

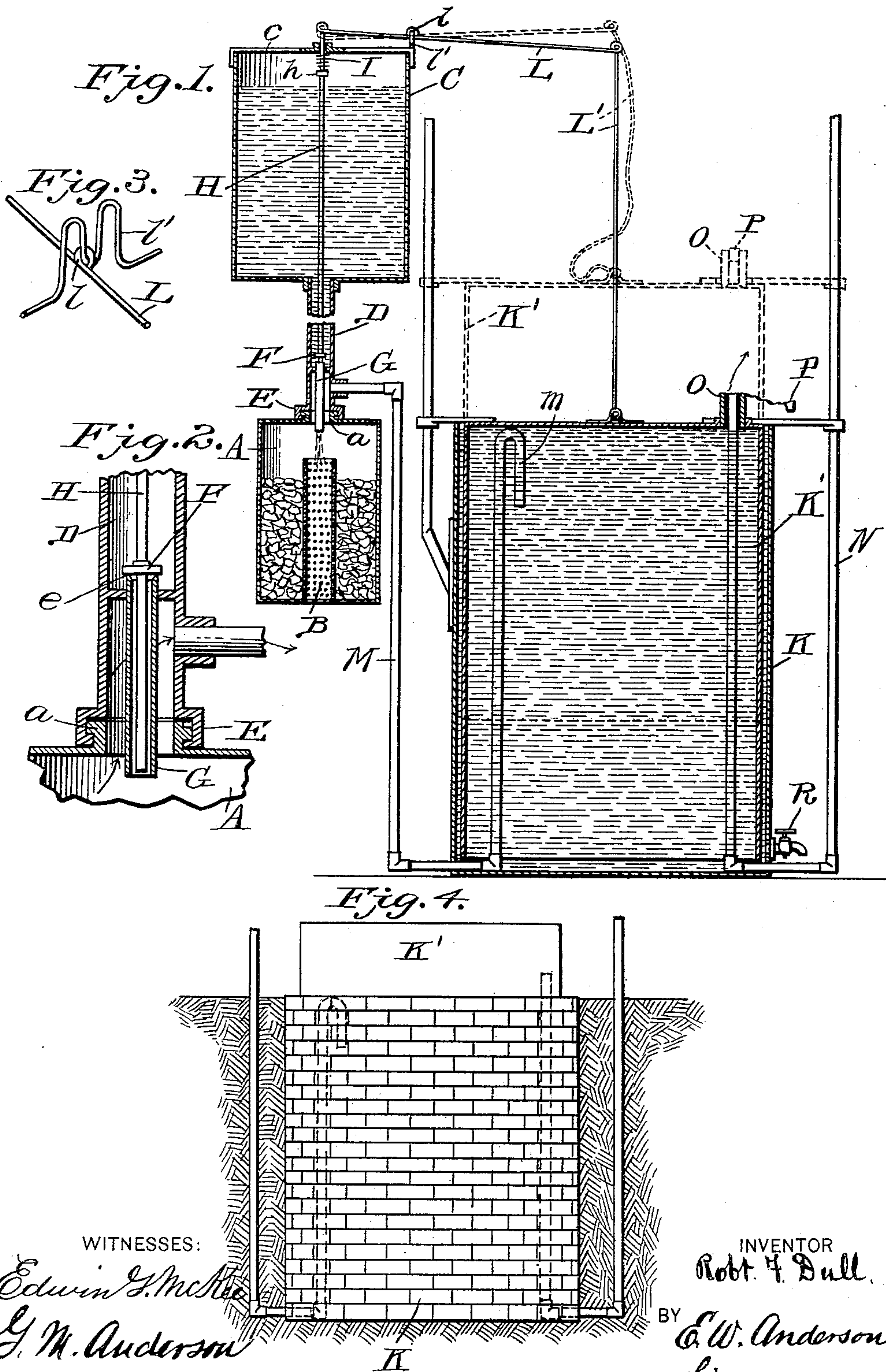
No. 620,757.

Patented Mar. 7, 1899.

R. F. DULL.  
ACETYLENE GAS GENERATOR.

(Application filed Sept. 8, 1898.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ROBERT F. DULL, OF BRIDGEWATER, VIRGINIA.

## ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 620,757, dated March 7, 1899.

Application filed September 8, 1898. Serial No. 690,482. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT F. DULL, a citizen of the United States, and a resident of Bridgewater, in the county of Rockingham and State of Virginia, have invented certain new and useful Improvements in Acetylene-Gas Generators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a central vertical section of the invention. Fig. 2 is an enlarged detail view of the valve and adjacent parts. Fig. 3 is a detail view of fulcrum of lever L. Fig. 4 is a detail view showing modification of gasometer.

This invention has relation to generators for acetylene gas, and is designed to provide a generator of this character which is simple and comparatively inexpensive in its construction, which can be readily taken apart for purposes of cleaning, and which will furnish a pure gas, free from air and from sediment likely to choke the service-pipes.

With these objects in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates the generator proper, which consists of a cylinder closed at the bottom and provided at the top with a reduced screw neck or extension *a*. B designates a perforated tube or cylinder which is placed centrally within said generator and is open at top and bottom.

C designates an elevated water-supply tank or vessel which is supported directly over the generator and is connected therewith by a vertical pipe D, fitted with a cap E at its lower end adapted to screw over the neck or extension *a* of the generator. Said pipe is provided at its lower portion with a transverse partition, through which extends a small vertical pipe G, whose lower end extends below the top of the vessel K and whose upper end portion is formed with a valve-seat *e*, having a thin seating edge for a valve F.

H designates a valve-rod which extends upwardly from said valve through the pipe D and through the tank or vessel C, having a guide-bearing at its upper end portion in a cross-bar *c*, secured to said tank or vessel. I is a coiled spring which is seated around the upper portion of said rod, between a flange or collar *h* thereof and the under side of said bar and whose tendency is to hold the valve seated.

K designates a gasometer vessel, and K' a gasometer-bell.

L is a lever which is fulcrumed at *l* on an arm *l'*, which is secured to one side of the water-tank C. Said lever is connected by its shorter arm with the upper end of the valve-rod H, and its other arm is connected with the gasometer-bell by a chain or other flexible connection, (indicated at *L'*.)

M designates a gas-outlet pipe which connects at one end with the pipe D a short distance below its valve-seat *e* and which extends downwardly to the lower portion of the gasometer, which it then enters, its upper end terminating in a bend *m*, which is below the water-level in the gasometer.

N designates a service-pipe which communicates with the gasometer above the water-level. The bell K' of the gasometer is provided with a cap O, which when the gasometer is emptied of gas fits over the upper end of the service-pipe. Said cap has an aperture in its upper end, which is closed by a plug P or other suitable device, which can be removed as the bell is lowered at the beginning of the operation to permit the air contained in the bell to escape, the said cap permitting the bell to descend to a point where its top is in contact with the surface of the water in the gasometer vessel to thereby exclude the presence of air.

Water being admitted to the generator through the valve F comes into contact with the carbid placed around the perforated pipe or tube B, the generation commencing at the bottom. The gas generated passes into the gasometer through the pipe M, and as the end of said pipe is submerged gas escaping therefrom is caused to pass through the water into the bell, being thereby purified and deprived of dust and sediment, which would otherwise not only injure the quality of the



gas, but would cause the service-pipes to become choked.

The pipe M is made in sections, so that it can be readily disconnected and cleaned when necessary, and the gasometer vessel is provided with a draw-off cock R at or near its bottom.

Owing to the screw connection between the generating vessel and the pipe D the said vessel can be readily detached when its carbid is exhausted and be cleaned, refilled, and replaced, or a new generating vessel can be attached at once. During this operation no gas can escape from the gasometer owing to the fact that the pipe M is water-sealed.

In the larger sizes of machines the gasometer vessel may be set or constructed in the ground, as shown in Fig. 4.

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

1. In an acetylene-gas generator, the combination with a generating vessel having a neck or extension at its top, a water-supply tank directly over said vessel, a vertical pipe D leading from the tank to the vessel and having a cap at its lower end adapted to screw over the neck or extension of said vessel, the small pipe G seated in the lower portion of the pipe D, a valve which closes the upper end of the pipe G, a valve-rod extending up through the said pipe D, and through the wa-

ter-tank, a gasometer, a connection between the bell of the gasometer, and the said valve-rod, and a gas-outlet pipe leading from the lower portion of the pipe D to the water-chamber of the gasometer, said lower portion of the pipe D having communication with the generating vessel, but closed from communication with the portion of said pipe above the valve-seat, substantially as specified.

2. In an acetylene-gas generator, the combination of a generating vessel, a water-supply pipe connected to the top of said vessel and having a transverse partition therein a short distance above said vessel, the upper portion of said pipe being in communication with a source of water-supply, and its lower portion communicating with said vessel, a small pipe G which extends through the said partition and is arranged to discharge into said vessel, a valve for closing the upper end of said small pipe, means for controlling said valve, a gasometer, a gas-outlet pipe leading from that portion of the pipe D below the partition to the gasometer, and terminating in the latter below the water-level thereof, substantially as specified.

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

ROBERT F. DULL.

Witnesses:

GEO. H. PARMELEE,  
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