

No. 684,025.

Patented Oct. 8, 1901.

H. S. WOOD.  
ACETYLENE GAS LAMP.

(Application filed Sept. 15, 1900.)

(No Model.)

Fig. 1.

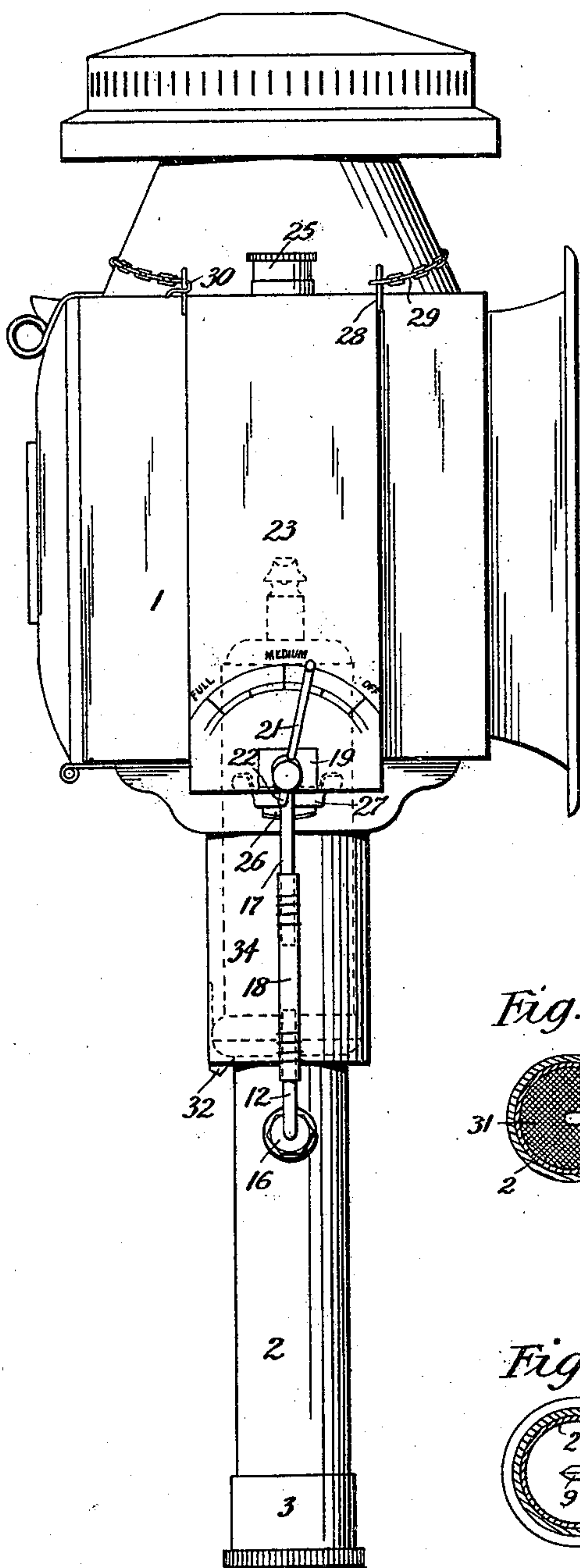


Fig. 2.

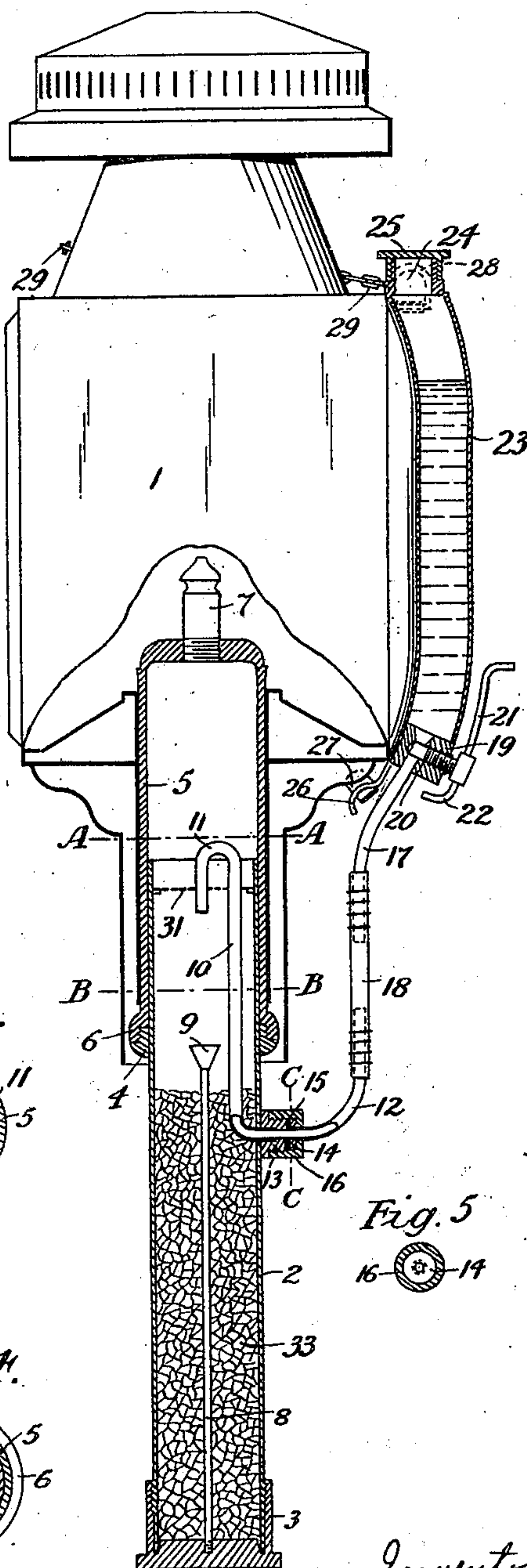


Fig. 3.

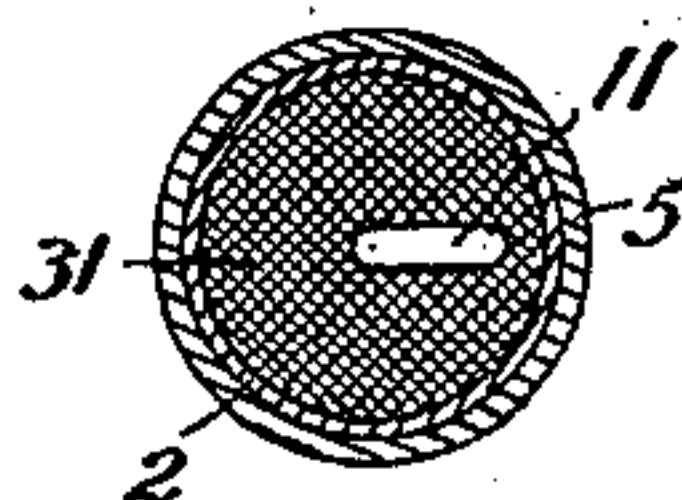


Fig. 4.

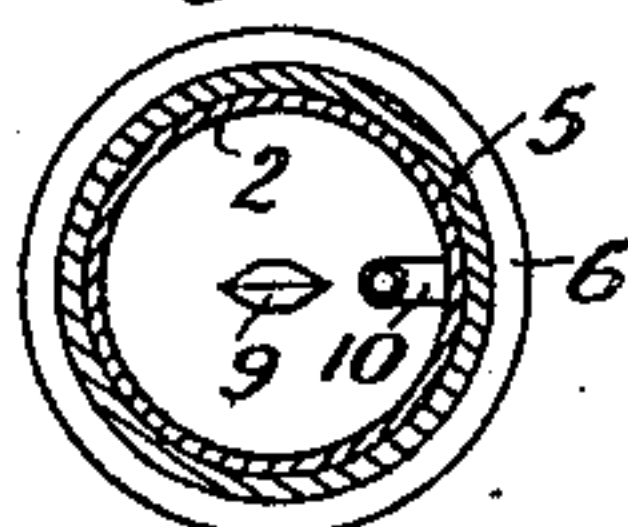


Fig. 5.



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# UNITED STATES PATENT OFFICE.

HENRY STEPHEN WOOD, OF NORTH MELBOURNE, VICTORIA.

## ACETYLENE-GAS LAMP.

SPECIFICATION forming part of Letters Patent No. 684,025, dated October 8, 1901.

Application filed September 15, 1900. Serial No. 30,189. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY STEPHEN WOOD, a subject of the Queen of Great Britain, residing at No. 100 Franklin street, North Melbourne, in the Colony of Victoria, have invented certain new and useful Improvements in Acetylene-Gas Lamps, of which the following is a specification.

The object of this invention is to provide a means whereby acetylene gas may be burned in carriage or vehicle lamps in lieu of candles and by which the ordinary vehicle candle-lamp can be converted into an acetylene-gas lamp with but slight alteration and with small expenditure.

In order to make my invention clear, I will refer in the following description to the accompanying sheet of drawings, in which—

Figure 1 shows a side view of a lamp provided with the apparatus for burning acetylene gas. Fig. 2 shows the apparatus in vertical section applied to a lamp, the lower portion of the lamp being shown in section. Fig. 3 shows a horizontal section of the apparatus, taken at line A A of Fig. 2. Fig. 4 shows a similar section taken at line B B of Fig. 2. Fig. 5 shows a vertical section taken on line C C of Fig. 2.

In the drawings, 1 represents the body of an ordinary lamp, and 2 a cylinder, which is closed at its bottom by a cap 3, screwing onto the cylinder. This cylinder has a screw-ring 4 encircling and secured to it. The top end of the cylinder 2 enters a cylindrical hood 5, the bottom end 6 of which screws onto the ring 4. This cylindrical hood rises above the top of the cylinder 2, and at its top any ordinary acetylene-gas burner 7 is set. The cap 3 has a rod 8 screwed into it and which projects upwardly within the cylinder 2 and has at its top a wedge-shaped head 9. A strip of fine wire-gauze 31 is set across the cylinder 2, near or at its top. A pipe 10 enters the cylinder 2 and rises within it, terminating in a swanneck 11, and the end of which is arranged to lie directly over the wedge head 9 aforesaid. The pipe 10 is connected by a coupling to the pipe 12 and by means of which the latter may be removed when placing the lamp in position. The construction of the part is as follows: The end of the pipe 10 is set in a screw-boss 13, affixed to the cylinder

2. The end of the pipe 12 terminates in a disk 14. A washer 15 is set between the boss and disk, and a cap 16 screws onto the boss 13 to hold the parts together. The pipe 12 is connected to pipe 17 by flexible hosing 18, or the parts 12 17 18 may be formed of a continuous length of flexible piping. The top of the pipe 17 is connected with a block 19, set at the base of water-reservoir 23, and a screw valve-rod 20 enters the said block and the periphery of which is in communication with the passage of pipe 17, and it is formed with a taper end which closes against corresponding depression in block. The valve-rod has a hand-rod 21 connected with it, whereby it is operated, and a footpiece 22 at the base of same, which projects beneath the block 19 and forms a radial limitation-stop. The reservoir 23 is designed to fit closely against the side of the lamp. The top of the reservoir has an opening 24, through which it is supplied with water, said opening being provided with a screw-cap 25. The base of the reservoir 23 is provided with a tongue 26, which is designed to enter the safety-strap connection 27, which forms part of the ordinary lamp. The top of the reservoir, at each side, has a ring 28 secured to it, and a chain 29 is connected at one end with one of the said rings, the other end being provided with a hook 30 for attachment to the opposite ring. The chain will encircle the top of lamp-body and (with the tongue 26) hold the receptacle 23 in position. The face of the receptacle 23 is marked (see Fig. 1) to indicate the position of valve when the rod 21 is turned. The cylinder 2 will be provided with a supply of calcium carbide 33, as shown in section in Fig. 2.

The cylindrical hood 5 and cylinder 2 will take the place of the ordinary "candle-socket," and same will enter the socket in the body of lamp and be held there by the means usually provided. In this case a spring-catch 32 is shown.

Assuming the apparatus to be applied to a lamp, as shown on the drawings, the action will be as follows: The water from the receptacle 23 will fill the pipe to the top of the swanneck 11, and on adjusting the valve by means of the handle 21 the water will drip from the end of the pipe 11 on the wedge head 9 and which will distribute or film the



water down along the rod 8, so as to come into contact with the calcium carbid (which is in contact all around with such rod) in the cylinder 2, so as to generate in an even and regular manner the acetylene gas. The cylindrical hood 5 and the portion of the cylinder 2 above the level of the carbid will form a reservoir for the gas prior to its exit by the burner 7 for combustion. The travel of the vehicle will shake the calcium carbid in toward the rod 8, so that the whole of same will be acted upon by the water in an even manner, and the cylinder 2 can be easily recharged by withdrawing the cylinder and hood from the lamp-body after having first unscrewed the coupling-cap 16 or removing the flexible portion 18 preparatory to removing the cap 3 for the insertion of the carbid. The wiregauze 31 will form a base for the carbid during filling and also act during the working of the lamp as a safety-screen against any downward travel of flame that might otherwise get at the calcium-carbid portion of the lamp.

I do not confine myself to the particular form of valve herein described, as another suitable form of valve might be employed to allow the adjustable downward escape of the water from the receptacle 23.

Reverting to the coupling-nut 16 and the flexible hose 18, I would have it understood that such adjustable connections have been specially provided so that the pipe connection may be uncoupled and moved aside when the socket 34 of the lamp is put into its holder on the vehicle. If preferred, the flexible portion 18 might be dispensed with; but if this be done and the pipes 17 and 12 be in the form of an unbroken tube it will be necessary to remove both the coupling-nut 16 and the water-tank from their positions when lifting the lamp-socket 34 into or from its position in the holder of the vehicle. By preference I remove one end of the flexible portion 18 from either the tube 17 or 12 and then withdraw the cylinder 2 and hood 5 by loosening the spring-catch at 32 in the usual manner.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In combination, a cylinder to contain calcium carbid, a lamp-body, a cylindrical hood attached to said lamp-body and fitting over said cylinder and carrying at its top an acetylene-gas burner, said cylinder having a vertical rod set within it with wedge head at top, a

water-containing receptacle fitting onto lamp-body, a pipe from the said receptacle to the cylinder having a swanneck with outlet over the wedge head aforesaid and a valve to control water-outlet from receptacle to pipe substantially as and for the purposes described.

2. In combination, a cylinder to contain calcium carbid, a lamp-body, a cylindrical hood attached to said lamp-body and fitting over said cylinder and carrying at its top an acetylene-burner, said cylinder having at its base a cap carrying vertical rod having wedge head, a water-containing receptacle fitting onto lamp-body, a flexible pipe from the said receptacle, a fixed pipe within cylinder having a swanneck, and a coupling connecting the fixed with the flexible pipes and a valve to control water-outlet from receptacle to pipe substantially as and for the purposes described.

3. In combination, a cylinder to contain calcium carbid, a lamp-body having a loop or strap, a hood attached to said lamp-body and fitting over said cylinder and bearing a gas-burner, a water-containing receptacle provided with a tongue adapted to enter said loop or strap, and with means for securing the upper end of the receptacle to the lamp-body, a pipe extending from said water-receptacle to said carbid-cylinder, and a valve to control the water passing through said pipe, substantially as herein set forth.

4. In combination, a cylinder 2 to contain calcium carbid, a lamp-body 1, a cylindrical hood 5 attached to said lamp-body 1 and fitting over said cylinder 2, the said cylinder 2 having cap 3 supporting rod 8 with wedge top 9, water-containing receptacle 23 fitted onto lamp-body, a pipe 17 communicating with base of water-receptacle, a valve at base of water-receptacle to control water-outlet to said pipe, a pipe 12 connected to the pipe 17 by flexible piece 18, said pipe 12 having disk 14, a pipe 10 set within the cylinder 2 having a swanneck and connected at its base to screw-bush 13, the screw-cap 16 uniting the pipes 10 and 12, a gauze strip at top of cylinder 2 substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY STEPHEN WOOD.

Witnesses:

A. O. SACHSE,  
A. HARKER.