

The Carbide Safety Lamp

by Tony Moon

One of the earliest uses of carbide in a mining lamp was for a safety lamp. The design of this early lamp was reported in the *Engineering and Mining Journal*.¹ Unfortunately, the manufacturer of the lamp is not stated and neither is its country of origin, but Germany is the most likely candidate as the majority of the article describes the use of carbide lamps in that country.

The advantage of carbide was its greater illuminating power compared to oil or naphtha and the presence of methane could still be detected. The disadvantages were the complexity of adding a carbide generator to a safety lamp with the inherent problems of providing a water feed regulating valve at 90 degrees (Wolf and Seippel) or angled (Arras) plus providing a reliable relighter that had to function through the side of the lamp. With the widespread adoption of electric lamps by the mid 1920's, the necessity for using a safety lamp for its illuminating power became a moot point and the carbide safety lamp became obsolete. Most of the examples date from 1910 to 1925.

Three manufacturers of carbide safety lamps are known to the author:

- Arras of France
- Seippel of Bochum, Germany
- Wolf with marking from England, Germany, and U.S.A.

Examples of the Arras lamps that have been examined by the author, and that are illustrated,² all appear to be very similar. The lamp is of steel and brass construction with a smooth bonnet. An unusual hook and bail assembly provides part of the clamping mechanism for the lamp. The lamp is later than the others and is probably from the 1920's.

The author's knowledge of the Seippel lamp is limited to published photographs.³ Two versions of an unbonneted lamp (or three if the large station type lamp is included) exist with relatively minor differences between the two styles, such as the length of gauze and the relighter type.

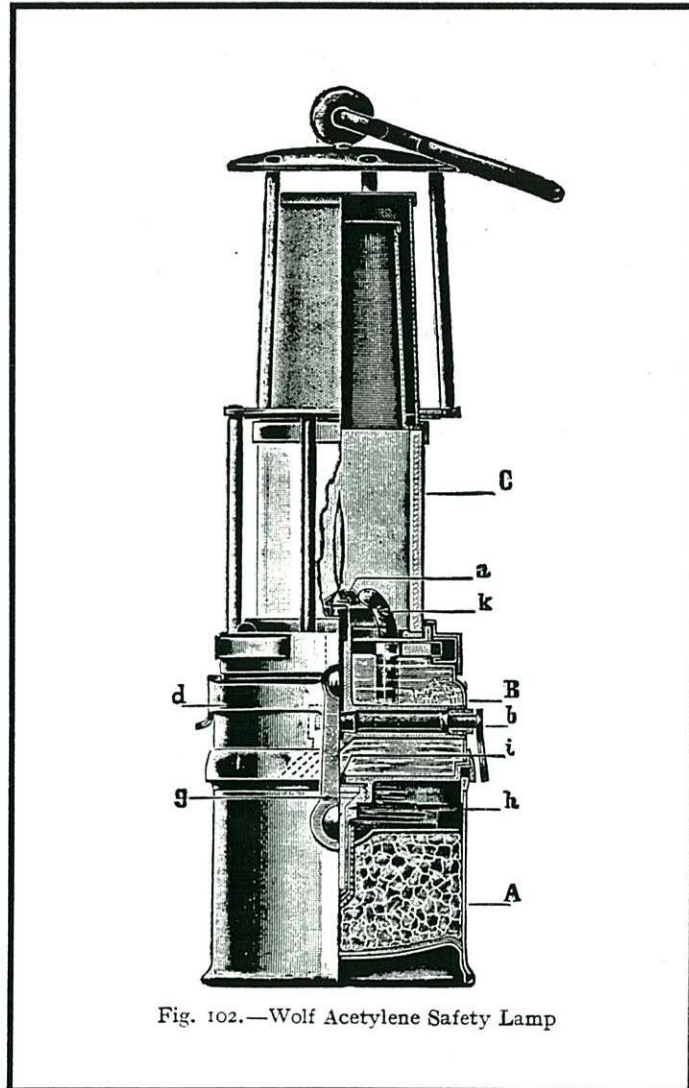


Fig. 102.—Wolf Acetylene Safety Lamp

The Wolf carbide safety lamp is the best documented of the three name brands. Two different models are shown with this article. The first is an unbonneted style from about 1910 and the second, from the author's collection, is a later all brass bonneted style from England with the label "The Wolf Safety Lamp Co, Leeds". The Wolf lamp was produced in two sizes: a 12 hour type and the other, of smaller diameter, with a capacity of about 6 hours. The earliest versions were unbonneted but later versions were available in either a smooth or a corrugated bonnet. The lamps were normally of steel and brass construction but were available in all brass for surveying purposes.

Two interesting customized versions of the Wolf lamp were reported in the literature.⁴ Mr. H. M. Chance experimented with at least two different carbide generators, but still used the top portion of a corrugated bonneted Wolf lamp. In one lamp he even added a Muesler chimney and a second glass. It is doubtful if either of these customized versions were made in any quantity.

References

1. The Engineering and Mining Journal, Feb 17, 1900
2. Senior Conflow Calendars: No. 1 (Jan 82), No. 4 (Nov 85), No. 5 (Dec 86) and Des Bergmanns Geleucht, IV Band, Verlag Gluckauf 1983.
3. IBID
4. Coal Age, April 1, 1916 and October 31, 1918

Photo right: Wolf carbide safety lamp. 3" dia. X 12" high (w/o hook). Tony Moon collection.

