

No. 674,587.

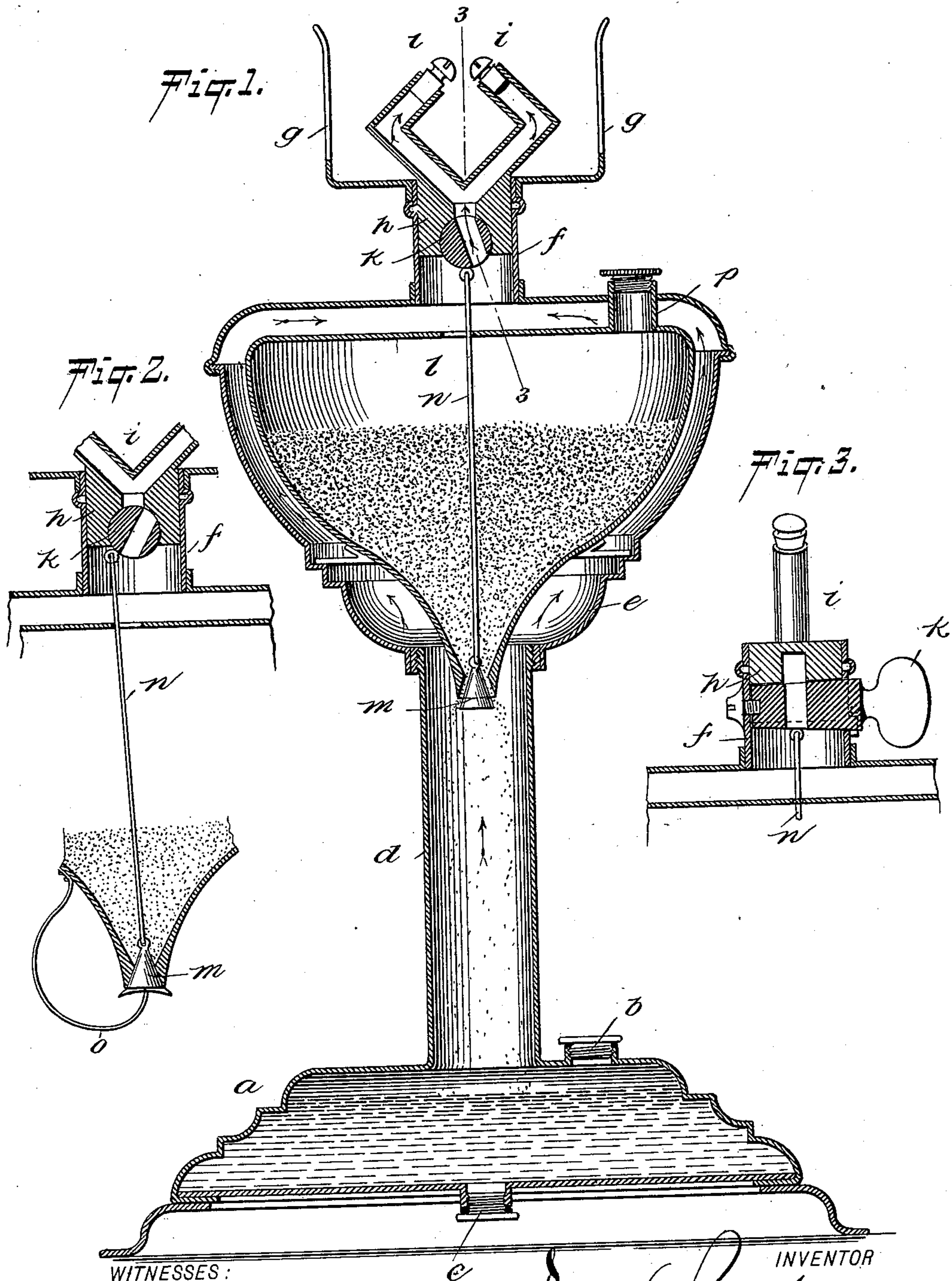
Patented May 21, 1901.

A. E. SCHATZ.
ACETYLENE GAS GENERATOR.

(Application filed Sept. 3, 1898.)

3 Sheets—Sheet 1.

(No Model.)



WITNESSES:
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INVENTOR
Adam E. Schatz

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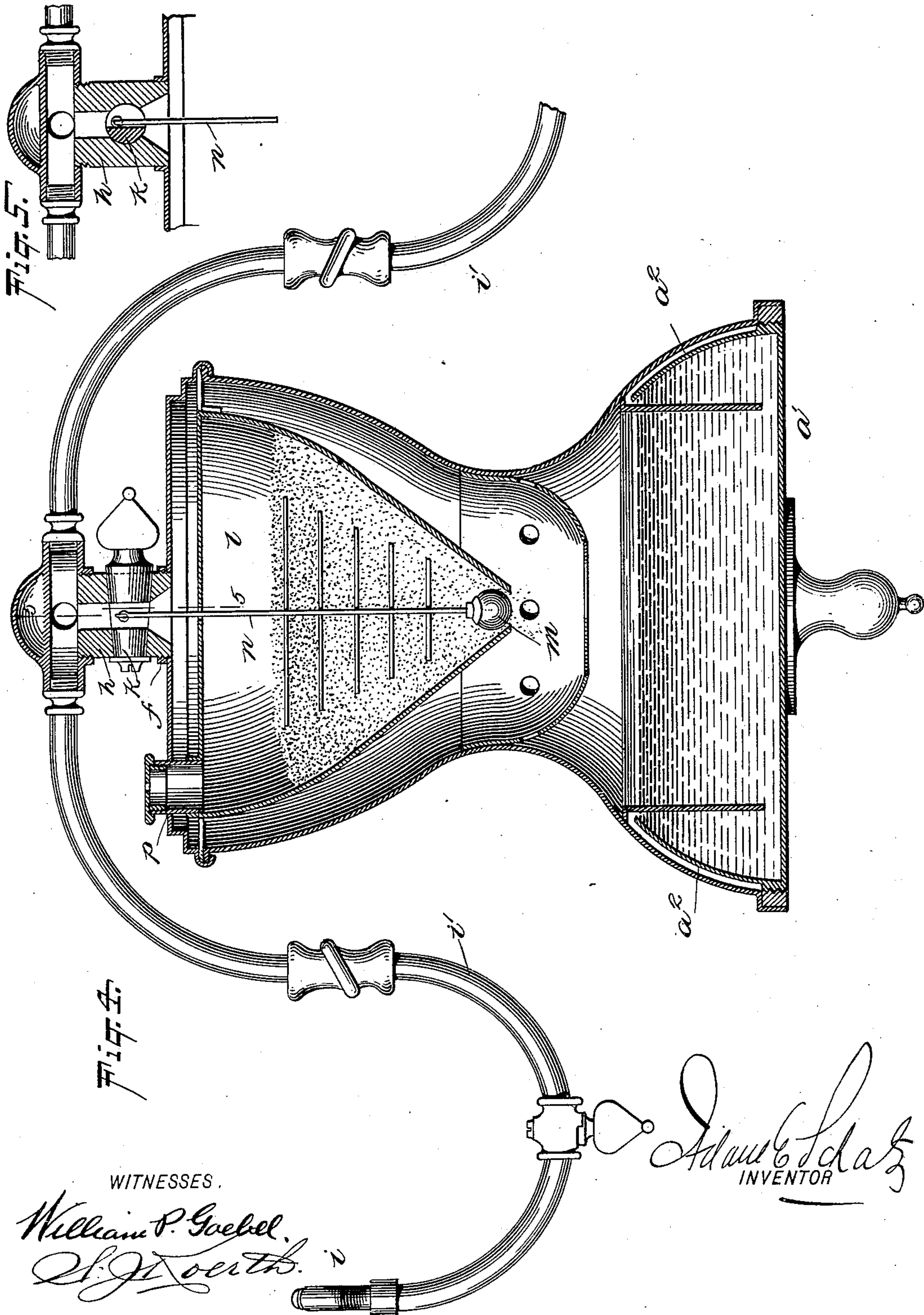
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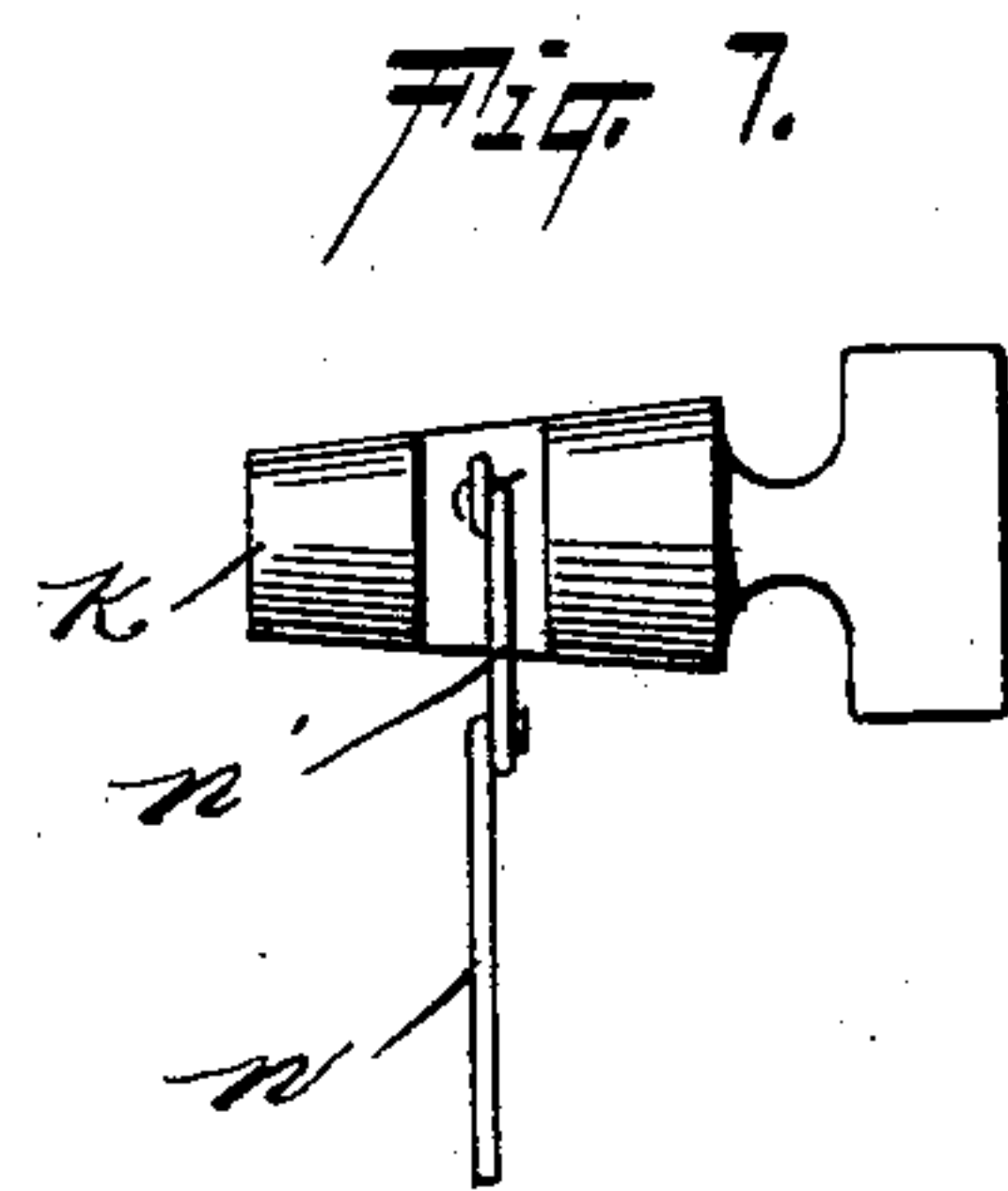
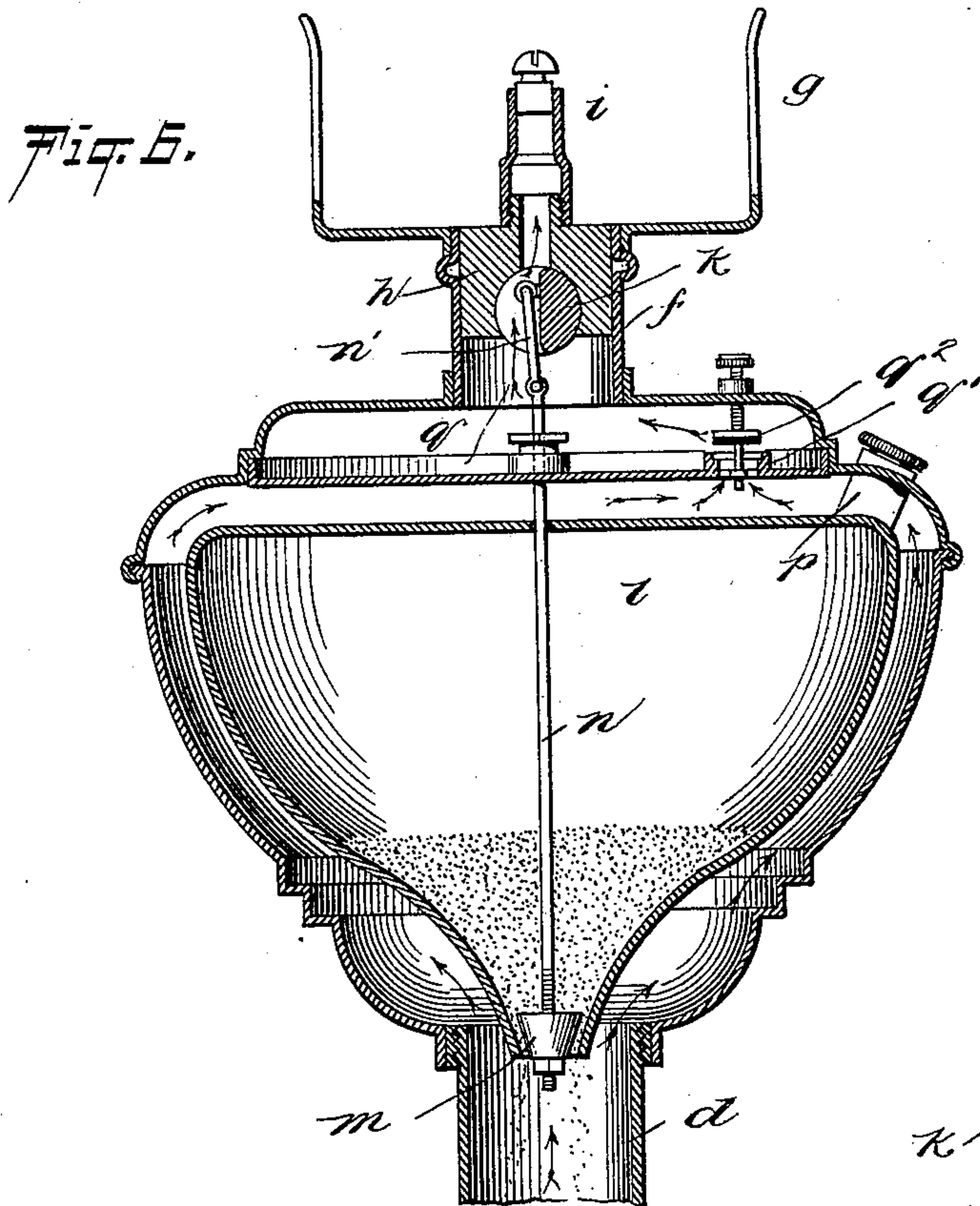
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3 Sheets—Sheet 3.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

ADAM EMIL SCHATZ, OF MOUNT VERNON, NEW YORK.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 674,587, dated May 21, 1901.

Application filed September 3, 1898. Serial No. 690,184. (No model.)

To all whom it may concern:

Be it known that I, ADAM EMIL SCHATZ, a citizen of the United States of America, residing at Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Portable Acetylene-Gas Lamps and 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 drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to acetylene-gas apparatus, and has particular relation to that type which embodies in one construction both the generating means and the burner, so as to form a gas-generating lamp.

In the principal embodiment of my invention the parts are assembled in a portable form, and this is considered preferable by me; but some of the details of my invention I do not intend to be limited to portable generators and lamps, as they are clearly applicable to stationary apparatus.

One object of my invention is to produce an apparatus of this type in which the carbide may be practically employed in a granular state and gradually discharged from the reservoir therefor into the water-tank.

A further object of my invention is to provide means for regulating the discharge of the carbide simultaneously with the regulating of the flow of gas from the generator.

Other objects of my invention will appear hereinafter in connection with the detailed description.

To these ends my invention consists in the construction and combination of parts substantially as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a vertical section of a portable generator and lamp embodying my invention. Fig. 2 represents a detail of some of the parts shown in Fig. 1 in different position. Fig. 3 represents a detail section on the line 3 3 of Fig. 1. Fig. 4 represents a vertical section of a generator and lamp designed more particularly for suspension from the ceiling or

other place of support and embodying certain modifications in structure. Fig. 5 represents a detail section on line 5 5 of Fig. 4. Fig. 6 represents a vertical section of a modified form of my invention, the lower part of the stand and the water-chamber being omitted. Said figure represents a construction substantially similar to that shown in Fig. 1. Fig. 7 represents a detail side elevation of the gas-cock shown in Fig. 6 and the link leading therefrom to the carbide-valve.

Similar reference characters indicate similar parts throughout the several views.

Referring first to Figs. 1, 2, and 3, *a* represents a hollow base adapted to receive and retain water and provided with a filling-opening *b* and a discharge-opening *c*, these two openings being provided with suitable plugs. Rising from the said base is a tubular standard *d*, to the upper end of which is secured the generating-chamber *e*, said generating-chamber having a neck *f*, to which is secured the chimney-embracing arms *g* and in which is secured the plug *h*, having the burners *i* and a gas-cock *k*. Within the chamber *e* and suitably supported thereby is the inverted-cone-shaped carbide-receptacle *l*, the lower end of which is provided with a contracted opening adapted to discharge granulated carbide through the tubular standard *d* into the water-chamber. *m* represents a valve adapted to close the opening of the carbide-receptacle, said valve being connected with the gas-cock by means of a rod *n*. By this construction whenever the gas-cock is opened the valve *m* is lowered sufficiently to permit of the escape of the granulated carbide to cause the generation of gas, and said gas rising around the carbide-receptacle and passing over the top thereof, as indicated by the arrows in Fig. 1.

In Fig. 2 I represent a spring *o*, attached to the outside of the carbide-receptacle and having an enlargement at its lower end, on which the valve *m* rests. This spring counterbalances the weight of the valve and its rod and prevents accidental opening of the valve. In addition the spring *o* serves to prevent the insufficient supply of gas to the burners, inasmuch as the valve *m* will be held open only when the rod *n* is in a true vertical position, in which position the gas-cock *k* will have its

port communicating with the passage leading to the burners to its fullest extent and allowing a full supply of gas to be furnished to the burners. When the rod n is in this position, the spring o will hold the parts in their proper position, while if the gas-cock is not turned on full or if the cock is accidentally turned by shaking, as by carrying the lamp, the spring will cause the cock to be turned and close the outlet-valve m . In other words, the spring o causes the lamp to have but two positions, either entirely open or entirely closed, so that there is no liability of the lamp furnishing a light less than that furnished by the fullest capacity of the generator. This construction prevents any liability of the gas-cock being accidentally turned to a position where but sufficient gas is furnished to make but a slight light or no light at all and insuring that no escape of gas will ensue. A pipe p extends from the carbid-receptacle through the cover of the generating-chamber and is provided with a stopper. This pipe permits of the filling of the receptacle l with fresh carbid.

Referring to Figs. 4 and 5, it will be seen that the hollow base instead of being adapted to rest upon the table or other support is provided with a bottom a' , which is adapted to be screwed into and removed from the said base. The sides of this bottom extend upward within the base around the outside of a flange a^2 , which depends from said base. This forms a cup-shaped water-receptacle, which can be removed from the base by unscrewing it therefrom, while the flange a^2 causes a water seal to be formed, that will prevent the escape of gas around the screw-joint. In the form shown in said Fig. 4 the valve m is a spherical one, preferably elastic, while the rod n is provided with radiating branches, which are adapted to stir up the carbid whenever the gas-cock is operated. The gas-cock here shown differs somewhat from that shown in Fig. 1 in that instead of having a tubular gas-passage through it a groove is formed in one side of the plug and the rod m is secured to an eye located in said groove. The burners are shown as carried by the ends of arms i' , which radiate outward and then extend downward in ornamental curves, as shown.

In Fig. 6 I have shown the valve m as adjustably connected with the rod n , the latter being screw-threaded and a nut fitted thereto below the valve. In this form a diaphragm q extends across the space above the carbid-receptacle, said diaphragm being provided with an opening q' , through which the gas passes to the burner. The said opening q' may be closed by a valve q^2 . In this form the valve-rod extends through a stuffing-box in the diaphragm, and hence cannot swing or move laterally at its upper end. Therefore in order that the said rod may be operated by means of the rotating gas-cock the connection with said rotating gas-cock is formed by

means of a short link n' , as shown in Figs. 6 and 7.

It will be understood, of course, that the mechanism described may be used in other connections than those shown in the drawings—such, for instance, as in connection with the ordinary hand-lantern, the generating-chamber in this case being preferably cylindrical and having a removable bottom held in position by suitable means.

What I claim is—

1. An acetylene-gas lamp comprising a generator, the lower end of which forms a liquid-receptacle; an inverted-cone-shaped carbid-receptacle suspended within said generator above the liquid, the lower end of said carbid-receptacle having an outlet for the granulated carbid; and means for manually controlling the movement of the carbid through said outlet, said means including the gas-cock for governing the supply of gas.

2. An acetylene-gas lamp comprising a generator the lower end of which forms a liquid-receptacle; an inverted-cone-shaped carbid-receptacle suspended within said generator above the liquid, the lower end of said carbid-receptacle having an outlet for the carbid; and a valve for regulating the discharge of the carbid through said opening, said valve having an operative connection with the gas-cock and controlled solely by its movement.

3. An acetylene-gas lamp comprising a generator the lower end of which forms a liquid-receptacle; a carbid-receptacle suspended therein, said receptacle having a discharge-outlet; a valve for controlling the outlet of carbid from said receptacle, said valve being normally in closed position; and means, including the gas-cock, for moving said valve to an open position, said means serving to hold said valve substantially locked in its open position when the gas-cock is opened to its full extent.

4. An acetylene-gas lamp comprising a generator the lower end of which forms a liquid-receptacle; an inverted-cone-shaped carbid-receptacle suspended within said generator above the liquid, the lower end of said carbid-receptacle having a discharge-outlet; a valve for regulating the discharge of carbid through said opening; a gas-cock for governing the movement of the gas to the burner; and positive connections between said valve and the gas-cock, whereby the movement of the latter will control the supply of carbid to the liquid-receptacle.

5. An acetylene-gas lamp comprising a generator the lower end of which forms a liquid-receptacle; an inverted-cone-shaped carbid-receptacle suspended within said generator above the liquid, the lower end of the carbid-receptacle having an outlet for the carbid; a valve for controlling the discharge of carbid through said opening; a gas-cock for governing the movement of the gas to the burner; positive connections between said valve and said gas-cock, whereby the movement of the

latter will control the discharge of carbid; and a spring for normally holding said valve to its seat and said cock closed.

5 6. An acetylene-gas lamp comprising a generator the lower end of which forms a liquid-receptacle; an inverted-cone-shaped carbid-receptacle suspended within said generator above the liquid, the lower end of said carbid-receptacle having an outlet for the carbid; a valve for regulating the discharge of the carbid through said opening; a gas-cock for governing the movement of the gas to the burner; and a link connection between said valve and said gas-cock, whereby the movement of the latter will control the supply of carbid to the liquid-receptacle.

7. An acetylene-gas lamp comprising a generator having a fixed internal capacity, the lower end of said generator forming a liquid-receptacle; an inverted-cone-shaped receptacle suspended within said generator above the liquid the lower end of said carbid-receptacle having an outlet for the carbid; a valve for regulating the discharge of carbid through said outlet; a gas-cock; and a link connection between said valve and the gas-

cock, whereby the movement of the latter will control the supply of carbid to the liquid-receptacle.

8. An acetylene-gas lamp comprising a generator the lower end of which forms a liquid-receptacle; an inverted-cone-shaped carbid-receptacle suspended within said generator above the liquid, the lower end of said carbid-receptacle having a discharge-outlet; a valve for regulating the discharge of the carbid through said outlet; a gas-cock having a limited movement; and a link connection between said valve and said gas-cock, said link connection, when said cock is moved to a position at one end of its limit of movement, holding said valve substantially locked in its open position, whereby the movement of the gas-cock will control the movement of the carbid to said liquid-receptacle.

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

ADAM EMIL SCHATZ.

Witnesses:

ARTHUR C. BOLLINGER,
FRANK D. BLACKISTONE.