A. J. R. MARJENHOFF.

ACETYLENE GAS GENERATOR.

APPLICATION FILED MAY 7, 1908.

926,952. Patented July 6, 1909.

2 SHEETS—SHEET 1.

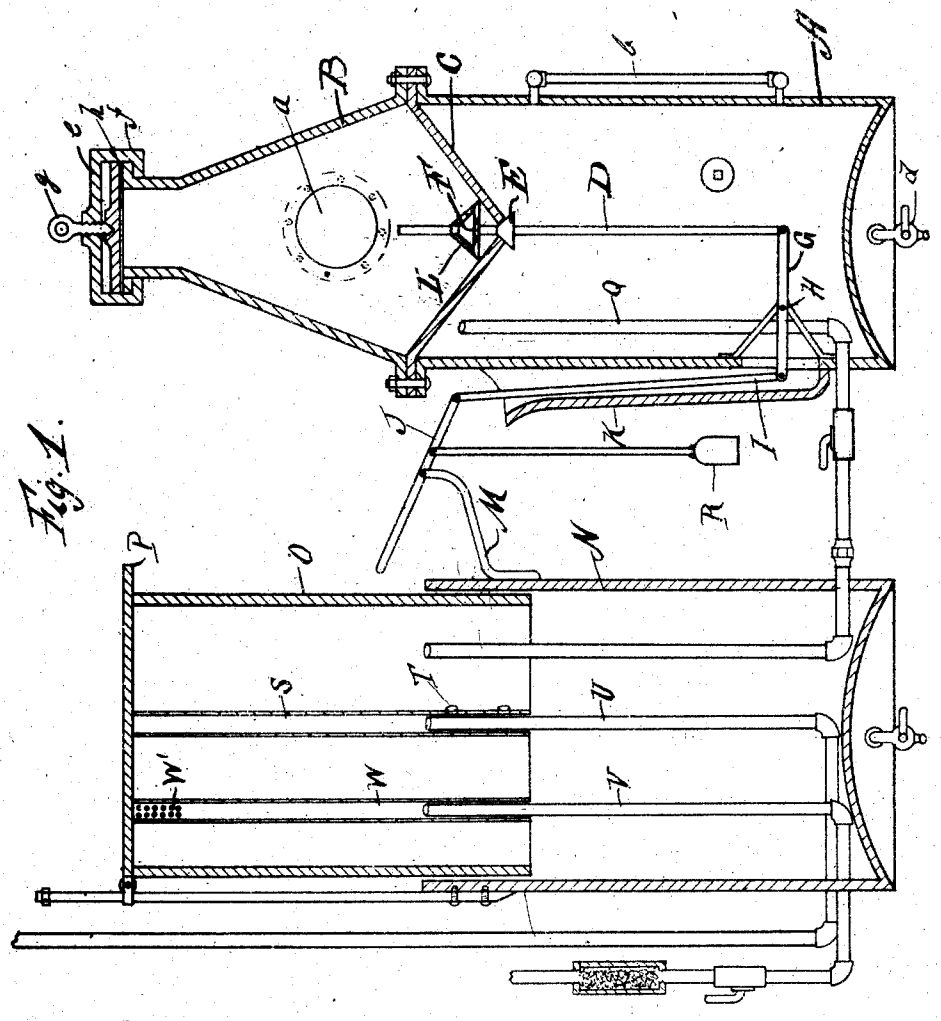

Fig. 1.

WITNESSES

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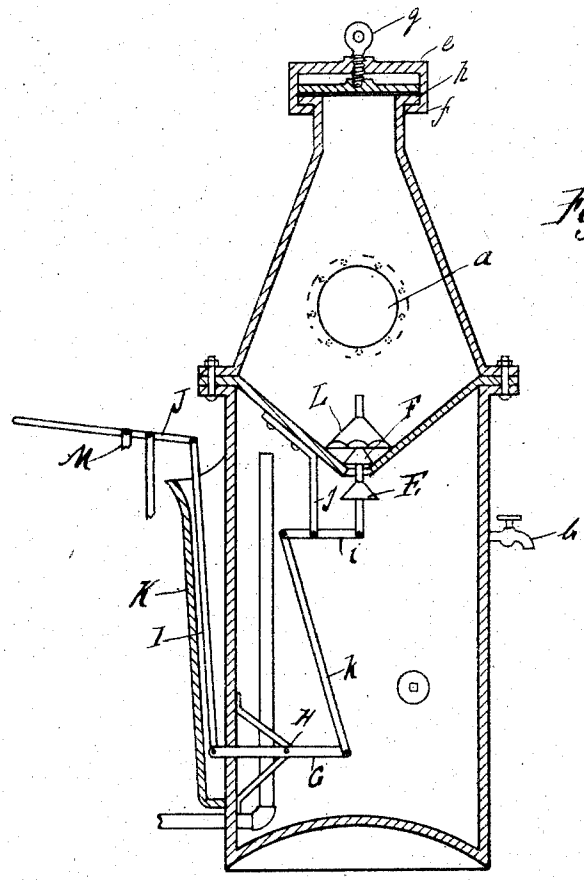

Fig. 2

Fig. 3

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AUGUST J. R. MARJENHOFF, OF CHARLESTON, SOUTH CAROLINA.

ACETYLENE-GAS GENERATOR.

No. 926,952. Specification of Letters Patent. Patented July 6, 1909.

Application filed May 7, 1908. Serial No. 431,341.

To all whom it may concern:

Be it known that I, AUGUST J. R. MARJENHOFF, a citizen of the United States, residing at Charleston, county of Charleston, and State of South Carolina, have invented a certain new and useful Improvement in Acetylene-Gas Generators, of which the following is a specification.

My invention relates to a new and useful improvement in acetylene gas generators, and has for its object to provide an exceedingly simple and effective construction by which the carbid will be automatically fed from the carbid chamber to the generating chamber and so distributed as to prevent the passage between the two chambers from becoming clogged.

A further object of my invention is to provide a safety device which will shut off the flow of the carbid should the automatic valve or its mechanism become disarranged.

A still further object of my invention is to provide for the observation of the carbid from the exterior of its chamber, and a still further object of my invention is to provide for the escape of the acetylene gas should an undue pressure be created in the gasometer.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by letter to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a vertical section of my improved gas generator and gasometer. Fig. 2, a similar view of the generator, the valve mechanism therein being slightly modified, and Fig. 3, a plan view of the feed cap for spreading the carbid.

In carrying out my invention as here embodied, A represents the generating tank having the top B secured thereto, the interior of which forms the carbid chamber or holder which is separated from the generating chamber by the funnel-shaped partition C. Through the bottom of this partition is formed a passage through which passes the valve rod D the latter having secured thereon the regulating valve E adapted to close the passage, and also having secured thereon the safety valve F, the latter being intended to shut off the flow of the carbid should the regulating valve or its operating mechanism become deranged. In Fig. 1 the valve rod D is pivoted to the lever G which in turn is pivoted at H and has pivoted to its outer end the rod I, the upper end of which latter is pivoted to the lever J.

In order that water may be readily introduced into the generating chamber and the level of said water easily determined I provide a funnel-shaped or flared stand pipe K which communicates with the generating chamber near the bottom thereof, and through this stand pipe passes the rod I.

L represents an umbrella-shaped feed cap fitted loosely around the valve rod D and having its edges scalloped or notched so that the carbid may flow around these edges to the regulating valve, by which arrangement the carbid will be so spread at this point as to prevent clogging, and the movements of the valve rod will vibrate the feed cap as the valve rod is not accurately guided and thus facilitate the feeding of the carbid.

The lever J is pivoted to the bracket M projecting from the lower tank N of the gasometer and the floating tank O has a projection P at the top thereof adapted to strike the outer end of the lever J when the floating tank reaches its downward limit thereby lowering the valve E from off its seat and permitting fresh carbid to flow from the chamber B into the chamber A, and as the gas is generated from this fresh supply of carbid and passes through the pipe Q to the gasometer the floating tank O will be forced upward thus releasing the lever J and permitting the valve E to be closed by the action of the weight R suspended from said lever. The floating tank has secured therein the tube S having a vent T formed therein, and this tube surrounds the escape pipe U so that as the floating tank rises and falls the tube S will be raised or lowered relative to the pipe U, and should the pressure of gas within the gasometer reach an excessive point it will escape through the vent T and out through the pipe U as will be readily understood. The service pipe V also projects into a tube W carried by the floating tank the upper end of this tube being perforated as indicated at W', and through these perforations the gas flows when being used.

In order that the amount of carbid within the chamber B may readily be determined I provide a glass section *a* in opposite sides

of the chamber so as to admit sufficient light to permit ready observation of its contents.

A water gage *b* is connected with the generating chamber so as to afford a means of determining the level of water therein.

For convenience in drawing off the water and sediment from the generating chamber I provide a blow-off cock *d* in the bottom of this chamber which when open will permit the blowing out of the tank.

e represents the cover for the carbid chamber which is held in place by the clamp *j* the latter having a clamp screw *g* passing therethrough adapted to bear upon the cover and force it against the packing ring *h*, and as the clamp is provided with hooked ends for engagement with the flange of the casing it may be readily removed by simply backing off the clamp screw *g* and sliding the clamp sidewise after which the cover may be lifted from its place.

In Fig. 2 I have shown a slight modification of the valve actuating mechanism which consists in pivoting the lever *i* to the bracket *j* and connecting said lever with the lever G by the rod *k*, thus when the rod I is forced upward the rod *k* is forced downward and the valve F is forced upward allowing a further flow of carbid and when the floating tank O rises the projection P thus releasing the lever J and permitting the valve F to be closed by action of the weight R suspended from the lever J, the valve E in this case acts to spread the carbid around in the water in the generator.

Among the principal advantages of my improvement is the safety valve F which absolutely prevents the excessive generation of gas and consequent damage should the valve mechanism become disarranged or broken, for in this case the safety valve remains closed and prevents the further flow of carbid into the generating chamber. Another advantage of my present improvement is the spreading and agitating cap L which greatly facilitates the regulation of the feeding of the carbid.

Having thus fully described my invention, what I claim as new and useful, is—

1. An acetylene gas generator consisting of a generator tank, a funnel shaped partition bolted upon the top of said tank, a carbid holder secured to said tank and separated therefrom by the funnel-shaped partition, said partition having an opening therein, a valve rod extending through said opening, a regulating valve secured to said rod and adapted to close said opening, a safety valve also secured upon said rod adapted to close said opening should the valve rod or its connections be broken, a spreader cap fitted loosely upon the rod, a flared stand pipe connected with the generating tank, a gasometer, the floating tank of which is adapted to operate the valve rod to open the regulating valve, as specified.

2. In an apparatus of the character described, a generating tank, a carbid tank secured thereto, a funnel-shaped partition separating the two tanks, said partition having an opening therethrough, a valve rod passing through said opening, two valves secured upon said rod, a notched edge spreading cap covering the upper valve, said rod passing through said cap so as to vibrate the latter, a gasometer, and means dependent upon the movements of the floating tank of said gasometer to operate the valves, as specified.

3. In an acetylene gas generator, a generating tank, a funnel shaped partition secured upon the top of said tank, a carbid holder secured upon said partition so that the said partition will serve as a bottom for said holder, said partition having an opening in the center thereof, a valve rod extending through said opening, a regulating valve secured to said rod below the partition, a safety valve secured to said rod above the partition, a spreader cap fitted loosely upon said rod, the edges of said cap being notched, two transparent sections set in the opposite walls of the carbid holder, a gasometer, and means dependent upon the movement of the floating tank of said gasometer to operate the valves, as specified.

In testimony whereof, I have hereunto affixed my signature in the presence of two subscribing witnesses:

AUGUST J. R. MARJENHOFF.

Witnesses:

A. M. O'NEILL,

A. W. CONNOR.