

Safety Surveying Lamps

by Mark Ballard

Several flame safety lamp manufacturers tried to make some type of surveying lamp. They were not very successful, due to design problems with the lamps and a lack of demand for safety surveying lamps.

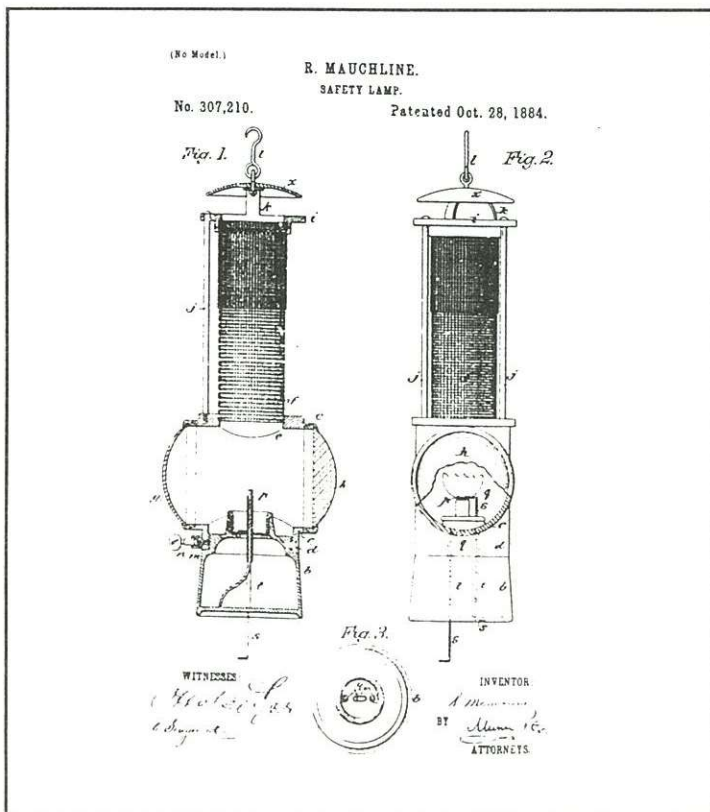
Small coal mining operations or “dog holes” never took the time to survey. Standard practice was just in and out, taking all the coal they could then closing down. These operations left no records or maps of the mine. If a new mine went in years later, they risked cutting into the old workings, letting water or gas into the mine, perhaps leading to a disaster.

Lamp manufacturers like Everhart saw the problem and offered a solution, but it is unlikely that many mining operations used them. The rare safety surveying lamps shown here were ahead of their times.

“My lamp, therefore, combines the sensitive detecting quality of the Davy lamp with the self-extinguishing quality of the Stephenson lamp. The flame, being enclosed below the gauze . . . prevents the miners from obtaining light for their pipes, either by sucking the flame through the gauze or by heating wires in the flame; and it also prevents the lamp from being blown out by currents of air.”

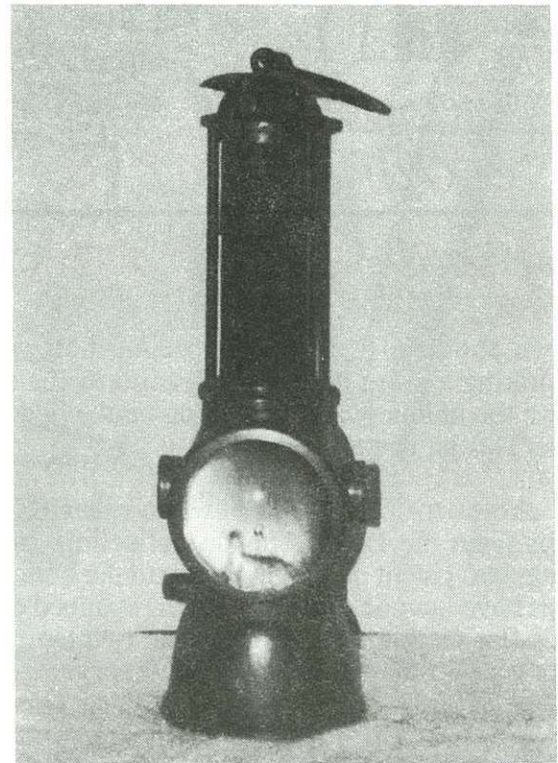
That last feature was important for survey work, since the survey team is often moving, working in main gangways, and in windy or wet conditions.

The Everhart Brass Works of Scranton, PA manufactured the lamp advertised as the Mauchline Bulls Eye lamp. The safety lamp pictured here is 12 1/2 inches tall to the hook ring. It has two air vents at the sides which unscrew, with copper screens inside. The large bullseye magnifying lense also unscrews. The base has a key lock, with a large oil reservoir, flat wick tube and wire rake. The lamp is all brass with copper gauzes. The top of the dome is marked “Everhart Scranton PA.”, and the top ring bears the patent date: “Oct. 28, 1884.”



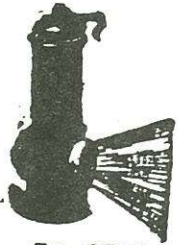
The Mauchline Bulls eye safety surveying lamp.

Robert Mauchline patented his lamp design in 1884, claiming many useful features, including better light due to an internal concave reflector and the thick glass lens, as well as better safety features in detecting gas:



Everhart safety surveying lamp, from the collection of Mark Ballard.

The lamp is pictured in an advertisement from a 1902 hardware catalog for *Somers, Fittler & Todd Co.*, Pittsburgh PA. The same illustration appears in an ad for the Everhart Brass Works, found in the 1911 *Coal Field Directory*.



The "Bull's Eye" or Mauchline Headlight Safety Lamp excels many others in light giving power, and has all the requirements of a safety lamp without bonnets. It has a gauze covered inlet for air on the side.

No.		Each.
1,	3- in. lense with iron gauze,	\$6.75
2,	3 " " " copper "	7.40
3,	2 1/4 " " " iron "	5.40
4,	2 1/4 " " " copper "	6.00

Somers, Fittler & Todd Co., Pittsburgh PA

In his patent, Mauchline states "I am aware that a lamp has heretofore been provided with a concave reflector and a lens on opposite sides of the burner . . ." It is possible the lamp he refers to is the safety lamp pictured below. This lamp is slightly smaller than the Everhart safety, and instead of an internal reflector, the reflector consists of the back wall of the horizontal part of the lamp. The dome is stamped "P. Quirin Maker St. Clair."



Quirin safety lamp from John Podgurski collection.

COAL FIELD DIRECTORY, 1911

THE EVERHART BRASS WORKS

ESTABLISHED 1867 SCRANTON, PA.

The cut illustrates the installation of our Pneumatic Signal Gongs. Making a complete hoisting and communicating system between shop engine house and tippie, or other places as desired.

KEY TO DIAGRAM

- No. 1—Signal outfit in shaft room.
- No. 2—Signal outfit in ground landing.
- No. 3—Signal outfit in engine house.
- No. 4—Signal outfit at bottom of shaft.
- No. 5—Extension for signaling from opposite side of shaft, where cables or lines from other side.

Manufacturers of

- Heavy Brass Work and Castings
- Extra Heavy Brass Globe Angle and Check Valves
- Double Seated Globe Valves
Can be Packed under pressure
- Pneumatic Signal Gongs
- Safety Lamps and Supplies for Same
- ANEMOMETERS
- Mine Water Gauges
- Brass Sheets, Rods and Tubing
- All Grades of Babbit and Anti-friction Metals

Coal Field Directory, 1911



Top markings on lamp.