

TWO CANDLE-LIKE CARBIDE LAMP PATENTS

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The two patents shown below are for miner's carbide lamps of a similar design as that of the Arnold Carbide Candle patented by Ralph R. Arnold in 1912. At this time, there are no examples of these lamps known to exist--only the patent drawings and text.

The lamp shown in Figure 1 was patented on April 13, 1920, by John D. Luttrell of Benton Harbor, Michigan. The patent was assigned to the Service Carbide Lamp Company of Terre Haute, Indiana--which was a co-partnership.

This lamp consisted of a cylindrical housing or casing with a burner tip at the top of the lamp. Unlike the Arnold Carbide Candle--which has the water in the top and the carbide contained in the bottom part of the lamp--this lamp had these items reversed. To charge the lamp for use, it was "to be inverted after the plug 5 and receptacle 6 have been removed therefrom and a quantity of calcium carbid introduced into the same to fill it about one third of its total capacity. Thereupon, the receptacle 6 with the wick 11 and the rod 9 projecting therefrom a predetermined distance, is inserted into the receptacle and the plug 5 thereafter inserted." This receptacle was one-third of the length of the casing and equipped with a screw cap. This receptacle was adapted "to contain water which is fed by capillary attraction to maintain the exposed portion of the wick projecting from or above the tubular element continuously moist." The lamp was then turned to its normal position causing the lumps of carbide in the top portion of the lamp to be brought into contact with the moist wick. As the carbide was decomposed, "the calcic residue will

drop down upon the top of the receptacle 6 and fresh carbid will be automatically brought into contact with the wick."

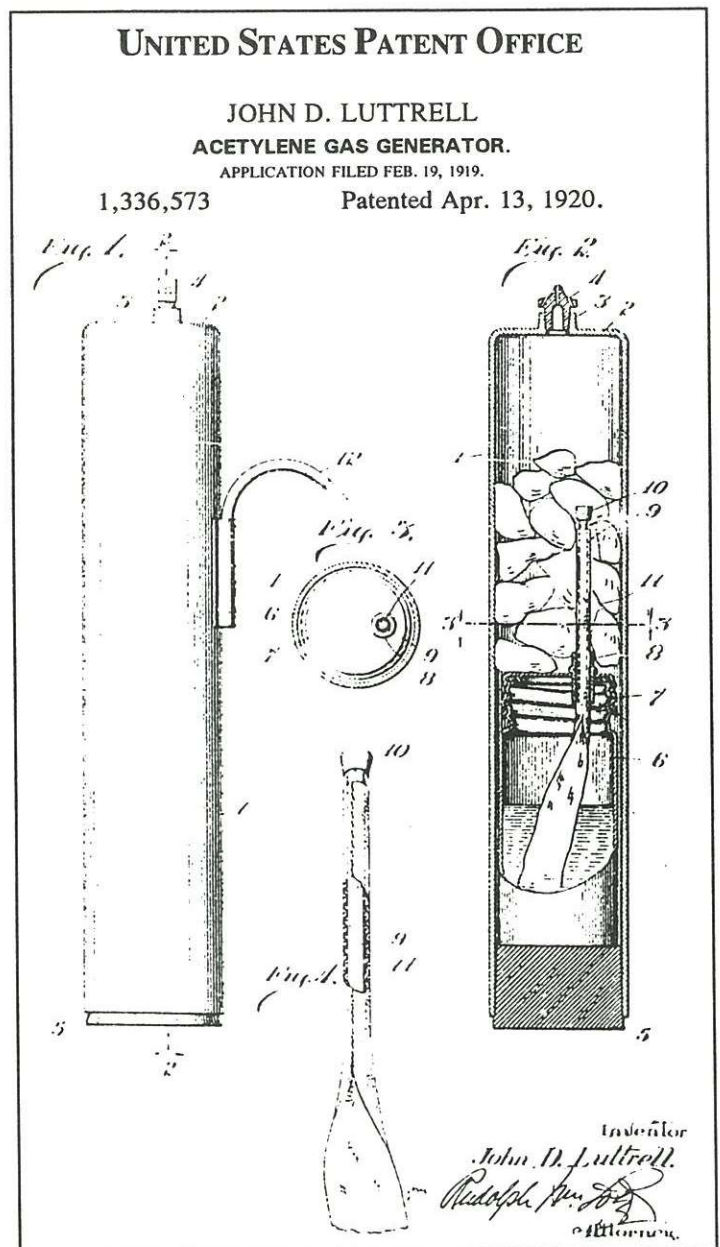


Figure 1. The patent drawings for John D. Luttrell's 1920 patent drawing for Improvements in Acetylene Gas Generators.

UNITED STATES PATENT OFFICE

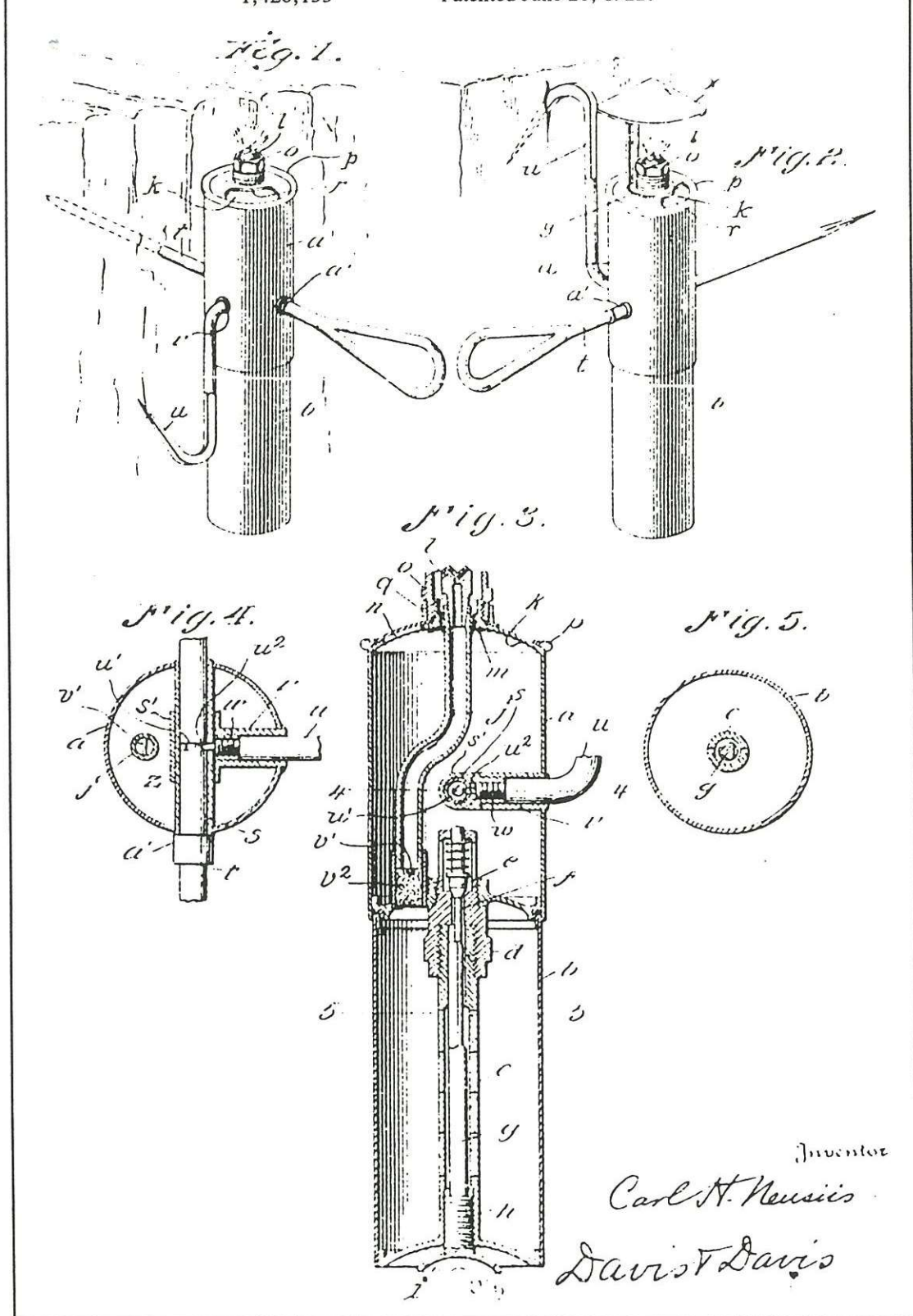
CARL HENRY NEUSIIS

ACETYLENE MINER'S LAMP.

APPLICATION FILED NOV. 30, 1921.

1,420,133

Patented June 20, 1922.



Inventor

Carl H. Neusii

Davis & Davis

Figure 2. The patent drawings for Carl Henry Neusii's 1922 patent for Improvements in Acetylene Miners' Lamps. Figure 1 of the patent drawing shows a perspective view of the lamp showing one way of supporting the lamp, while Figure 2 is a similar view showing another way of supporting the lamp and also one way of protecting the flame from dropping water.

The lamp shown in Figure 2 was patented by Carl Henry Neusiis of Baker, Oregon, on June 20, 1922.

This lamp was designed to be made in two main cylindrical parts, the top containing the water and the lower for carbide. The water feed valve was a "thumb-piece being converted upwardly to enable it to fit up into the convexed bottom wall of the carbide-chamber, so as to be in a measure housed by said bottom wall in such manner as to be out of the way." The water valve was spring actuated at the top.

One of the features that Carl Neusiis considered of great importance was an exposed burner tip "permitting the flame to radiate in all directions without forming shadows, shadows being, of course, frequently very objectionable to the miner. In view of this capacity to radiate the light in all directions, the miner will have a wider choice of positions for locating the lamp than would be the case if the light were permitted to radiate toward one side only. In fact, I have constructed my lamp to be as nearly like a candle as possible, since a candle is an ideal illuminating device for mine use, except that its illuminating power is too limited.

Probably the most unique features of Carl Neusiis's carbide lamp were the hook, "skewer" and canopy. These features are described in the patent text in detail and the concepts are very novel. The following are the descriptions of these features as taken from the patent text.

"Extending through the water-chamber at a point above the center of gravity of the lamp is a rigid tube open at both ends. Through this tube is passed a skewer which consists of a rod pointed at one end and provided with a finger-receiving ring-handle at the other end. In putting up the lamp, it is simply necessary to pass the skewer through the tube and then push or drive the pointed end of the skewer into the mine timber. The skewer passes loosely through the tube so that the lamp swings on the tube in the manner of a pendant, thus always maintaining an upright position and relieving the miner entirely of the bother of holding the lamp upright during

the driving of the skewer into the timber of the mining chamber.

"For use in those cases where it is impossible or inconvenient to support the lamp on the skewer, I provide a hook as shown in Fig. 2. To connect this hook to the lamp, I provide another tube which enters the water-chamber at right angles to the [other] tube and has its inner end supported on said [other] tube by a T-coupling. At the inner end of the short tube. . . I provide a series of internal screw-threads into which the threaded end of the hook may be screwed. The end of the hook is screwed loosely into the threads so that the lamp will swing to upright position as freely with the use of this hook as when the skewer is employed as a support.

"As shown in Fig. 2, I may protect the flame by a canopy which is clamped to the upper face of the cover-plate by a flat ring. It will be observed that the shape of the hook enables it to be readily screwed home in the tube, the hook part serving as a sort of crank, and it will be observed also that it may be screwed far enough to cause [the] pin formed on its inner end to pass through an opening formed in the tube so that when desired this hook may be used to lock the lamp from sliding off the skewer, said pin being arranged to enter an annular groove formed in the skewer. To properly locate this groove with respect to [the] pin, the skewer is provided with a shoulder to limit its passage through [the] tube.

"It will be observed that a feature of importance is that the lamp will always hang straight on the skewer or hook, whichever support is used. . ."

"It will be observed also that my lamp is virtually reversible in that the skewer may be passed through the lamp-body from either side, thereby enabling the miner to locate the hook on either the right or left-hand side of the lamp. This is a great convenience to the miner."