

UNITED STATES PATENT OFFICE.

WILLIAM ALOYSIUS READY, OF NASHVILLE, TENNESSEE.

ACETYLENE-GAS GENERATOR.

946,269.

Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed October 10, 1908. Serial No. 457,110.

To all whom it may concern:

Be it known that I, WILLIAM ALOYSIUS READY, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Acetylene-Gas Generators; and I do hereby 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.

My invention relates to certain improvements in acetylene gas generators, and has to do more particularly with that type in which the carbid is supported in a chamber, and the water permitted to feed down upon the same, the gas being generated upon contact of the water and carbid.

An object of the invention is to provide an apparatus of the character mentioned, of such a character that the flow of water may be automatically regulated and controlled solely through the instrumentality of the gas pressure, and without the aid of any moving parts. This is accomplished by the balancing of the pressure of gravity on the water and the expansive force of the gas, the flow of water increasing or decreasing in proportion to the increase or decrease of the gravity pressure as compared with the expansive force of the gas.

A further object to be attained is a device such as set forth, wherein the several parts are readily removable, to permit charging and cleaning of the apparatus.

Briefly, the invention includes a lower and an upper receptacle, the lower one containing the carbid, and the upper one holding the water and being supported upon and removable from the lower receptacle. The upper receptacle includes a main storage tank for the water and an auxiliary chamber, means being provided for permitting the water to pass from the auxiliary chamber into the lower receptacle containing the carbid. The auxiliary chamber is provided with two passages leading thereto, the one connecting with the main water tank and the other constituting an exit for the generated gas. A stand pipe is provided in the auxiliary chamber, and as the water rises it overflows the pipe and feeds into the lower receptacle. The gas passes up through this pipe into the auxiliary chamber, and as the pressure increases in the auxiliary chamber, the water is forced back into the main sup-

ply tank, and prevented from feeding into the lower receptacle. Correspondingly, when the gas pressure decreases in the auxiliary chamber, as when the gas is being freely used, the back pressure on the water is relieved, and it feeds into the auxiliary chamber, overflowing the stand pipe, and passes down to the carbid, thereby producing an additional supply of gas.

With these several objects and advantages in view, the invention, in its preferred embodiment, includes the form of construction hereinafter described in detail, pointed out in the appended claims, and shown in the accompanying drawings, in which—

The figure is a vertical section of the apparatus, showing the parts in operative relation.

Referring more particularly to the drawing, A' designates the lower or carbid holding receptacle. Provided at the upper edge of the receptacle A', and secured thereto, is a ring A², having an inwardly projecting flange A³.

A⁴ designates the carbid basket which is carried by the ring A⁵.

A⁶ are lugs on the ring A⁵, by means of which the carbid basket is supported in its receptacle. The basket is constructed preferably of wire, and is provided with a pipe A⁷ which extends vertically from the center of its bottom portion, to a point approximately in a plane with the top of the basket.

A⁸ is a removable plug, in the bottom of the pipe A⁷, and A⁹ are openings in the side of the pipe near the bottom.

A¹⁰ is a cover for the basket, adapted to rest on the flange A¹¹.

B' indicates the upper receptacle, including the main water supply tank B², and the auxiliary chamber B³.

B⁴ is a pipe, extending through the bottom of the receptacle B' to a point adjacent the top of pipe A⁷. At the upper end of the pipe B⁴ is a baffle-plate B⁵, to prevent the water from splashing into the pipe.

B⁶ is a passage leading from the tank B² to the auxiliary chamber B³, the same being controlled by the needle-valve B⁷.

B⁸ is an outlet from the auxiliary chamber B³, and leads to a spigot B⁹, by means of which the auxiliary chamber and the main water supply tank may be drained and cleaned.

Leading up from the auxiliary chamber, and passing through the main water tank is

a pipe B¹⁰, which terminates in a chamber B¹¹, adapted to contain a suitable substance for extracting moisture from the gas. Connected with the chamber B¹¹ is the gas supply pipe B¹², which is provided with a cut-off cock B¹³.

B¹⁴ is a plug for closing the filling opening of the main water supply tank. Positioned between the upper and lower receptacles, is a rubber gasket B¹⁵ to form a gas tight joint between them.

The operation of my apparatus is as follows: The basket is first placed in the lower receptacle and filled with carbid, its cover then being put in position. The tank is next filled with water, the valve B⁷ being closed, and the upper receptacle placed upon the lower one, care being taken to have a gas-tight connection. The valve B⁷ is now opened, and water flows through to the auxiliary chamber, rising in the same until it overflows the pipe B⁴. It then passes down and out through openings A³, coming in contact with the carbid, and generating gas. The gas passes up through the pipe B⁴, filling the chamber B³, and flowing into pipe B¹⁰. If the valve B¹³ is closed, the pressure of the gas in chamber B³, soon becomes sufficient to force the water back into tank B², and stop further production of gas. As soon as the valve B¹³ is opened, the pressure in the chamber decreases, and the water is permitted to flow in and start the action upon the carbid again. Thus, the fluctuations in the consumption of gas automatically operate to control the passage of water to the carbid and regulate the gas production.

Various changes and modifications may be adopted, which do not affect substantially the operation of my device, and which in-

volve the main novel features herein set forth, and as such, are contemplated by and to be included within the spirit of the present invention.

What I claim, and desire to secure by Letters-Patent is:—

1. A device of the character described including a lower receptacle, and an upper receptacle, a substantially semi-spherical-shaped auxiliary chamber within the upper receptacle, a pipe leading from the top of the auxiliary chamber to the top of said upper receptacle, said upper receptacle having a passage formed in the bottom thereof and leading from the bottom of the upper receptacle to the bottom of the aforesaid auxiliary chamber, and means for controlling the flow of gas in said pipe.

2. A device of the character described including a lower receptacle, and an upper receptacle, a substantially semi-spherical-shaped auxiliary chamber within the upper receptacle, a pipe leading from the top of the auxiliary chamber to the top of said upper receptacle, said upper receptacle having a passage formed in the bottom thereof and leading from the bottom of the upper receptacle to the bottom of the aforesaid auxiliary chamber, means for controlling the flow of gas in said pipe, a pipe leading from the auxiliary chamber to the lower receptacle, a perforated, removable carbid holder in the lower receptacle, and a detachable cover for the carbid holder.

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

WILLIAM ALOYSIUS READY.

Witnesses:

T. M. STEGER, Jr.,

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