No. 645,963. Patented Mar. 27, 1900.

H. P. LEFTWICH & C. H. REINKEN.

ACETYLENE GAS GENERATOR.

(No Model.) (Application filed Dec. 9, 1898.)

Fig. 1.

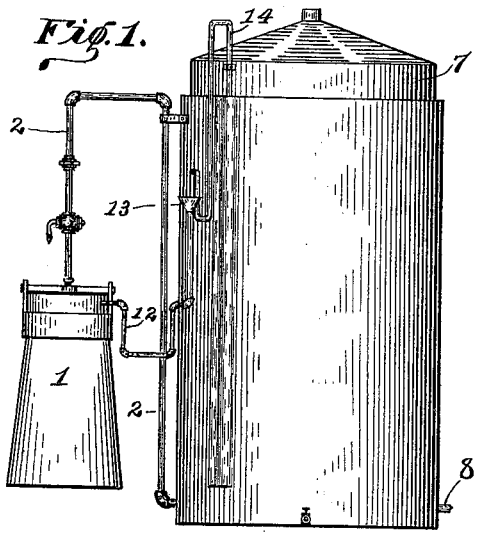


Fig. 2.

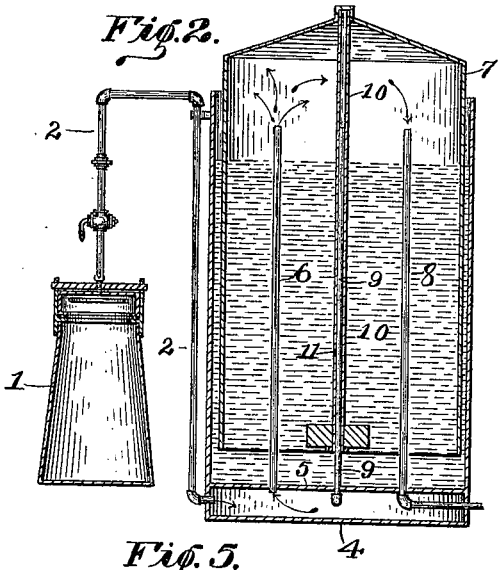


Fig. 3.

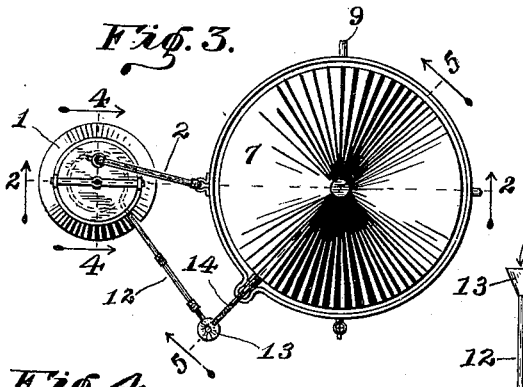


Fig. 4.

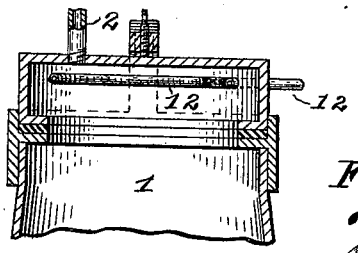


Fig. 5.

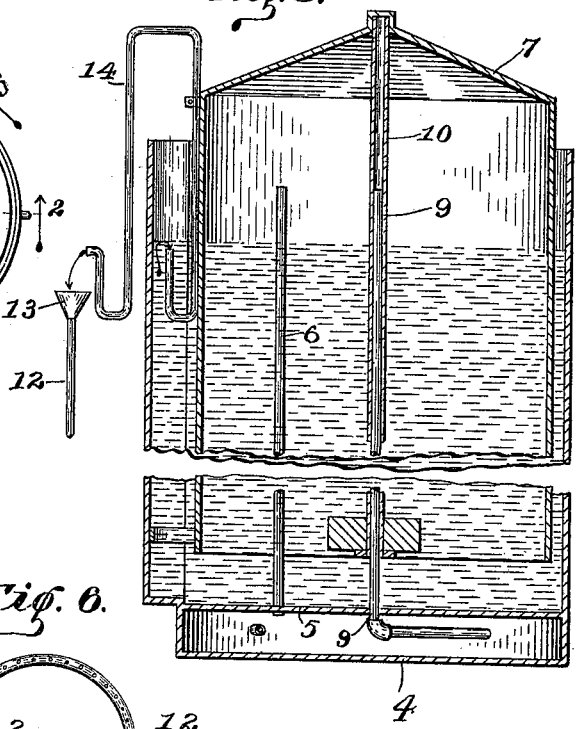
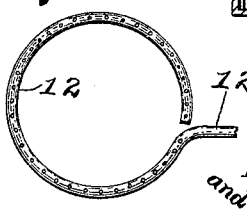


Fig. 6.



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UNITED STATES PATENT OFFICE.

HARRY P. LEFTWICH AND CHARLES H. REINKEN, OF INDIANAPOLIS, INDIANA.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 645,963, dated March 27, 1900.

Application filed December 9, 1898. Serial No. 698,766. (No model.)

To all whom it may concern:

Be it known that we, HARRY P. LEFTWICH and CHARLES H. REINKEN, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

The object of our invention is to provide an improved means whereby the generation of acetylene gas may be automatically discontinued and resumed as the quantity of gas in the gasometer increases and diminishes.

Said invention consists, essentially, in a peculiar application of a particular form of siphon to the gas generating and holding apparatus, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a side elevation of a gasometer, a tank for containing calcium carbid, and the various pipes, connections, &c., the whole constituting an apparatus to which our invention is applied; Fig. 2, a central vertical sectional view of the same as seen from the dotted line 2 2 in Fig. 3; Fig. 3, a top or plan view thereof; Fig. 4, a detail sectional view, on an enlarged scale, of the upper portion of the carbid-holder as seen from the dotted line 4 4 in Fig. 3; Fig. 5, a sectional view, also on an enlarged scale, of the gasometer at the point where the siphon is attached as seen from the dotted line 5 5 in Fig. 3; and Fig. 6, a detail plan view of the inner end of the fluid-pipe which is contained within the upper portion of the carbid-holder.

The gas as generated passes from the carbid-holder 1, through the pipe 2, to the bottom of the gasometer, which it enters at a point between the bottom 4 and the false bottom 5, where it cools somewhat, and thence passes up the pipe 6 to the gas-holding portion 7, whence it passes off through the service-pipe 8 in the ordinary manner. The small central pipe 9 is mounted rigidly on the false bottom 5, and the large pipe 10, attached to the gas-holder 7, operates telescopically thereon, and the holder 7 is thus guided and held to place. These pipes 9 and 10 are also adapted to operate as an escape or safety conduit, and to this end the pipe 10 is provided with an orifice 11, through which when the pipe 10 has been forced to sufficient height the gas will flow from the gas-holder and thence down the pipe 9 to the outside into open air. All these parts which have been described are or may be of any usual or desired construction and arrangement and have only been described for the purpose of making plain the operation of the apparatus embodying our invention.

As best shown by Figs. 1, 3, and 5, a pipe 12 leads from within the upper end of the carbid-holder, through the casing thereof, to the outside, thence downwardly a short distance, thence horizontally, and thence upwardly, thus forming a liquid-trap, where it terminates in a funnel-shaped top 13. The inner end of this pipe, as best shown in Fig. 6, is extended around in the form of a coil and contains numerous fine perforations.

Attached to the gas-holder 7 is a siphon 14 of a peculiar form and which, being rigidly connected to said gas-holder, moves vertically therewith as said holder is raised by the inflow of gas or permitted to descend by the consumption of the gas therein. Both the lower ends of this siphon are U-shaped. The end within the tank preferably opens directly upwardly, while the end outside of the tank bends over sufficiently so as to discharge into the funnel-shaped top 13 on the pipe 12, above which it is immediately placed, as best shown in Fig. 5. The open inner end, when there is a large quantity of gas in the gasometer, is above the level of the water which constitutes the seal of said gasometer, and when in this position there is no operation. When, however, the gas is so far used up as that said open lower end descends below the surface of the water, then the siphon immediately begins to operate and to discharge water from its outer end into the funnel-shaped top 13 of the pipe 12, and this water emerging through the perforations in the inner end of said pipe and dropping onto the calcium carbid contained within the carbid-holder serves to at once cause the generation of gas, which flows in the ordinary way, as above described, into

the gasometer, raising the gas-holder 7, and when a sufficient amount of gas has been generated to raise the siphon out of the water the operation will cease. It will thus be seen that the generation of the gas is rendered entirely automatic. The form and course of the pipes are such that no gas will escape through the siphon or through the pipe 12, as these pipes are so trapped as to form a complete water seal against the passage of gas, as will be readily understood.

The siphon is primed for operation by applying suction to its outer end to fill the pipe, and when once primed it remains so, the pressure therein being equalized by the form of the ends, which thus prevent it from emptying.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, in an acetylene-gas generator, of a carbid-holder, a suitable ingress-pipe for water connected thereto, a gasometer, a gas-pipe running from said holder thereto, a siphon formed with both its legs trapped and mounted on the gas-holder to be carried thereby with one of its legs inside the gasometer-casing and the other on the outside in position to discharge into the ingress-pipe of the carbid-holder, all substantially as described.

2. The combination of a carbid-holder having a suitable ingress for water, a gasometer, and a siphon connected to the movable portion of said gasometer and arranged to discharge into the ingress to the carbid-holder, said siphon having both its legs **U**-shaped, substantially as set forth.

3. The combination, in an acetylene-gas-generating apparatus, of a carbid-holder having a suitable ingress formed also to constitute a liquid-trap and having its receiving end directed upwardly, a gasometer having a siphon connected to the movable part thereof, the legs of said siphon being also formed to constitute liquid-traps and the discharging end thereof being arranged above the receiving end of the ingress to the carbid-holder, substantially as set forth.

In witness whereof we have hereunto set our hands and seals, at Indianapolis, Indiana, this 7th day of December, A. D. 1898.

HARRY P. LEFTWICH. [L. S.]
CHARLES H. REINKEN. [L. S.]

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