

The Szombathy Flame Safety Lamp

Hank Edenborn

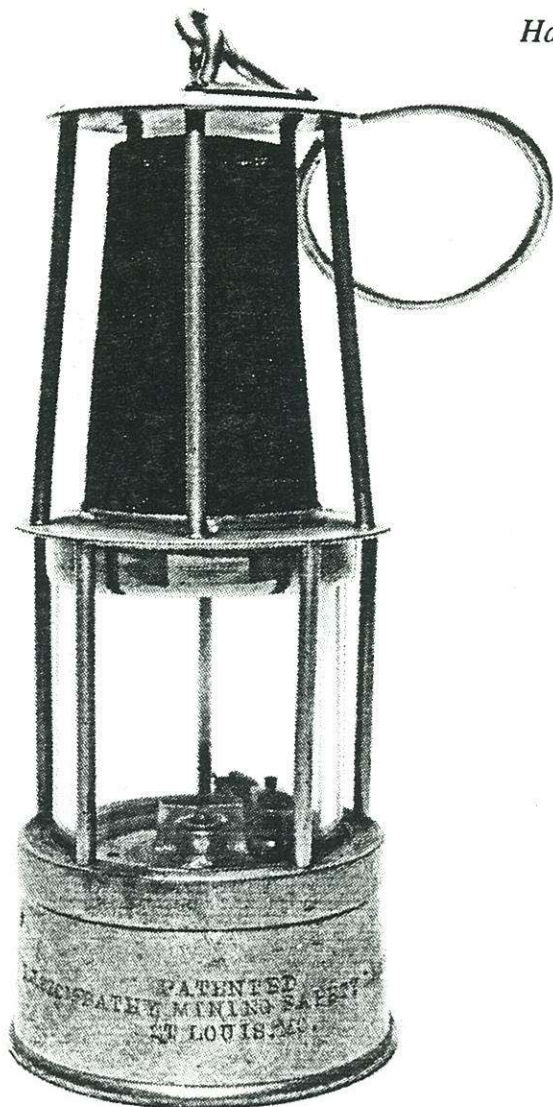


Fig. 1 Unbonnetted lamp has the following inscription:

PATENTED
I.J. SZOMBATHY MINING SAFETY LAMPS
ST. LOUIS, MO.

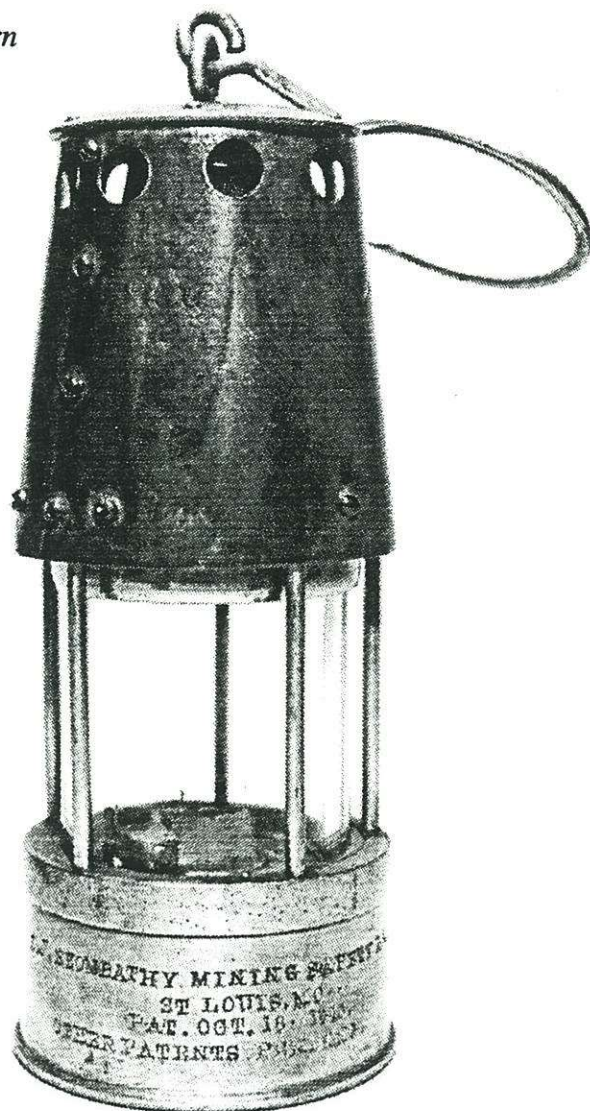


Fig. 2 Bonnetted lamp has the following information hand-stamped on the oil pot (with a "G" instead of a "C" in "OCT.")

I.J. SZOMBATHY MINING SAFETY LAMPS.
ST. LOUIS, MO..
PAT. OGT. 18..1910.
OTHER PATENTS PENDING.

Included among the U.S. Bureau of Mines' flame safety lamp collection at the Pittsburgh Research Center are two examples of the rarely seen Szombathy lamp. Tony Moon reports that to his knowledge only one example exists in the hands of a private collector. Both unbonnetted

(Figure 1) and bonnetted (Figure 2) examples exist in the Bureau's collection.

A schematic of the lamp, as described in U.S. patent 973, 234 (October 18, 1910) is shown in Figure 3. The basis for the patent apparently lies in the

"latch dog" mechanism for the magnetic lock. The action of this magnetic lock can be seen on the patent diagram, where X identifies the horse-shoe magnet used to draw the arms of the latch dogs outward and hold them out of the recesses in the neck of the oil pot while the lamp is opened.

973,234.

A disadvantage of this design (as with Wolf lamps) is that the magnet would have to be applied while the lamp was being closed as well. I was unable to open the unbonnetted lamp or detect any response inside the lamp when I used a strong horseshoe magnet. No evidence of the magnetic lock mechanism is visible on the outside of the lamp. Interestingly, the bonnetted version has no lock at all. The patent also includes mention of the use of a third gauze cap as an extra safety measure. Although the lamp would be safer in theory, it may well have suffered from a poor air supply to the flame and reduced candlepower as a result (Paul, et.al., 1924).

The lamp body is constructed of aluminum, and the bonnet is made of steel. A brass key and knob on the bottom of the lamp are used to operate a Wolf friction pin-and-wheel flint igniter and adjust the height of the wick, respectively. The lamp has 3 filling caps inside the lamp on the top of the oil pot, with the numbers 1, 2 and 3 stamped both on the caps and on the top of the oil pot adjacent to each cap. On the unbonnetted lamp there is also a small screw clamp at the base of the glass (not shown) designed to press tightly against the glass, presumably to avoid rattling. The inclusion of this feature does not instill much confidence in the ability of the lamp to remain gas-tight in the mine environment!

I have been unable to find much information about Josef Szombathy himself. A search of St. Louis City Directories in 1910 and 1915 listed him as a machinist by trade, living at 3515 Lindell Ave. and 1327A Page Boulevard, respectively. My thanks to the St. Louis Public Library for researching this information. It would be interesting to hear of any additional information about this man and his apparently short-lived safety lamp.

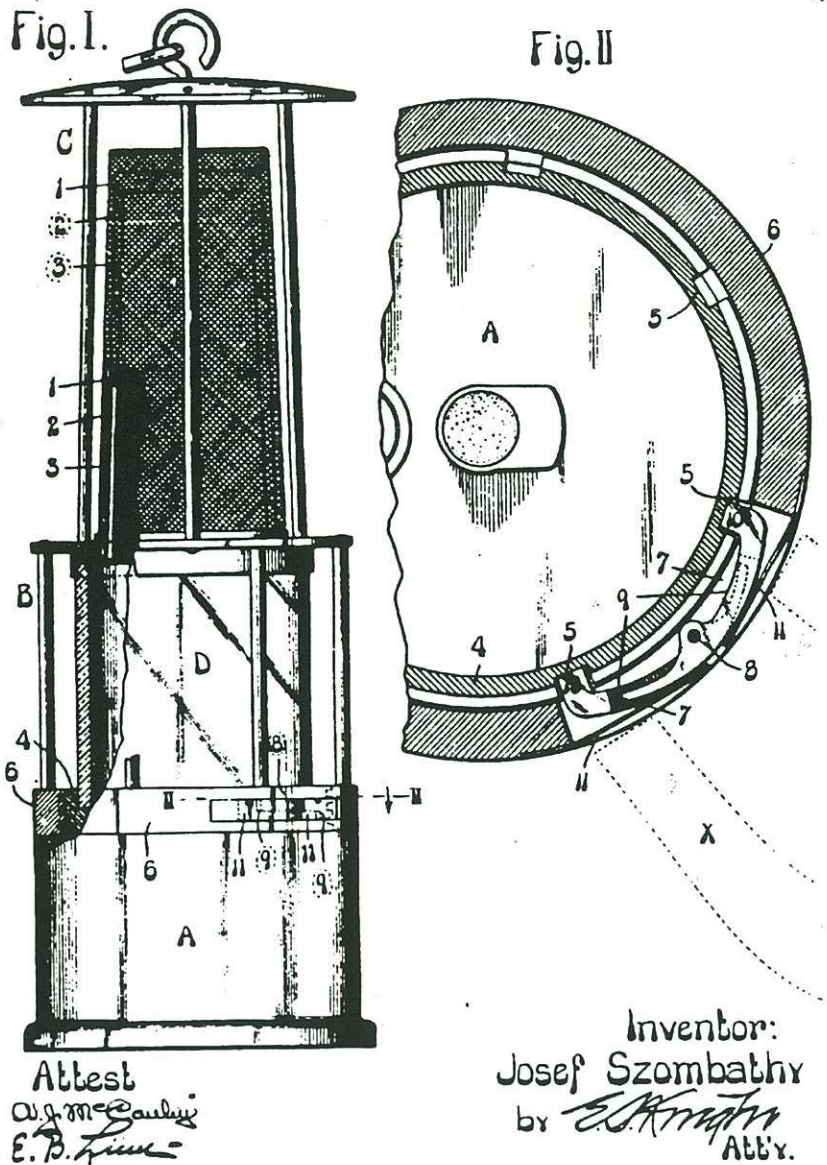


Figure 3. Patent diagrams for the Szombathy safety lamp. "Fig I" is a view partly in elevation and partly in vertical section. "Fig. II" is an enlarged section taken on line II - II in Fig I, illustrating the "latch dog" locking mechanism. Note the triple gauzes illustrated in Fig I.

References:

Paul, J.W., L.C. Ilesley, and E.J. Gleim. 1924. Flame Safety Lamps. U.S. Bureau of Mines Bulletin 227, Washington, DC.

Dimensions:

Height of lamp (base to cap): 24 cm (9.5 in)
 Diameter at base: 10.5 cm (4.1 in)
 Diameter at top: 8 cm (3.15 in)
 Height of glass: 8.5 cm (3.4 in)
 Height of outer gauze: 8 cm (3.15 in)
 Length of carrying hook: 14 cm (5.5 in)