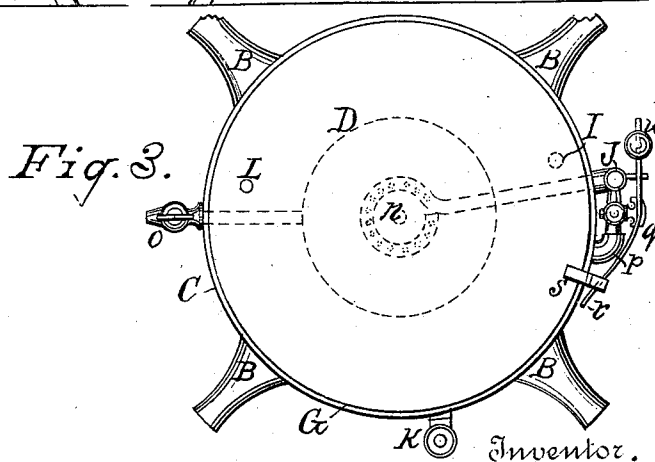
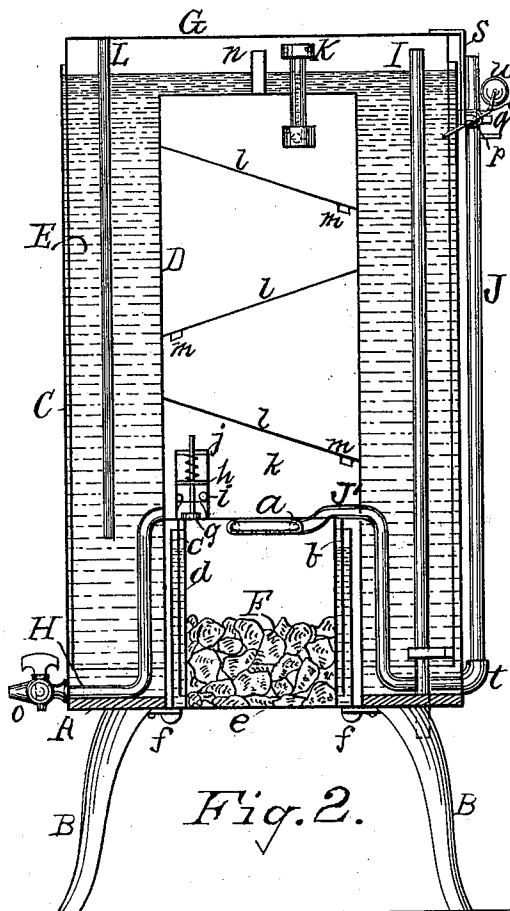
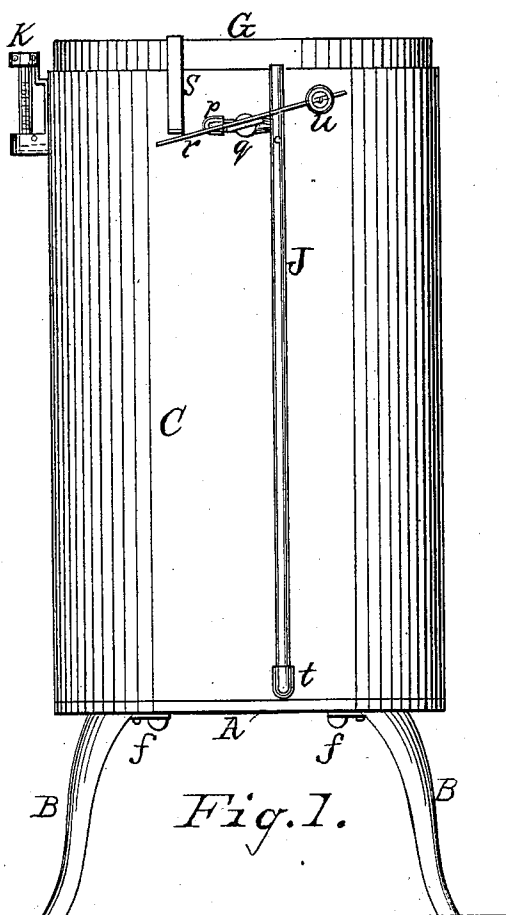


(No Model.)

Z. P. DEDERICK.
ACETYLENE GAS GENERATOR.

No. 599,074.

Patented Feb. 15, 1898.



Witnesses.
S. W. Porter.
John Gregg.

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UNITED STATES PATENT OFFICE

ZADOC P. DEDERICK, OF SHERMAN, TEXAS.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 599,074, dated February 15, 1898.

Application filed March 8, 1897. Serial No. 626,466. (No model.)

To all whom it may concern:

Be it known that I, ZADOC P. DEDERICK, a citizen of the United States, residing at Sherman, in the county of Grayson and State of Texas, have made certain new and useful Improvements in Apparatus for Generating Acetylene Gas, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

The object of this invention is to provide with few appliances a simple and compact apparatus requiring little attention for generating acetylene gas for light, heat, and power purposes either continuously or intermittently from carbid of calcium by the application of water to the latter; also, for automatically stopping its generation when no gas is being burned.

Various forms in detail as to size, configuration, and mechanical adjustment of parts can of course be used to embody my invention; but these objects are preferably attained by the gas-generator illustrated in the accompanying drawings, fully described in the specification, and particularly pointed out in the claims.

Referring to the drawings, in which like letters designate like parts in the several views, Figure 1 is a side elevation of an apparatus embodying my invention. Fig. 2 is a vertical section showing the generator filled and charged ready for use. Fig. 3 is a top view of the same.

The annular plate A, resting upon legs B, forms a stand that supports an open receptacle or reservoir C. Centrally located within said receptacle and of about one-third its diameter is a cylindrical chamber D, affording the annular space E for holding water. Within the cylinder D is a bottom *a*, placed some distance from its lower end, to which bottom is attached a cylindrical ring *b*, that extends downward to the bottom of reservoir C.

The generating-bucket in which carbid F is placed has an outer shell *c* and inner shell *d*, placed at suitable distances apart one within the other and both secured to bottom *e* of bucket. The annular space thus formed between shells *c* and *d* being supplied with water forms a seal around the cylindrical ring *b*, thus preventing the escape of gas. The

bucket is held in place by buttons *f*, loosely secured to plate A. The inner shell *d* when bucket is placed in position for use presses against enlarged end *g* of valve *h*, raising the valve from rubber seat *i* in valve-chamber *j*, permitting the passage of gas when evolved from carbid F to compartment *k* in chamber D. Within this chamber is arranged a series of inclined disks *l*, one above the other, having openings *m* near their lower edges for the upward passage of gas to and through tube *n* into an ordinary gas-holder G, that is capable of vertical movement. The water surrounding chamber D cools the gas, and inclined disks *l* tend to collect any moisture or other impurities it may contain, delivering the gas to holder G cool, dry, and ready for use. The pipe H connects with compartment *k* close to upper side of bottom *e* and passes downward and outward through reservoir C, where a valve *o* is attached through which any condensation of the water or impurities separated from the gas may from time to time be drawn off. A service-pipe I, having open communication with holder G, serves to conduct the gas from said holder to the point where it is utilized.

At J, I show a vertically-disposed pipe on the outside of reservoir C, extending from top to bottom of same and connected to it below water-line by elbow *p* and valve *q*. The lever *r*, attached to handle of valve, is actuated by bracket *s*, attached to holder G. The gas in this holder as consumed causes it to descend until the bracket presses lever *r* downward, which opens the valve, allowing water to flow into the pipe J, whence the water passes downward and through elbow *t* into annular chamber E, thence upward through pipe J', which is a continuation of pipe J, to the top side of bottom *a*, thence downward to the under side of this bottom, where the pipe terminates in a circle, the lower side of which has a series of small holes that spray the water on carbid F, gas being then generated, and, passing to holder G, raises the holder, lifting the bracket *s* from lever *r*, when weight *u*, secured to opposite end of lever, closes the valve, thus stopping the flow of water and also the generation of gas.

At K, I show a glass water-gage which indicates the water-level in reservoir C.

At L, I show a pipe depending from the top of holder G, that extends downward some distance in water-chamber, but, being shorter than holder G, would be lifted out of the water by an excessive generation of gas, and thereby conduct it off before holder is raised beyond a safety limit. By placing a funnel in upper end of this pipe water when needed may be supplied to reservoir C.

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

1. The combination with a suitable tank or reservoir, having a central gas - collecting chamber having its outlet projected above the normal water-line of the reservoir, the vertically-movable holder having its lower end water-sealed in the reservoir and means for withdrawing gas from the holder, of a supplemental chamber having communication with the gas - collecting chamber, a valve adapted to close communication between such chambers, a generating-bucket detachably held in the supplemental chamber adapted to engage and open the aforesaid valve when set in position, a water-supply discharging into such bucket and feed devices governed by the movement of the holder for regulating the water-supply all being arranged substantially as shown and described.

2. In a gas-generating means as described, a vertically - movable gas-holder having its lower end water-sealed in a suitable tank or reservoir, said holder having a suitable gas-outlet, of a supplemental gas-collecting chamber having its bottom provided with a valved opening, a calcium-carbid holder removably held below the said bottom and adapted to engage and open the valve therein when set in place and a water-service pipe leading to the carbid-calcium holder, as set forth.

3. In a gas-generator, the combination with the main reservoir or water-holder having a centrally-disposed gas-collecting chamber provided with an outlet extended above the water-line in the reservoir, said chamber having a bottom provided with an opening, an automatically-operated valve for closing such opening, said bottom having a pendent annular rim *b*, and the vertically-movable holder having a gas-outlet pipe, of the carbid-calcium holder detachably held under the bottom of the gas-collecting chamber having a portion adapted to engage and open the automatically-operated valve, and provided with an annular water-jacket to receive the pendent rim *b*, all being arranged substantially as shown and described.

4. In a gas-generator, of the class described, the combination with a water tank or reservoir having a water-gage K, a gas-holder open at the bottom moving freely therein, and a valve-actuating bracket depending from the top of said holder, of a cylindrical chamber centrally located within said water-reservoir, the bottom thereof placed some distance above the lower end of said chamber and provided on its top side near the edge with a valve opened by the inner ring of a carbid-receptacle when lifted in position, and allowed to close when said receptacle is removed, a discharge-pipe connected with said chamber and passing downward and to the outside of water-reservoir near the bottom thereof, and supplied with a valve for drawing off any refuse matter that may accumulate in said chamber, substantially as described.

ZADOC P. DEDERICK.

Witnesses:

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JOHN GREGG.