

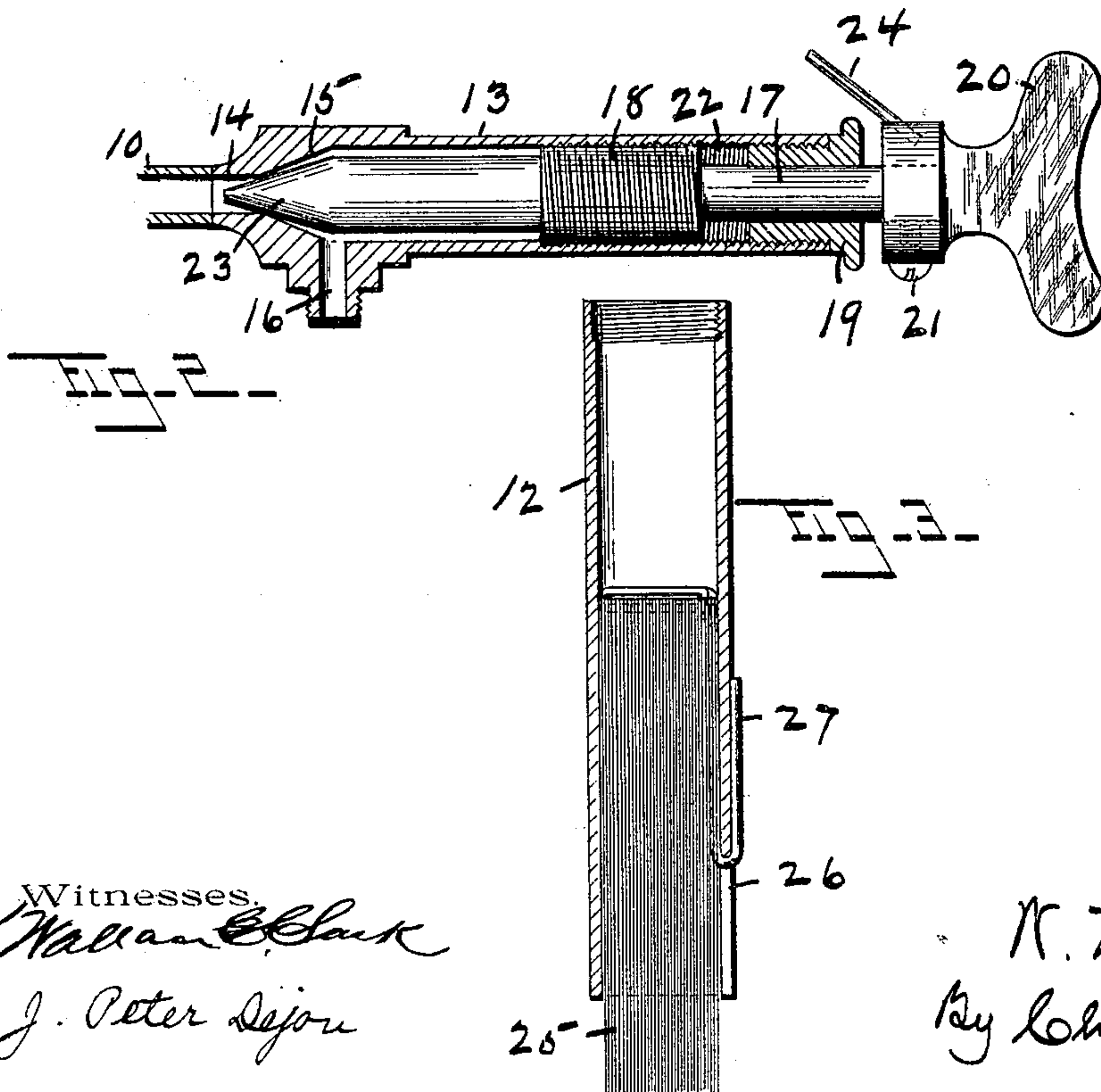
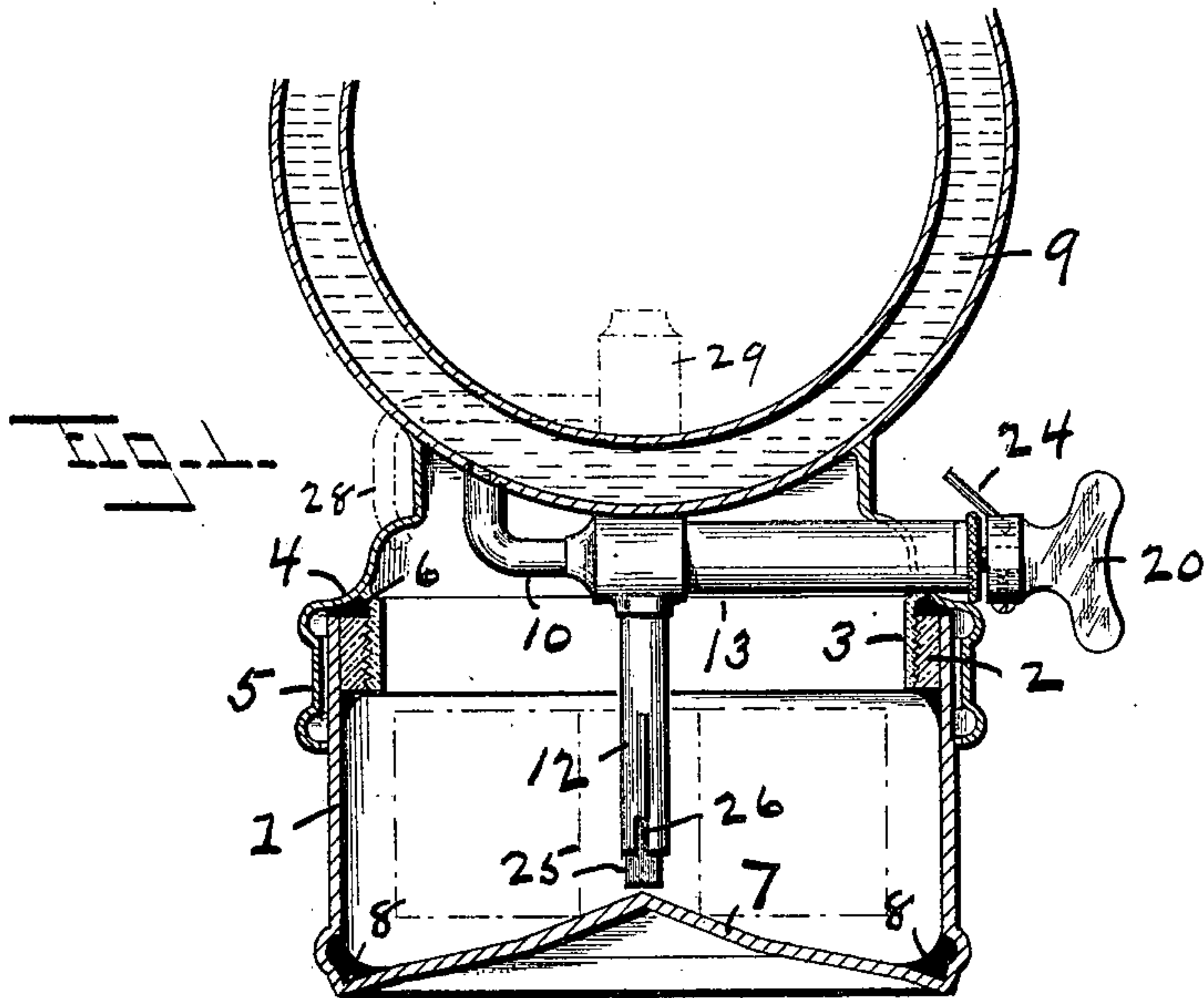
No. 625,949.

Patented May 30, 1899.

W. M. GILBERT.
ACETYLENE GAS GENERATOR.

(Application filed Mar. 14, 1898.)

(No Model.)



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM M. GILBERT, OF WATERBURY, CONNECTICUT, ASSIGNOR TO
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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 625,949, dated May 30, 1899.

Application filed March 14, 1898. Serial No. 673,754. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. GILBERT, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Acetylene-Lamps, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to lamps for generating and burning acetylene gas, and has for its object to provide a lamp of this character having improved means for governing the supply of water to the calcium carbide and for securing the even and regular conversion of the cake of carbide into gas until said cake is entirely converted into lime.

To these ends my invention consists in the lamp constructed and operating as hereinafter fully described, and particularly pointed out in the claims.

Referring to the drawings, in which like numerals designate like parts in the several views, Figure 1 is a vertical section of the generating-chamber of a lamp embodying my invention. Fig. 2 is a longitudinal section of the valve which governs the water-supply. Fig. 3 is a longitudinal section of the water-supply tube.

The generating-chamber of the lamp herein shown is composed of a cup-shaped body 1, provided at its open upper end with an internally-threaded ring 2, the thread of which engages an externally-threaded depending flange 3 of the top portion 4 of the lamp-body to detachably connect said body to said top portion, the latter being preferably provided with an outer depending flange 5, which overlies the upper edge of the body 1, as shown in Fig. 1, and is beaded or otherwise ornamented to add to the ornamental appearance of the lamp. A packing-ring, of rubber or other suitable material, interposed between the top of body 1 and the top portion 4, as shown at 6, effectually prevents the escape of gas from the chamber. The bottom 7 of the chamber 1 has its highest point at its center and slopes gradually from such point to its edge, its angle of inclination being preferably greater immediately surrounding its cen-

ter than near its edge, as shown in Fig. 1. At the point where said bottom joins the side wall of the chamber an annular filling 8, of cement, prevents the formation of a sharp angle. Suitably supported by the top portion 4 is a water-reservoir 9, which, as herein shown, is of annular form, but which may be of any desired form, said reservoir being provided with an outlet-pipe 10, which connects with the supply-pipe 12 of the chamber through a valve-body 13 to supply water to the chamber. Said valve-body is provided with the inlet-port 14, which communicates with the pipe 10 and terminates at its inner end in a conical seat 15, and with an outlet-port 16, which communicates with the pipe 12. A valve-stem 17, having a threaded portion 18, which engages an internally-threaded portion of the body 13, passes through a screw-cap 19 at the end of said body and carries at its outer end a thumb-nut 20, which is detachably secured thereto by a binding-screw 21. A suitable packing 22, interposed between the cap 19 and the threaded portion of said stem, prevents any escape of gas through the valve-body. At its inner end said valve-stem carries the conical valve 23, which enters the conical seat 15 to tightly close the inlet-port 14 when advanced by turning the valve-stem. The angle of inclination of the seat 15 is, however, made slightly greater than that of the end of valve 23, as clearly shown in Fig. 2, and as a consequence but a very slight endwise movement of the valve is required to fully open and to close said port 14, while the degree of closure can be regulated with the most minute exactness. Such construction enables me to fully open and close the valve with but a partial revolution of the valve-stem, and to render any calculation on the part of the operator unnecessary I provide the thumb-nut 20 with a projecting finger 24, which when the valve is shut is at the upper side of the hub of the nut and which when the valve is opened to the desired degree strikes against the edge of the top portion 4 and prevents any further movement of the stem in that direction. The thumb-nut being adjustably secured to the stem by the screw 21, provision is made for thus restricting the opening movement of the

stem to any desired opening of the inlet-port 14 or, in other words, to any desired amount of water-supply. The finger 24 also serves as an indicator to indicate at all times the position of the valve.

The supply-pipe 12 projects downwardly within the chamber 1 nearly to and in substantial vertical alinement with the center of the bottom 7, and within its lower end is inserted a conductor which is preferably composed of strands of horsehair, as shown at 25, and which loosely fills said lower end of said pipe and projects a short distance beyond said end. As a convenient manner of securing said conductor in place I provide the lower end of said pipe with a short longitudinal slit 26 and secure said horsehair strands to a wire 27, which is bent to bear against the outer side of the pipe and, passing through the slit 26, passes upwardly within the pipe a short distance to the point where it passes transversely across the same, at which latter point it supports the strands, as shown in Fig. 3. Such manner of attachment enables the conductor to be readily withdrawn from the pipe for cleaning and returning thereto; but I have found that a conductor thus formed from strands of horsehair requires but little, if any, cleaning, as the particles of carbid or lime do not adhere thereto nor accumulate thereon, as in the case of wicking such as is usually employed.

In the use of the lamp thus constructed the cake of carbid or some compound thereof having a central opening extending through it, as shown by broken lines in Fig. 1, is placed in the chamber 1, with the apex of bottom 7 projecting into its opening, and the body 1 is secured to the top portion 4, with the supply-pipe 12 projecting downwardly into said opening. The valve 23 is then moved to its open position and the water begins to flow through pipe 10 and the supply-pipe 12 to the bottom of chamber 1, where it is distributed by the sloping bottom 7 evenly beneath the carbid cake, and the gas thus generated passes through the outlet-pipe 28 to the burner 29. (Shown by broken lines in Fig. 1.) The disintegration of the carbid goes on evenly and at a regular rate until the gas-producing properties thereof are entirely exhausted, there being no possibility of clogging of the water-supply devices. The shape of bottom 7 of the chamber and the cement filling 8 prevent any accumulation of water in the chamber.

The quick-opening properties of the valve governing the water-supply and the action of the indicator-finger 24 render the operation of the lamp easy and avoid any possibility of mistake on the part of the operator.

It is obvious that modifications in the details of the construction herein shown and described can be made within the spirit of my invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with the top portion 4 of an acetylene-lamp, of the chamber 1 detachably secured thereto and having the conical bottom 7 whereby the height of said chamber increases from its center to its outer edge, the angle of inclination of said conical bottom being greater near its apex, a water-reservoir connected with said top portion by a single pipe connection leading from said reservoir nearly to the apex of said conical bottom, and a valve located in said pipe connection adjacent to said water-reservoir for governing the passage of water therethrough, substantially as described.

2. In an acetylene-lamp, the combination with a water-reservoir having a supply-pipe projecting downward therefrom and a valve in said supply-pipe for regulating the water-supply passing therethrough, the said valve being operated from without the said reservoir; of a generating-chamber detachably secured below said water-reservoir, the said chamber having a conical bottom whereby the height of said chamber increases gradually from the center outward, the apex of said conical bottom being beneath the said supply-pipe, substantially as described.

3. The combination with the water-reservoir and generating-chamber of an acetylene-lamp, of a supply-pipe, as 12, communicating with said reservoir and projecting within said chamber, said pipe being provided at its lower end with the slit 26, and a conductor located in said pipe, said conductor being composed of the wire 27 passed through said slit 26 and bent as described and the strands 25 of horsehair secured to said wire, substantially as described.

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

WILLIAM M. GILBERT.

Witnesses:

GEORGE E. HALL,
EDWARD R. LEZOTT.