

No. 633,043.

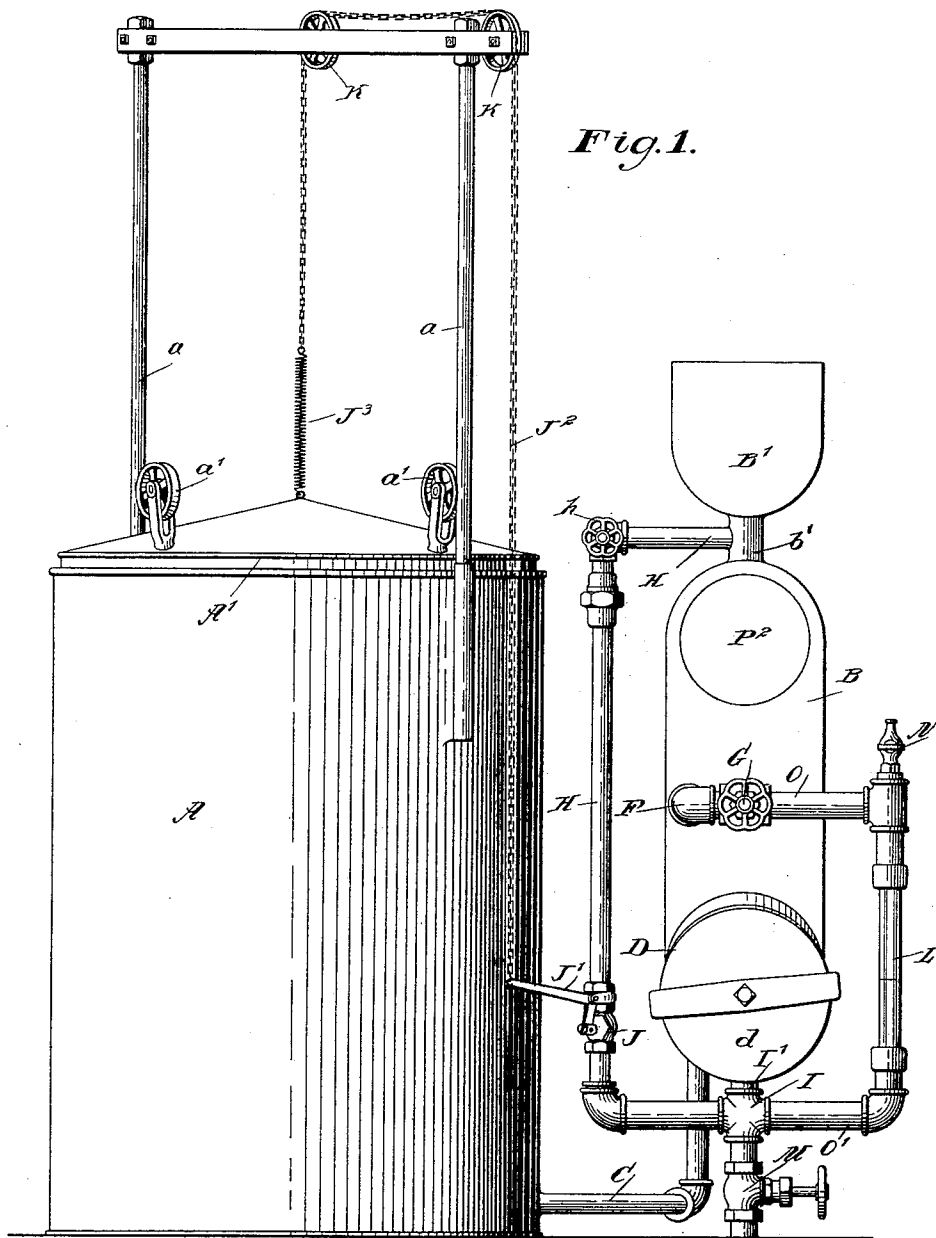
Patented Sept. 12, 1899.

L. F. ROSE.
ACETYLENE GAS GENERATOR.

(Application filed Apr. 5, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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2 Sheets—Sheet 2.

Fig. 3.

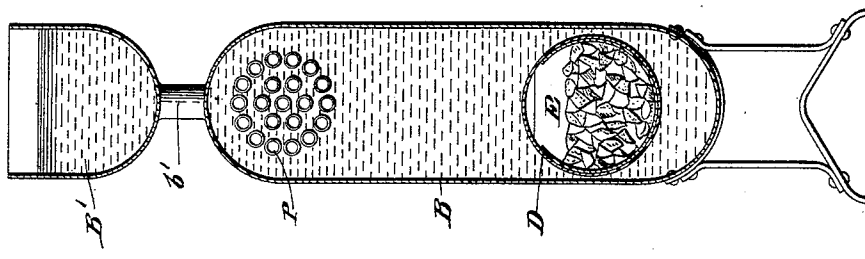


Fig. 2.

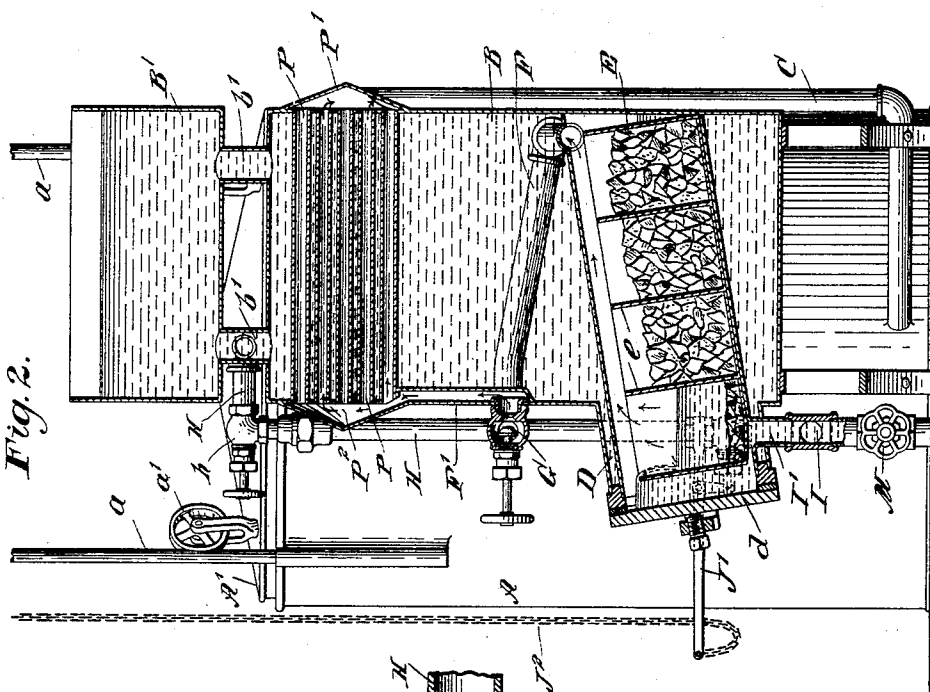
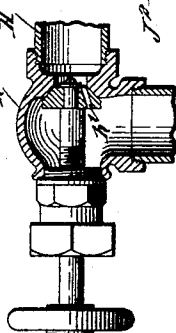


Fig. 4.



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LEONARD F. ROSE, OF NEW LONDON, IOWA.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 633,043, dated September 12, 1899.

Application filed April 5, 1899. Serial No. 711,828. (No model.)

To all whom it may concern:

Be it known that I, LEONARD F. ROSE, of New London, in the county of Henry and State of Iowa, have invented a new and Improved Acetylene-Generator, of which the following is a full, clear, and exact description.

My invention relates to an improvement in acetylene-generators, and comprises novel features which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of my device. Fig. 2 is a sectional elevation taken through the generator. Fig. 3 is a sectional elevation of the generator, taken at right angles to Fig. 2; and Fig. 4 is a detail view of a valve hereinafter more fully described.

In connection with my device I use a gasometer which is of the usual form, consisting of a tank A, which is filled with water and has a bell A' rising and falling therein and guided in its motion by having rollers or wheels *a'* turning upon vertical guides *a*. The generator is placed within a case B, which is located alongside the gasometer and is filled with water. Above the case B is placed the tank B', from which water is supplied to the generating-chamber or carbid-holder. The tank B' is connected with the case B by means of short pipe-sections *b'*, so that said case B may be filled from the tank B'.

The generating-chamber consists of a cylinder D, which is inserted in the lower portion of the case B and extends through the same, projecting at one end. The case is extended as a portion of a cylinder, so as to surround the projecting end of the cylinder D and form a water-jacket therefor. The open end of the generating-chamber is closed by a removable cover *d*, which is secured in any convenient manner and is preferably provided with a packing-ring of compressible material between its inner surface and the end of the cylinder D. This cylinder D or generating-chamber is placed at an incline and contains a drawer E, which is provided with a series of cross-partitions *e*, thus dividing it into a series of compartments, each of

which is designed to contain a quantity of carbid which is acted upon at one time by the water. The upper end of the generating-chamber has a pipe F connected therewith and by which gas is conveyed to the cooler and thence to the gasometer. To the lower end of the generating-chamber is connected a pipe I', by which water is admitted for the reduction of the carbid.

To the tank B' or to one side of the pipe-section *b'*, as desired, is connected a pipe H, through which water is supplied to the generating-chamber. This pipe is provided with a valve *h*, the seat of which is provided with a small groove or hole *h'*, constituting a by-pass and by reason of which a small stream of water may at any time flow past the valve. Between this valve and the connection with the generator the pipe is provided with a controlling-valve J, which will entirely stop the flow of water. This valve is operated by means of a lever J', to which a chain J² is connected, said chain passing over guide-pulleys K and being connected with the bell A' by means of a spring J³. When the gasometer-bell reaches the lower portion of its fall, the chain J² will be tightened, which will raise the lever J' and open the valve J, thus admitting water to the generating-chamber. The pipe H is connected with the generating-chamber through a cross or four-way fitting I, to which is also connected a drainage-pipe having a valve M therein, and to the same cross-fitting is also connected a by-pass pipe O', which extends upward and by means of a pipe O connects with a T-valve G. By the term "T-valve" is meant a valve placed in a casing made in the form of a letter T. This T-valve is connected with a pipe F, which leads to the upper end of the generating-chamber. When the valve G is closed, the generating-chamber is disconnected from the gasometer.

In the by-pass formed by the pipes O and O' is placed a glass water-gage L, which will show the level of the water in the generating-chamber. To the upper portion of this by-pass is connected a relief or vent valve M. The by-pass is very important, as when the generating-chamber becomes filled with water, which forces the gas out of the chamber, and the T-valve is closed, the by-pass allows

a free drainage when letting the water out for the renewal of the carbid.

The T-valve G controls communication with a pipe or passage F', which is herein shown as formed in the interior of the case B and leads upward to the cooler. This cooler consists of a series of pipes P, extending through the upper portion of the case B and having caps or covers P' P², which cover the ends of all the pipes. The gas passing upward through the passage F' enters the space between the cap P² and the side of the case B, and thence passes through the pipes P into the hollow beneath the cap P'. From this point it passes through a pipe C, which is connected with the cap P', into the gasometer A.

The compartments formed in the carbid-holding drawer E by the partitions *e* hold such a quantity of carbid that the gasometer will contain the gas generated therefrom. This trough being placed at an incline, as shown, it is necessary that the water should rise to a higher level for each successive compartment, thus insuring a stoppage of gas generation before an amount can be generated which will more than fill the gasometer. The valve *h*, having a small by-pass opening, prevents any possibility of an inrush of water through the feeding-pipe which will flood the generating-chamber, and thus cause an overproduction of gas. The generating-chamber being placed on an incline in the manner shown, when the carbid therein has all been decomposed the chamber is filled with water, and there is consequently very little acetylene gas which can escape when the generating-chamber is opened for cleaning and recharging. To do this latter, the T-valve G is closed, and the drainage-valve M and the vent N are then opened. This permits air to enter through the vent N and the water to be discharged through the valve M. The cover of the generating-chamber may then be removed and the drawer E be withdrawn, cleansed, and refilled and then inserted in place and the cover *d* secured. The valve G is then opened and the lever J' raised, so as to admit water sufficient to start the generation of gas.

The amount of carbid in the generating-chamber which has not been consumed may be told at any time by observing the water-level in the glass gage L.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. An acetylene-generator comprising a casing adapted to contain water, a generating-chamber inserted through the side of said casing and having one end projecting therefrom, the said chamber being provided with a removable cover at its projecting end, a cooler located in the upper part of the casing, the said cooler being connected at one end with the generating-chamber and at the other end with a gas-delivery pipe leading to a gas-

ometer, a water-supply tank located directly above the casing, pipes connecting said supply-tank with the upper part of said casing, a pipe leading from said supply-tank to the lower part of the generating-chamber, a regulating-valve in said pipe, and means for controlling the valve.

2. An acetylene-generator comprising a casing, a carbid-holder inserted in said casing, a water-supply tank located above said casing, a communication between said water-supply tank and the upper part of the casing, a pipe connecting said tank with the lower end of the carbid-holder, a valve in the upper part of said pipe, the seat of said valve having a small passage to permit a small stream of water to flow at any time past the valve, a water-controlling valve in the lower part of said pipe between the first-mentioned valve and the carbid-holder, means for automatically operating the controlling-valve, and a gas-delivery pipe leading from the carbid-holder.

3. An acetylene apparatus comprising a casing adapted to contain water, a generating-chamber in said casing, a water-supply tank communicating with said casing, a pipe leading from the water-tank and provided at its upper portion with a valve having a small by-pass for the water, the said pipe being connected at its lower end through a cross-fitting with the generating-chamber, a controlling-valve in said pipe located between the by-pass valve and the generating-chamber, a gas-delivery pipe leading from the generating-chamber, a valve in said pipe adapted to stop the flow of gas to the delivery-pipe, a drainage-pipe for the generating-chamber provided with a valve and connected with the cross-fitting, a by-pass pipe connecting the valve in the gas-delivery pipe with the cross-fitting at a point above the drainage-valve, and a vent-valve connected with the upper portion of said by-pass pipe.

4. An acetylene-generator, comprising a generating-chamber adapted to receive the carbid, a water-supply, a pipe leading therefrom and connected through a cross-fitting with said generating-chamber, a valve controlling the water-supply, a gas-delivery pipe connected with the generating-chamber, a T-valve in said pipe adapted to stop the flow of gas to the delivery-pipe, a drainage-pipe for the generating-chamber provided with a valve and connected with the cross-fitting, a by-pass pipe connecting the T-valve with the cross-fitting at a point above the drainage-valve, and a vent-valve in said by-pass pipe.

5. An acetylene apparatus comprising a casing adapted to hold water, a generating-chamber inserted in said casing, a water-supply pipe connected through a cross-fitting with said generating-chamber, a valve controlling the water-supply, a gasometer, a connection between the gasometer-bell and the controlling-valve, a gas-delivery pipe leading from the generating-chamber, a valve in said

pipe to stop the flow of gas, a gas-cooler connected with said pipe, a pipe connecting said cooler with the gasometer, a drainage-pipe for the generating-chamber provided with a
5 valve and connected with the said cross-fitting, a by-pass pipe connecting the valve in the gas-delivery pipe with the cross-fitting at

a point above the drainage-valve, and a vent-valve in said by-pass pipe.

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Witnesses:

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