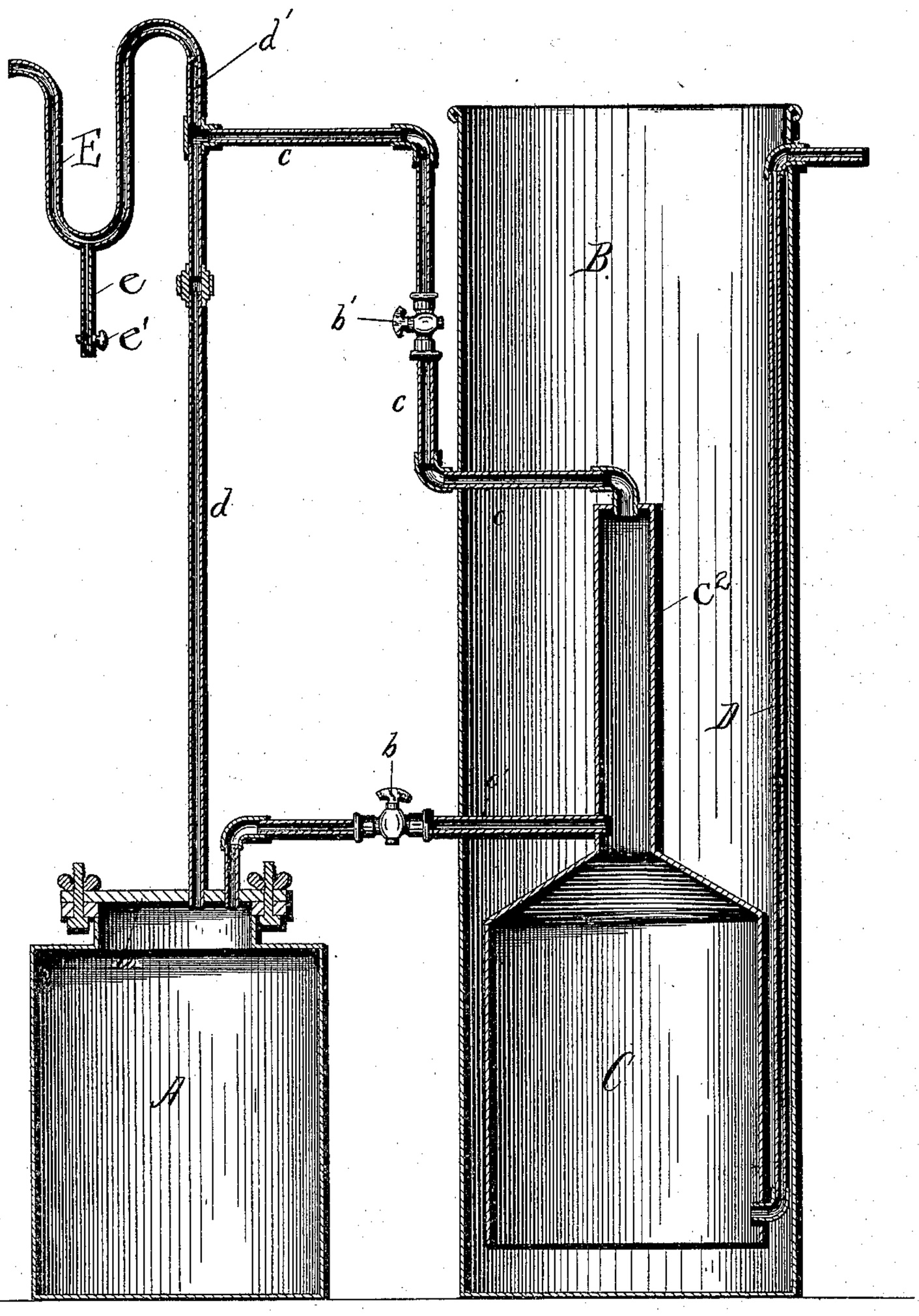
(No Model.)

E. GODIN.

ACETYLENE GAS GENERATOR.

No. 604,039. Patented May 17, 1898.



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UNITED STATES PATENT OFFICE.

EUGENE GODIN, OF THREE RIVERS, CANADA.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 604,039, dated May 17, 1898.

Application filed October 7, 1897. Serial No. 654,472. (No model.) Patented in England July 19, 1897, No. 17,021; in France November 18, 1897, No. 268,869, and in Canada November 22, 1897, No. 58,185.

To all whom it may concern:

Be it known that I, EUGENE GODIN, a subject of Her Majesty the Queen of Great Britain, and a citizen of the Dominion of Canada, residing at Three Rivers, in the district of Three Rivers, Province of Quebec, Canada, have invented certain new and useful Improvements in Acetylene-Gas Generators, (for which I have obtained Letters Patent in the Dominion of Canada, dated November 22, 1897, No. 58,185; in France, dated November 18, 1897, No. 268,869, and in Great Britain, dated July 19, 1897, No. 17,021,) of which the following is a full, clear, and exact description and which will enable others skilled in the art to which the invention appertains to make and use the same.

My invention relates to improvements in apparatus for generating acetylene gas.

The objects of my invention are to provide an apparatus in which the generating of the gas will be accomplished without danger of explosion, in which the gas furnished will be free from any moisture, and which will provide a gas of this character at a minimum cost.

My invention consists in the improved construction and combination of parts, as hereinafter fully described, and particularly pointed out in the claims.

In the drawing, in which similar letters of reference indicate similar parts, the figure of the drawing represents a vertical cross-sectional view of my improved apparatus.

A designates a vessel having a cover *a*, adapted to be removably secured thereto by suitable means, the vessel being adapted to contain the carbid from which the gas is to be made.

B designates a vessel having an open top, within which is adapted to be secured the open-bottom vessel C. The lower end of the vessel C, which is opened, extends to within a short distance of the bottom of the vessel B. The top of the vessel C is dome-shaped and has an upward extension c^2.

The vessels A and C (the latter being adapted to contain water) are connected by a pipe c', which leads from the lower part of the extension c^2 to and through the cover *a*. This pipe is provided with a valve *b*, by means of which communication between the vessels is prevented.

Extending upwardly from the vessel A is a pipe *d* for the outlet of gas formed in the vessel A, and at a suitable distance above the cover *a* it is joined by a pipe *c*, which extends through the vessel B into the top of the extension c^2. At a point midway between the ends of the pipe *c* is located a valve b'.

The pipe *d*, above the point where it is joined by pipe *c*, is provided with a drain-pipe E, through which the gas passes before entering the main distributing-pipes. This drain-pipe may be made of any suitable form, but preferably that shape shown in the drawing, which is in the form of a siphon, to the lower bend of which is attached the downwardly-leading pipe *e*, having the valve e'.

D designates a pipe leading from the lower portion of the vessel C and having an outlet at a point near the top of the vessel B. The water is kept at its proper height in the vessel B by occasionally adding thereto.

The operation of my apparatus being constructed as above described and shown in the drawings is as follows: The carbid of which the gas is to be formed having been placed in the vessel A, the valve *b* is closed and the vessel B filled with water to a point extending a short distance above the opening in the extension c^2 to the pipe c'. The valve *b* and valve b' are then opened, when the water in the vessel C will pass through the pipe c' into the vessel A, in which is contained the carbid. The gas thus formed passes through pipe *d* through the drain-pipe E, where any moisture that might be held in the gas during its formation would pass into the pipe *e* and be held there, the gas passing onward into the main distributing-pipe.

Should the gas be formed too rapidly in the vessel A, the back pressure in the main pipe would cause it to enter into the top of the extension c^2 by means of the pipe *c*. When this happens, the pressure exerted by the gas presses on the water contained in the vessel C and causes it to be forced downward until the upper surface of the water reaches a point below the opening of the pipe c', thus cutting off the supply of water for the carbid and

stopping the generation of the gas. Should, however, the back pressure be so great as to force the water out of the vessel C sufficient to cause the upper surface of the water to reach a point below the entrance of the pipe D, the superfluous gas will escape through the pipe D, thus equalizing the pressure and disposing of the gas without danger of an explosion. Should the vessel B be filled to a point above the proper distance, the surplus water would be forced out through the pipe D.

When it is desired to insert new or additional carbid into the vessel A, the valves *b* and *b'* are closed, the cover *a* taken off, and the carbid placed in position.

The advantages of this construction are obvious, and it is not thought necessary to present them in detail, but it is to be noticed that all danger of explosion is eliminated by reason of the automatic action of cutting off the supply of water, immediately upon the overproduction of the gas, by means of back pressure, and also the additional relief-pipe D.

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

1. An apparatus for generating acetylene gas, comprising a vessel for carbid; a vessel open at its top for the water; an internal vessel open at its bottom, and having an extension, said internal vessel being mounted within the water vessel; a gas-outlet pipe connected to said vessel for the carbid; an auxiliary pipe connected to the top of said extension and said gas-outlet pipe; and a connection between the top of said vessel for the carbid and said extension, the opening of said pipe in said extension being below the opening of the auxiliary pipe, whereby the surplusage of gas will serve to automatically cut off the supply of water to the carbid.

2. In apparatus for generating acetylene gas, the combination, with a vessel A for holding metallic carbids, of a vessel B for holding water, an internal vessel C open at the bottom and supported in the vessel B, a gas-outlet pipe connected to the upper parts of the vessels A and C, a pipe connecting the vessel A with the vessel C at a point below the said gas-pipe, and a gas-relief pipe D connected to said internal vessel near its bottom, substantially as set forth.

3. In apparatus for generating acetylene gas, the combination with a vessel A for holding metallic carbid, of a vessel B for holding water, an internal vessel C open at the bottom and supported in the vessel B, a gas-outlet pipe *d* connected to the vessel A, a pipe *c* provided with a valve and connected to the pipe *d* and to the upper part of the vessel C, a pipe *c'* provided with a valve and connected to the vessel A and to the vessel C at a point below the pipe *c*, and a gas-relief pipe D connected to said internal vessel near its bottom, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EUGENE GODIN.

Witnesses:
J. A. MARION,
LUCIEN DÉSILETS.