

J. COURTNEY.
MINER'S ACETYLENE LAMP.
APPLICATION FILED JAN. 30, 1913.

1,063,419.

Patented June 3, 1913.

Fig. 1.

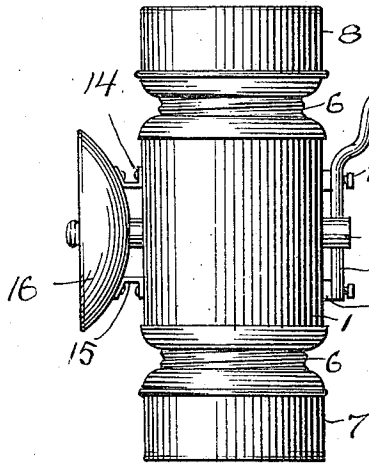


Fig. 2.

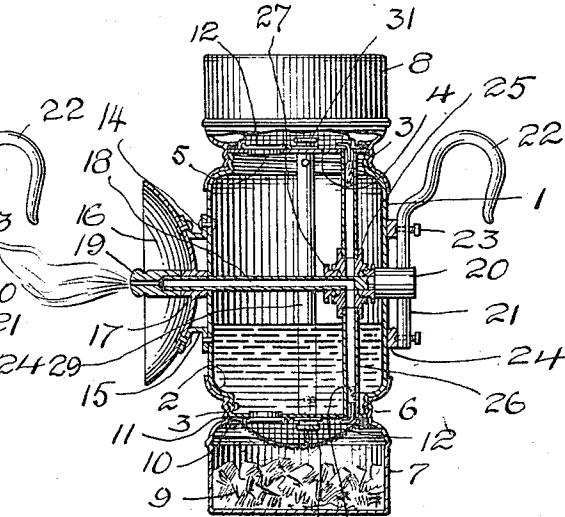


Fig. 3.

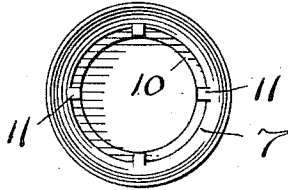


Fig. 6.

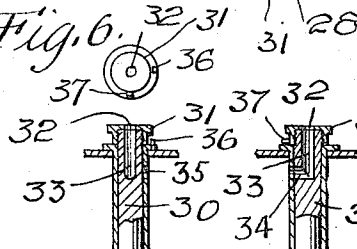


Fig. A.

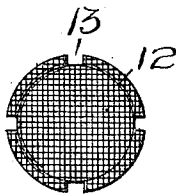


Fig. 5.

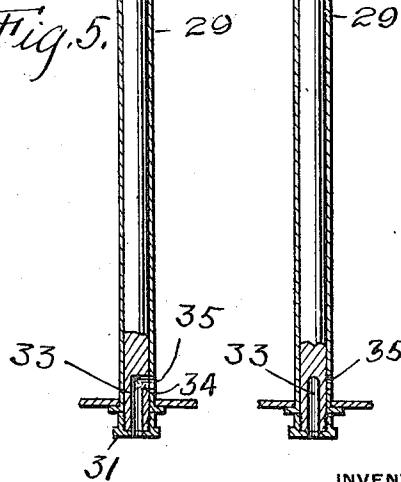
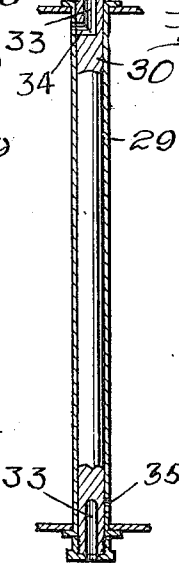


Fig. 7.



WITNESSES

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MINER'S ACETYLENE-LAMP.

1,063,419.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed January 30, 1913. Serial No. 745,167.

To all whom it may concern:

Be it known that I, JOHN COURTNEY, a citizen of the United States of America, residing at Forbes Road, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Miners' Acetylene-Lamps, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a miner's acetylene lamp, and more particularly to that type wherein water and carbid are utilized as a fuel for producing a brilliant light which will facilitate the operations of a miner in a mine or quarry.

The objects of my invention are to provide:—First, an invertible acetylene gas lamp that has carbid reservoirs that can be alternately placed in use, thereby permitting of one reservoir being filled and the fuel replenished while the other reservoir is in use. Second, an acetylene gas lamp that has novel valvular members that control the generation of acetylene gas and consequently the use of the lamp. Third, an invertible acetylene gas lamp that can be advantageously used in connection with a miner's cap for producing a brilliant light and sufficient illumination for operations in the workings of a mine. Fourth, an acetylene gas lamp consisting of comparatively few parts inexpensive to manufacture, durable and so arranged as to be easily and quickly assembled.

With the above and other objects in view the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawing, wherein:—

Figure 1 is a side elevation of the lamp, Fig. 2 is a similar view partly broken away and partly in section, Fig. 3 is a plan of a detached carbid reservoir, Fig. 4 is a plan of a detached screen, Fig. 5 is a vertical sectional view of a valvular member controlling the supply of water to the reservoirs, Fig. 6 is a plan of the same, and Fig. 7 is a longitudinal sectional view of the valvular member taken at right angles to Fig. 5.

A lamp in accordance with this invention comprises a cylindrical shell 1 that has the ends thereof reduced, as at 2 and provided with screw threaded necks 3. The screw

threaded necks 3 are closed by plates 4 provided with filling openings that are normally closed by hinged caps or plugs 5, the caps or plugs permitting of water being placed in the shell 1, whereby the shell will constitute a water reservoir.

Screwed upon the necks 3 are the screw threaded ends 6 of cylindrical reservoirs 7 and 8, these reservoirs having flat bottoms and said reservoirs constituting the top and bottom of the lamp. The reservoirs are adapted to contain carbid 9 and each reservoir has the threaded end thereof provided with an annular flange 10 and a plurality of inwardly projecting lugs 11, said lugs being arranged above the flange 10 whereby a convexo-concave sieve or screen 12 can be seated upon the flange 10 beneath the lugs 11. The screen is notched, as at 13 and said notches provide clearance for the lugs 11 whereby the screen can be seated upon the flange and then partially rotated to engage under said lugs and thereby be held in position relatively to the reservoir. This screen retains the carbid within the reservoir and prevents interference with the communications of the reservoirs.

Secured to the front side of the shell 1 by rivets 14 or other fastening means are brackets 15 supporting a reflector 16. The reflector 16 has a concentric bearing 17 for a shiftable gas tube 18 that extends into the shell 1. The outer end of the gas tube 18 within the reflector 16 has a burner tip 19 and the inner end of said gas tube is provided with a head 20 that extends through the rear wall of the shell 1 and accommodates the shank 21 of a hook 22. The hook 22 facilitates attaching the lamp to a hat besides constituting a handle whereby the tube 18 can be rotated. The hook 22 is held in an adjusted position relatively to the shell 1 by set screws 23 carried by the shank 21, the set screws being tapped into sockets 24 carried by said shell.

The tube 18 extends through a valve body 25, carried by a gas pipe 26 that is in communication with the reservoirs 7 and 8 of the lamp. The valve body 25 has packing glands 27 that insure a nonleakable connection between the gas tube 18 and the gas pipes 26. The gas tube 18 has a small opening and said gas tube serves functionally as a valve stem. With the hook 22 in one position the gas tube is in communication with one of the gas pipes 26 and when the

hook 22 is swung to an inverted position the gas tube 18 is placed in communication with the other gas pipe. The outer ends of these gas pipes are provided with detachable filters 28, preferably in the form of
 5 pieces of cotton that are carried by pins whereby the pieces of cotton can be easily removed. The filters prevent impurities from passing into the gas pipes, thereby
 10 insuring to a high degree a clean and perfect acetylene gas being emitted by the burner tip 19.

In order to establish communication with the water reservoir and the carbid reservoirs a cylindrical casing 29 extends longitudinally of the shell, said casing being supported by the plates 4. Within the cylindrical casing there is located a rod 30 and this rod has the ends thereof provided with
 15 caps 31 having openings 32 in communication with angle ports 33 and 34, the port 34 being arranged at a different angle from the port 33. The angle ports 33 and 34 are in communication with openings 35 in the casing 29 and by rotating the rod 30 first
 20 the port 34 is placed in commission and then the port 33. In consequence of the arrangement of the ports 33 and 34 the communication between the reservoir 7 and the shell 1 can be easily controlled, also so with the
 25 communication between the reservoir 8 and the shell 1.

In operation, the rod 30 is adjusted whereby the water within the shell 1 can drip into
 30 the reservoir 7, through the screen 12 onto the carbid 9 and thereby generate a gas that passes upwardly in one of the gas pipes into the tube 18. Assuming now that the carbid has been exhausted in the reservoir
 35 7, said reservoir can be removed and the rod 30 adjusted to establish communication between the reservoir 8 and the water supply within the shell 1. The hook 22 can then be inverted by adjusting the screws 23
 40 and when said hook is inverted the gas tube 18 is placed in communication with the reservoir 8. As the hook has been inverted the lamp is used in an inverted position and it is during this use that the exhausted reservoir 7 can be replenished also the supply of
 45 water within the shell 1. In other words, I have revised a lamp with an auxiliary acetylene gas supply which permits of the lamp being practically used continuously.

In order to determine an adjustment in connection with the rod 30, the end of the casing 29 has a pin 36 that is engaged by a
 50 lug 37 forming part of the rod 30. The pin 36 serves as a stop and the user of the lamp can readily determine when the rod 30 has
 55 been properly adjusted to establish the necessary communication with a carbid reservoir.

It is thought that the operation and utility of the lamp will be apparent without

further description and while in the drawing there is illustrated a preferred embodiment of my invention, it is to be understood that the structural elements are susceptible to such variations and modifications as fall
 70 within the scope of the appended claims.

What I claim is:—

1. An invertible miner's acetylene lamp comprising a water reservoir, carbid reservoirs carried by the top and bottom thereof,
 75 a longitudinal valvular member connecting said carbid reservoirs and adapted to alternately establish communication between said carbid reservoirs and said water reservoir, and a gas tube rotatably supported by said
 80 water reservoir and adapted to be alternately placed in communication with said carbid reservoirs.

2. An invertible acetylene lamp comprising a water reservoir, carbid reservoirs adapted to be alternately placed in communication with said water reservoir, and a
 85 rotatable gas tube extending into said water reservoir and adapted to be alternately placed in communication with said carbid
 90 reservoirs.

3. An invertible acetylene lamp comprising a water reservoir, carbid reservoirs adapted to be alternately placed in communication with said water reservoir, a
 95 rotatable gas tube extending into said water reservoir and adapted to be alternately placed in communication with said carbid reservoirs, and means carried by said gas tube whereby said tube can be locked in
 100 adjusted position relatively to said water reservoir.

4. An invertible acetylene lamp comprising a reservoir, carbid reservoirs carried by the ends of said water reservoir, a valvular
 105 member connecting said carbid reservoirs and adapted to alternately place said water reservoir in communication with said carbid reservoirs, gas pipes connecting said carbid reservoirs, and a rotatable gas tube supported by said pipes and said water
 110 reservoir and adapted to be alternately placed in communication with said pipes.

5. An invertible acetylene lamp comprising a water reservoir, carbid reservoirs detachably mounted upon the ends thereof, gas
 115 pipes connecting said carbid reservoirs, a rotatable gas tube supported by said water reservoir and adapted to be alternately placed in communication with said carbid
 120 reservoirs through the medium of said gas pipes, and means connecting said carbid reservoirs for alternately establishing communication between said carbid reservoirs and said water reservoir.

6. An invertible acetylene lamp comprising a water reservoir, carbid reservoirs detachably mounted upon the ends thereof, gas
 125 pipes connecting said carbid reservoirs, a rotatable gas tube supported by said water

reservoir and adapted to be alternately placed in communication with said carbid reservoirs through the medium of said gas pipes, means connecting said carbid reservoirs for alternately establishing communication between said carbid reservoirs and said water reservoir and means carried by said gas tube for locking said tube in ad-

justed position relatively to said water reservoir.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN COURTNEY.

Witnesses

N. J. McCLAIN,

J. Q. TRUXAL.

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