

# MINING AND SCIENTIFIC PRESS

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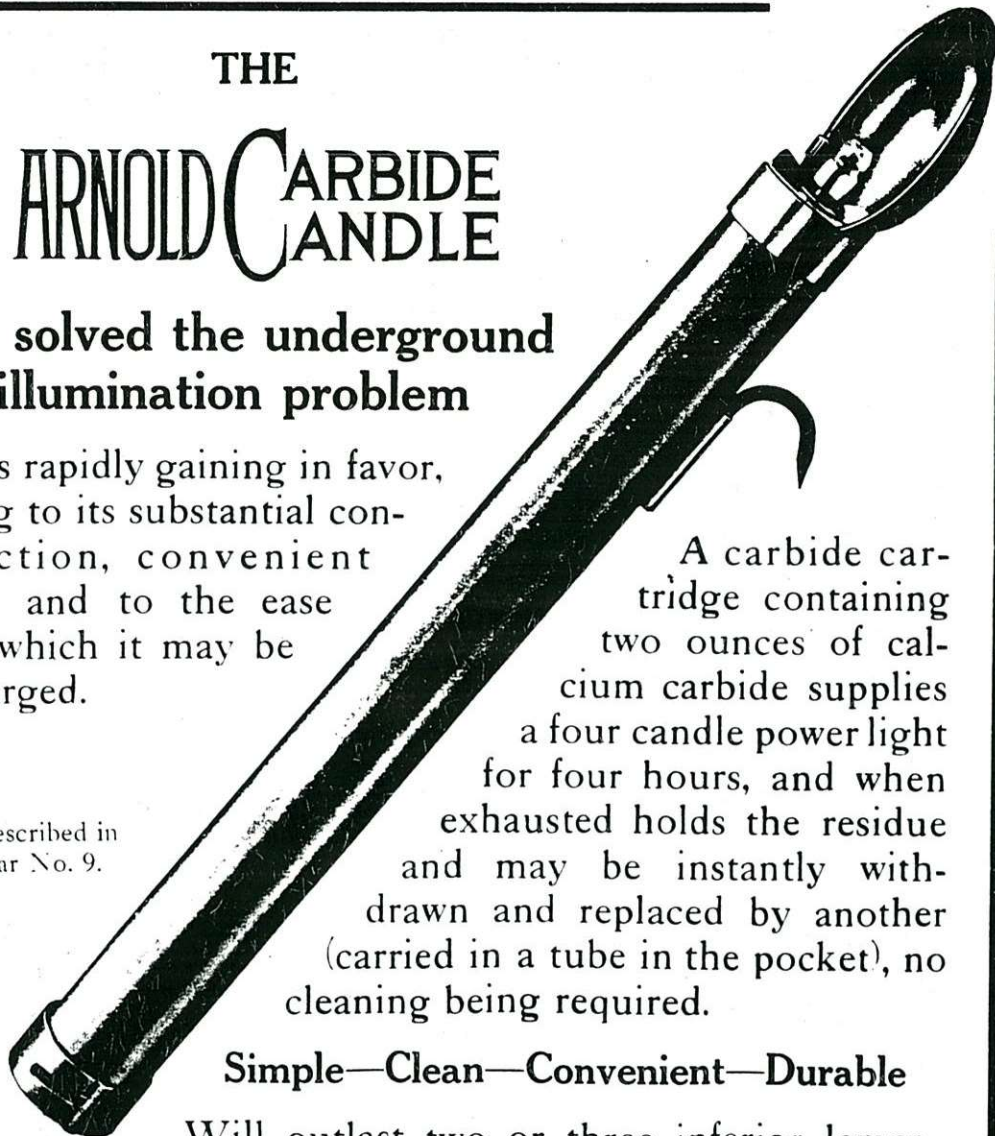
BUYERS DIRECTORY, PAGE 36

## THE ARNOLD CARBIDE CANDLE

**Has solved the underground  
illumination problem**

and is rapidly gaining in favor,  
owing to its substantial con-  
struction, convenient  
form, and to the ease  
with which it may be  
recharged.

Fully described in  
Circular No. 9.



A carbide car-  
tridge containing  
two ounces of cal-  
cium carbide supplies  
a four candle power light  
for four hours, and when  
exhausted holds the residue  
and may be instantly with-  
drawn and replaced by another  
(carried in a tube in the pocket), no  
cleaning being required.

**Simple—Clean—Convenient—Durable**

Will outlast two or three inferior lamps.

Price \$2.50. If your dealer does not carry them, a sample  
lamp will be sent postpaid upon receipt of price.

WM. AINSWORTH  
◊ & SONS ◊

THE PRECISION FACTORY

DENVER, COLO.  
◊ U.S.A. ◊

## The Arnold Carbide Candle by Len Gaska

The Arnold Carbide Candle is one of the most unusual carbide lamps ever made. It is certainly not a cap lamp and doesn't really fit into the category of a hand lamp or "hanging lamp" as I categorize conventional 6-8 hour lamps with hook and bale. It's rather large hook was designed, no doubt, for hanging on mine walls or timbers.

A unique feature of the Arnold Carbide Candle is the cloth bag to hold the carbide. Each Arnold was supplied with several bags and a tin to hold extra charges. This feature was supposed to result in simplicity of cleaning and recharging of the lamp. However, because the bags were subject to tearing and deterioration, this method of charging the lamp was probably not practical. Miners have always been drawn to simple, reliable, and durable designs in mine lighting and the Arnold Carbide Candle did not fit the bill.

The Arnold Carbide Candle was patented on October 29, 1912 by Ralph R. Arnold of Cripple Creek, Colorado. Advertisement for the Arnold refer to extensive use and testing in the Cripple Creek Mining District. Although the Arnold was most likely superior to candles, it could not compete with the simpler designs of Justrite and other lamp manufacturers. Because of its relatively short life, the Arnold Carbide Candle is rare and highly prized by collectors.

<b>WM. AINSWORTH &amp; SONS</b>	<b>THE PRECISION FACTORY</b>	<b>DENVER, COLO. U.S.A.</b>
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THE  
**ARNOLD CARBIDE  
CANDLE**

**SOLVES THE MINE ILLUMINATION PROBLEM**

A two years' tryout underground in the Cripple Creek mining district has demonstrated its superiority over the numerous lamps now on the market owing to its simplicity, economy and durability, as well as to its convenient form.

**Simplicity:** As shown, the lamp consists of a main tube 1 1/2 inches in diameter by 12 inches long and divided near the center into a water chamber closed by a shutter above, and a carbide chamber closed by a gasket lined cap below, a water control valve with screw adjustment and a gas tube extending from the carbide chamber below to the top.

**A Cartridge** containing calcium carbide is placed in the carbide chamber and the water chamber filled; upon opening the valve the generation of gas immediately begins and by regulating the water and thereby the production of gas the flame is controlled and may be varied from one fourth to 8 candle power, the cartridge containing a sufficient amount of carbide (2 ounces) to produce a 4 candle power flame for at least 4 hours.

**Economy:** When the entire charge has been consumed the cartridge containing the residue may be instantly replaced by a new one, no cleaning of the carbide chamber being required, the cartridge fabric being such that it filters the gas, thereby eliminating the filters required in other lamps, accommodates the expansion of the carbide, and conducts the water to the carbide uniformly throughout the length of the cartridge thereby consuming every atom.


**The Burner** produces a fan shaped flame affording maximum illumination with a minimum of gas, thereby eliminating carbonizing and the consequent obstruction of the burner.

**Reflectors:** A nickel plated removable sliding reflector serves also as a wind shield and water deflector, and when slid down on the candle acts as a protector for the burner when general illumination is required.

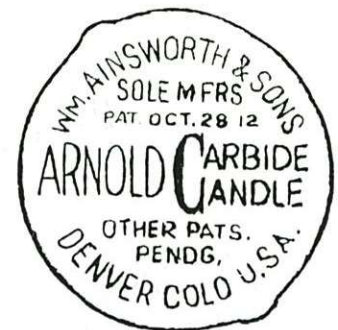
**Durability:** Made of 20 gauge brass, has no screw threads to become jammed or crossed, and will outlast from two to six of the inferior lamps now on the market. Only the best workmanship and material used throughout.

**Circular No. 9** gives full description and price. Send for it.

If your dealer does not carry them, a sample lamp will be sent by parcels post, paid, upon receipt of price. Discount in quantities.



Weight 8 Ounces.  
Price \$2.50



Bottom



Bag