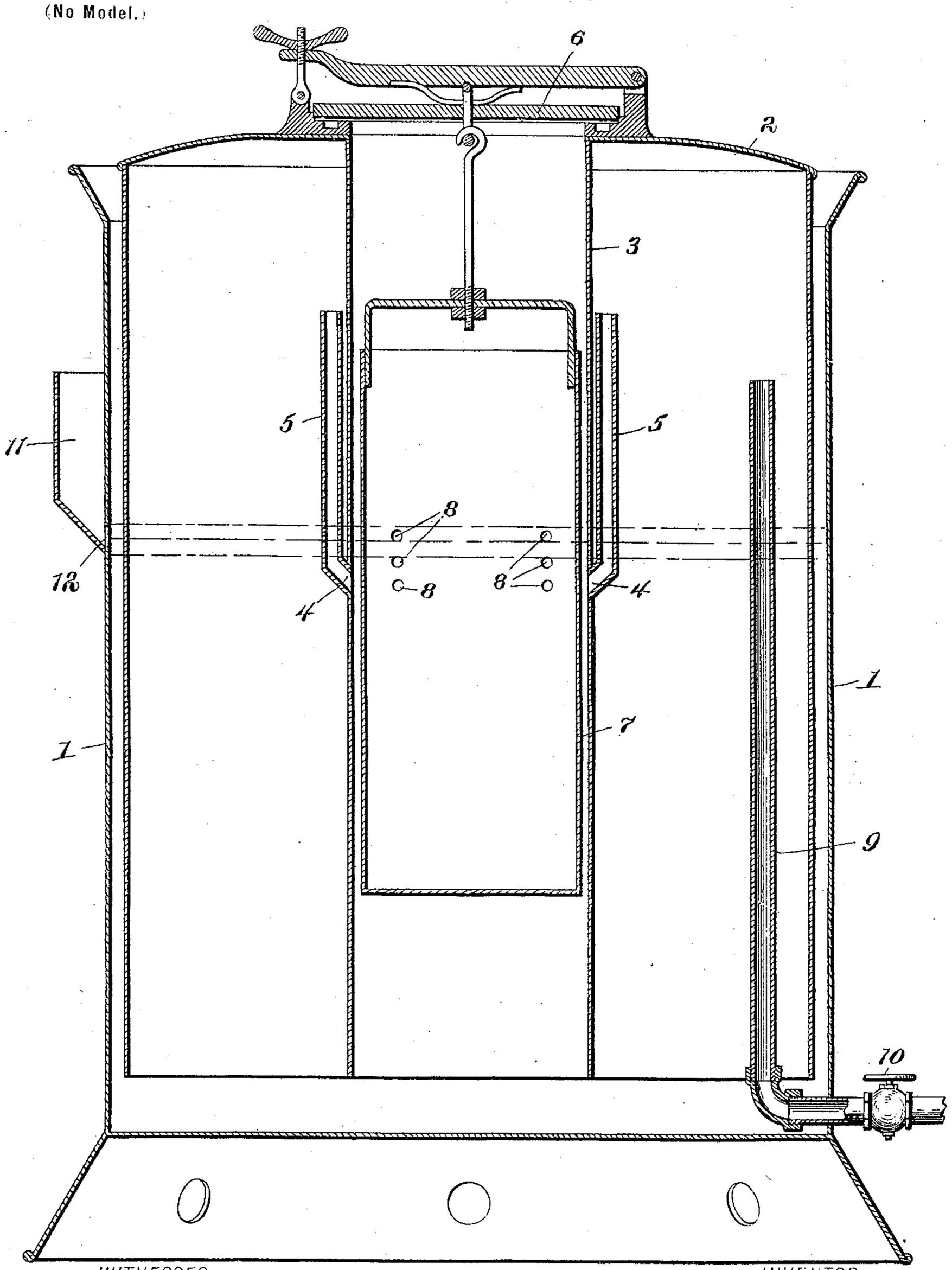
No. 610,306. Patented Sept. 6, 1898.

W. A. McCUNE.

ACETYLENE GAS GENERATOR.

(Application filed Sept. 14, 1897.)

(No Model.)



WITNESSES:
Albert Teichens
C. L. Moon

INVENTOR
William A. McCune,
BY
Walter W. Haskell.
ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM A. McCUNE, OF STERLING, ILLINOIS.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 610,306, dated September 6, 1898.

Application filed September 14, 1897. Serial No. 651,672. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. McCUNE, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Acetylene-Gas Generators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the figures of reference marked thereon, which forms a part of this specification.

My invention relates to acetylene-gas generators, and pertains more especially to that class wherein the process of generation is carried on automatically, the main objects of my device being to furnish novel and simple means for replenishing the carbid without permitting an escape of the gas from the gas-holder and a simple and new method of admitting the water to the carbid while in operation and cutting off the supply thereof.

In the drawing the figure is a vertical cross-section of my invention.

1 represents the usual water-tank, and 2 the gas-holder telescoping vertically therein. In the center of the gas-holder 2 and integral therewith is the cylinder 3, communicating with the gas-holder 2 by means of one or more holes 4 in said cylinder and pipes 5, secured therein, said holes 4 being a short distance below the water-line when the gas-holder is at its lowest point.

6 is a lid or cover tightly secured upon the cylinder 3 by any known method. Suspended from the lid 6 within the cylinder 3 is the carbid holder or pail 7, having a tight bottom and sides except where perforated by one or more series of minute holes 8 immediately below the water-line when the gas-holder 2 is at the lowest point.

By means of the pipe 9 the gas is conducted to the usual gas-reservoir or gasometer (not shown) and prevented from returning when desired by the shut-off cock 10. Through the funnel 11 and aperture 12 in the wall of the water-tank 1 the water can be kept at the desired height in such tank.

In operation the pail 7 is partly filled with calcium carbid, inserted within the cylinder 3, and the cover 6 secured in place. The water immediately enters the holes 8 and, coming in contact with the carbid, generation of acetylene gas results. As the gas fills the cylinder 3 it is not sufficient in quantity to raise the gas-holder 2; but the pressure of the gas forces the water surrounding the carbid-holder 7 downward until the gas escapes through the opening 4 and pipe 5 into the gas-holder 2. As the gas-holder becomes charged with gas it rises, carrying with it the cylinder 3 and pail 7, until the perforations 8 are above the water-line and the supply of water to the carbid shut off. As the supply of gas becomes depleted and the water in the carbid-pail is exhausted the gas-holder descends until fresh water is supplied, and the process continues. The perforations 8 are quite small, so as to have the effect of a spray, and it is not necessary to use more than the lower hole 8 of the series, the additional holes merely increasing the rapidity of generation, which can also be regulated by the size of one or more of the lower holes used alone.

In cleaning out the pail 7 and renewing the carbid (which can only be done when the gas-holder 2 is at its lowest point) the gas is confined in the gasometer by means of the stop-cock 10, it being impossible for what gas there may be in the gas-holder 2 to escape, on account of the opening 4 being below the water-line. The greater volume of gas is in the gasometer, the gas-holder of which, having no attachments, is lighter and rises more easily than the gas-holder 2.

It is evident that as soon as the opening 4 is elevated above the water-line there is direct communication between the cylinder 3 and gas-holder 2.

If desired, the opening 4 in the cylinder 3 can be used without the tube or pipe 5; but in such use, while the hole 4 is below the water-line, the gas in escaping through the water on the outside of the cylinder would make a continual bubbling noise, which is averted by the use of the pipe.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a gas-generator, the combination with a vertically-operating gas-holder provided with a pendent inner generating-cylinder

open at both ends, and having a series of apertures through its walls normally below the water-level, of pipes extending upwardly from said apertures to a point above the water-level, a cover designed to close the upper end of the cylinder, and an apertured carbid-holder suspended within said cylinder, substantially as specified.

2. The combination with a water-tank provided with a supply-funnel upon its exterior and below its upper edge, of a gas-holder within the tank provided with an inner pendent generating-cylinder opening through the top of the gas-holder and provided with apertures normally in a lower plane than the bottom of the supply-funnel, pipes communicating at their lower ends with said apertures and extending upwardly close to the exterior of the cylinder, a cover above the gas-holder and closing the upper end of the generating-cylinder, a carbid-holder suspended within the cylinder from the cover and provided with a closed bottom and apertures adjacent to the apertures in the cylinder and a cock-controlled gas-pipe piercing the tank at its bottom and extending upwardly into the gas-holder to a point above the water-level, substantially as specified.

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

WILLIAM A. McCUNE.

Witnesses:

CARL E. SHELDON,

FRED L. McCUNE.