

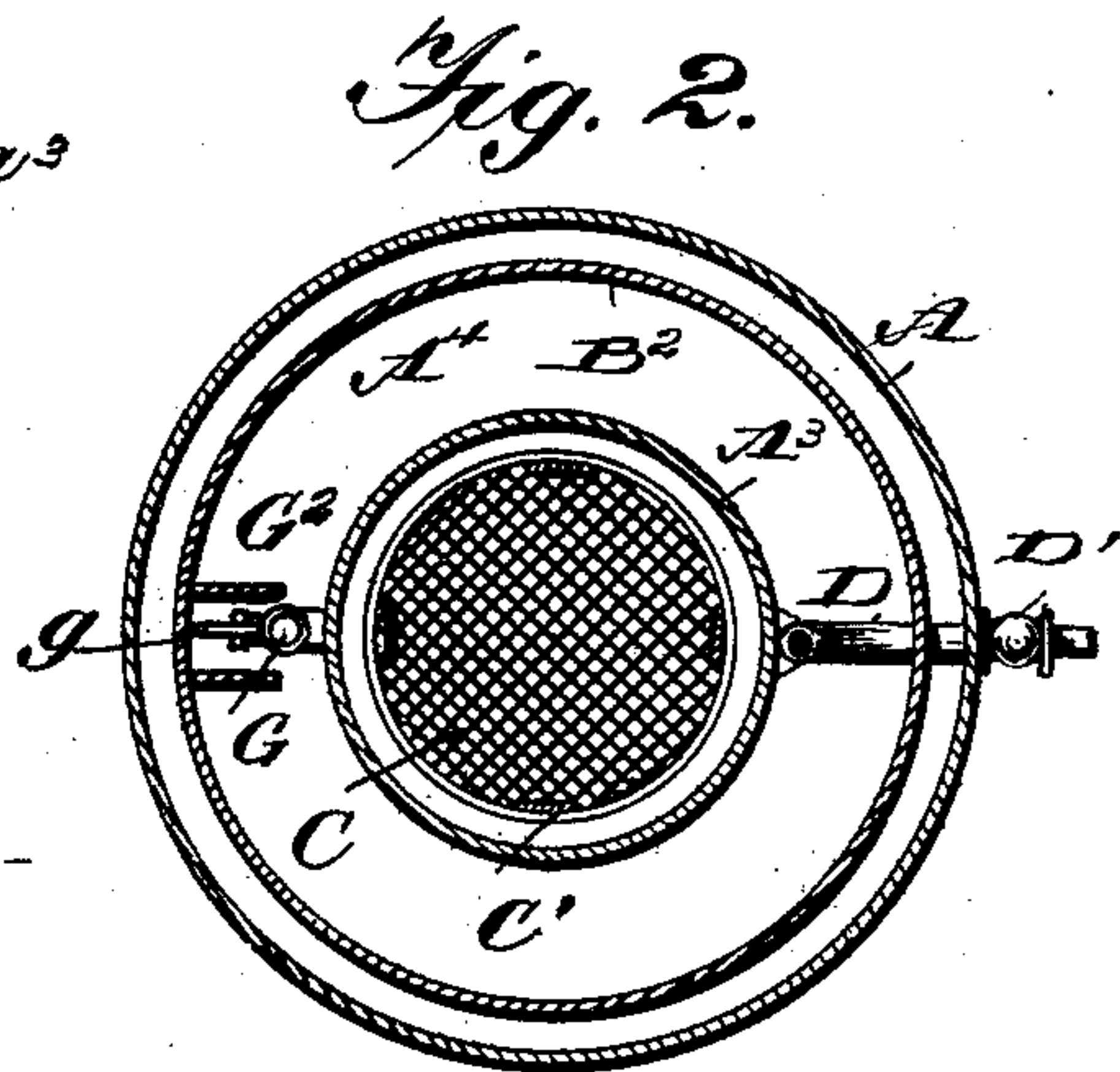
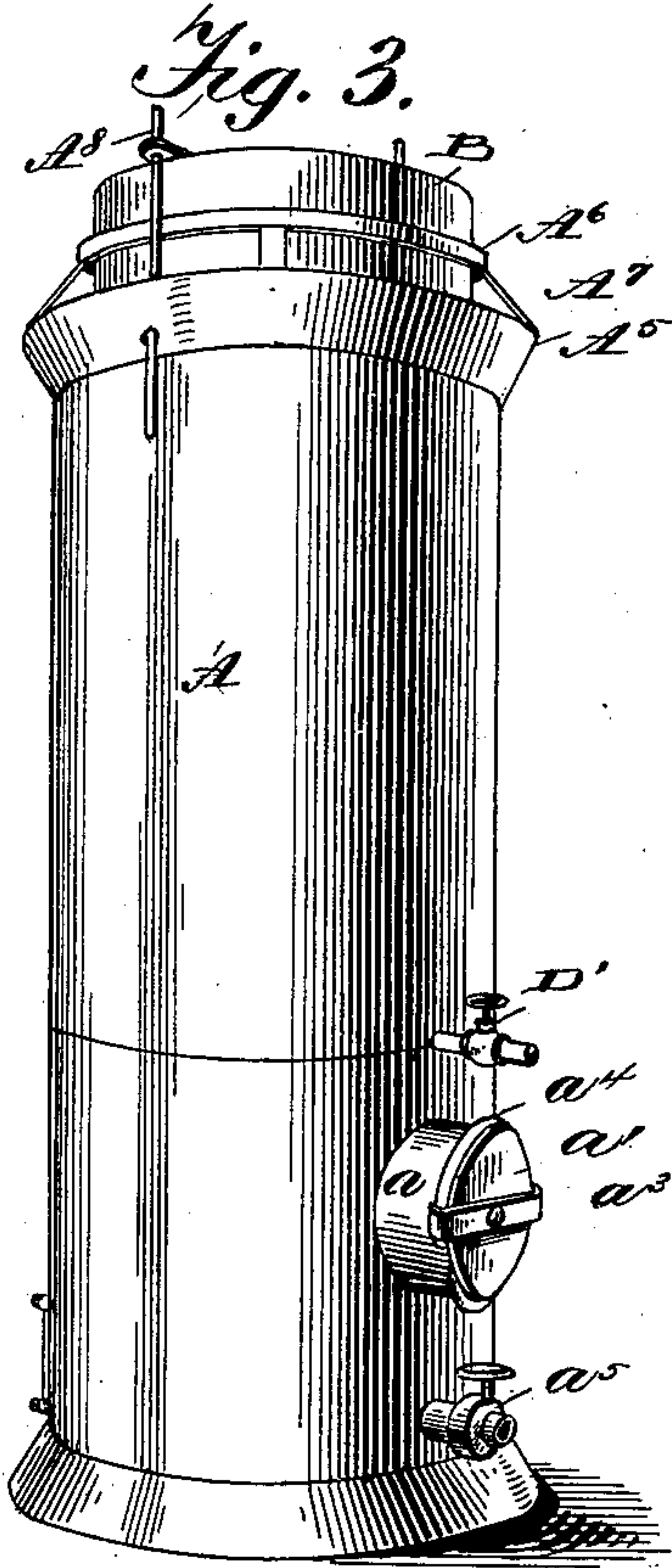
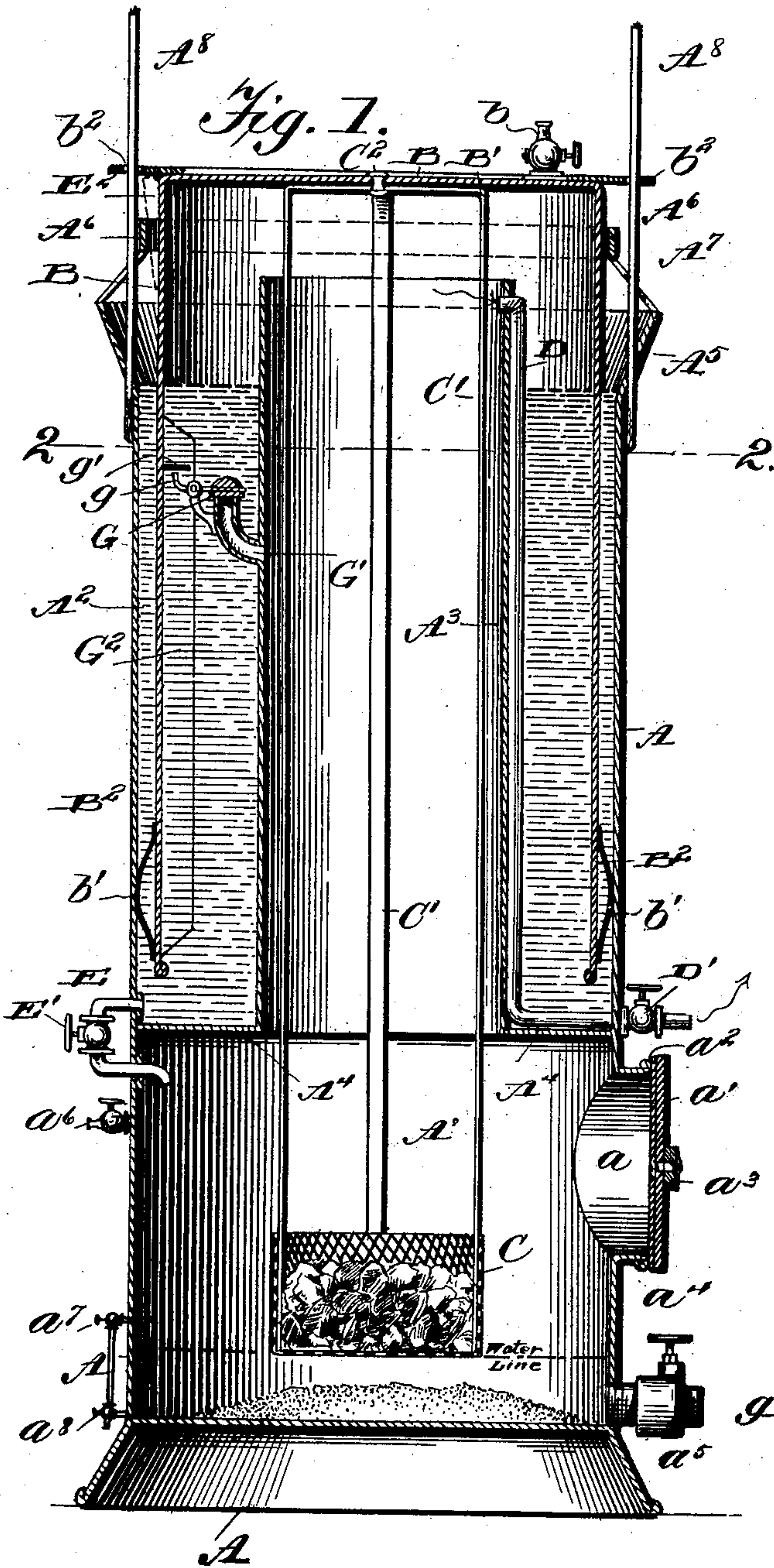
No. 606,674.

Patented July 5, 1898.

T. E. LEWIS.
ACETYLENE GAS GENERATOR.

(Application filed Sept. 24, 1897.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS E. LEWIS, OF DOUGHERTY, INDIAN TERRITORY.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 606,674, dated July 5, 1898.

Application filed September 24, 1897. Serial No. 652,913. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. LEWIS, a citizen of the United States, residing at Dougherty, Chickasaw Nation, Indian Territory, have invented certain new and useful Improvements in Gas-Generators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to gas-generators, and more particularly to generators intended for use in the production of gas within a gasometer by the use of calcium carbide or other suitable gas-producing material.

The invention has for its object to provide a structure by means of which the basket carrying the gas-producing material will be lowered into contact with the liquid contained in the base of the generator as the gas held within the gasometer is consumed, and also to provide an automatic feeding of the liquid to the lower portion of the generator when the same becomes exhausted.

It has for a further object to improve the several features of construction, as more particularly hereinafter pointed out, so that the apparatus will be adapted for the rapid and automatic production of illuminating-gas.

Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a central vertical section through the gasometer. Fig. 2 is a horizontal section on the line 2-2 of Fig. 1, and Fig. 3 is a perspective of the apparatus.

Like letters of reference indicate like parts throughout the several figures of the drawings.

The letter A designates a gasometer constructed of any desired material and provided at its lower portion with a generating-chamber A' and at its upper portion with an annular water-chamber A². This water-chamber is formed by means of a tubular central extension A³, extending upward from the bottom wall A⁴, which connects the former with the exterior wall. The lower portion of the gasometer is provided with a manhole *a*, by means of which entrance may be had to the generating-chamber for the purpose of recharging or cleaning the same and removing

refuse therefrom. This manhole is closed by any suitable construction of cap or cover—for instance, a disk *a'*, provided with a rubber packing *a*² and held in position by means of a locking-bail *a*³, which engages a flange *a*⁴ upon the outer edge of the manhole, and thereby constitutes a bayonet-joint securing means, by which the cap can be readily detached when desired for the purposes described. Beneath the manhole *a* there is also provided a flushing or outlet valve *a*⁵, operated by either screw or lever, by means of which the water contained in the generating-chamber may be removed and at the same time a large quantity of the refuse material washed out from the generating-chamber. The generating-chamber is also provided with an air-cock *a*⁶ and at its lower portion with a water-gage *a*⁷, having thereon a draw-off cock *a*⁸ to lower the water-level when the same becomes too high.

The upper portion of the gasometer is provided with an outwardly-flared edge A⁵, which presents a space through which water may be introduced into the water-chamber A². Above this flared edge there is supported a guide-ring A⁶ by means of connecting-braces A⁷. Guide-rods A⁸ also extend upward from the gasometer.

Within the water-chamber of the gasometer there is located a removable inverted cover or dome B, which is cylindrical in form and provided with a closed top B' and downwardly-extending walls B², provided with guides *b*¹, said walls forming an open lower end adapted to be immersed in the water contained in the water-chamber of the gasometer. The upper portion of this cover B is provided with a suitable air-cock *b*, by means of which the air may be removed therefrom when the lower end of the cover is introduced into the water, and with guide-plates *b*² to fit over said rods A⁸ and steady the movement of the cover.

Suspended from the top B' of the cover there is located a reticulated receptacle C for the reception of the calcium carbide or other chemical used in the production of gas. This suspension is effected by means of the depending arms C', secured to the cover B' by any suitable means—for instance, a rivet C²—so that the receptacle will rise and fall with the cover, and thus be introduced into the

generating liquid when the gas has been used from the movable cover or dome and removed from the generating liquid when sufficient gas has been accumulated beneath the cover to raise the same. The gas which is generated in the chamber A' and passes to the upper portion of the cover or dome B is removed for use by means of an outlet-pipe D , which is located adjacent to the tubular extension A^3 and passes downward through the body of water contained in the water chamber or seal and outward to a controlling-cock D' , as illustrated. For the purpose of removing water from the water chamber or seal into the generating-chamber when desired a pipe E is provided with a controlling-cock E' , and the opposite ends of this pipe communicate, respectively, with the chamber A^2 and the generating-chamber A' . By this means sufficient water may be allowed to pass within the generating-chamber to cause the proper chemical reaction for the production of the gas. When it is desired to open the generating portion of the gasometer while a body of gas is contained in the upper portion of the cover or dome, the cover may be held in its raised position by means of a wedge-block E^2 , introduced between the guide-ring A^6 and the side wall B^2 of the cover or dome.

For the purpose of automatically increasing the amount of water or liquid in the generating-chamber when the removable cover or dome reaches the limit of its downward movement I have provided a feed-valve G , carried by a stationary part of the gasometer—for instance, upon the tubular extension A^3 . This valve is pivoted to an upwardly-extending feed-passage G' and is provided with a finger g , adapted to engage a stop g' , carried by the removable cover or dome. At opposite sides of this stop g' guide-flanges G^2 are provided, between which the finger g of the feed-valve travels, so as to prevent the position of the stop from becoming changed in its relation to the finger of the valve. It will be observed that as the cover or dome descends in its movement the stop g' will depress the finger g and thus raise the valve G , allowing the water in the upper portion of the water seal or chamber to pass downward through the passage G' into the generating-chamber. As soon as the gas has been generated to raise the dome the stop will be removed from contact with the valve G and the same will be returned by gravity to its position of closure. It is obvious that the water may be introduced into the chamber A^2 by any suitable means—for instance, by means of a service pipe or hose leading into the upper portion of the chamber.

The operation of the parts is as follows: The carbid or gas-producing material is introduced into the basket C and the same passed into the generating-chamber of the gasometer, while the flange of the cylindrical cover passes into the body of water contained within the water seal. The downward move-

ment of the cover will open the feed-valve G and allow sufficient water to pass within the generating-chamber to generate a quantity of the gas, which will then pass upward into the upper portion of the dome and find its outlet through the pipe D . This pipe leads through a body of cool or cold water, so that the gas, which is in a heated state after its generation, will be cooled before it passes from the gasometer. When the cover is first introduced, the air-cock b is open, so that the air contained therein may pass out.

In the further operation of the device it will be observed that the water-feed valve will be actuated or opened whenever the dome or cover and the carbid-receptacle carried thereby descends downward, and as soon as sufficient gas has accumulated within the dome the same is raised, so that the valve will be closed and the carbid-receptacle lifted above the water in the generating-chamber.

As previously stated, whenever it is desired to clean the generating-chamber the cover or dome may be supported in its raised position by means of the wedge-block E^2 and the man-hole-cover removed, so that access can be had to the generating-chamber. If it be found desirable in starting the machine, the water for use in the generating-chamber may be introduced by means of the pipe E and cock E' .

Any desired liquid may be used in connection with the chemicals used for the production of gas; but I prefer the use of salt water in the water seal and generating-chamber, as it has been found that water having in solution a percentage of sodium chlorid will not readily freeze, so that with this liquid there is no danger of the parts becoming inoperative during cold weather.

I have described with particularity the details of construction of the several parts; but it is obvious that changes may be made therein without departing from the spirit of this invention as defined by the appended claims.

Having described my invention and set forth its merits, what I claim as new, and desire to secure by Letters Patent, is—

1. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, and a receptacle suspended from said cover or dome, substantially as specified.

2. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, and a gas-outlet pipe extending from the upper portion of said dome through said water-chamber, substantially as specified.

3. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, and a guide-ring supported from said generator and surrounding said dome, substantially as specified.

4. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a guide-ring supported from said generator and surrounding said dome, and means engaging said guide-ring and dome to hold the latter in its relation to the former, substantially as specified.

5. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a cover or dome located in said chamber, a receptacle suspended from said cover or dome, a water-chamber into which the lower end of said cover extends, an inlet-pipe provided with a cock and communicating with said water and generating chambers, and an outlet-cock at the lower portion of said generating-chamber, substantially as specified.

6. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a man-hole-cover provided with a packing, and a bail pivoted to said cover to engage a flange upon the edge of a manhole, substantially as specified.

7. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion

located in said water-chamber, a receptacle suspended from said cover or dome, a feed-valve located on said tubular extension, and means for operating said valve carried by said cover or dome, substantially as specified.

8. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a pivoted feed-valve located on said tubular extension and provided with a finger, and a stop carried by said cover or dome and adapted to engage said finger in the downward movement of the cover, substantially as specified.

9. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a feed-valve carried by said tubular extension, a finger extending outwardly from said valve, a stop carried upon the cover or dome to engage said finger, and parallel guide-flanges carried by the cover upon opposite sides of said finger, substantially as specified.

10. In a gas-generator, the combination with a generating-chamber at the lower portion thereof, of a central tubular extension connected at its lower end with the walls of said generator so as to constitute a water-chamber, a cover or dome having its lower portion located in said water-chamber, a receptacle suspended from said cover or dome, a gas-outlet pipe extending from the upper portion of said cover or dome downward through the water-chamber, an inlet-feed valve pivotally mounted upon said tubular extension, and a stop carried by the cover or dome to engage said valve, substantially as specified.

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

THOMAS E. LEWIS.

Witnesses:

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J. B. RANDLE.