S. E. SIMMONS.

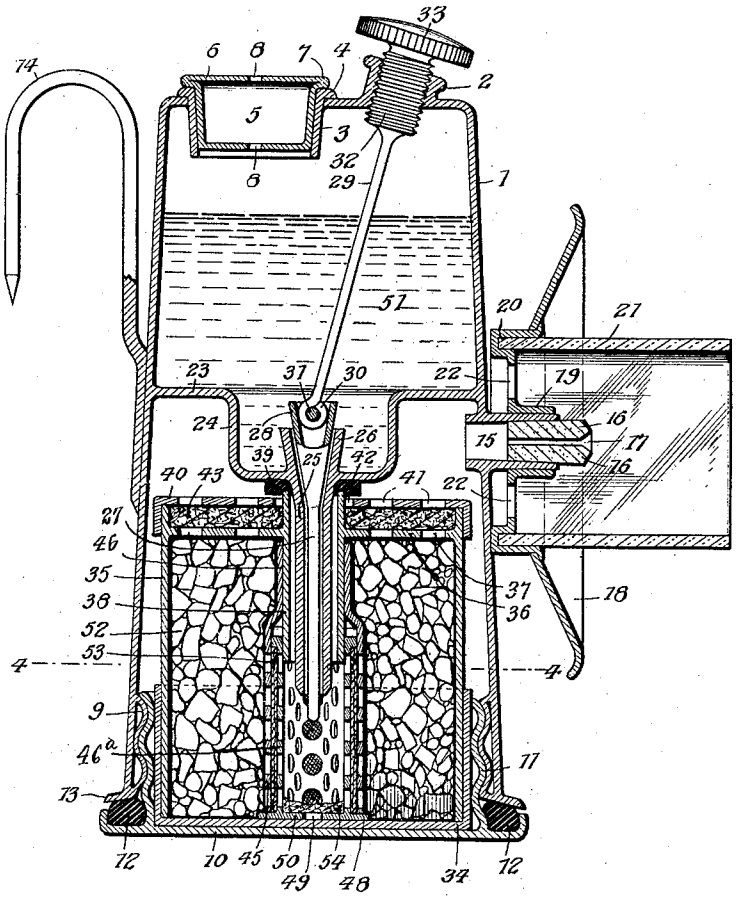
CARBID LAMP.

APPLICATION FILED OCT. 4, 1909.

976,611. Patented Nov. 22, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

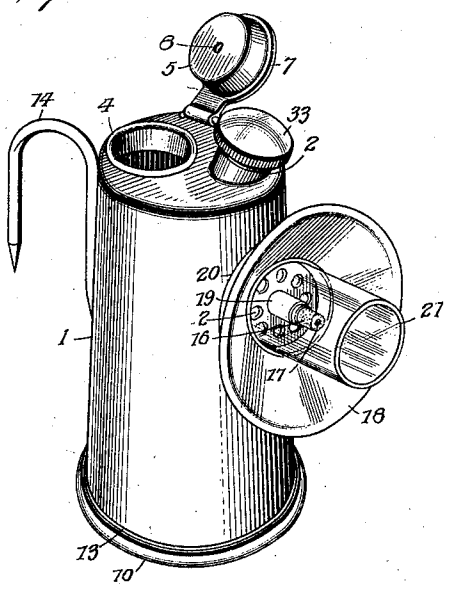


Fig. 3.

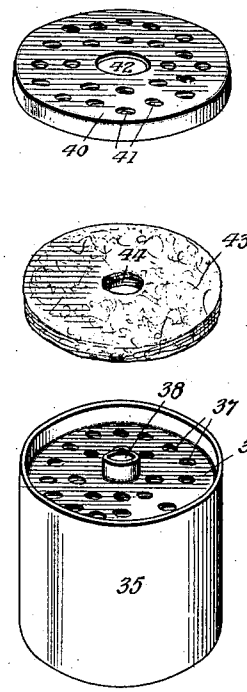


Fig. 4.

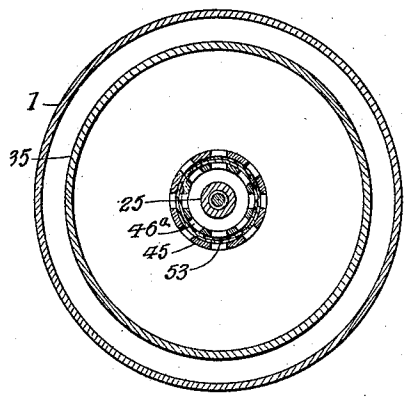
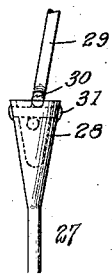
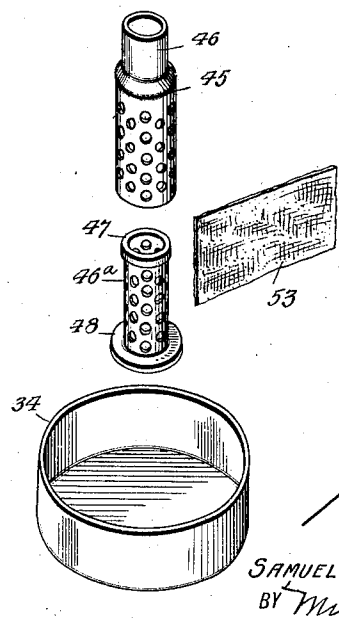


Fig. 5.





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CARBID-LAMP.

976,611. Specification of Letters Patent. **Patented Nov. 22, 1910.**

Application filed October 4, 1909. Serial No. 520,898.

To all whom it may concern:

Be it known that I, SAMUEL E. SIMMONS, a citizen of the United States, and a resident of Litchfield, in the county of Montgomery and State of Illinois, have made certain new and useful Improvements in Carbid-Lamps, of which the following is a specification.

My invention is an improvement in carbid lamps and consists in certain novel constructions and combinations of parts, hereinafter described and claimed.

The object of the invention is to provide a device of the character specified, which will be compact and simple in form, containing both the water tank and generator in one receptacle, and wherein the admission of the water may be nicely regulated.

A further object is to prevent the entrance of sediment to the carbid and to strain the incoming water and the outgoing gas.

Referring to the drawings forming a part hereof, Figure 1 is a vertical section of the lamp. Fig. 2 is a reduced perspective view. Fig. 3 is a perspective view of the parts of the generator separated. Fig. 4 is a section on the line 4—4 of Fig. 1, and Fig. 5 is a side view of the upper portion of the plug.

The present embodiment of the invention comprises a receptacle 1, substantially cylindrical in shape, and having in its top a threaded nipple 2, and an opening in which is seated a collar 3, having a flange 4 resting on the upper face of the receptacle, and in the collar is seated a cup 5 having a closed top 6, and a marginal flange 7 which rests upon the flange of the collar, and the top and bottom of the cup are provided with registering openings 8.

At its bottom the receptacle is provided with a lining 9, which is threaded as shown, and a bottom 10 is provided with a flange 11, also threaded, and screwing into the lining, and a packing ring or gasket 12 is arranged between the edge of the bottom and a lateral annular flange 13 on the lower edge of the receptacle. The receptacle is also provided near its top, on one side with a hook 14, by means of which it may be suspended, and on the other side at approximately its center with a nipple 15 for a purpose to be presently described.

A burner plug or core 16 of glass, porcelain, lava, or other suitable material, having a central bore 17 is inserted in the nipple, and a reflector 18, encircles the nipple, the reflector having a hub 19 which fits on the nipple, and an annular groove 20 for receiving a flue 21. Openings 22 are also provided in the wall of the reflector between the flaring portion and the hub, for admitting air to the burner.

Just above the nipple 15 the receptacle is provided with a diaphragm 23, which at its center is depressed as at 24, and a tube 25 extends above and below the depressed portion, passing through the bottom of the depressed portion. The upper end of the tube is flaring as at 26, and stops short of the level of the diaphragm proper, and the lower end extends to about the upper end of the lining 9 before mentioned.

A plug 27 fits within the tube, and is shaped to conform with the shape of the tube, the upper end being tapering as at 28, and a link 29 is provided at its lower end with an eye 30, which is received in the end of the plug and is traversed by a pin 31, extending also through the sides of the plug to secure the link in place. The upper end of the link is enlarged and threaded as at 32, and engages the nipple 2, and above the enlarged portion the link is provided with a milled head 33.

A cup 34 rests on the bottom 10, and within the lining 9, and a casing 35 having an open bottom, fits within the cup. The top 36 of the casing is depressed below the top edge thereof and is perforated as at 37, and provided with a central hub 38 through which extends the sleeve 25. The hub extends above and below the top, and a packing ring 39 is arranged between its upper end and the bottom of the depressed portion 24.

A cap 40 fits over the top of the casing, the cap being perforated as at 41 and having a central opening 42 through which extends the hub portion 38, and a disk 43 of cotton or other suitable absorbent material is arranged between the cap and the top 36 of the sleeve, the disk having a central opening 44 for permitting the passage of the hub 38.

A tube consisting of a lower perforated portion 45, and an upper unperforated reduced portion 46 encircles the hub 38, and a second tube 46^a having a perforated side wall and flanges 47, 48, at its ends fits within the first named tube, the bottom 50 of the second tube being closed and centrally perforated as at 49. The bottom of the tube 46^a rests on the cup 34, and a strip of cotton 53 or other suitable material is wound around the tube 46^a.

The receptacle 1 is divided by the diaphragm 23 into upper and lower compartments, the upper compartment being adapted to contain water 51, while the lower is the generator proper and contains the carbid 52. The carbid is introduced into the receptacle by unscrewing the bottom 10, and taking out the cup 34 and casing 35. The casing is then inverted and the cup removed. After filling the casing the parts are replaced and the water is poured into the upper compartments through the sleeve 3, after removing the cup 5. During this operation the plug 27 is pushed into the tube 25 by means of the link, which is operated by turning the milled head 33. After the water is introduced, the plug is withdrawn sufficiently to permit the entrance of enough water to start the generation of gas. The water passes through the tube 25, into the inner perforated tube 46ª, through the cotton strip 53 and the outer perforated tube 45—46, to the carbid. The gas generated passes up through the carbid, out through the perforated top 36 of the casing, through the disk 43, and the perforated cap 40 into the space above the cup and below the diaphragm, and out at the burner plug 16 where it is ignited. Sufficient air is supplied through the openings 22 to form a good mixture, and the flue 21 protects the flame from air currents.

It will be evident from the description, that the improved lamp is compact and simple in construction, and that all of the necessary parts are contained within the one receptacle, thus dispensing with the necessity for separate tanks, and conducting pipes. No leakage is possible between the upper and lower compartments, the water of necessity all passing through the tube 25, and the packing ring or gasket 12 prevents any escape of gas at the bottom of the receptacle.

A disk 54 of cotton or other suitable absorbent material is placed in the bottom of the inner tube, and the arrangement of the disks 43 and 54, and the strip 53, is such that both the water and the gas are strained, the water before it reaches the carbid, and the gas before it reaches the burner, the disk 43 absorbing all of the water in suspension from the gas, so that it will burn with a clear bright flame, and without sputtering. Any sediment which may be in the water will be deposited on the diaphragm or partition 23, and especially in the depression 24, and since the top 26 of the tube 25 is above the bottom of the depression, such sediment cannot enter the tube. By the arrangement of the depression and the tube, a maximum of water storage is secured, while at the same time the deposit of sediment is prevented.

I claim—

1. In a device of the class described, a generator comprising a casing for containing carbid, a cup in which the casing rests, said casing having a perforated top depressed below the upper end, a perforated cap on the upper end of the casing, a disk of absorbent material between the cup and the top of the casing, inner and outer perforated tubes arranged concentric with the casing, a layer of absorbent material between the tubes, means for delivering water to the inner tube, and a container for the generated gas inclosing the casing.

2. In a device of the class described, a carbid holder, having a perforated top depressed below the top of the holder, a disk of absorbent material seated in the top, a perforated cap seated on the disk and top of the holder, a container for the gas inclosing the holder, inner and outer perforated tubes at the center of the holder, a layer of absorbent material between the tubes, and means for supplying water to the inner tube.

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