

No. 713,640.

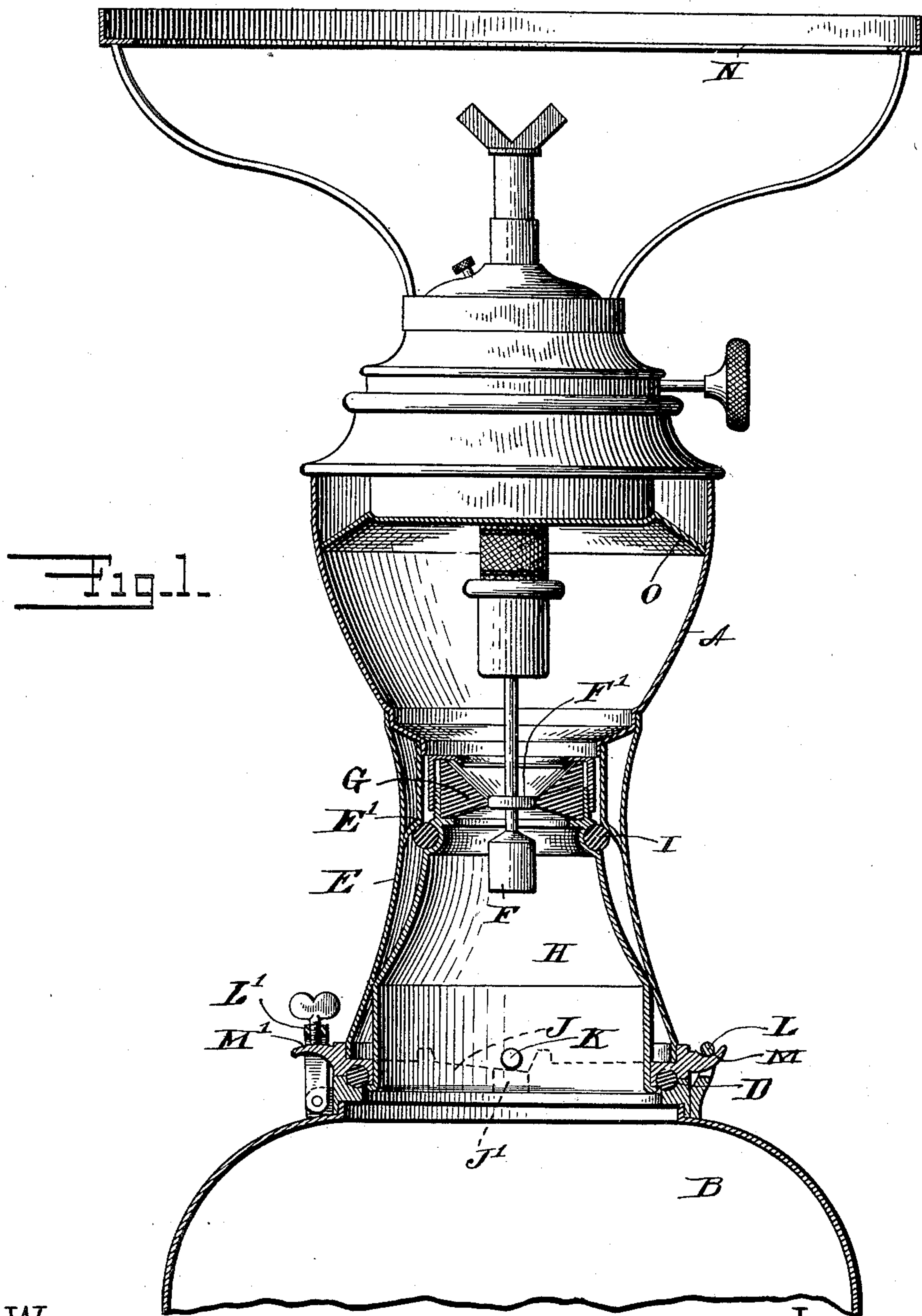
Patented Nov. 18, 1902.

W. C. HOMAN.
ACETYLENE GAS GENERATOR.

(Application filed Feb. 19, 1902.)

(No Model.)

3 Sheets—Sheet 1.



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Fig. 2.

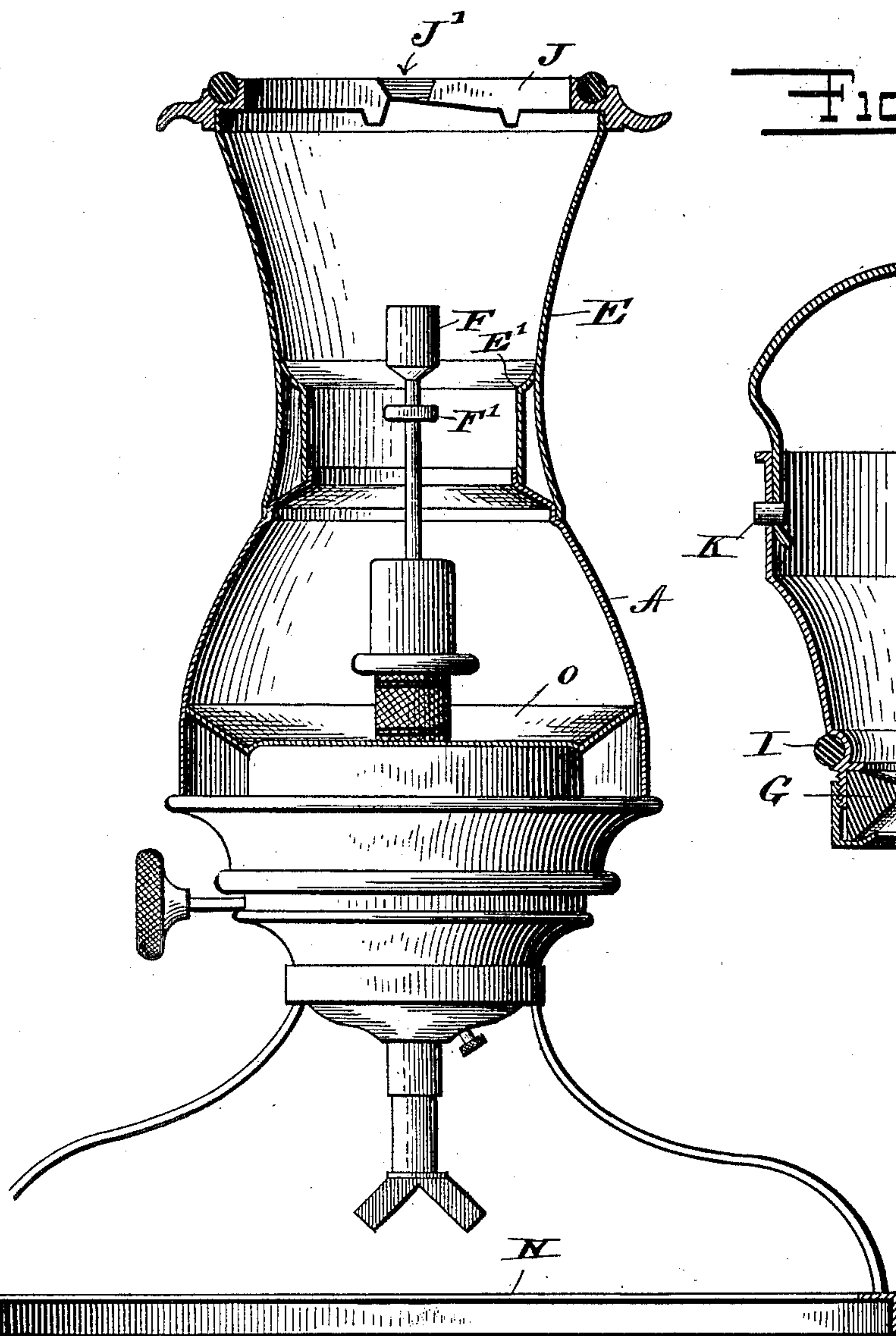
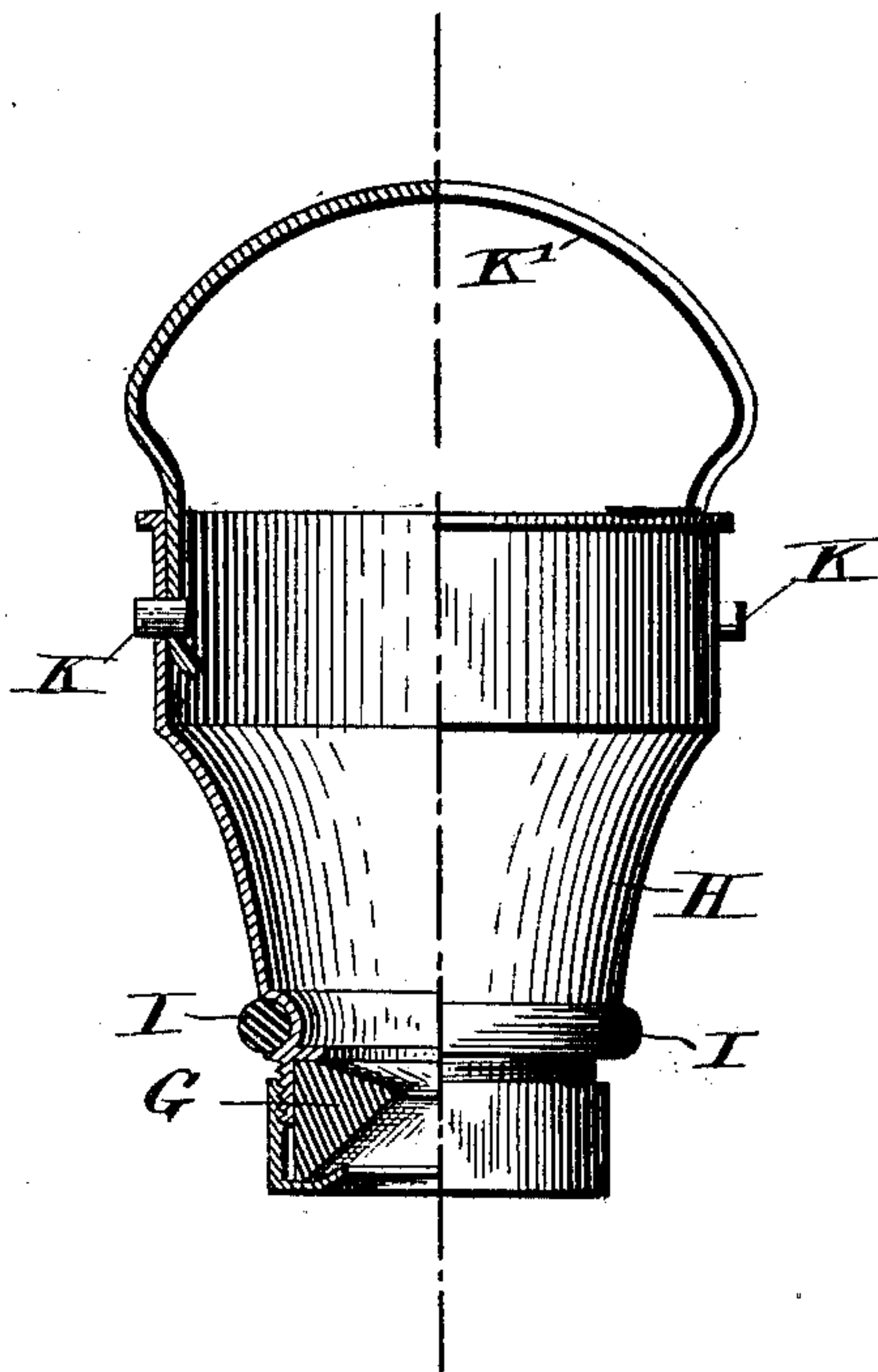


Fig. 3.



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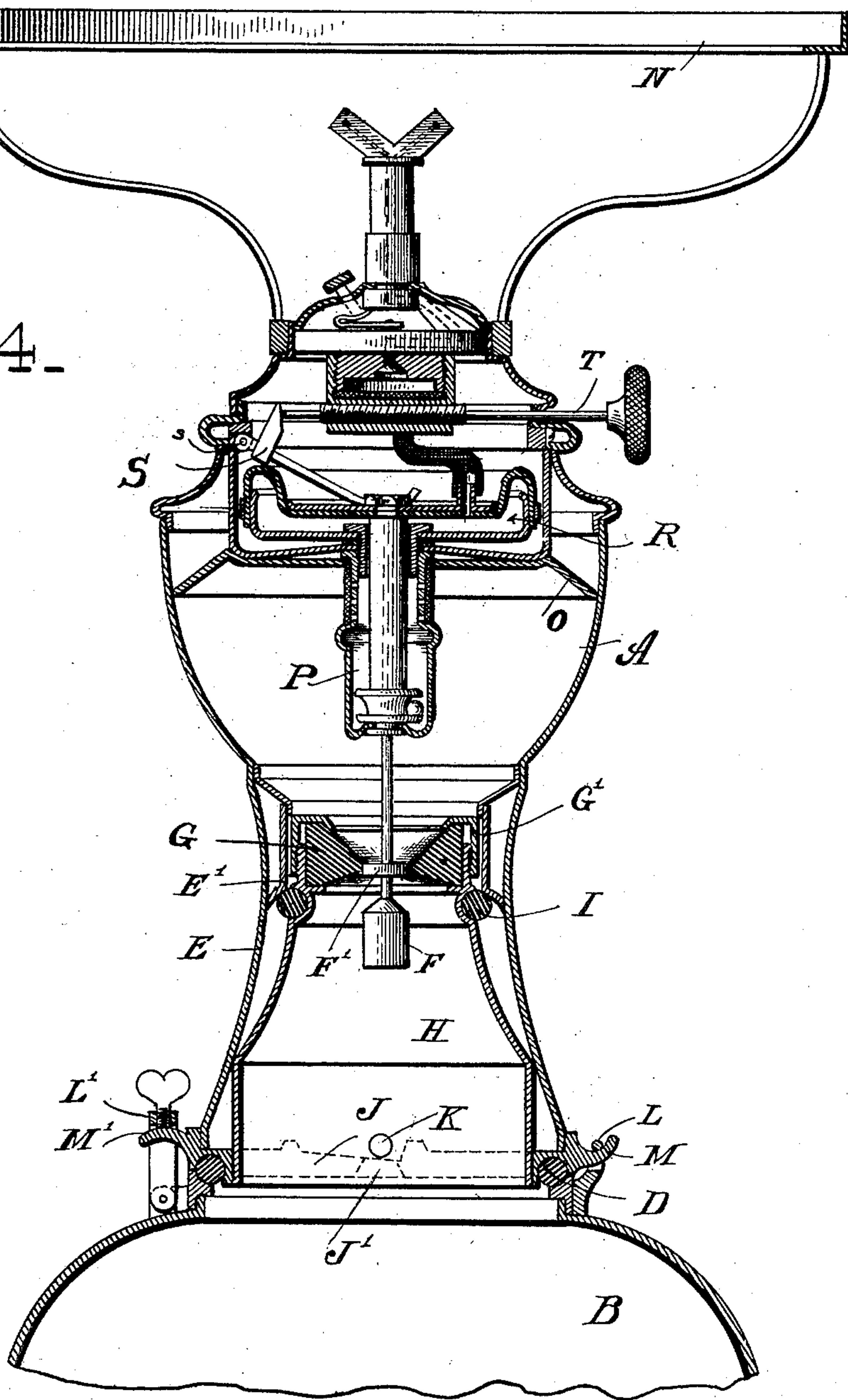
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Fig. 4.



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UNITED STATES PATENT OFFICE.

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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 713,640, dated November 18, 1902.

Application filed February 19, 1902. Serial No. 94,739. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. HOMAN, a citizen of the United States, residing at Meriden, county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Acetylene-Generators, of which the following is a full, clear, and exact description.

My invention relates to acetylene-generators, and in the drawings I have shown a generator in the form of a lamp which provides an automatic feeding mechanism whereby the proper quantity of carbid is intermittently fed to a water-chamber, whereupon the gas is generated and fed to the burner.

My invention relates particularly to the construction of the generator, whereby the parts are simplified and the necessity of having more than one opening into the generating-chamber is avoided. In this sense I mean to include the carbid-chamber and the water-chamber as constituting the gas-generating chamber. Manifestly it is necessary to get access to both the water and carbid chambers in order to fill or clean them. This is accomplished in a novel and effective manner.

The improvement herein also permits me to get a more ready access to the interior of the carbid-chamber and to the valve.

In the drawings, Figure 1 is a side elevation, mainly in section, of a generator in the form of a lamp, the bottom of the liquid-chamber being broken away. Fig. 2 is a similar view of the lamp inverted, a portion of the mechanism shown in Fig. 1 being removed from the lamp for the purpose hereinafter described. Fig. 3 is a side elevation, partly in section, of the detached portion. Fig. 4 is a vertical sectional view of a lamp embodying my invention, showing an operating mechanism therefor.

A is a casing forming a chamber in which the carbid is placed.

B is a receptacle for water.

The casing A is connected to the receptacle B by means of a joint of approved pattern which preferably includes a packing-ring D, which when the parts are coupled together hermetically seals the joint, preventing the escape of any of the contents of the generator.

The carbid-receptacle A is spaced apart from the receptacle B by what I shall term a "tubular shank" E of symmetrical proportions and of sufficient size to afford accommodation for the valve and adjacent parts.

G is a valve-seat, preferably made of suitable material, such as rubber, which can co-act effectively with the valves F F', so that when either of the valves is in engagement with said seat it will properly close the passage between the carbid-receptacle A and the water-receptacle B.

A convenient manner in which the valves F and F' may be operated will be hereinafter described.

It is apparent from an inspection of the drawings that there is no way for affording access to the interior of the carbid-receptacle unless the generator is taken apart. Heretofore it has been common to provide a suitable port or opening fitted with a screw-cap affording a means for filling the carbid-chamber from the outside. This, it is believed, is undesirable, since in the event the cap is not screwed into place very tightly leakage might occur. To that end, therefore, I provide a removable stopper of very much larger proportions than could be provided by means heretofore employed, which stopper cannot be removed until the generator is taken down, and which stopper must necessarily be secured properly in place before the generator can be used at all.

In the drawings it will be observed that within the shank E there is a separate member H, corresponding generally in shape to the interior of the shank E. The upper part of this member H affords a housing or support for the valve-seat G, which may be secured thereto conveniently by an annular cap G'.

I is a packing of suitable material located between the exterior of the member H and the interior wall of the shank E. When the parts are in the position shown in Fig. 1, this packing I is under the desired compression to effectively seal the passage aside from the sealing of the valve within the seat G. As particularly shown, there is a shoulder E, provided within the shank E, against which the

packing I impinges. Manifestly this shoulder may be provided in a variety of ways obvious to the mechanic skilled in the art.

Within the lower part of the shank E is provided an inclined ledge J, and by preference a pair of these ledges is provided for the purpose hereinafter described.

K K are studs provided on opposite sides of the member H, and these studs are adapted to coact with the inclined ledges J, so that the member H may be connected with the shank E by a joint similar in effect to the bayonet-joint. To that end the notch J' is provided adjacent to each ledge J, so that the studs K can be introduced properly. Manifestly a screw-joint might be used; but this effect generally is shown as a convenient method of attaching said member H to the shank E. To facilitate detachment, the studs K may project inward slightly, and a spring yoke or handle K' may be provided with each generator outfit, which handle may be engaged with the inside of the studs K, so that the operator may easily unseat and remove the member H. The member H, I shall term herein and in the following claims a "stopper," in that its function is to stop the passage leading into the carbide-receptacle from the liquid-receptacle, and vice versa, except, as before stated, to the extent that that passage is stopped by the valve F or F'.

L and L' are catches adapted to attach the shank to the base by coacting with the lugs M and M', respectively.

To fill the generator, the upper part is detached from the liquid-receptacle B and then inverted and caused to assume the position shown in Fig. 2, in which, it will be observed, the shade-support N may be used as a standard. The handle K' is then connected with the studs K K and the stopper H is removed, thus affording a free access to the interior of the carbide-chamber, and also affording a generous space through which to insert such cleaning implements as may be desired or necessary in order to properly clean said chamber or the valves F F'.

O is a plate which is preferably located in the top of the carbide-chamber and which when the generator is in the position shown in Fig. 2 serves as a bottom upon which the carbide may be deposited before inserting the stopper H and inverting the position of the parts. This plate O serves to prevent any loose carbide from getting up into the top of the generator, where it might possibly clog some portion of the controlling mechanism. When the proper amount of carbide has been inserted into the receptacle A, the stopper H is inserted and secured, the handle K' is removed, the liquid-receptacle B is filled with the desired amount of water, and the parts are assembled in the position shown in Fig. 1. The line of connection occurring at the pack-

ing D between the carbide and the liquid-receptacle is the only point at which access may be had to the interior of the lamp.

The generation of gas may be controlled by a suitable mechanism—as, for example, that shown in Fig. 4. The valves F and F' may be carried by a valve-rod, which passes up through a tube P and is attached to the top of a collapsible gas-reservoir R. The pressure of the gas which is contained in the receptacle A is then communicated to the reservoir R and causes the valves to rise and fall as it passes outward to the burner. When the lamp is in its inoperative position, the valve F' closes the passage between the carbide and water receptacles. To set the lamp in operation, the operating-stem T may be moved so as to raise the valve-rod by means of the lever S. This lever S is pivoted at s and suitably connected to the top of the collapsible gas-reservoir. The raising of the valve-rod and the valves permits the carbide in the receptacle A to fall intermittently into the water-receptacle. Gas is then generated and passes up through the collapsible gas-reservoir, which by its operation automatically opens and closes the valves F and F'.

What I claim is—

1. In an acetylene-generator, a carbide-receptacle, a detachable liquid-receptacle, and a removable stopper for the former located between said liquid-receptacle and said carbide-receptacle and carrying a valve-seat.
2. In an acetylene-generator, a carbide-receptacle, and a liquid-receptacle access being had to said carbide-receptacle only by means of a connection between said carbide-receptacle and said liquid-receptacle and a removable stopper for closing the access-passage.
3. In an acetylene-generator, a carbide-receptacle, a detachable liquid-receptacle, a valve between the same, and a removable stopper located between said liquid-receptacle and said carbide-receptacle, and a valve-seat carried by said stopper said stopper closing the space between said valve and said carbide-receptacle.
4. In an acetylene-generator, separate chambers for the gas-generating elements, a passage from one to the other, a valve therefor, a valve-seat for said valve, means for attaching said two chambers together, a removable stopper and a packing-ring for said stopper.
5. In an acetylene-generator, a carbide-receptacle, a water-receptacle, a passage from one to the other, a valve for said passage, a valve-seat for said valve said valve-seat being carried by a stopper removable through said passage.
6. In an acetylene-generator, a carbide-receptacle, a water-receptacle, a locking connection between the two, a passage from one to the other, a valve for said passage, a valve-

seat for said valve said valve-seat being carried by a stopper removable through said passage when said receptacles are detached.

5 7. In an acetylene-generator, a carbid-receptacle, a water-receptacle, means for connecting the two, a passage from one to the other, and means for filling said carbid-receptacle through said passage when the two receptacles are disconnected, a valve for said

passage, a valve-seat for said valve said valve-seat being carried by a stopper removable through said passage. 10

Signed at Meriden, Connecticut, this 14th day of February, 1902.

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Witnesses:

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