

No. 662,843.

Patented Nov. 27, 1900.

S. P. WATT.
ACETYLENE GAS GENERATOR.

(Application filed Jan. 27, 1900.)

(No. Model.)

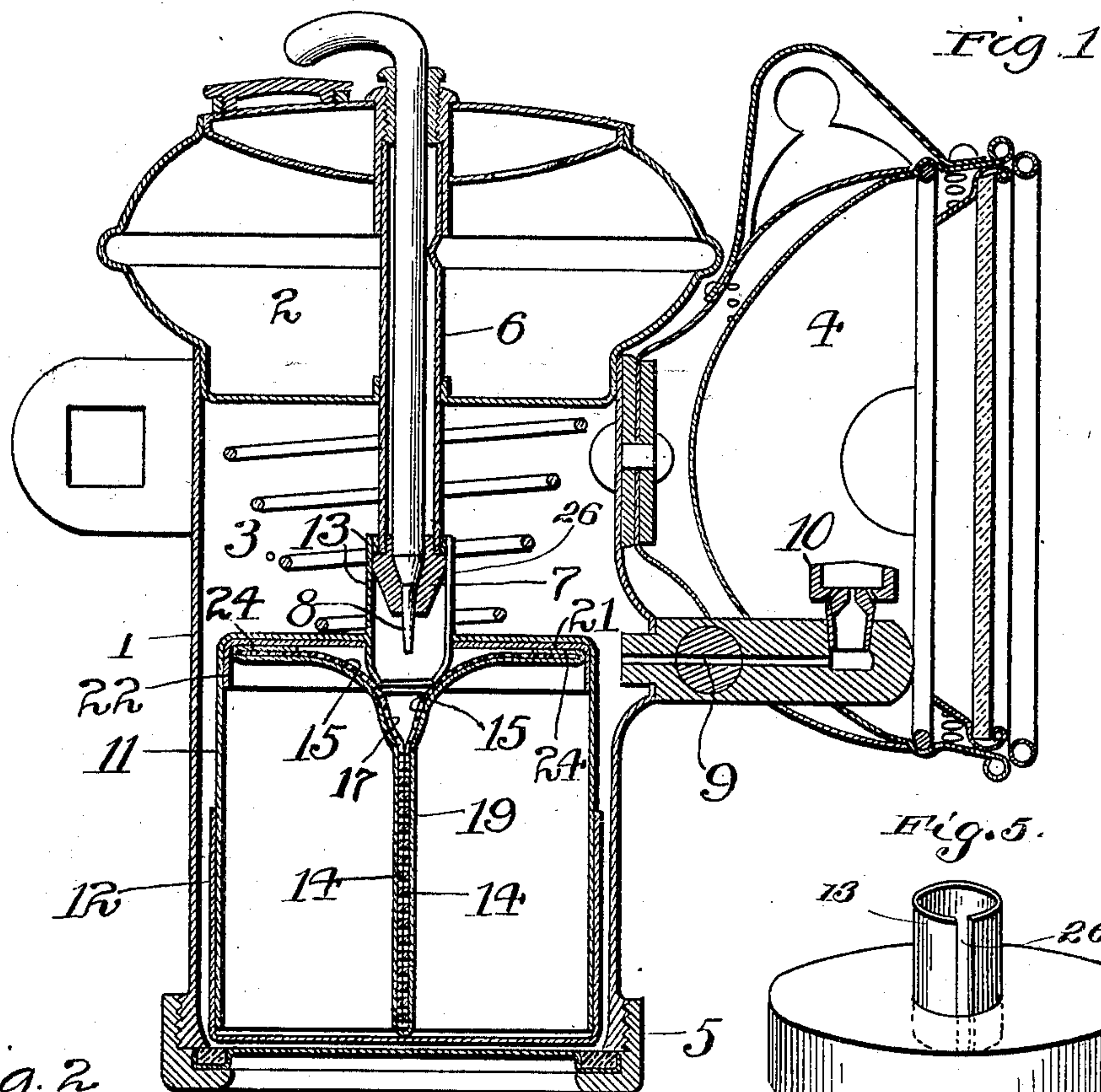


Fig. 2

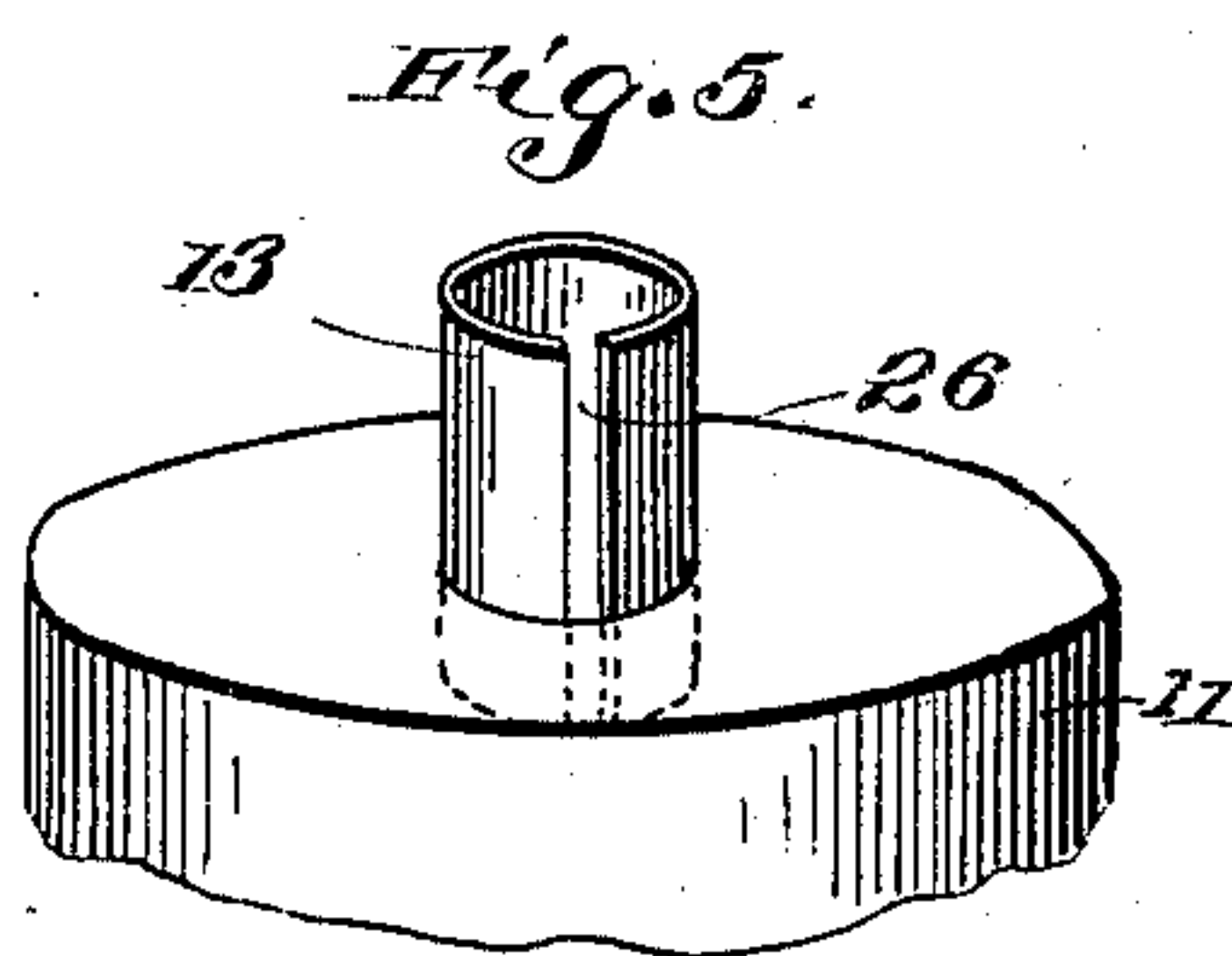


Fig. 3

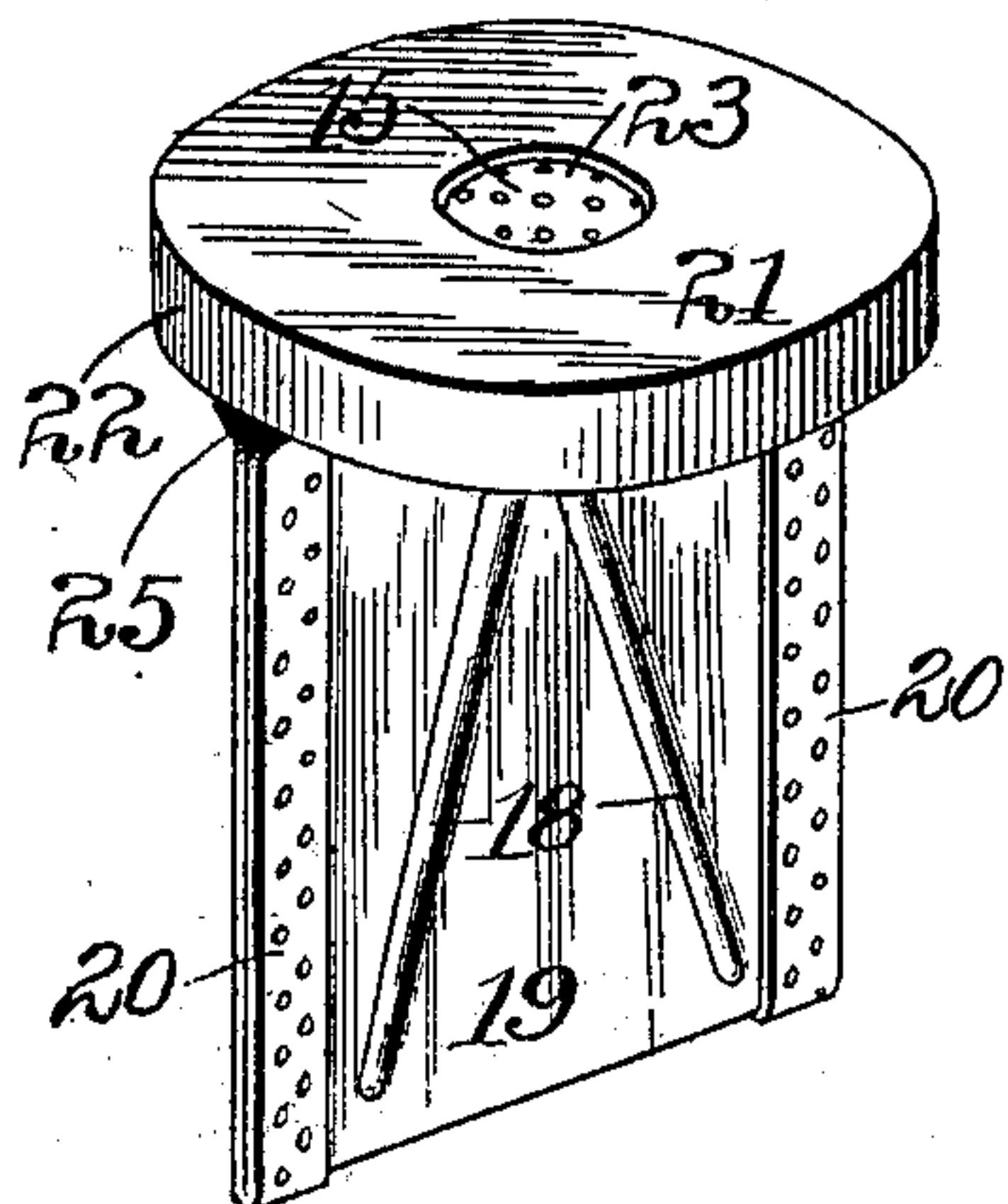
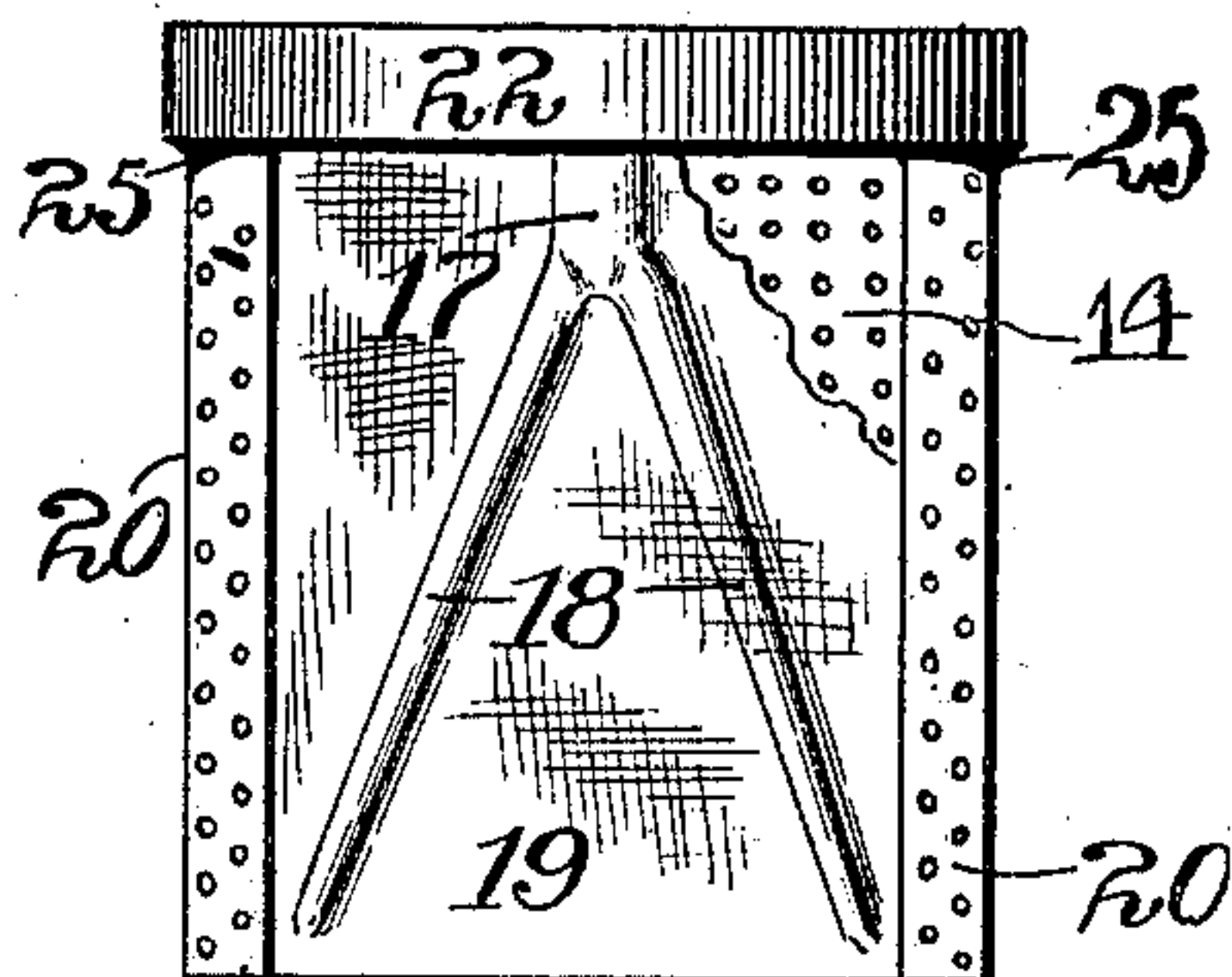
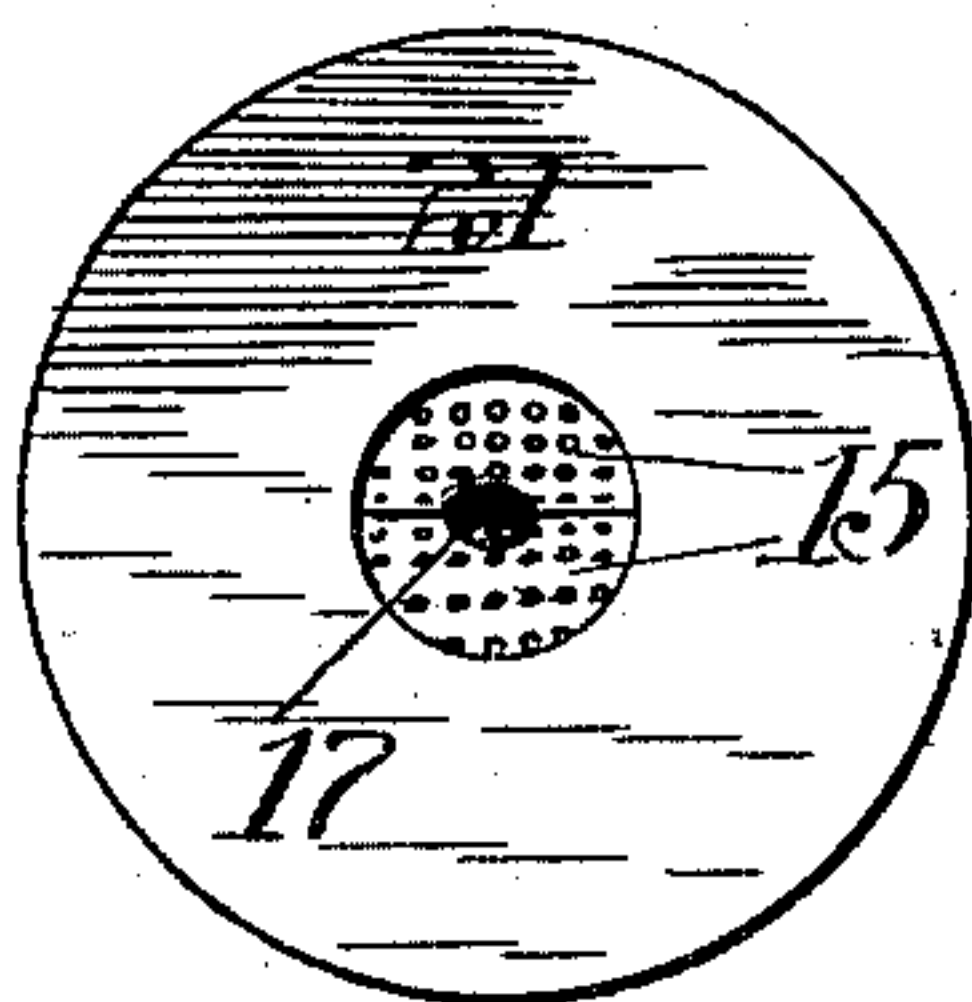


Fig. 4



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UNITED STATES PATENT OFFICE.

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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 662,843, dated November 27, 1900.

Application filed January 27, 1900. Serial No. 3,052. (No model.)

To all whom it may concern:

Be it known that I, SERN P. WATT, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gas Generators or Lamps, of which the following is a specification.

My invention relates to acetylene-gas lamps or generators, whether of the portable or stationary type, but more particularly to the carbid-holding cup or receptacle.

My object is to provide such a cup of novel construction for the perfect distribution of the water and for the ready charging with carbid, as well as for the ready removal of the residue. The cup is so constructed that it can be charged with the carbid and can be carried apart from the lamp into which it is insertible.

While I have herein shown my invention as applied to a bicycle-lamp—that is, a lamp of the portable type—it will be understood that my invention is applicable to lamps of the stationary type, such as house-lamps, &c. In the accompanying drawings, Figure 1 is a sectional elevation of a lamp with the carbid-cup in place therein; Fig. 2, a perspective of the water-distributor; Fig. 3, a side elevation of such distributor; Fig. 4, a top plan of the distributor, and Fig. 5 a perspective of the upper end of the carbid-cup.

Inasmuch as my invention relates only to the generating means of a gas-lamp, more particularly to the carbid-holding receptacle, the other parts of the lamp will not be described in detail. Such parts are well known and also are non-essential to the invention herein.

The lamp shown as embodying one exemplification of my invention in a complete device comprises a suitable casing 1, having a water-chamber 2, a generating-chamber 3, a flame-chamber 4, bottom cap 5, and suitable passages between such chambers. A tube 6 communicates with the water-chamber and projects downward into chamber 3, where it has at its end a plug 7, forming a valve-seat regulated by a valve 8. A gas-outlet passage 9 leads from the generating-chamber 3 to the burner-tip 10 in the flame-chamber. A carbid cup or holder 11 is inverted and closed by the cover 12. The cup preferably has a

tube 13 extending above and below its closed end and surrounding the valve-seat 8. This tube has a side slot 26 and forms a water-guide and a gas-passage. The running of the slot the full length of the tube prevents the formation of a water-veil and the consequent fluctuation in the flow of the water and gas.

The water-distributor is flat at its lower portion and extends diametrically across the cup. It is composed of two plates 14 in close proximity, except at the top, or of a single perforated plate bent upon itself at the lower end. Consequently when in this case, and particularly in the claims, there is used the expression “two plates in close proximity,” or substantially such expression, it will be understood that a single plate thus bent upon itself is included. The separate top ends of the plate are spread laterally and are circular in plan view. One or both plates may (though not necessarily) have an impression or cavity 17 near the central top portion, just below the central tube 13, from which cavity two impressions or grooves 18 may lead toward the lower or bottom corners of the distributor. The plates are covered on the outside—that is, next to the carbid—with linen 19 or other suitable material both for causing a distribution of the water and preventing the entrance of carbid-dust into the perforations of the plates, as well as providing a filtering medium for the gas. The vertical edges 20 of the plates may be turned over upon the linen to clamp it, and such linen may also be extended over the top of the ends and clamped against the top inner surface of the cup, as hereinafter referred to.

A disk 21, having a downwardly-extending marginal flange 22, is adapted to be received by the carbid-cup and to be removed therefrom. This disk is of the same diameter as the cup and its edges fit closely against the internal surface of the cup. This disk has a central opening 23, through which the tube 13 passes when the distributor is in place. This flanged disk forms the means of attachment for the distributing-plates and also provides the means for readily withdrawing the residue, thereby cleaning the cup. The upper or spread portions of the distributor-plates are formed or cut to the inner diameter of

the disk, into which they are pressed, the turned-over portions of the fabric or covering 24 on top of the plates being clamped against the inner surface of the disk, as shown in Fig. 1. To make a rigid connection between the plates and the disk, these parts may be soldered together, as at 25. The construction shown provides a perfect and uniform distribution of water, and the generated gas cannot escape from the cup without passing through the covering of the distributor, whereby a perfect filtering or straining of the gas is obtained. In charging, the carbid-cup is filled and the cover put on, whereupon the cup is reversed and then replaced in the lamp-casing. The water admitted by the valve will drop upon the plates and will be distributed uniformly by them to the carbid. The grooves or channels 18 will permit of the same amount of distribution to the lower portion of the cup as to the upper portion, so that uniform distribution of water is assured. When it is necessary to remove the residue and recharge the cup, the bottom cap 5 is unscrewed and the entire cup removed, and the cover 12 is taken off, whereupon the lower end of the distributor can be grasped by the fingers and withdrawn, together with the disk 21, thereby forcing all the residue from the cup, which will be clean and ready for another charge. Inasmuch as the disk fits closely within the cup, it will scrape along the sides of the cup and thoroughly clean it of all residue. The construction shown provides for the ready cleaning and recharging of the device. Moreover, the cup is dust-proof and can be carried loaded and apart from the lamp. As shown, the cup has a single opening, through which the water is admitted and from which the gas escapes. After the water-valve is opened the lamp will work automatically, since the gas-pressure will regulate the amount of water permitted to feed through the valve.

Although I have described more or less precise forms and details of construction, I do not intend to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents as circumstances may suggest or render expedient and without departing from the spirit of my invention.

While I have herein shown and described the cup and disk as cylindrical or circular, it is to be understood that I do not limit these parts to that form and that obviously they may be of any other form.

I claim—

1. A carbid-holder comprising a cup, a water-distributor therein flat at its lower portion and spread laterally toward the top, a cover for the cup and an opening in the top of the cup for the entrance of water and passage of gas.

2. A carbid-holder comprising an inverted cup, a water-distributor therein, a disk connected to the upper end of the distributor and normally within, and at the closed end of, the

cup, such disk being withdrawable with the distributor and a cover for the open end of the cup.

3. A carbid-holder comprising an inverted cup with a central opening in its top, an impervious disk slidable within the cup and also having a central opening, a water-distributor secured to the disk, and means for feeding water through such openings.

4. A carbid-holder comprising an inverted cup having a central opening, a flanged impervious disk slidable within the cup, also having a central opening, and normally positioned at the top of the cup, and a water-distributor secured to the disk and removable together with it, the disk being of the same diameter as the cup and adapted to clean the cup of residue when withdrawn.

5. A carbid-holder comprising an inverted cup closed at its top except for a water-admission opening, a solid, impervious disk slidable within the cup and of the same dimensions as the interior of the cup to scrape the sides thereof, such disk being provided with an opening registering with said water-admission opening, and a water-distributor physically independent of the disk but secured thereto below said opening and removable therefrom with from the cup.

6. A carbid-holder comprising an inverted cup having a top opening for admission of water, and a water-distributor located in the cup and consisting of perforated plates in close proximity at the lower end of the distributor and spread laterally near the top, one of such plates having a cavity and impressions or channels leading from the cavity to the bottom corners of the plates for the perfect and uniform distribution of water.

7. A carbid-holder comprising an inverted cup, a disk within the cup and of the same diameter, a downwardly-projecting marginal flange on the disk, and a water-distributor consisting of two plates in close proximity at their lower ends and spread apart laterally at the top which is contained and secured to the disk and flange.

8. A carbid-holder comprising an inverted cup having a top opening, a marginally-flanged disk having an opening registering with said top opening and slidable within the cup, a water-distributor consisting of two plates in close proximity at their lower ends and spread apart laterally at the top, and a fabric covering on the outside of the plates and extending partially over the top edges thereof, the top part of the distributor being held to the disk and such extended portions of the covering being clamped thereagainst.

9. A carbid-holder comprising an inverted cup having a top opening, a tube therein, a marginally-flanged disk having an opening receiving such tube, a water-distributor secured to such disk and removable therewith, and a cover for the cup.

10. A carbid-holder comprising a cup 11, a cover 12, water-distributor plates 14, with

spread portions 15, a covering 16 on the plates and having portions 24 turned over the top edges of the plates, a disk 21, with a central opening 23 and flange 22, a tube 13 in a central top opening of the cup and passing through opening 23 and means for admitting water through such tube.

11. A carbid-holder comprising a cup 11, having a central top opening, a tube 13 in such opening and extending above and below the top of the cup, a cover 12, a disk 21 with a flange 22 and central opening 23, and a water-distributor consisting of plates 14, with upper spread portions 15 secured to the disk, such plates having grooves 18 leading from a common cavity 17 to the bottom corners of the water-distributor.

12. A carbid-holder comprising an inverted cup having a top opening, a closure for the bottom of the cup, and a tube extending in such opening and provided with a side slot.

13. A carbid-holder comprising an inverted cup having a top opening, a closure for the bottom of the cup, and a water-guide tube or gas-passage in such opening and provided with a side slot along its full length.

14. A carbid-holder comprising an inverted cup which is closed at its top except for a single opening, a disk slidable within the cup and having an opening registering with the opening of the cup, a water-distributor con-

nected to the disk and located within the cup and a cap or closure for the open end of the cup.

15. A carbid-holder comprising an inverted cup which is closed at its top except for a single opening and a water-distributor therein substantially flat and vertical at its lower portion and spread laterally toward the top approaching a substantially horizontal position, and means for feeding water to the holder through the said opening.

16. In an acetylene-gas lamp or generator, the combination, with a gas-generating chamber, of a disk slidable within the generating-chamber and solid and impervious except for a water-admission port or opening, such disk being normally located at the top of such chamber, and a water-distributor secured to the disk and arranged below said opening to receive and distribute the water.

17. A water-distributor for acetylene-lamps comprising perforated plates in close proximity having impressions or channels leading from the top, where water is applied, to the bottom corners of the plates for the perfect and uniform distribution of water and an outside covering of filtering material.

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Witnesses:

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