

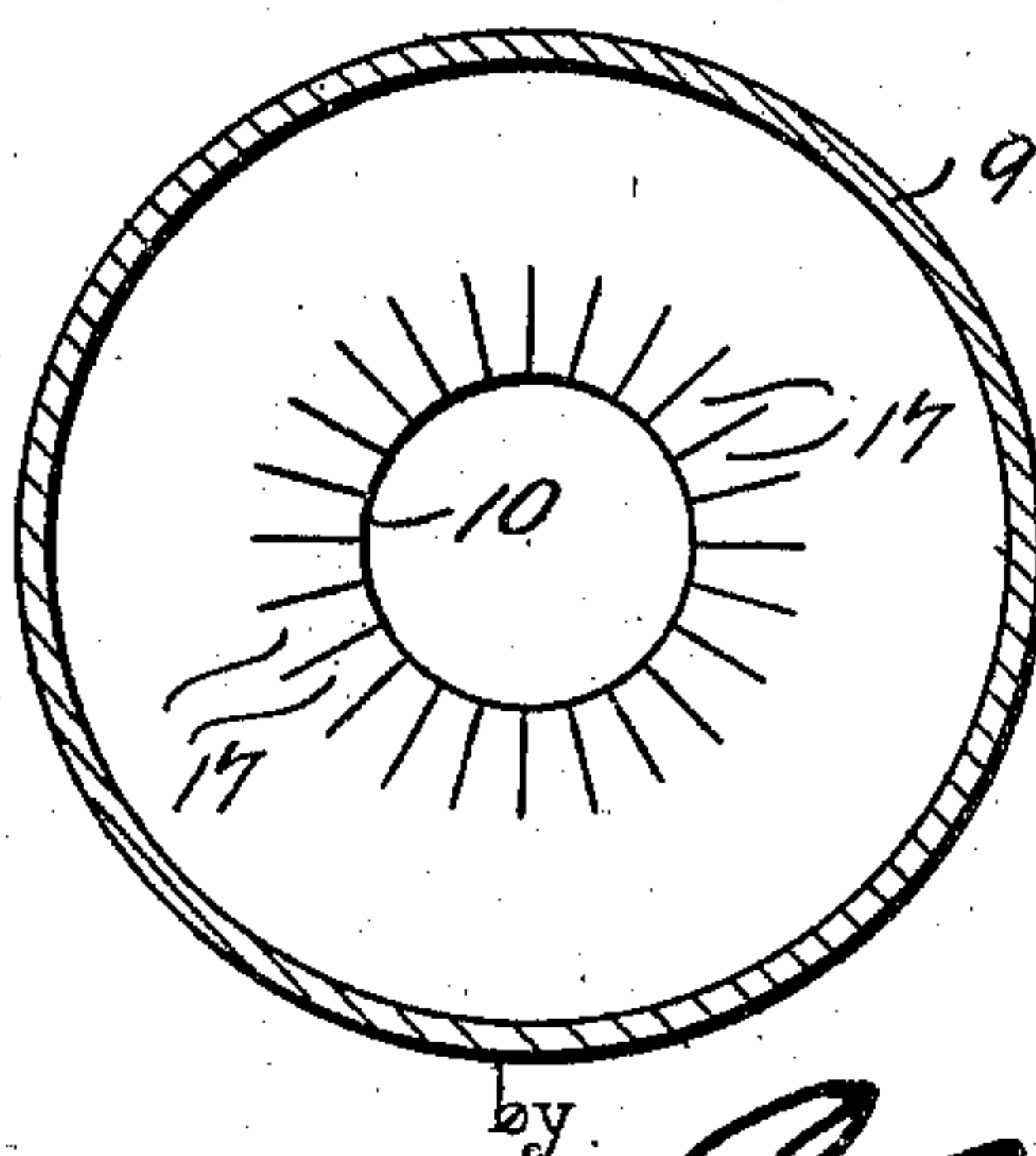
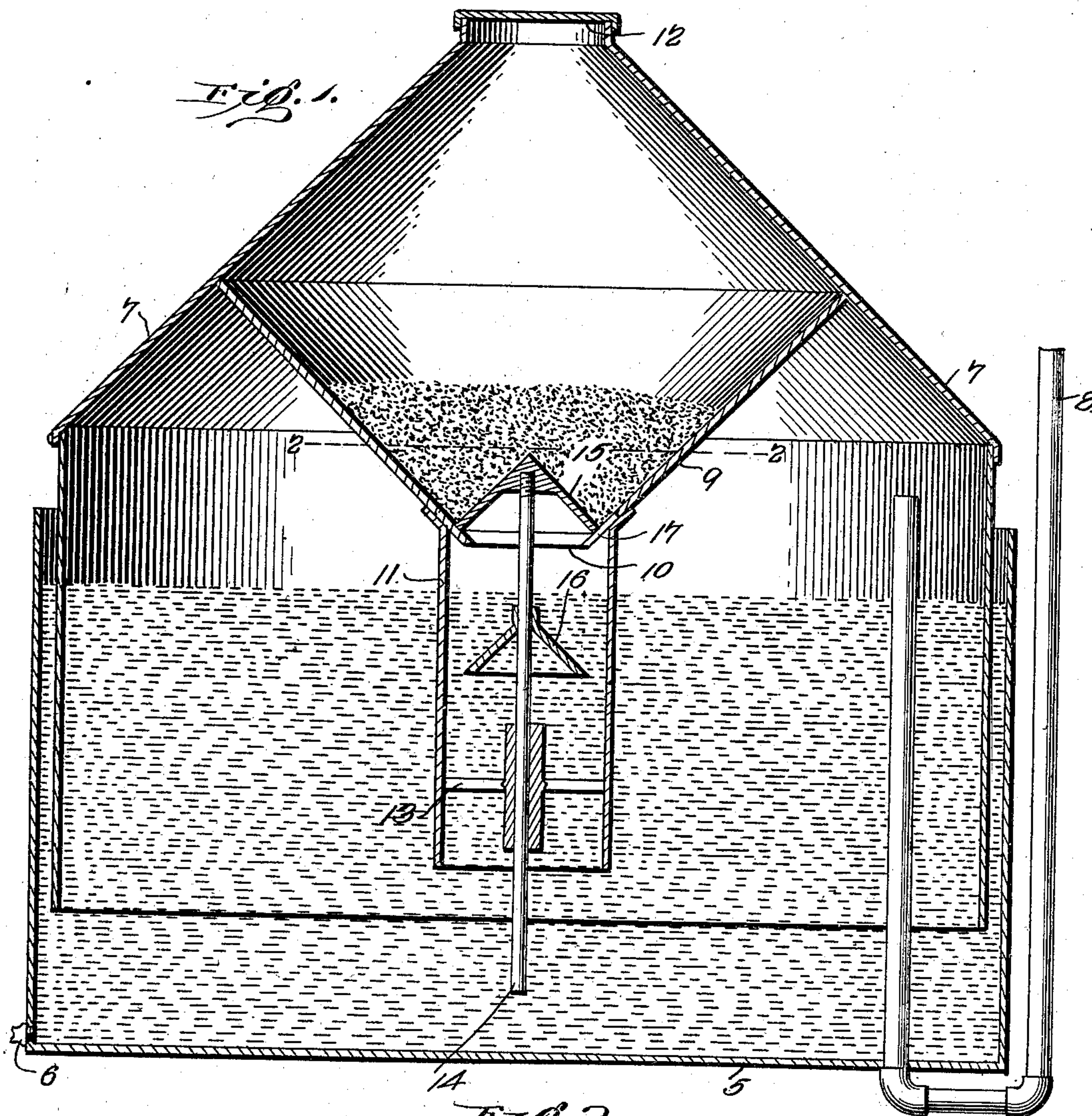
**No. 696,859.**

**Patented Apr. 1, 1902.**

**J. B. CLOPTON.**  
**ACETYLENE GAS GENERATOR.**

(Application filed Oct. 31, 1901.)

(No Model.)



Witnesses

Witnesses  
*E. E. Stewart*  
*John E. Parmer*

*John B. Crompton,*  
Inventor.

*C. Snow & Co.*  
Attorneys



# UNITED STATES PATENT OFFICE.

JOHN B. CLOPTON, OF BASTROP, TEXAS.

## ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 696,859, dated April 1, 1902.

Application filed October 31, 1901. Serial No. 80,691. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. CLOPTON, a citizen of the United States, residing at Bastrop, in the county of Bastrop and State of Texas, have invented a new and useful Gas-Generator, of which the following is a specification.

My invention relates to certain improvements in apparatus for generating acetylene gas, and has for its object to provide a device for automatically feeding calcium carbide into a gas-generator at intervals as the supply of gas decreases.

A further object is to provide for the automatic closing of the valved discharge-hopper when the supply of carbide is wholly exhausted, so that the hopper may be filled without permitting the escape of gas.

A still further object is to so construct the apparatus as to prevent the escape of gas from the bell when the hopper-cap is opened, and a still further object is to so construct the valve and valve-seat as to insure the proper closing of the valve in the event of the catching of a portion of the carbide at the edge of the valve.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the claims.

In the drawings, Figure 1 is a transverse sectional elevation of the acetylene-gas generator constructed and arranged in accordance with my invention. Fig. 2 is a sectional plan view of the same on the line 2 2 of Fig. 1.

The apparatus comprises a tank or containing vessel 5, having at the bottom a discharge-pipe 6 for withdrawing the exhausted carbide, and in said tank is placed a bell 7 of any desired contour and provided, if desired, with suitable counterbalancing-weights and guides. From a point above the water-line leads a gas-discharge pipe 8 in the usual manner.

In the upper portion of the bell is a hopper 9, terminating in a lower discharge-mouth 10, the area of which is proportioned to the size and character of the generator. From the hopper depends a tube 11 of any suitable length and diameter, said tube extending downwardly for a distance sufficient to insure its lower edge being below the water-line

when the bell is raised to its fullest extent and serving to prevent the escape of gas within the main body of the bell should the cap or cover 12 of the hopper be removed.

The tube 11 carries a guide 13 for a valve-stem 14, on which are secured two valves 15 and 16, conical in form and located one within the hopper and the other below the mouth thereof.

The hopper is made in the form of a funnel and the hollow conical valve 15 is so arranged as to present its edge to the inner surface of the hopper, reducing the amount of surface in contact to a minimum in order to avoid as much as possible the lodgment of grains of carbide between the edge of the valve and its seat and prevent the valve from closing.

In order to insure the perfect closing of the valve, the wall of the hopper-opening is provided with a large number of radial slits 17, which divide the valve-seat into a series of spring-tongues, which may yield independently and allow the valve to descend to its seat should an unusually large grain of carbide be caught between the valve and valve-seat, one or more of such tongues yielding and the valve being seated in contact with the hopper for the remaining portion of its circumference, and thus prevent the continuous flow of the smaller particles of carbide through a partially-open valve.

The operation of the device is as follows: The tank having been filled with water to any desired extent and a suitable quantity of granulated carbide having been placed in the hopper, gas will be formed by slightly raising the bell and permitting the carbide to fall into the water, it being understood that the valve 16 is in contact with the mouth of the hopper and the valve-stem 14 in contact with the bottom of the tank at the beginning of the operation. The carbide is guided through the tube 11 to a point near the bottom of the tank, and as all of the gas formed cannot be contained within the small gas-space of the tube the greater quantity is compelled to pass through the water to the main body of the bell, becoming thoroughly washed and insuring a much better quality of gas than where the carbide is simply poured on top of the water. At the same time the tube is so arranged that its lower edge will at all times be below



the surface of the water, so that the cap or cover 12 may be removed at any time without allowing the gas in the main body of the bell to escape. As the gas rises in the bell 5 the valve-stem will move out of contact with the bottom of the tank, permitting the valve 15 to close and prevent the escape of further carbid, and the valve will remain closed until the supply of gas in the bell is nearly consumed. 10 When the valve is lowered to an extent sufficient to permit the valve-stem to strike the bottom of the tank, the valve 15 is again opened and permits the escape of a further quantity of carbid, this intermittent feed 15 continuing until the supply of carbid is wholly exhausted, the mouth of the hopper then coming into contact with the conical valve 16, this being the initial position when the generator is not in use. The function of the 20 valve 16 is important in that it enables the operator to replenish the supply of carbid without allowing any portion of the carbid to enter the water until after the cap 12 has been replaced and the bell has been slightly 25 raised to partly open the valve.

The construction of the bell and the contour of the hopper may be altered in any desired manner, and the form, proportions, size, and details of construction may be changed 30 to suit various requirements without departing from the spirit or sacrificing any of the advantages of my invention.

Having thus described my invention, what I claim is—

35 1. The combination in a gas-generator, of a water-tank, a bell, a hopper carried by and

movable with the bell and having a lower opening forming a discharge-mouth, the walls of said opening being provided with a series of radial slits forming yielding tongues, and 40 an automatically-operated valve adapted to be seated on the slitted portion of the hopper-mouth to close said mouth, the tongues being independently movable to permit of the closing of the valve in the event of the retention of a portion of the carbid between the 45 edge of the valve and one or more of said tongues.

2. The combination in a gas-generator, of a water-tank, a gas-bell, a hopper carried by 50 and movable with the bell and having a removable cap or cover, there being in the lower portion of said hopper a discharge-opening, a valve-seat extending around the opening and formed of a series of independently-movable 55 spring-tongues, a tube or casing depending from the mouth of the hopper to a point below the water-line of the tank, a valve-stem adapted for contact with the bottom of the tank, a conical valve carried by the valve- 60 stem at a point within the mouth of the hopper, and a second conical valve also carried by said valve-stem at a point below the mouth of the hopper.

In testimony that I claim the foregoing as 65 my own I have hereto affixed my signature in the presence of two witnesses.

JOHN B. CLOPTON.

Witnesses:

C. C. HIGHSMITH,  
O. H. GEMEINERT.