relates to new and useful improvements in acetylene-gas generators, and particularly to the class known as "water-feed" and wherein the water is automatically fed to the carbid.

The objects of the invention are to simplify, cheapen, and generally improve the construction of generators of this class, and, further, to entirely dispense with the use of valves throughout the pipe connections of the generator, it being obvious that the use of valves in acetylene-gas pipes or machines is particularly objectionable, since they invariably give more or less trouble by sticking and working hard after being in use a short time.

The above and other objects of my invention will be readily understood from the following description, in connection with the accompanying sheets of drawings, forming a part of this specification, upon which similar characters of reference denote like or corresponding parts throughout the several figures, and of which—

Figure 1 shows a central vertical longitudinal section through my complete machine. Fig. 2 is a detail sectional plan view taken on line 2 2 of Fig. 1. Fig. 3 is a side elevation of a simplified form of machine embodying a slight modification of my improvement.

Referring in detail to the characters of reference marked upon the drawings, A represents a suitable base, upon which the tank B of the gasometer C is mounted. Said gasometer, as will be apparent, is provided with the customary water seal D, whereby the escape of gas is prevented and the bell permitted to rise and fall in accordance with the pressure of gas therein. Adjacent to the base A, I provide a wash-tank E, through the water of which the gas from the generator is passed for cleansing. Upon the top of this tank is mounted one or more generators F, the construction of which is as follows: Within the bottom of the cylindrical shell G is located a carbid-holder I, which is preferably inclosed around its bottom, so as to prevent the admission of water therethrough from the tank, but having an open top and a series of holes M through its top edge. This holder is covered by means of a bell J, the depending flange of which is adapted to encircle said holder and be submerged within the water surrounding the same. An extension to the bell is provided to accommodate the pipe J', through which the gas is fed to the water through a perforated disk K, as shown. The water for the generator is fed in through pipe L around the bell and runs down between it and the tank and rises upon the inside of said bell J and overflows through the openings M of the carbid-holder, before mentioned, in suitable quantities, as will be later more fully explained.

Upon the tank E and substantially central thereof I place an intermediate reservoir, which I will term the "feed-reservoir" N. This feed-reservoir is adapted to rise and fall with the pressure of gas and is mounted within a two-walled tank O, which forms the customary water seal. Within the inner wall of this tank I provide a cotton-packed chamber P, having a perforated top and bottom Q, which, together with said cotton, forms a purifier.

From the above description it will be noted that the gas from the tank E readily passes up through the cotton-chamber and emerges under the bell, from whence it is led out through pipe R to the service-pipe S or into the gasometer C through the branch pipe T, thus giving a direct service-feed from the generator through the feed-reservoir N with substantially a uniform pressure and permitting the excess to pass into the storage-gasometer.

The bell of the feed-reservoir N is subjected to a slight vertical movement by reason of the variations of pressure of gas within the gasometer, and in practice the two are so weighted with respect to each other that the smaller one will assume a raised position, as shown in the drawings, when there is any gas in the gasometer or when there is sufficient

to raise its bell; but the moment the large bell descends and the consumption of gas continues the bell of the feed-reservoir N immediately drops to its lowered position, thus causing a feed of water through the construction of mechanism which I will next describe.

Upon the top of the bell of the feed-reservoir N, I place a cup U, having a spout V, the entrance of which is made from the upper portion of said cup, thus insuring the retention of a given quantity of water within the base of the cup at all times. The spout V is provided with a vertical extension W, which is guided through one of a series of holes X, contained within the flange Y, secured to the outer casing of the tank O. The spout referred to discharges its flow of water into a trough Z, which preferably encircles the tank O and may be provided with any one or more pipes L to convey the water down into the generators. The function of the trough is to provide for the successive flooding of a series of generators, it being obvious that as they become filled the water backs up through the pipe L into the trough and overflows into the adjoining generator, and so on until the entire series is consumed.

The water-supply is contained in a tank *a*, which is situated above the feed mechanism and is retained upon a suitable support *b*, mounted upon the flange Y before mentioned. Central of the tank *a* is situated a depending pipe *c*, having a Y branch *d*, through which a vent is provided at such times when the bell drops away from the open end of the pipe *c* and releases the back pressure upon the water contained therein. The arrangement, adjustment, and relative size of these parts are such that it is not necessary to drop the cup sufficiently to entirely remove the water seal of said cup from the mouth of the pipe *c* before the water is fed therethrough; but said feed takes place intermediate of said points.

From the above construction it will be apparent that in the operation of my machine the moment the supply of gas within the gasometer becomes exhausted the feed-dome is drawn upon until its supply is no longer sufficient to retain it at its normal height and that by reason of its descent the pressure of the seal of the supply-tank is released and the water permitted to flow therefrom through the several connections into one of the series of generators and whereby the supply of gas is replenished within the gasometer, as well as the feed-reservoir, until the pressure of the same is sufficient to again raise the latter and close the feed. Said operation is automatically performed from time to time in accordance with the quantity of gas made and consumed.

In Fig. 3 of my drawings I have shown a slight modification of my feed mechanism by the direct application of it to the gasometer. In doing this I have located the trough upon the gasometer-tank and provided for the rise and fall of the cup and its spout by using a spring *e* to normally hold said cup in a raised position. An arm *f* is attached to the bell of the gasometer to engage and force down the cup at the desired time against the resistance of the spring aforesaid. It will be noted that the position of the parts illustrated in this figure is that which they would assume when in the act of feeding, while in Fig. 1 said parts are shown in a closed position.

If desired, a water-valve may be located within the pipe *c*, so that the water-feed can be entirely cut off when the machine is not in use.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an acetylene-gas generator, the combination with a gasometer, one or more generators connected therewith, a water-feed tank provided with a Y-shaped pipe with one branch of said Y open to the air, a cup to receive the end of said pipe, connections from said cup to the generator whereby the water is conveyed to the latter and means for lowering and raising said cup by the pressure of gas within said gasometer.

2. In an acetylene-gas generator, the combination with a gasometer and one or more generators, of a water-tank having a depending Y-shaped pipe with one branch of said Y open to the air, a cup adapted to contain a quantity of water and forming a seal for said pipe, connections from said cup to convey the water from the latter to the generators, means for raising and lowering the cup to permit the feed of water from the tank through said cup to the generators, substantially as described.

3. In a gas-generator of the class described the combination with a gasometer and a generator, of a tank provided with a feed-pipe, a Y-shaped vent-pipe located intermediate of said feed-pipe and having one branch open to the air, means to engage the open end of said pipe whereby the flow of water and the action of the vent are controlled, connections from said means to convey water to the generator, substantially as described.

4. In a gas-generator the combination with a generator adapted to contain calcic carbid, of a gas-tank, a water-tank to supply water to said generator and provided with a Y-pipe through which said water is fed, a reservoir located adjacent to said Y-shaped pipe and having one branch open to the air, adapted to open and close the same in accordance with the position of the gas-tank, means to convey the water from said tank through the reservoir to the generator, substantially as described.

5. In a gas-generator of the class described, the combination with a gasometer, a feed-water tank provided with an opening and a Y-shaped pipe forming a vent having one branch open to the air, a receptacle to inclose said opening and provided with pipe connec-

tions to the generators, connections between said receptacle and the movable dome of the gasometer, whereby said receptacle is operated to permit of a feed of water from said tank to the generator.

6. In a gas-generator of the class described, the combination with a gasometer, of one or more generators, a water-tank provided with a Y-pipe having one branch open to the air, a cup to engage the larger opening of said Y-pipe, a trough connected with said cup and adapted to receive the water therefrom, connections leading from said trough to each of the generators whereby the water may be successively fed to the same, means for operating the cup to cause the feed of water to the generators.

7. In a generator of the class described, the combination with a gasometer, of one or more generators, a water-tank provided with a depending Y-pipe having one branch open to the air, a feed-bell located beneath said tank and adapted to be raised and lowered according to the quantity of gas contained within the machine, a receptacle situated upon said feed-bell and adapted to contain a water seal for said pipe, connections from said receptacle to the generator whereby water is fed to the same in accordance with the quantity of gas contained within the gasometer.

8. In a gas-generator of the class described, the combination with the generator, of a gasometer to receive the gas from said generator, a water-tank to supply the water to said generator, a Y-shaped pipe leading from said tank with one branch open to the air, a cup to surround said pipe and containing a water seal for the same, a spout leading from said cup, a pipe beneath said spout, a guide for said spout and means for raising and lowering the cup and spout to open and close the Y-pipe by the pressure of gas within the generator.

9. The combination in a gas-generator, of a gasometer, a series of generators, an intermediate gas-reservoir, a cup situated upon the bell of said reservoir adapted to contain water, a spout leading downward from said cup, a trough encircling the tank of said intermediate reservoir and provided with a feed-pipe to each of the generators, a water-tank located above the intermediate reservoir provided with a Y-shaped vented pipe and having one branch open to the air extending into the water of the cup before mentioned, and whereby the water is permitted to flow from said tank through the cup and its connections to the generator by the movement of said intermediate tank.

10. The combination in a gas-generator, of a gasometer, one or more generators connected therewith, an intermediate feed-reservoir provided with a water seal, a cup located on the bell of said feed-reservoir containing a spout, a series of guides through any one of which said spout may be guided, connections from said spout to a generator, means to permit an overflow of water from one generator to another, a water-tank located above the feed-reservoir and provided with a Y-pipe with one branch open to the air, the lower end of which discharges into the cup before mentioned, means to permit of the rise and fall of the cup in accordance with the quantity of gas contained within the machine.

Signed at Bridgeport, Fairfield county, Connecticut, this 23d day of November, 1899.

WILLIAM J. BAULIEU.

Witnesses:
C. M. NEWMAN,
EDWARD K. NICHOLSON.