

J. W. SILVER.
ACETYLENE GAS GENERATOR.
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1,013,520.

Patented Jan. 2, 1912.

Fig. 1.

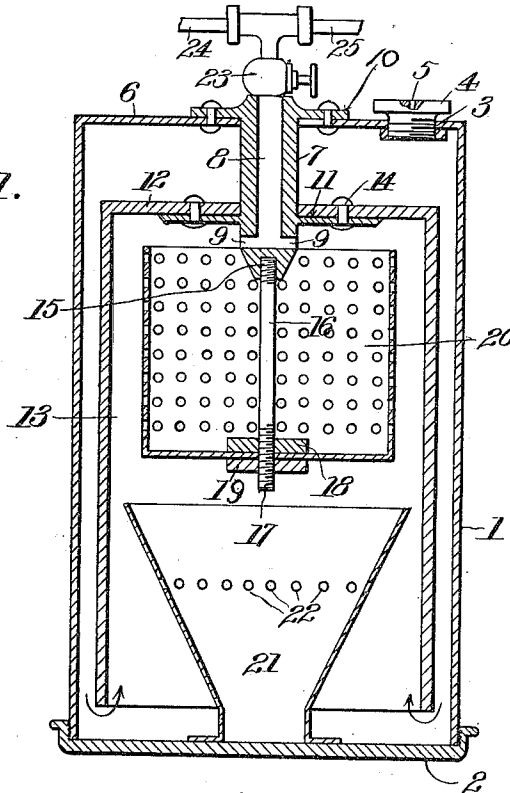
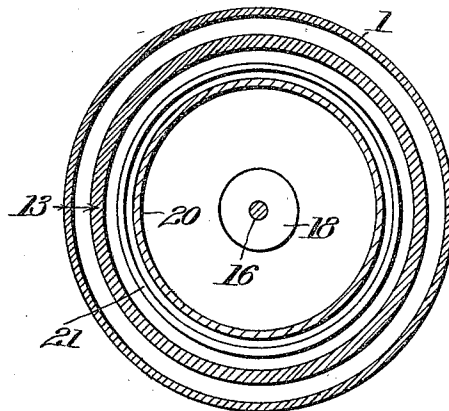


Fig. 2.



Witnesses

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ACETYLENE-GAS GENERATOR.

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To all whom it may concern:

Be it known that I, JAMES W. SILVER, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

This invention relates to acetylene gas generators.

One object of the invention is to provide an acetylene gas generator embodying such characteristics that the water which is fed by gravity to the carbid is resisted by the volume and pressure of the gas generated by the contact of the water with the carbid, the water being driven backwardly away from the gas incident to the volume and pressure of the gas acting upon it to move it back away from the carbid.

Another object is to provide a simple, inexpensive, durable and efficient gas generator embodying such characteristics that the water feed is controlled automatically by the pressure of gas.

A still further object resides in the provision of an acetylene gas generator whose parts are so fixed with relation to one another with the exception of the valved outlet for the gas, thereby insuring against accidental derangement of the various parts of which the generator is composed.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts herein-after more fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes may be made in the form, proportion, size and minor details without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a vertical sectional view of the invention. Fig. 2 is a horizontal sectional view.

Referring now more particularly to the accompanying drawings, the reference character 1 indicates the outer casing of my improved generator provided with a removable bottom 2 and a water inlet 3, which may be closed by a plug 4 having a vent 5. The top 6 of the casing 1 in which the inlet 3 is formed is provided also with a central

opening through which is disposed a nozzle 7 provided with a bore 8 and oppositely disposed openings 9. This nozzle 7 is provided with upper and lower flanges 10 and 11, respectively, the upper flange 10 being riveted to the top of the casing 1 and the lower flange 11 being riveted against the inner face of the top 12 of the reservoir 13, there being rivets or other fastening means 14 passed through the top 12 of the reservoir 13 and said lower flange 11 whereby the reservoir 13 is suspended from the nozzle 7 within the casing 1 in spaced relation to the latter, terminating at its lower end short of the bottom 2 of the casing 1, all as clearly shown in the accompanying drawing.

The nozzle 7 has its lower end provided with a screw threaded socket adapted to receive the screw threaded end 15 of a rod 16 which depends into the reservoir 13 and which has its lower end screw threaded at 17 for operative connection with the upper and lower nuts 18 and 19, between which latter and embracing the rod 16 is the perforated carbid holder 20, the upper and lower nuts 18 and 19 bearing against the upper and lower surfaces, respectively, of the bottom of the carbid holder 20 for the purpose of supporting the latter. The carbid holder is thus suspended within the reservoir 13 in spaced relation to the latter and near the upper end thereof.

The character 21 indicates a funnel-shaped or other receptacle adapted to receive the slaked carbid which may filter through the perforations of the carbid holder 20 in the generation of the gas, this receiver 21 being supported upon the bottom 2 of the casing 1 in any suitable manner and adapted to receive the slaked carbid to prevent the latter from closing or obstructing the passage or the space between the casing 1 and the lower end of the reservoir 13, there being a plurality of perforations 22 formed in the receiver 21 for the purpose of permitting water falling thereinto to pass outwardly thereof and back to the reservoir. The nozzle 7 is provided with a valved passage 23 having communication with the outlets 24 and 25 which may lead to a burner or any other suitable point of consumption with which the generator may be connected for the purpose of using the gas generated in my improved apparatus.

The water is fed into the casing 1 through the opening 3 and passes downwardly into the space between the reservoir and the casing and upwardly into the reservoir, as indicated by the arrows in Fig. 1, and when the reservoir has been nearly filled with water, or when the water reaches the same level inside of the gas reservoir, as in the inside of the outer casing 1, it comes into contact with the carbid in the carbid holder 20, which starts the generation of gas. As the gas is generated it rises toward the top of the reservoir and passes through the openings 9 into the bore 8 of the nozzle 7, and if the valved passage 23 is open, the gas may pass to any suitable point of consumption (not shown) by way of the outlets 24 and 25. When the valved passage 23 is closed, and the pressure of gas reaches a certain pressure, there is a resultant accumulation of gas in the reservoir which forces the water downwardly and under the bottom of the reservoir and upwardly between the reservoir and the outer casing and into the upper part of the latter, which results in a discontinuance of the generation of gas until the pressure is lowered again. When the pressure is lowered again, the water again returns and comes in contact with the carbid in the carbid holder, again starting the generator. The pressure of the gas may be regulated and forced to any desired pressure by the quantity of water that is poured into the reservoir 13. All of the slaked carbid which may be forced through the apertures in the carbid holder will fall into the receiver 21, thereby preventing interference with the free passage of water between the lower end of the reservoir and outer casing 1, as already stated. The generator cannot explode on account of pressure by virtue of the fact that the water would be blown out through the vent hole 5 of the plug 4.

From the foregoing it will be understood that the feed of the water is controlled automatically by the pressure of the gas. The gas is always ready to be transmitted to the burner, avoiding the necessity of any delay awaiting feed of the water to the carbid holder. All carbid must expel its full quantity of gas, and as the generated gas is retained in the reservoir unless the valved passage 23 is opened, a great economy and saving in carbid is the result, and the generator cannot explode on account of over pressure by reason of the water being blown out through the vent hole 5.

There are but few parts to my improved apparatus, rendering the same not liable to derangement, and the same may be readily cleaned by removing the bottom 2 from the casing 1, which will permit access to the interior of the reservoir and render it easy to remove the carbid holder 20 from the nozzle 7.

What is claimed is:—

1. In an acetylene generator, a casing provided with a removable bottom and a water inlet, a nozzle depending within the casing and provided with oppositely disposed inlets and a socket and a valved outlet, a reservoir secured to the nozzle and suspended thereby within the casing in spaced relation to the latter, a rod removably fitted in the socket of the nozzle, and a carbid holder secured upon said rod.

2. In an acetylene generator, a casing provided with a removable bottom and a water inlet, a nozzle depending within the casing and provided with oppositely disposed inlets and a socket and a valved outlet, a reservoir secured to the nozzle and suspended thereby within the casing in spaced relation to the latter, a rod removably fitted in the socket of the nozzle, a carbid holder secured upon said rod, and a receiver disposed upon the bottom of the casing and projecting upwardly into the reservoir.

3. In an acetylene generator, a casing provided with a removable bottom and a water inlet, a nozzle depending within the casing and provided with oppositely disposed inlets and a socket and a valved outlet, a reservoir secured to the nozzle and suspended thereby within the casing in spaced relation to the latter, a rod removably fitted in the socket of the nozzle, a carbid holder secured upon said rod, and a conical shaped receiver disposed upon the bottom of the casing and projecting into the reservoir to receive the slaked carbid from the carbid holder, said receiver having apertures to permit of the escape of water therefrom.

4. In an acetylene gas generator, a casing provided with an inlet and a central opening in its top, a nozzle fitted in said opening in the top of the casing and provided with a flange for engagement with the outer face of the top of the casing, means to secure the flange and casing together, said nozzle having a valved outlet and also provided with a second flange, a reservoir secured to the second flange of the nozzle and suspended thereby within the casing in spaced relation to the latter, the nozzle having a socket, a rod removably fitted in said socket, and a carbid holder removably fitted to said rod whereby the holder is removably suspended within the reservoir.

5. In an acetylene gas generator, a casing provided with an inlet and a central opening in its top, a nozzle fitted in said opening in the top of the casing and provided with a flange for engagement with the outer face of the top of the casing, means to secure the flange and casing together, said nozzle having a valved outlet and also provided with a second flange, a reservoir secured to the second flange of the nozzle and suspended thereby within the casing in spaced relation

to the latter, the nozzle having a socket, a
rod removably fitted in said socket, a carbid
holder removably fitted to said rod whereby
the holder is removably suspended within
5 the reservoir, and a receiver constructed and
arranged to receive the slaked carbid falling
from the carbid holder.

In testimony whereof I affix my signature
in presence of two witnesses.

JAMES W. SILVER.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."