W. W. COZINS.

ACETYLENE GAS GENERATOR.

APPLICATION FILED DEC. 27, 1911.

1,038,856. Patented Sept. 17, 1912.

FIG. 1.

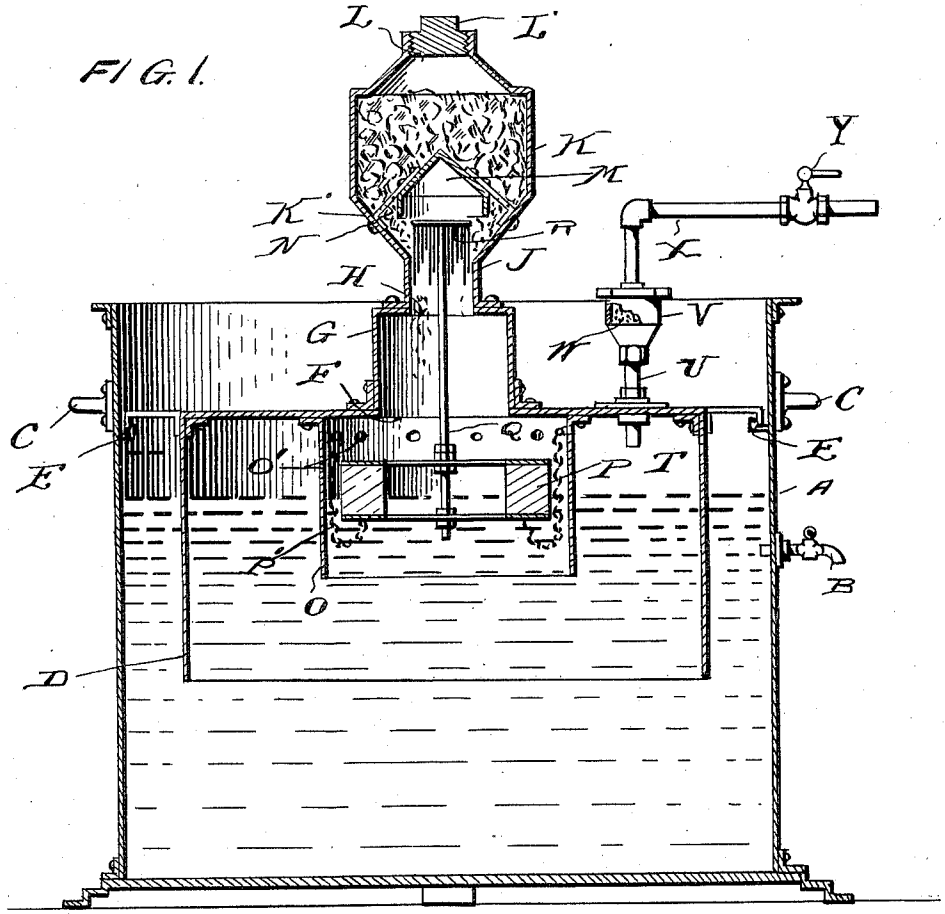


FIG. 2.

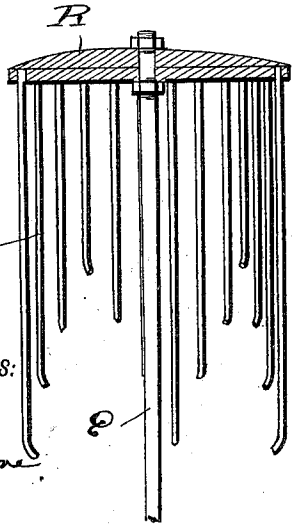
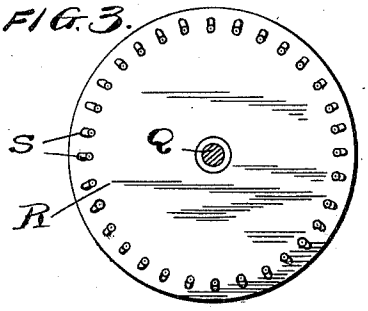


FIG. 3.



WITNESSES:

C. K. Davies

M. E. Moore

William W. Cozins
INVENTOR

By Jno. J. Moore
ATTORNEY

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C

UNITED STATES PATENT OFFICE.

WILLIAM W. COZINS, OF COCHRANTON, PENNSYLVANIA.

ACETYLENE-GAS GENERATOR.

1,038,856. Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed December 27, 1911. Serial No. 668,162.

To all whom it may concern:

Be it known that I, WILLIAM W. COZINS, a citizen of the United States, residing at Cochranton, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

My invention relates to improvements in acetylene gas generators, and one object of my invention is the provision of a generator which will be of compact, simple and durable construction to produce a portable generator capable of production at a very low price to be within the reach of any person requiring a practical apparatus of this character.

Another object of my invention is the provision of a generator which while possessing the necessary requisites of simplicity, durability and inexpensiveness will be of the highest possible efficiency and which will insure the furnishing of the proper quantity of illuminating gas and which will perfectly regulate the feed of the carbid and prevent waste of the material.

Another object of my invention is the provision of a generator capable of transportation with ease to any desired locality, which may be made of any capacity to suit the requirements, and which will be absolutely proof against explosion, thus producing a safe, economical, and thoroughly efficient generator.

With these objects in view, my invention consists of an acetylene gas generator embodying novel features of construction and combination of parts substantially as disclosed herein.

In order that the detailed construction and the operation of my generator may be understood and its many advantages be fully appreciated, I invite attention to the accompanying drawing showing the preferred embodiment of my invention.

Figure 1 represents a vertical central sectional view of an acetylene gas generator constructed in accordance with my invention. Fig. 2 represents a central sectional view of the peculiar valve or gate forming one of the essential features of my invention, and Fig. 3 represents a horizontal sectional view of the gate or valve to particularly disclose the construction of the arms or rods forming the gate or valve.

In the drawings: the letter A designates the tank of the proper size, shape and dimensions to suit the requirements, which tank is provided with a discharge or draw off cock B and with suitable handles C to facilitate the transportation of the tank.

Within the tank is arranged the bell D, formed with the brackets E, which supports the bell within the tank, and the bell is provided with a central opening F, which communicates with the dome G, having the reduced opening H, from which leads the discharge neck J of the carbid holder K, said carbid holder having the filling opening L, provided with the removable stopper L'. The carbid holder is thus disposed in the most advantageous place to permit access for charging with carbid and adjacent to the conical lower portion K' of the carbid holder K within the same is secured the conical cap forming a guard M, which guard is retained in place in the conical discharge portion of the carbid holder by means of the series of angle brackets N.

Depending from the bell and encircling the central opening thereof is the cylindrical shell or casing O, which forms a chamber in which is confined the float P, leading upwardly from which is the rod Q, to whose upper end is secured the cap R, and depending from the cap are the series of vertical rods or arms S, which are arranged parallel and equal distances apart, and are of unequal lengths and constitute the regulating gate or valve for feeding the carbid, its peculiar construction insuring only the feeding of the necessary and proper amount of carbid. By arranging the vertical arms in unequal lengths and staggered relation, I am enabled to regulate the feed of the carbid to better advantage, as the carbid is separated and can only be fed in certain and even quantities.

Above the water line and within the bell is provided the gas chamber T, from which leads the feed pipe U, through the purifier V, which comprises a casing containing a suitable purifying means W, and from the purifier leads the service supply pipe X, provided with a regulating cock Y.

From the foregoing description, taken in connection with the drawing, the operation of my generator will be readily understood and it may be stated that the tank is partially filled with water and the carbid holder is supplied with carbid and the carbid passes through the openings formed by the rods of

the valve or gate and falls into the water and instantly generates the gas, which passing through the water enters the gas chamber of the bell from which it passes through the feed pipe, purifier and to the service pipe.

It will be apparent that the peculiar shape of the gate or valve, having the rods of different length presents variously disposed outlets which according to the amount of gas required, insures a perfect regulation preventing a waste of carbid and the proper pressure and production of the gas to insure a perfect and even supply of gas for service.

The many advantages of my generator will be readily understood and appreciated and further comment is deemed unnecessary, but its extremely simple and inexpensive construction combined with its reliability and efficiency will instantly commend the generator as practical, desirable and economical.

The float D is retained in its proper vertical movement and limited by the chains P′ connected to the float and surrounding casing O, which casing is provided with a series of perforations O′ for the outlet of the gas from whence it passes into the bell and out through the service pipe, as will be readily understood.

I claim:

1. In an acetylene gas generator, the combination of a tank, a bell supported therein, a carbid holder mounted upon the bell, a guard in said carbid holder to prevent the too rapid feed of the carbid, a float, flexible devices connected to said float for retaining the float in proper position and a valve or gate carried by the float and guided in the discharge end of the holder.

2. In an acetylene gas generator, the combination of a tank, a bell supported therein, a carbid holder mounted upon the bell, a guard in said carbid holder to prevent the too rapid feed of the carbid, a float, and a valve or gate carried by the float and guided in the discharge end of the holder, said gate comprising a cap piece and a series of arms depending therefrom arranged in spaced parallel relation to form feeding openings.

3. In an acetylene gas generator, the combination with a tank and a bell therein, a carbid holder communicating therewith and having a reduced discharge neck, a float and a gate or valve provided with a plurality of depending arms and carried by the float and guided in the neck of the holder for regulating the feed of the carbid.

4. In an acetylene generator, the combination of a tank, a bell supported therein, a carbid holder communicating with the bell, a guard mounted in the carbid holder, a gate or valve consisting of a cap piece and a series of parallel depending arms of varying lengths depending from said cap piece and guided in a discharge portion of the holder and a float connected with said cap piece.

5. In an acetylene generator, the combination with a tank, a bell, a casing depending from the bell, a carbid holder arranged above the bell, a valve for said carbid holder, a float arranged within the casing of said bell, and flexible devices connecting the casing and the float for retaining the float in proper position.

6. In an acetylene generator, in combination, a tank, a bell arranged therein, a carbid holder arranged above said bell, a casing depending from the bell, a float arranged within the bell casing, flexible devices for limiting the movement of the float, a rod carried by said float, a cap arranged at the upper end of the rod, and a plurality of parallel depending arms of unequal length carried by said cap.

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

WILLIAM W. COZINS.

Witnesses:
F. A. Curtis,
H. E. Gross.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."