W. H. PARKER.

ACETYLENE GAS GENERATOR.

APPLICATION FILED NOV. 23, 1910.

1,032,154. **Patented July 9, 1912.**

2 SHEETS—SHEET 1.

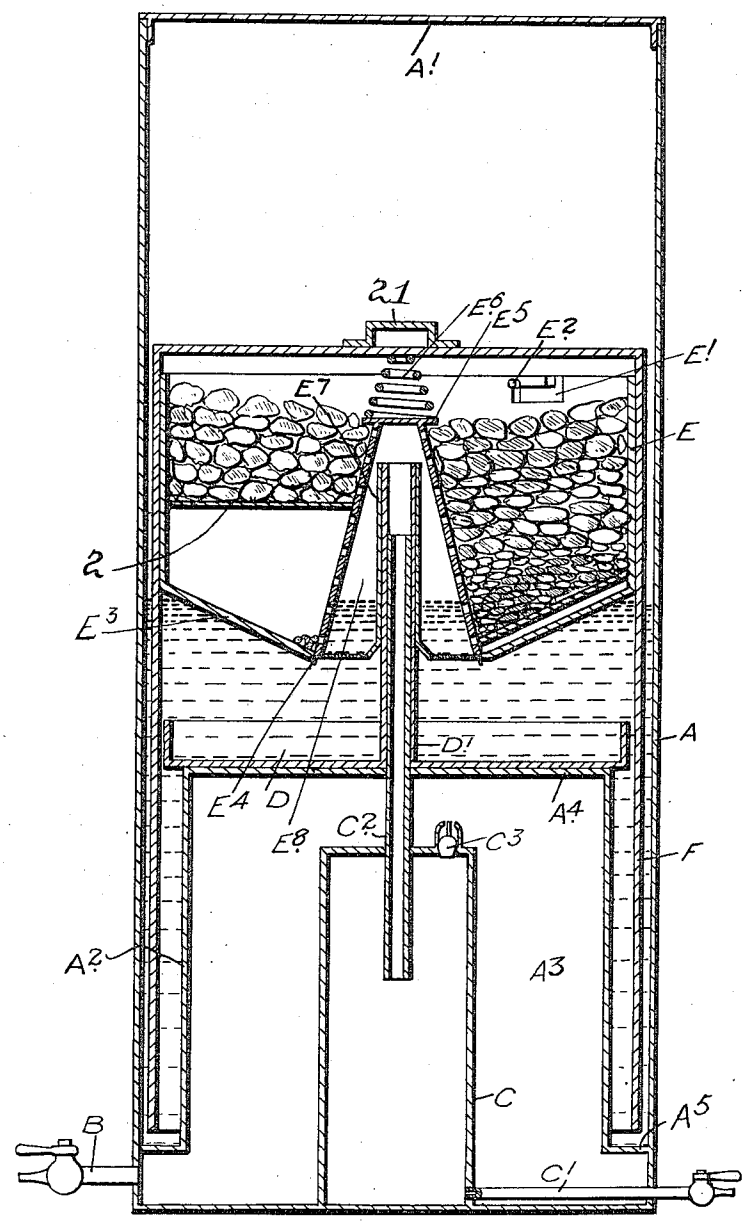

FIG. 1.

Witnesses.

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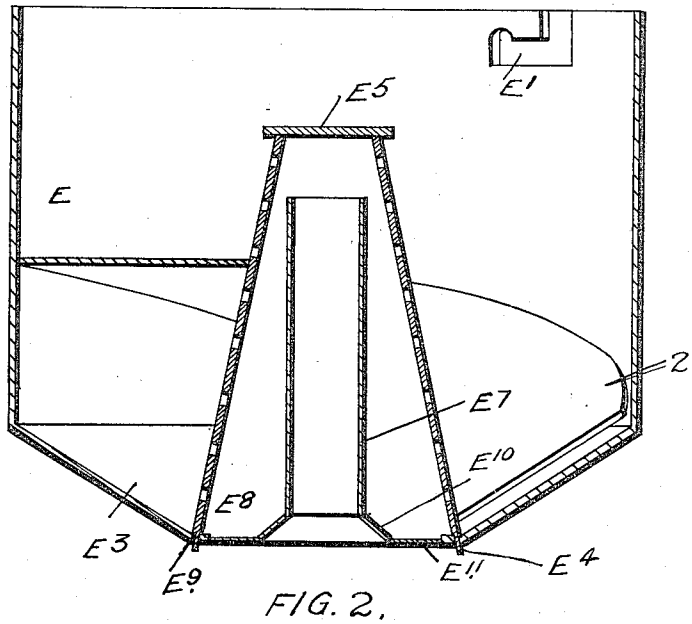

FIG. 2.

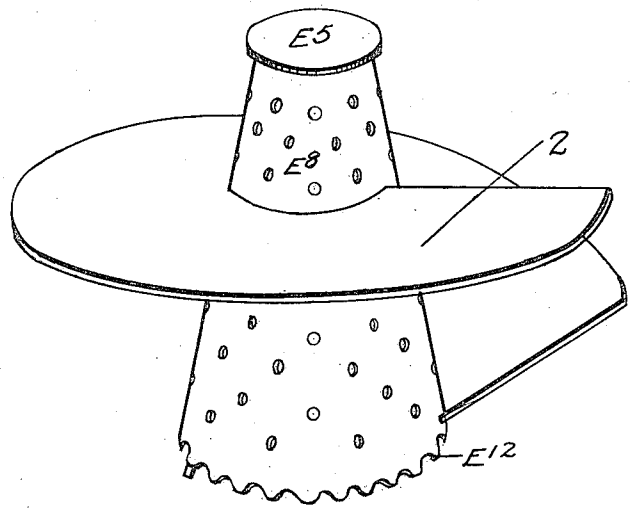

FIG. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM HARTLEDGE PARKER, OF TORONTO, ONTARIO, CANADA.

ACETYLENE-GAS GENERATOR.

1,032,154. Specification of Letters Patent. Patented July 9, 1912.

Application filed November 23, 1910. Serial No. 593,928.

To all whom it may concern:

Be it known that I, WILLIAM HARTLEDGE PARKER, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is the specification.

My invention relates to improvements in acetylene gas generators patented to me in the United States of America on the 8th November, 1910, under Number 975,154, and the object of the present invention is, first, to improve the construction of the generator chamber and the carbid receptacle therein; secondly, to provide means to insure the removal of all moisture of the gas previous to its passage to the supply pipe as well as provide a convenient storage for a determinate quantity of gas; thirdly, to devise a simple means for preventing the creation of a vacuum in the supply pipe and the consequent interruption of a regular flow of gas to the burner; fourthly, to provide a simple and convenient means to receive and remove the ash deposited from the carbid receptacle; fifthly, to devise a simple means to prevent the ash from being shaken down the tube leading to the storage chamber and sixthly, to provide a simple and convenient means for supporting the carbid receptacle at the top of the generating chamber and for connecting and disconnecting the same.

To effect these objects my invention consists of a main casing having an upwardly extending false bottom of less diameter than the main casing, so as to form an annular water seal and a lower chamber, a gas supply pipe and tap for the same located near the bottom, an inner casing extending upwardly from the bottom and forming a gas storage chamber provided with a suitable drain pipe and tap for the same, a central upwardly extending tube and a check valve, a generating casing and carbid receptacle fitted therein near the top, the walls of the casing extending into the annular water space aforesaid, the carbid receptacle being provided with a central tube and a perforated hollow cone extending from the bottom of the carbid receptacle upwardly, the parts being otherwise constructed and arranged in detail as hereinafter more particularly explained.

Figure 1, is a vertical section through my improved generator. Fig. 2, is an enlarged vertical section through the carbid receptacle. Fig. 3, is a detail of the perforated hollow cone of the carbid receptacle and inclined way surrounding the same.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the casing, A′ a suitable cover or top readily detachable, A^2 the wall of the interior chamber A^3, and A^4 is the top of the internal chamber A^3.

A^5 is the lower annular wall extending from the lower end of the vertical wall to the exterior wall of the casing A.

B is a suitable tap, which is designed to be connected by any suitable tube or pipe to the burners.

C is a central casing, which extends to the bottom of the main casing and is provided with a drain pipe C′ having a suitable tap as indicated, such drain pipe being designed to carry off any moisture, which may collect in the casing C.

C^2 is a central tube extending upwardly from the casing as indicated.

D is a tray having a central tube D′ extending upwardly therefrom beyond the top of the tube C^2 and surrounding the same. The tray D is designed to receive the ash or sludge from the carbid and the central tube extending upwardly therefrom prevents any ash or sludge passing down through the tube C^2 above the top of which it extends. The chamber C is provided at the top with a check valve C^3 which allows the gas to pass upwardly into the chamber A^3 and thence out through the gas supply pipe B.

E is the carbid receptacle, which is provided at the top with bayonet slots E′ into which when the receptacle is in position extend pins E^2 from the interior of the bell F.

It will be noticed that the bell F is bottomless and that the lower portion extends into the annular water chamber forming thereby a water seal, the water extending up beyond the top of the central chamber A^3 to a point above the bottom of the carbid receptacle. The carbid receptacle is provided with a dished bottom E^3 and a central opening E^4 in such bottom. From the edge of the said opening extends upwardly a hollow perforated truncated cone E^8 having a suitable top E^5 between which and the top of the casing of the bell F extends a compression spring E^6. The opening in the bottom of the carbid receptacle is an

annular opening and from the center of the opening extends a tube E^7, which extends upwardly beyond the top of the pipe C^2 and surrounds the tube D'.

Having now described the principal parts involved in my invention I shall briefly describe its operation and utility. Upon the tap of the supply pipe B being turned and the air being ejected at the burner the gas is started generating by the carbid in the receptacle coming in contact with the water on the lowering of the bell or generator after which the gas forces the carbid receptacle and generator upwardly. The carbid is acted upon by the water to create gas as long as the burners are lighted. The gas passes upwardly around the tubes E^7 and D' and thence downwardly through the gas tube C^2 into the central chamber C, whence the gas passes upwardly through the check valve C^3 and outwardly by the supply pipe B. The perforations in the hollow truncated cone admit of a ready access of the water to the carbid in the receptacle surrounding the cone. All back pressure is avoided by the check valve C^3 and consequently there is an even flow of gas to the burners without any danger of flickering. The gas is cooled passing down through the water and also through the chamber A^3, which is surrounded by water. In order to remove the carbid all that it is necessary to do is to withdraw the bell by the handle 21 and by turning the carbid receptacle slightly it may be disengaged from the top of the bell and the sludge removed therefrom. The tray D may also be removed to take out any sludge, which may have fallen into it. The tray and the carbid receptacle may be then replaced and the spring E^6 will serve to hold the carbid receptacle in place, so that the pins E^2 are insured of being held securely in the bayonet slot E' and the liability of disconnection of the carbid receptacle from the top of the generator avoided.

It will be noticed that the truncated cone E^8 is provided at the bottom with a shoulder E^9 by which it is supported on the edge of the bottom opening of the carbid receptacle. The tube E^7 flares outwardly at the bottom at E^{10} and is supported by a spider E^{11}. The bottom of the truncated cone is also provided with a serrated edge E^{12}. The truncated cone E^8 also carries a helical way 2 upon which the carbid is supported and which serves to allow of the water contacting with a small portion of the carbid at a time and thus prevents over generation. The helical way, of course, extends to the wall of the carbid receptacle at the outside edge and necessarily the carbid is supported entirely on the top of the helical way and gradually passes down such way as the water acts upon it, the water passes or drains off the lower end of the way.

It will be seen from this description that my present generator is very simple and cheaply manufactured. It will also be seen that modifications may be made in the construction without departing from the spirit of my invention.

What I claim as my invention is:

1. In an acetylene gas generator, a casing having a gas storage compartment in the lower part thereof, and having a water chamber above said compartment, a vertically movable bell carrying a dip carbid receptacle, a supplemental gas chamber in said gas compartment, a check valve controlling communication between said supplemental chamber and gas compartment, and a tube connecting said supplemental chamber with the space in the water chamber above the water level.

2. In an acetylene gas generator, the combination with the casing, of a gas storage compartment located at the bottom of the same and provided with an annular space around the same designed to receive water, a gas supply pipe extending through the wall of the casing underneath the annular space at a point above the bottom of the casing, a tube extending upwardly from the compartment above the level of the water, and a bell into which such tube extends, a carbid receptacle suitably held within the upper part of the bell, a supplemental gas chamber connected to the bottom of the tube located in the gas compartment, a check valve in the top of such chamber and a drain pipe extending from the bottom of the wall of the supplemental chamber through the side of the casing as and for the purpose specified.

3. In an acetylene gas generator, the combination with the generator having pins in the wall thereof, of a carbid receptacle provided with bayonet slots in the upper edge whereby it may be attached to and detached from the pins, and a central truncated cone having a closed top and a spring extending between the top of the cone and the top of the casing of the generator, as and for the purpose specified.

4. In an acetylene gas generator, the combination with the bell, of a carbid receptacle suitably supported on the top thereof and provided with a downwardly inclined converging bottom having an opening in the center thereof, a perforated truncated cone having a shoulder at the bottom designed to be supported on the edge of the said opening and a spider extending inwardly from the same and a tube carried by the spider extending upwardly from the bottom of the truncated cone as and for the purpose specified.

5. In an acetylene gas generator, the combination with the bell, of a carbid receptacle suitably supported on the top thereof and

provided with a downwardly inclined converging bottom having an opening in the center thereof, a perforated truncated cone having a shoulder at the bottom designed to be supported on the edge of the said opening, and suitably serrated, and a spider extending inwardly from the same and a tube carried by the spider extending upwardly from the bottom of the truncated cone as and for the purpose specified.

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Witnesses:
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