

H. KERST.
ACETYLENE LAMP.
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1,016,275.

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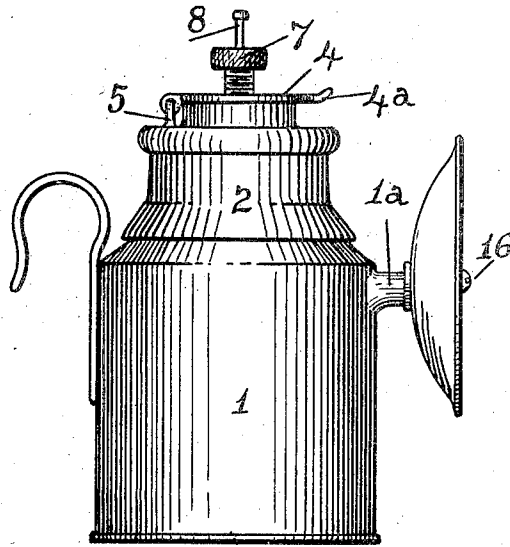


Fig. 1.

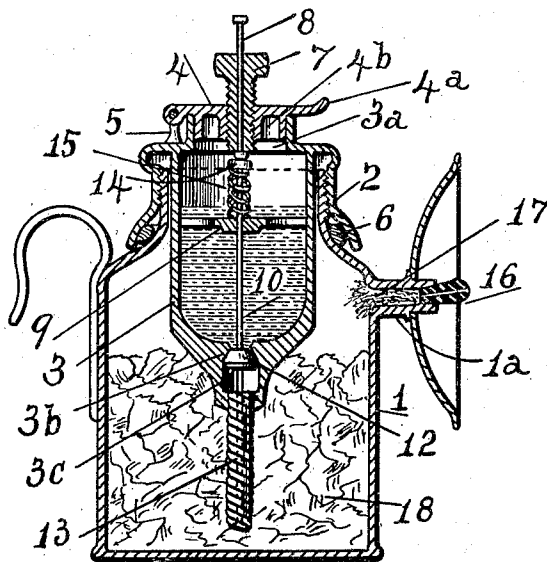


Fig. 2.

Witnesses.
Pearl Coleman.
A. T. Murray.

Inventor
HENRY KERST.
By Atty N. DuBois.

UNITED STATES PATENT OFFICE.

HENRY KERST, OF SPRINGFIELD, ILLINOIS.

ACETYLENE-LAMP.

1,016,275.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY KERST, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented a new and useful Acetylene-Lamp, of which the following is such a full, clear, and exact description as will enable others skilled in the art to make and use my said invention.

The invention relates primarily to acetylene lamps such as are used by miners, but is obviously applicable, without material modification, to table lamps, or vehicle lamps.

The purposes of the invention are: To provide in a lamp of the class described, a distributor of improved construction adapted to apply and distribute water in the mass of carbid used in generating the gas, and operative to break the incrustation of spent carbid or other obstructive material accumulating on the distributor during the operation of the lamp; to provide means for adjusting from the outside of the lamp, the valve controlling the water supply; to provide means for operating from the outside of the lamp, the distributor applying water to the carbid; to provide other new and useful features of construction hereinafter set forth.

The invention is embodied in a lamp comprising the novel feature of construction and combination of parts shown in the annexed drawing, and hereinafter particularly described and finally recited in the claims.

Figure 1 is a side elevation of the lamp and Fig. 2 is a vertical, axial section through the lamp.

The lamp is preferably constructed of suitable light sheet metal and comprises a carbid box 1, a screw cap 2, screwing onto the carbid box and a water reservoir 3, supported by the cap 2 and extending downwardly into the carbid box. A gasket 6 forms a gas-tight connection between the carbid box 1 and the cap 2. The cap 2 has at its upper end an opening 3^a, closed by a hinged cover 4. The cover 4 is mounted to turn on a staple 5, fixed on the upper end of the cap 2, and has a thumb-piece 4^a to facilitate raising the cover; it also has a central hub 4^b

accommodating a tubular screw 7. A pin 8 is adapted to slide in the bore of the screw 7, and has at each end a knob, or equivalent means, to keep the pin from pulling out of the screw.

Inside of the reservoir 3 is a stationary horizontal spider 9, having a central hole in which the vertical rod 10 slides. The reservoir 3 has at its lower end a central valve-seat 3^b and a central tube 3^c. A valve 12 secured on the rod 10 fits on the valve seat 3^b and is adapted to slide in the tube 3^c.

A closely coiled springy feed tube or distributor 13 has its upper end open and secured in the lower part of the tube 3^c, and its lower end closed and secured on the lower end of the rod 10.

A washer 14 is secured on the upper end of the rod 10. The lower end of the pin 8 rests on top of the washer 14. A spring 15, of sufficient rigidity to normally keep the valve closed, surrounds the rod 10 between the spider 9 and the washer 14 and acts to keep the valve 12 on the seat 3^b.

Water is poured into the reservoir 3 through the opening 3^a.

A burner 16 is mounted on a tube 1^a, which communicates with the interior of the carbid box. Fibrous material 17 in the tube 1^a, filters the gas passing from the carbid box to the burner.

In practical use a sufficient quantity of carbid will be placed in the box 1. The reservoir 3 will be supplied with water and the cap 2 will be screwed onto the box 1 so that the reservoir will be suspended centrally within the box. The screw 7 will then be turned downward and the lower end of the screw, acting on the upper end of the rod 10, will push the rod downward to open the valve 12 sufficiently for a normal supply of water to drip through the tube 3^c into the space surrounding the rod 10 inside of the distributor 13, and will seep through the interstices between the coils of the distributor into contact with the carbid 18 within the box, thereby causing generation of gas in the usual manner.

If the supply of water is excessive, the screw 7 will be turned upward to cause partial closing of the valve and if the supply

of water is insufficient the screw 7 will be turned downward to open the valve to increase the valve opening.

It is found in practice that an incrustation of carbid ash or other obstructive material accumulates in the lower end of the feed-tubes of lamps as constructed prior to my invention, and obstructs or completely closes the lower end of the feed-tube. It is also found in practice that a single opening at the end of the feed tube, for supplying water to the carbid, is objectionable because the water is supplied within such a small space that frequently the quantity is insufficient for proper generating of the gas. On the other hand, if excessive water is supplied, the carbid at the end of the tube becomes drowned or water-soaked. The tubular springy distributor tube 13, which I use, permits the distribution of the water along the entire length of the tube and in contact with the carbid, and the feed of the water can be so accurately controlled that there is no danger of drowning the mass of carbid; and the water contacting with the greater mass of carbid is more certainly and effectively applied to generate the constant supply of gas.

If incrustation forms on the distributor 13, or if the interstices between the coils of the tube become stopped, it is only necessary to push the pin 8 downward to cause it to act on the upper end of the rod 10 to push the rod downward and thereby stretch the springy distributor tube 13 to break the incrustation and permit normal flow of water between the coils of the distributor. The screw 7 may be turned upward sufficiently to permit the spring 15 to slide the rod 10 upward to cause the valve 12 to seat firmly on the seat 3^b, and thereby entirely stop the flow of water.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. The combination of a carbid box, a reservoir connected with the carbid box, a springy distributor communicating with the interior of the reservoir and adapted to extend downward into the mass of carbid within the carbid box and extensible to break incrustation accumulating on said distributor and a rod connected with the lower part of the distributor and extending upward through the lamp and depressible from outside the lamp to expand the distributor.

2. The combination of a carbid box, a reservoir connected with the carbid box, a coiled springy distributor communicating with the interior of the reservoir and adapted to permit water to seep between the coils of said distributor, a valve between

the reservoir and the distributor and a stem connected with the valve and the distributor and operable from outside the lamp to control the supply of water from the reservoir to said distributor and to expand said distributor to break incrustation.

3. The combination of a carbid box, a reservoir connected with the carbid box, a springy coiled distributor communicating with the interior of the reservoir and adapted to permit water to seep between the coils of said distributor, a valve controlling the supply of water to the interior of the distributor, and valve-controlling means connected with the valve and the distributor and operable from outside the lamp to control the supply of water from the reservoir to the interior of said distributor and to control said coiled distributor to vary the flow of water between the coils thereof to correspond to the opening of the valve.

4. In combination with a carbid box and a reservoir supplying water thereto, a coiled extensible distributor intercommunicating with the reservoir and the carbid box, and an extender connected with the distributor and operable from outside the lamp to expand the distributor to break incrustation on the distributor to increase the flow of water from the reservoir into the carbid box.

5. In combination with a carbid box and a reservoir supplying water thereto, a feed-tube intercommunicating with the reservoir and the carbid box and extensible to break incrustation forming on said feed-tube, a slidable rod connected with the tube, and a slidable pin extending upwardly through the lamp and engaging on the end of said rod.

6. The combination with a carbid box; a cap connected with the carbid box and having an opening; a reservoir connected with said cap and extending into the carbid box and having in its lower part an upwardly tapered valve-opening; an expansible distributor connected with the reservoir and communicating with the valve-opening thereof; a cover closing the opening in said cap; a screw mounted on said cover; a slidable pin extending through said screw; a vertically slidable valve-rod in line with and engaged by said pin and adapted to expand said distributor; a valve on said valve-rod adapted to seat in the valve-opening of said reservoir; and a spring acting to raise the valve-rod to hold the valve on its seat.

7. The combination of a carbid box; a reservoir within the carbid box and provided with a valve-seat, an extensible distributor connected with said reservoir, a vertically slidable valve-rod connected with and adapted to expand said distributor, a

valve connected with said valve-rod and fitting on the valve seat of said distributor; a spring acting to raise the valve rod to close the valve; an adjusting screw in line with the valve-rod and operative from the outside of the lamp; and a pin extending through the adjusting screw and engaging on the valve rod to slide it downward.

In witness whereof I have hereunto signed my name at Springfield Illinois, this 10 21st day of May 1910.

HENRY KERST.

Witnesses:

PEARL COLEMAN,
A. G. MURRAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."