No. 873,406. PATENTED DEC. 10, 1907.

T. J. BEAUDETTE.

ACETYLENE GAS GENERATOR.

APPLICATION FILED DEC. 19, 1906.

2 SHEETS—SHEET 1.

Fig. 1

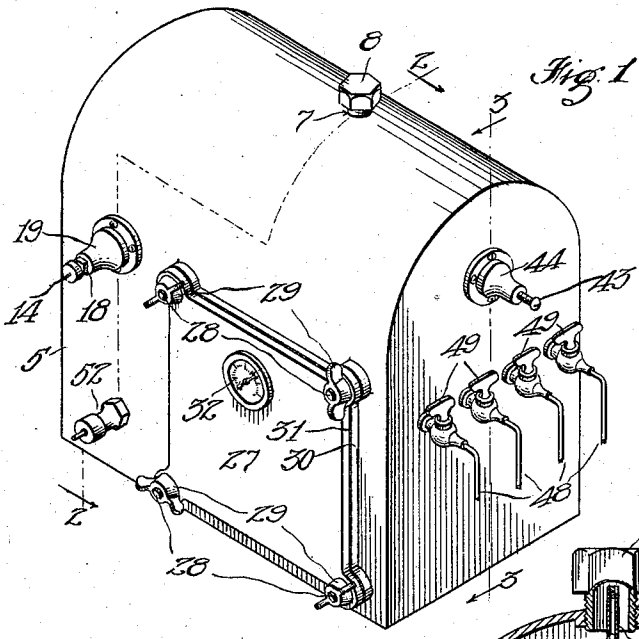
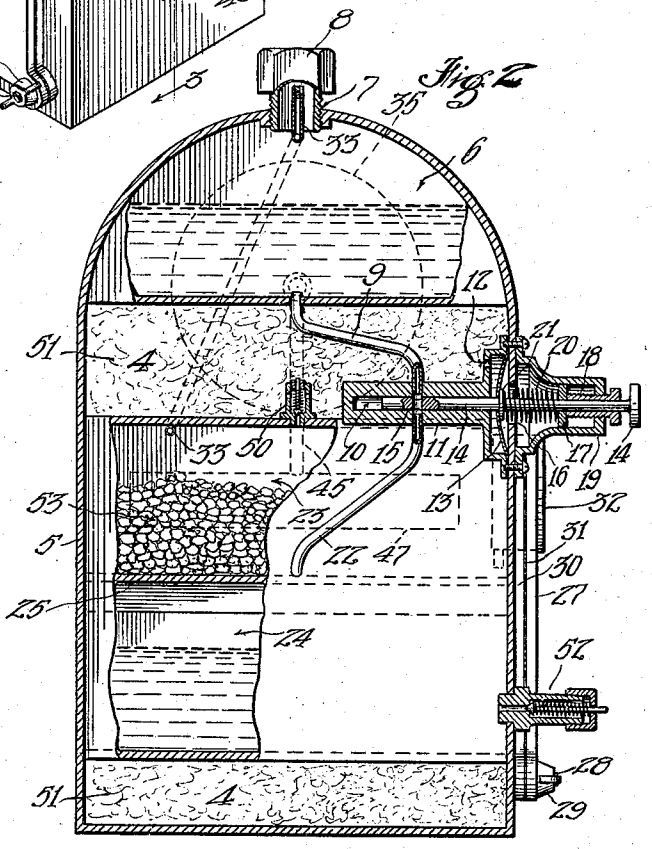


Fig. 2



Witnesses
F. Allan Fiel
E. A. Thaus.

Inventor
Telesphore J. Beaudette
By Hazard & Harpham.
Attorneys.

No. 873,406. PATENTED DEC. 10, 1907.

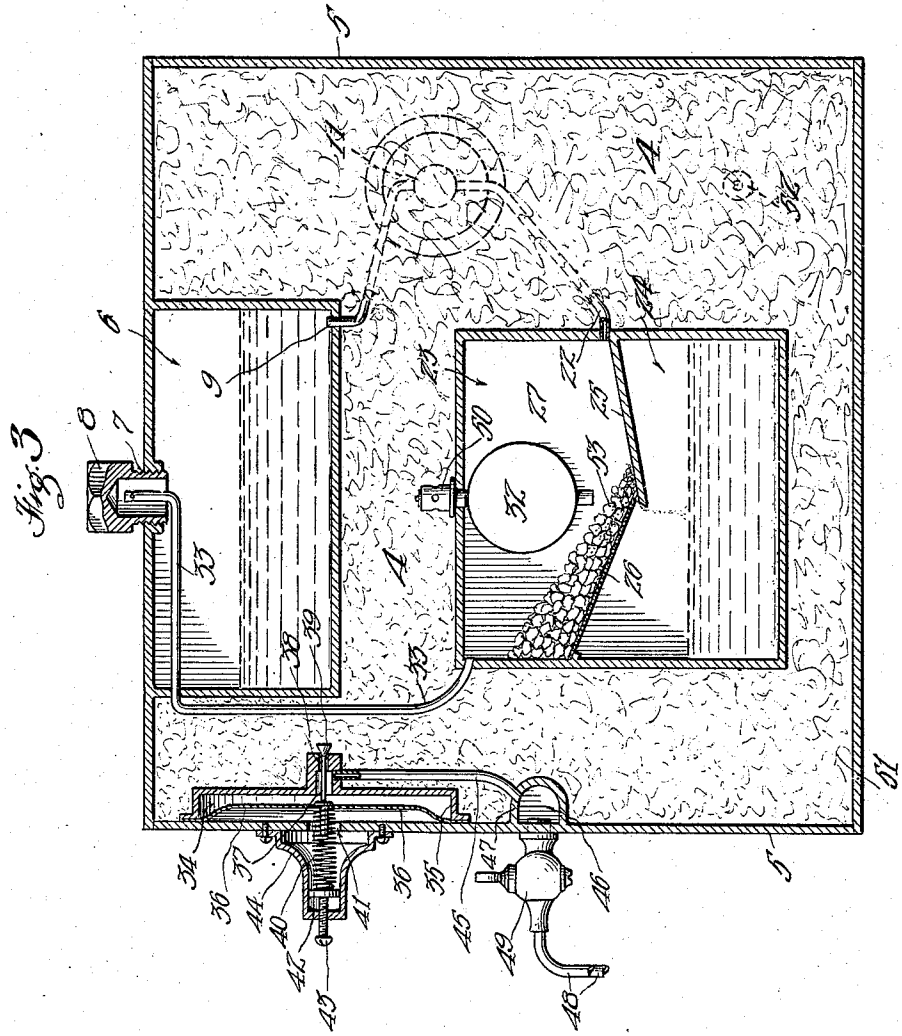
T. J. BEAUDETTE.

ACETYLENE GAS GENERATOR.

APPLICATION FILED DEC. 19, 1906.

2 SHEETS—SHEET 2.

Fig. 3



Witnesses
F. M. Mansfield
E. A. Strauss.

Inventor
Telesphore J. Beaudette
By Hazard & Harpham.
Attorneys

UNITED STATES PATENT OFFICE.

TELESPHORE J. BEAUDETTE, OF LOS ANGELES, CALIFORNIA.

ACETYLENE-GAS GENERATOR.

No. 873,406. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed December 19, 1906. Serial No. 348,547.

To all whom it may concern:

Be it known that I, TELESPHORE J. BEAUDETTE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

My invention relates to improvements in generators of that type wherein water is fed to the carbid in quantities automatically controlled by the pressure of the gas generator.

One of the many objects of this invention is to provide a generator of this type wherein the control of the supply of water will be sensitive and will operate positively and efficiently under either a high or a low gas pressure.

Another object is to provide a generator in which the pressure of the gas to the lights is automatically regulated irrespective of the gas pressure in the generator.

Other objects and advantages of the invention will be hereinafter stated.

In the drawings the generator is illustrated in a form for use on an automobile, but it is to be understood that it is adapted for use in other forms of apparatus.

Figure 1— is a perspective view of my improved generator detached from the machine. Fig. 2— is a section on line 2—2 of Fig. 1. Fig. 3— is a section on line 3—3 of Fig. 1.

A storage chamber 4 is formed by the outer casing 5. In the top of the storage chamber is a water chamber 6, the top of which is formed by a portion of the outer casing. In the top of this chamber is a filling port 7 which is closed by a screw plug 8 which may be removed when it is desired to fill the chamber. Leading from the bottom of the water chamber is a pipe 9 which opens into the water controlling valve chamber 10 through the casing 11 of said valve chamber, which casing is secured to the outer casing. The outer end of this valve chamber is enlarged as shown in Fig. 2 and has a port 12 therein. Projecting into the enlarged end of said valve chamber is a resilient diaphragm 13 which is secured to the outer casing and also secured to the reciprocating valve 14 which has an opening 15 extending transversely therethrough which registers or is out of register with pipe 9 when the valve is feeding water or is closed as hereinafter stated. In the position shown in Fig. 2 the valve is fully open. This valve stem passes through an opening 16 in the outer case and thence through a hollow washer 17 and thence through nut 18 and passes through the end of the casing 19 secured to the outside casing, as shown in Figs. 1 and 2, and forms a chamber on the outside of the main casing which I will call the spring regulating valve chamber. Surrounding the valve within this chamber is a spring 20, one end of which bears against washer 17 and the other against a washer 21, which latter washer is secured to diaphragm 13 and to valve 14.

Connected to and opening to the interior of valve casing 11 on the opposite side to pipe 9 is a pipe 22 which leads to and opens into carbid chamber 23. Below the carbid chamber is a sludge chamber 24 and the two chambers are separated by shelves 25 and 26 which preferably project downwardly as they approach each other and preferably terminate near the center of the bottom of the carbid chamber, of which chamber these shelves form the bottom. Shelf 25 is preferably imperforate, while shelf 26 is preferably perforate and projects a little over shelf 25 and terminates slightly above the same to permit the ash to pass down into the sludge chamber. These shelves slope downwardly as best shown in Fig. 3 so that all of the carbid may ultimately be subjected to contact with the water flowing into the chamber through pipe 22 and also so that the ash will be washed into chamber 24. The outer casing forms one end of chambers 23 and 24, and the other end is closed by a removable door 27 which is secured in place by means of bolts 28, provided with wing nuts 29.

The casing is preferably reinforced at the door by a flange 30 and a gasket 31 may be used to secure an air tight and water tight joint at the door. A pressure gage 32 is provided in that part of the door which covers the end of the carbid chamber so that the gas pressure may be known. A pipe 33 leads from the top of the carbid chamber to the top of the water chamber and terminates within the closure plug 8, which is hollowed out for that purpose, so that water will not easily enter the carbid chamber therethrough when in use on an automobile and the water may be subjected to gas pressure. Preferably secured to the upper part of the main casing is the service regulating valve chamber 34. Within this last chamber is the resilient dia-

phragm 36, to which is secured a stem 37 which passes through a port 38 in casing 35 and exterior said casing said stem carries a valve 39 which, when the gas pressure rises too high closes said port and prevents the passage of gas therethrough. On the opposite side of the diaphragm to stem 37 is a spring 40 which passes through a port 41 in the outer casing and bears against an adjusting disk 42 secured upon the inner end of screw 43, which screw passes through a casing 44 which surrounds said spring and port and is secured to the main casing.

Leading from the service regulating valve chamber is a pipe 45, which opens into a distributing chamber 46. The casing 47 of this chamber is secured to the main casing. Leading from this distributing chamber are a plurality of service pipes 48, each of which is provided with a cock 49 thereon so that any service pipe may be cut out that is desired. These service pipes lead to lamps (not shown).

In the top of the carbid chamber is an outwardly opening check valve 50 which permits the gas to flow from the chamber, but prevents its return thereinto. The water chamber and the carbid and sludge chambers are considerably smaller than the storage chamber and the unoccupied space in said storage chamber I preferably fill with acetone acid and ground asbestos 51 as the use of these materials enables me to store a much larger quantity of gas than I could do without their use. I also provide a safety check valve 52 to guard against too high pressure in the storage chamber.

In the operation of my device it will be understood that I fill the carbid chamber with carbid 53 by removing door 27 and then replacing the same, that when the door is removed I clear out the sludge, and that I fill the water chamber by removing plug 8 and after the chamber is filled replacing the same. I regulate the tension of spring 20 to whatever desired pressure I may wish to have within the storage chamber which is 20 pounds or higher or lower as desired. I also regulate the tension of spring 40 so as to have the desired gas pressure at the lights, which is preferably about four ounces pressure. When there is no gas within the storage chamber valve 14 will be carried by the pressure of spring 20 so as to bring opening 15 thereof out of register with pipes 9 and 22 and to the left thereof, and no water will be fed into the carbid chamber while it is being re-filled. Now, to start the generation of gas after the parts are all charged, the operator will catch hold of the projecting end of valve 14 and pull on the same until he brings it to register opening 15 with pipes 9 and 22. After he has permitted sufficient water to flow into the chamber to generate gas sufficient to hold the valve in that position, he releases his hold on the stem and the further generation of gas increases the pressure upon diaphragm 13 until it carries valve 14 to bring opening 15 out of register and to the right of pipes 9 and 22, thereby cutting off the further flow of water. When a sufficient quantity of gas is used to reduce the pressure so as to permit the spring 20 to force the valve to bring opening 15 again into register with pipes 9 and 22, water is again permitted to flow into the carbid chamber to generate more gas. It will be understood that as long as there is a sufficient quantity of carbid in the carbid chamber the supply of water flowing through the valve will always be sufficient to keep the pressure high enough to cause the water to be cut off by the movement of the valve to the right, and that it is only moved to the left after the supply of carbid in the chamber has become exhausted, whereby the operator can always tell by the position of the outer end of valve 14 whether the carbid chamber needs refilling or not.

Having described my invention what I claim is:—

1. An acetylene gas generator, comprising a storage chamber; a water chamber within the top of said storage chamber; a carbid chamber within said storage chamber and below said water chamber having a communication with said storage chamber; a pipe leading from the lower portion of said water chamber and opening into said carbid chamber; a spring operated valve on said pipe; a resilient diaphragm secured to said valve, said diaphragm being in communication with the storage chamber and being opposed by the spring pressure on the valve; and a sludge chamber below and in communication with said carbid chamber.

2. In an acetylene gas machine, a water chamber; a storage chamber; a carbid chamber below said water chamber provided with a communication with said storage chamber; a pipe leading from said carbid chamber to the lower part of said water chamber; a reciprocating valve on said pipe; means connected to said valve operable by gas pressure to move the said valve in one direction to cut off the flow of water through said pipe and a spring operating in the other direction to cause the valve to cut off the flow of water through the pipe when the pressure on the other means to move said valve falls below a predetermined degree; and means to regulate the tension of said spring.

3. In an acetylene gas machine, a storage chamber; a water chamber in the upper part of said storage chamber; a carbid chamber within said storage chamber and below said water chamber; a sludge chamber below said carbid chamber and in communication therewith; a pipe leading from the bottom of said water chamber and opening into said carbid chamber; a reciprocating valve on said pipe operable by gas pressure in one di-

rection and by spring pressure in the other direction whenever the pressure falls below a predetermined degree; a check valve controlling the communication between said carbid and said storage chambers; a distributing chamber connected to said storage chamber; and a regulating valve on said last connection operable by gas pressure in one direction and by spring pressure in the other direction.

4. An acetylene gas generator, comprising a storage chamber; a water chamber within the top of said storage chamber; a carbid chamber within said storage chamber and below said water chamber; a sludge chamber below said carbid chamber and in communication therewith; a pipe leading from the bottom of said water chamber and opening into said carbid chamber; a reciprocating valve on said pipe operable by gas pressure in one direction when the pressure rises upon a predetermined degree and by spring pressure in the other direction whenever the pressure falls below said predetermined degree; a check valve controlling the communication between said carbid and storage chambers; a connection between the top of said carbid chamber and the top of said water chamber; a distributing chamber connected to said storage chamber; and a regulating valve on said last connection operable by gas pressure to close said connection and by spring pressure to open it.

5. In an acetylene gas machine, a storage chamber; a water chamber, a carbid chamber and a sludge chamber all located within said storage chamber, said water chamber being in communication with said carbid chamber and said carbid chamber being in communication with said storage chamber.

6. In an acetylene gas machine, a storage chamber; a water chamber, a carbid chamber and a sludge chamber all located within said storage chamber, said carbid chamber having communication with said storage chamber; a pipe leading from said water chamber to the bottom of said carbid chamber; gas pressure actuated means to cut off communication through said pipe when the pressure rises above a certain limit; and spring actuated means to cut off communication through said pipe when the pressure falls below a certain limit.

7. In an acetylene gas machine, a carbid chamber provided with a double inclined bottom, one side of the bottom being perforate and adapted to support calcium carbid, the other side being imperforate and having a water admission at its top edge, in combination with a sludge chamber located directly below said carbid chamber.

In witness that I claim the foregoing I have hereunto subscribed my name this 12th day of December, 1906.

TELESPHORE J. BEAUDETTE.

Witnesses:

G. E. HARPHAM,

EDMUND A. STRAUSE.