H. GRAHAM.

GAS GENERATOR.

APPLICATION FILED JAN. 26, 1910.

981,413.

Patented Jan. 10, 1911.

2 SHEETS—SHEET 1.

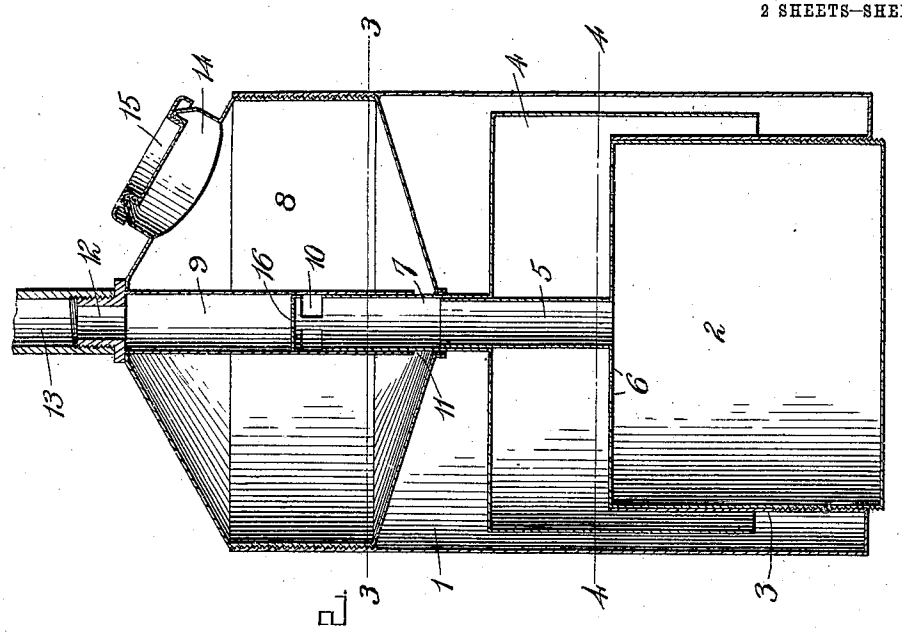

FIG. 2.

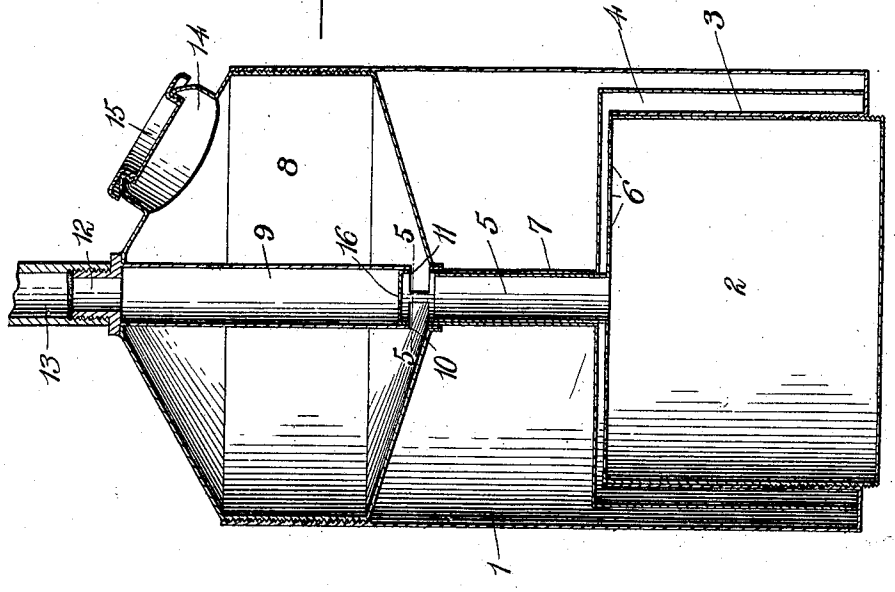

FIG. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

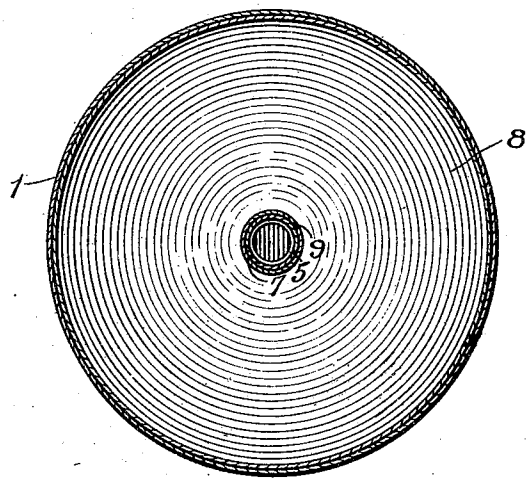


Fig. 4.

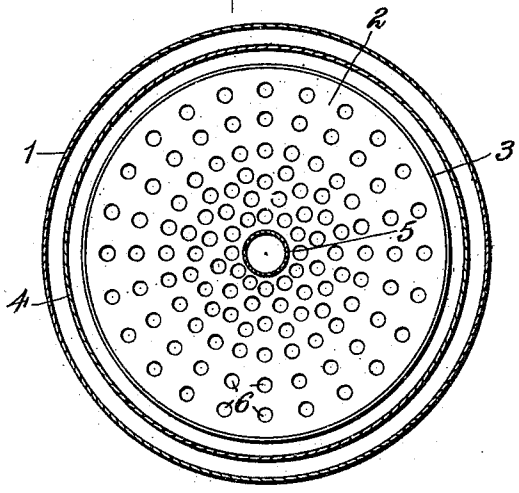
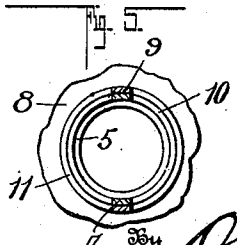


Fig. 5.



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UNITED STATES PATENT OFFICE.

HARVEY GRAHAM, OF KERRMOOR, PENNSYLVANIA.

GAS-GENERATOR.

981,413. Specification of Letters Patent. Patented Jan. 10, 1911.

Application filed January 26, 1910. Serial No. 540,217.

To all whom it may concern:

Be it known that I, HARVEY GRAHAM, a citizen of the United States, residing at Kerrmoor, in the county of Clearfield and State of Pennsylvania, have invented a new and useful Improvement in Gas-Generators, of which the following is a specification.

This invention relates to a generator for acetylene gas, and while the device may be made in various sizes it is especially adapted for use in connection with lamps, the gas being generated as used, and the main object of the invention is a device of this kind which will generate gas only as fast as gas is used by the burner or burners being supplied.

The invention consists of the novel features of construction hereinafter fully described, pointed out in the claims and shown in the accompanying drawings, in which,

Figure 1 is a vertical sectional view through the device the parts being shown in position for the feeding of carbid to the water tank, and consequently in position to generate gas. Fig. 2 is a similar sectional view, the parts being in the position assumed when a sufficient quantity of gas has been generated, the carbid feed is cut off. Fig. 3 is a section on line 3—3 of Fig. 2. Fig. 4 is a section on line 4—4 of Fig. 2. Fig. 5 is a section on line 5—5 of Fig. 1.

In the drawings, 1 represents a metal receptacle of any desired size into the bottom of which is threaded a water tank 2, the said tank threading into an interior annular flange 3, carried by the receptacle 1, the water tank being of less diameter than the receptacle, thereby affording ample space for the sides of a downwardly open bell 4. The water tank is provided with an upwardly extending centrally arranged tube 5 and its top is also perforated as shown at 6 to permit passage of gas into the bell 4. The tube 5 fits in a tube 7 carried by the bell 4 and this tube works through the hopper-shaped bottom of a carbid holder 8 which holder is threaded into the top of the receptacle 1, thus forming both a top for the receptacle and a holder for the carbid. A third tube 9 is arranged centrally in the carbid holder and receives the tube 7 of the bell 4. The tube 7 is closed at the top but is slotted as shown at 10 adjacent the top and the tube 9 is slotted as shown at 11 at its lower end. These parts are so proportioned that when the bell 4 is in its lowest position the slots 10 will register with the slots 11 and carbid will pass through said slots, sliding upon the sloping bottom of the carbid holder, and will pass through into the open upper end of the tube 5 thus into the water tank 2. A nipple 12 is carried by the top of the carbid holder, in alinement with the tube 9 and upon said nipple is threaded a supply pipe 13 which conveys the gas to the lamp or other place of use. A filling vent 14 closed by a cap 15 is also provided in the carbid holder so that the supply of carbid can be replenished.

It will be noted that as gas is generated it will pass through the perforation 6 and if not used as rapidly as generated the bell 4 will lift. The lifting of the bell 4 will raise the tube 7 in the tube 9 and by lifting the slots 10 out of alinement with the slots 11 feed will be cut off. No additional carbid will be fed to the water tank until the gas generated has been consumed and the bell 4 has fallen into position to feed an additional quantity of carbid and the bell will again be lifted to a certain extent. It will be noted that with a lamp burning steadily a balance will be automatically obtained, the bell being lifted to a sufficient extent so as to limit the feed to the amount being consumed and during ordinary use there would be no wide variation in the rise and fall of the bell. It will also be noted that both the carbid holder and the water tank can be unscrewed from the receptacle and removed thus leaving the receptacle open at both top and bottom, so that the parts can be readily cleaned.

The top of the tube 7 is centrally perforated as shown at 16 in order that the gas generated may pass through the tube 9 into the service pipe.

What I claim is:—

1. A device of the kind described comprising a receptacle, a water tank secured in the lower portion of the receptacle, a carbid holder detachably secured to the receptacle, a tube carried by the carbid holder, a bell movable between the water tank and the carbid holder, a tube carried by said bell through which carbid is fed to the water tank when the bell is in its lowest position, said last mentioned tube being adapted to slide within the tube carried by the carbid holder and to control the feed of carbid.

2. An acetylene gas generator consisting of a cylindrical receptacle, a water tank re-

movably fixed in the bottom of said receptacle and having an upwardly extending tube, a carbid holder detachably held in and closing the upper end of said receptacle, a tube arranged centrally in the carbid holder and slotted adjacent the bottom of the holder, a bell movable in the space between the water tank and the carbid holder, and a tube carried by the bell, said tube being slotted adjacent its upper end and slidable over the tube of the water tank and within the tube of the carbid holder.

3. An acetylene gas generator of the kind described consisting of a receptacle having an interior annular flange at the bottom, said flange being spaced from the sides of the receptacle, a water tank threaded into said flange, said water tank having a perforated top, a tube carried by said top and open at both ends, a bell the sides of which work between the sides of the receptacle and the interior flange, said bell inclosing the water tank, a tube carried by said bell, said tube receiving the tube of the water tank, the bell tube being slotted adjacent its upper end, a carbid holder threaded into the upper portion of the receptacle, and a tube centrally carried by said carbid holder, said tube being slotted at a point within and near the bottom of the carbid holder, the said tube receiving the bell tube, and a service pipe in communication with the upper end of the carbid holder top.

4. A device of the kind described consisting of a cylindrical receptacle, a portion of the bottom of the same being cut out and an interior annular flange surrounding said cut out portion, a water tank fitting in said cut out portion and threading in the said flange, the top of said water tank being perforated, a centrally arranged downwardly and upwardly open tube carried by the water tank, a bell inclosing said tank, a tube carried by said bell, the last mentioned tube sliding upon the tube of the water tank, the bell tube being slotted adjacent its top, and the top of said tube being perforated, a carbid holder threading into and closing the upper end of the receptacle, the said holder having a hopper-shaped bottom, a tube open at each end extending centrally entirely through said carbid holder the tube being slotted adjacent its lower end to give communication between the interior of the tube and the carbid holder, the bell tube working in the carbid holder tube, and the slots of the two tubes registering when the bell is in its lowest position, and a service pipe in communication with the upper end of the tube carried by the carbid holder.

5. In a device of the kind described water and carbid holding devices arranged in vertical alinement and spaced apart, a bell movable between the said devices, a tube extending from the water to the carbid holding device, the bell sliding upon said tube, a tube arranged within the carbid holding device, said last mentioned tube having communication with the carbid holding device, and a tube carried by the bell and sliding upon the first mentioned tube and having communication when the bell is in a predetermined position with the carbid holding device, said communication being effected through the second mentioned tube, substantially as set forth.

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Witnesses:
L. F. De Haas,
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