

C. E. WAGNER.  
ACETYLENE GENERATOR.  
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1,069,592.

Patented Aug. 5, 1913.

Fig. 1.

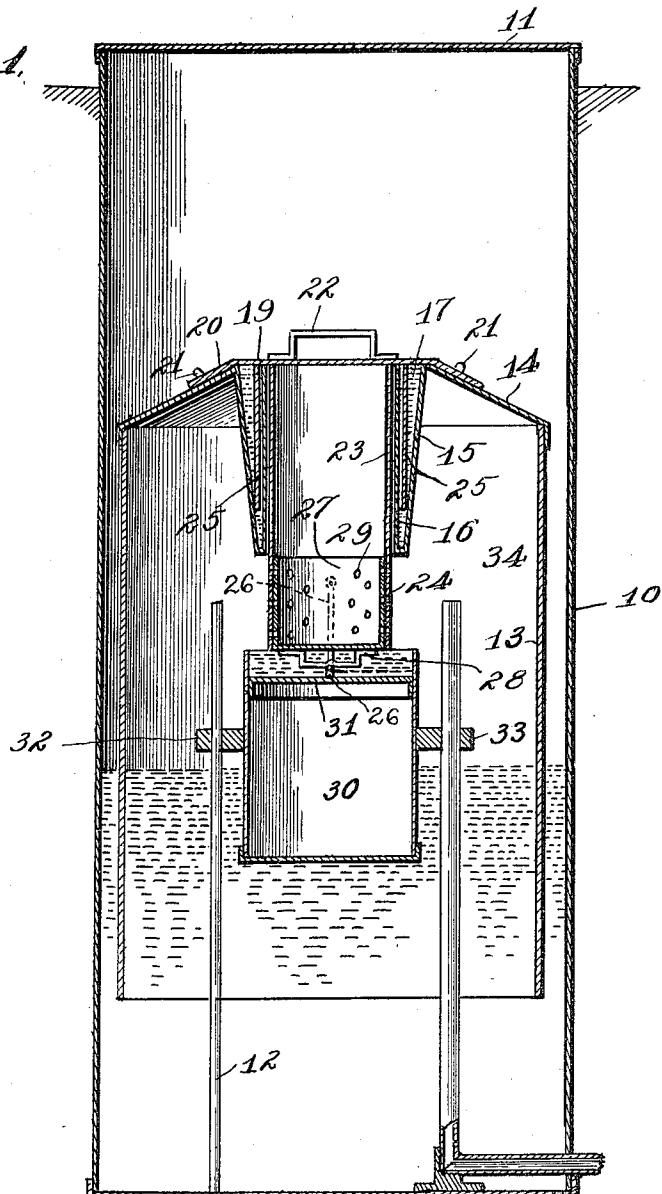
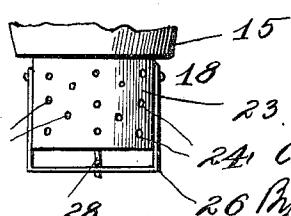


Fig. 2.

WITNESSES

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# UNITED STATES PATENT OFFICE.

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## ACETYLENE-GENERATOR.

1,069,592.

Specification of Letters Patent.

Patented Aug. 5, 1913.

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To all whom it may concern:

Be it known that I, CHARLES E. WAGNER, a citizen of the United States, and residing at Cedar Rapids, in the county of Linn and 5 State of Iowa, have invented certain new and useful Improvements in Acetylene-Generators, of which the following is a specification.

My invention relates to certain new and 10 useful improvements in acetylene generators, and especially to that class where a seal is provided for the gas-bell when the carbid cartridge has been removed to recharge the same.

15 A further object of the invention is to provide a float for accomplishing this result which will constitute a seal for the gas-bell so that the gas remaining in the bell can be utilized after the removal of the car- 20 bid cartridge.

A still further object of the invention is to provide a carbid cartridge which will slowly feed the carbid to the water, and 25 operating in connection with the float to be partially controlled in its downward movement.

With these and other objects in view, the invention will be more specially described and then claimed, reference being had there- 30 in to the accompanying drawing, wherein:—

Figure 1 is a central vertical sectional view of the generator, and, Fig. 2 is a fragmentary view of the carbid cartridge showing means for securing the carbid recep- 35 tacle therein.

Referring more particularly to the drawing, the reference numeral 10 indicates a tank which is preferably sunk into the ground to a depth adjacent the upper end 40 thereof. This tank is provided with a removable cover 11 which permits ready access to the interior thereof, the object of which will be presently pointed out. The tank 10 has the usual bottom upon which 45 is mounted a vertical guide rod 12. Disposed within said tank is a gas-bell 13, open at its lower end and partially closed at the top as at 14. The bell is of a diameter less than the tank and substantially about one- 50 half the length thereof so that the same may have a free vertical movement therein. The cover 14 has an opening centrally there- 55 of formed by the frusto-conical member 15 joined at its base to a vertical member 16, providing a space 17 therebetween for the reception of water or other sealing fluid.

Removably mounted in the opening provided in the gas-bell cover 14, is the carbid cartridge 18. The cartridge in its entirety comprises a cover 19 to close the central opening in the gas-bell and has an annular flange 20 extending laterally therefrom to rest upon the cover 14 of the gas-bell upon which the same is supported. Any suitable fastening means as at 21, are provided to 60 secure the carbid cartridge 18 in the gas-bell. A handle 22 is provided to facilitate the removal of the cartridge.

Suspended from the cover 19 is a centrally arranged tubular member 23 sealed to 70 the cover at its upper end and open at its lower end, perforations 24 being provided adjacent the lower end, the object of which will presently appear. A second tubular member 25 is also suspended from the cover 75 19 and surrounds the member 23, but is of less length than said member 23. A U-shaped swinging bail 26 is carried by the lower end of the member 23 and is disposed below the bottom end thereof. A carbid receptacle 27 closed at its lower end and open at the top is mounted in the lower end of the member 23 and has fastened upon the bottom thereof a yoke member 28 to be engaged by the bail 26 for securing the same in position. Perforations 29 are provided in the carbid receptacle 27, which register the 80 openings 24. When the carbid cartridge is mounted in the gas-bell, the tubular member 23 extends downwardly through the central 85 opening in the gas-bell, while the tubular flange 25 is received within the water seal space 17, to effectually shut off all communication between the gas-bell 13 and tank 10. There is provided a guided float 30 disposed 90 directly beneath the carbid cartridge and has the top 31 set down into the float body to constitute a receptacle to contain water. Guides 32 and 33 are provided to direct the float in its up and down movements. The 95 guide 32 engages the guide rod 12, while the guide 33 is slidingly mounted on the gas outlet pipe 34, which also acts as a guide and which extends from the lower end of the tank 10, up into the gas-bell 13. The 100 diameter of the float 30 is greater than the lower end of the frusto-conical member 15, and is adapted to receive and seat the same.

The operation of the device is as follows: The usual amount of water is placed within 110 the tank 10 and the gas-bell 13 descending therein carries downwardly therewith the

carbid cartridge, the bail 26 upon the lower end thereof engaging the float 30, to depress the same, and cause the water in the tank 10 to fill the upper end of the float. The water carried by the upper end of the float does not come in contact with the carbide, but the weight of the gas-bell carries the cartridge downwardly into the water contained within the tank 10, thereby generating gas. The pressure of the gas within the bell 13, will force the same upwardly carrying therewith the carbide cartridge 18, and the gas escapes through the outlet pipe 34. Such operation will permit the float 30 to rise and find its normal floating position and carries upwardly therewith the water at the upper end thereof. Should the carbide within the cartridge become exhausted, the gas will have decreased in volume, thereby allowing the gas-bell to descend in proximity to the float. The bail 26 engaging the float 30 will force the same downward a material distance, and it will be readily observed that upon a removal of the carbide cartridge 18, the float 30 will immediately rise, whereupon the upper water receptacle carried thereby will receive the lower end of the frusto-conical member 15, and cause a water seal to prevent the escape of gas from the bell while the cartridge is being re-charged and still permit use of the tank without an appreciable loss.

Having fully described my invention, what I claim as new is:—

- 35 1. A gas generator comprising a tank, a gas-bell disposed therein, a carbide cartridge carried by said bell, a float mounted in said tank, a water receptacle upon the upper side of said float to engage said bell and adapted to prevent the escape of gas therefrom upon removal of the cartridge.
- 40 2. A gas generator comprising a tank, a gas-bell disposed in said tank, a circular depending member carried by said bell, a carbide cartridge mounted in said depending member, a float disposed below said depending member and provided upon the upper side thereof with a water receptacle whereby the lower end of the depending member is received therein upon a removal of the cartridge.

3. A gas generator comprising a tank, a gas-bell disposed therein, a depending cylindrical member carried by said bell, a vertical guide rod and gas-outlet pipe extending upwardly within said bell, and a float guided by said rod and outlet pipe and adapted to come in contact with said depending member.

4. A gas generator comprising a tank, a gas-bell disposed therein, a depending cylindrical member carried by said bell, a float arranged to operate directly beneath said depending member, the cover of said float being spaced below the upper marginal edges of said float to provide a water receptacle, the lower end of said depending member to be received therein.

5. A gas generator comprising a tank, a gas-bell disposed therein, said bell provided with a central opening in the top thereof and surrounded by a depending cylindrical member, a cover for said opening carrying a depending tubular member to be received within said cylindrical member, a carbide cartridge removably mounted in the lower end thereof, a float disposed beneath said carbide cartridge, and said float provided with a recess upon the upper side thereof, the lower end of the cylindrical member to be received within said recess upon removal of said cover.

6. A gas generator comprising a tank, a gas-bell disposed therein, a float provided with a depression in the upper side thereof, and means carried by said bell and removable therefrom to permit said float to engage the bell.

7. A gas generator comprising a tank, a gas-bell disposed therein, a float provided with a recess for containing fluid disposed within said tank, means within said tank to provide for a central and vertical movement of said float, and means carried by said bell and removable therefrom to permit said float to engage the bell.

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

CHARLES E. WAGNER.

Witnesses:

EDWARD K. DIEHL,  
ETHELYN M. GRAU.