

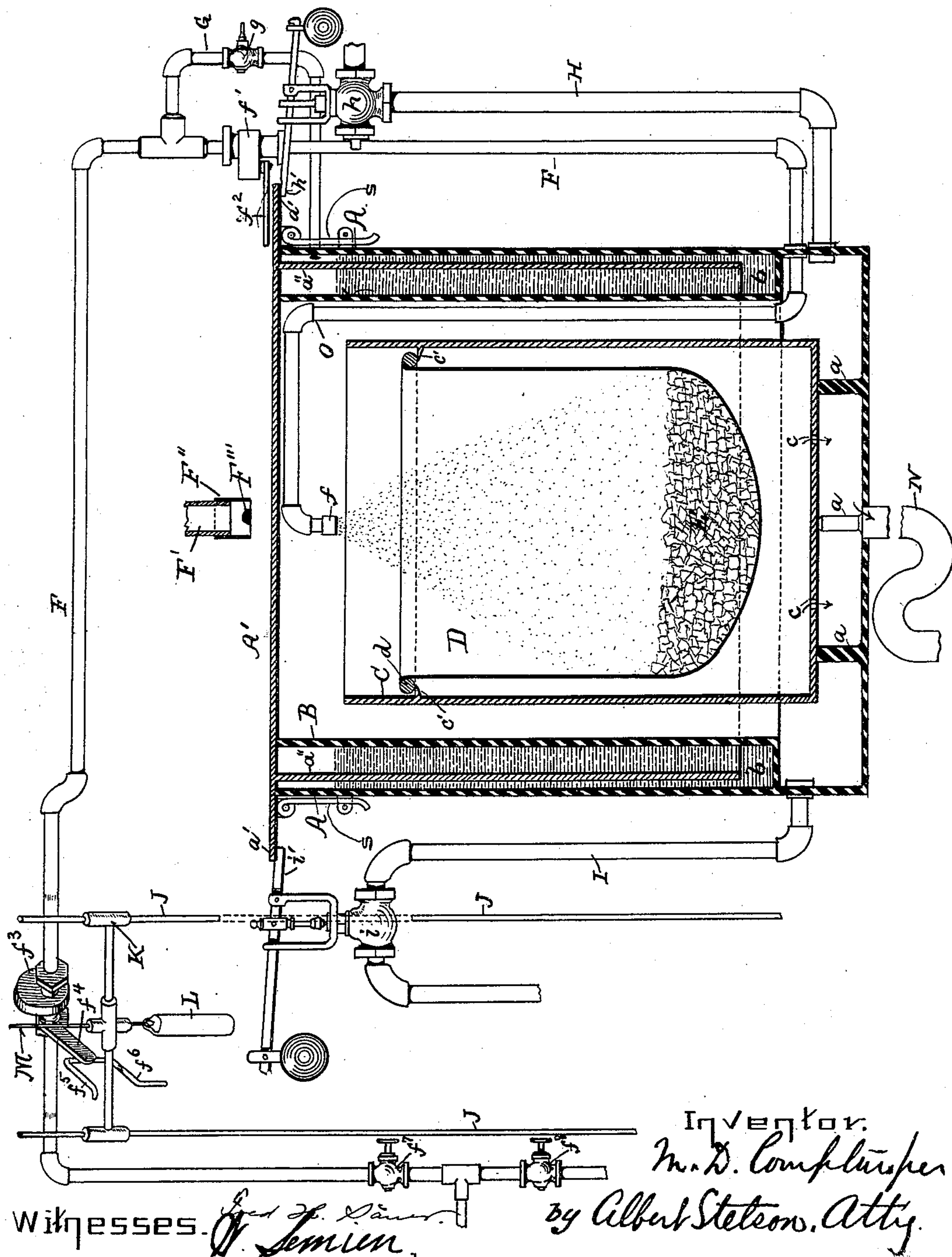
No. 648,022.

Patented Apr. 24, 1900.

M. D. COMPTON.
ACETYLENE GAS GENERATOR.

(Application filed Aug. 21, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

MELVIN D. COMPTON, OF EAST ORANGE, NEW JERSEY.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 648,022, dated April 24, 1900.

Application filed August 21, 1899. Serial No. 727,905. (No model.)

To all whom it may concern:

Be it known that I, MELVIN D. COMPTON, a citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

My invention relates to acetylene-gas generators and to means for controlling and utilizing the gas as generated.

The object of the invention is to provide a generator which shall be cheap, efficient, and absolutely automatic in its working and one which by the simple act of being charged with carbide will automatically open and close the proper valves for the inlet of water and the discharge of the gas.

In most of the generators hitherto constructed there has been a danger that either the water would be turned on and the gas-discharge pipe left shut, which would result in a dangerous gas accumulation and pressure, or that the gas-pipe would be left open and gas escape when the carbide was being renewed. I have avoided these defects by the arrangement shown in the drawing, in which the parts are designated as follows:

A A show the external shell of the generator; B, a cylinder internal to A and forming therewith a water seal *b b* for the cylindrical sides *a'' a''* of the generator-cover A'. Located within the walls A A is a removable vessel C, resting on studs *a a* rising from the bottom of A A. C is provided at its upper part with projections *c' c'*, upon which rests a ring *d*, supporting a porous receptacle D, containing the carbide E.

c c are orifices in the vessel C for carrying off to the drain-pipe N any water that may be in the bottom of C.

F F show the water-supply pipe, terminating at *f* in a spray-nozzle, the details of which are shown at F' F'' F'''.

G is a branch on the water-supply, controlled by the cock *g*, for filling the water seal *b b*.

H is the air-pipe for preventing suction, furnished with the valve *h*, controlled by a ball-weighted lever.

I is the gas-discharge pipe, also having a valve *i* controlled by a ball-lever.

J J are guides in which runs the arm K, attached to the weight L, which is connected with the gas-holder and engages with the prong-lever *f⁵ f⁶ f⁴*, controlling the valve *f²* in the water-supply pipe F.

f⁷ and *f⁸* are valves in the water-supply pipe F for admitting water to the generator A and the gas-washer.

f' is a valve in the supply-pipe F, controlled by the lever *f²*.

s s are metal straps swinging on a hinge-joint.

The method of operation is as follows: Suppose the carbide E to be exhausted and a new charging necessary. The lever *f²*, which is arranged to swing horizontally and to the pivot of which the valve *f'* is attached, is swung around so as not to interfere with the cover A' being removed. Lifting the cover closes the water-supply pipe F. The straps *s* being then loosened, raising the cover A', removes the pressure from *h'* and *i'* and releases the weighted ball-levers, thereby opening the valve *h* in the air-pipe H and removing the suction, at the same time closing the valve *i* in the gas-discharge pipe I. The cover A' is removed, the vessel C raised out, the porous receptacle D lifted out and emptied, and then replaced after being filled partially with carbide. The cover A' is then replaced, and by the act of being replaced opens the gas-discharge pipe I, closes the suction-pipe H, and when the lever *f²* has been swung into place opens the water-supply valve *f'*. The water then passes out at *f* in a spray, and gas begins to be generated and passes through I to the gas-holder, which immediately begins to rise. The weight L, connected with the gas-holder, falls, and in so doing engages with the forked lever *f⁶*, which when the gas-holder has reached a predetermined point closes the valve in *f³* and shuts off the water. When the gas commences to be consumed, the gas-holder falls, the weight L engages the upper forked lever *f⁵* and opens the valve in *f³*, admitting more water, which in turn generates more gas, and this alternate automatic supplying and shutting off of the water continues until the carbide is exhausted. Should the carbide become entirely exhausted, so that it can give no more gas, the weight L, with its guiding-arm, will pass over the curved end of

f^5 , and the forked lever will then fall of its own weight and shut off the water-supply. In case the gas-holder is situated directly adjacent to the generator the weight L may be
5 dispensed with and a projection on the gas-holder operate the arms f^5 and f^6 of the forked lever controlling the valve in f^3 .

F' F'' F''' show a detail of the spraying-nozzle f .

10 F''' is a ball or half-sphere suspended by thin metallic strips from the sides of F'', so that when the water is let into f it issues in a finely-divided state, which is the most favorable form for a gradual but copious genera-
15 tion of gas.

By the use of the porous receptacle for holding the carbid the clogging of the drain-trap N is prevented, since the lime and carbon sediment are retained within the receptacle.

20 When the porous holder is omitted, this is impossible, since the sediment carried by the water would soon stop up the drain-pipe and render the trap inoperative.

Having thus fully described and illustrated my invention, what I claim is—

25 1. In an acetylene-gas generator the combination of a removable cover, a suction-pipe, a gas-discharge pipe, both automatically controlled by the said cover, and a lever for controlling the water-supply and holding the
30 cover in place, substantially as set forth.

2. In an acetylene-gas generator, the combination of a suction-pipe, a gas-discharge pipe, each provided with weighted valves, and a removable cover furnished with a water seal,
35 and so arranged that the removal or replacing of the cover opens or closes the said valves, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 18th day of
40 August, A. D. 1899.

MELVIN D. COMPTON.

Witnesses:

ORLANDO M. THOWLESS,
A. STETSON.