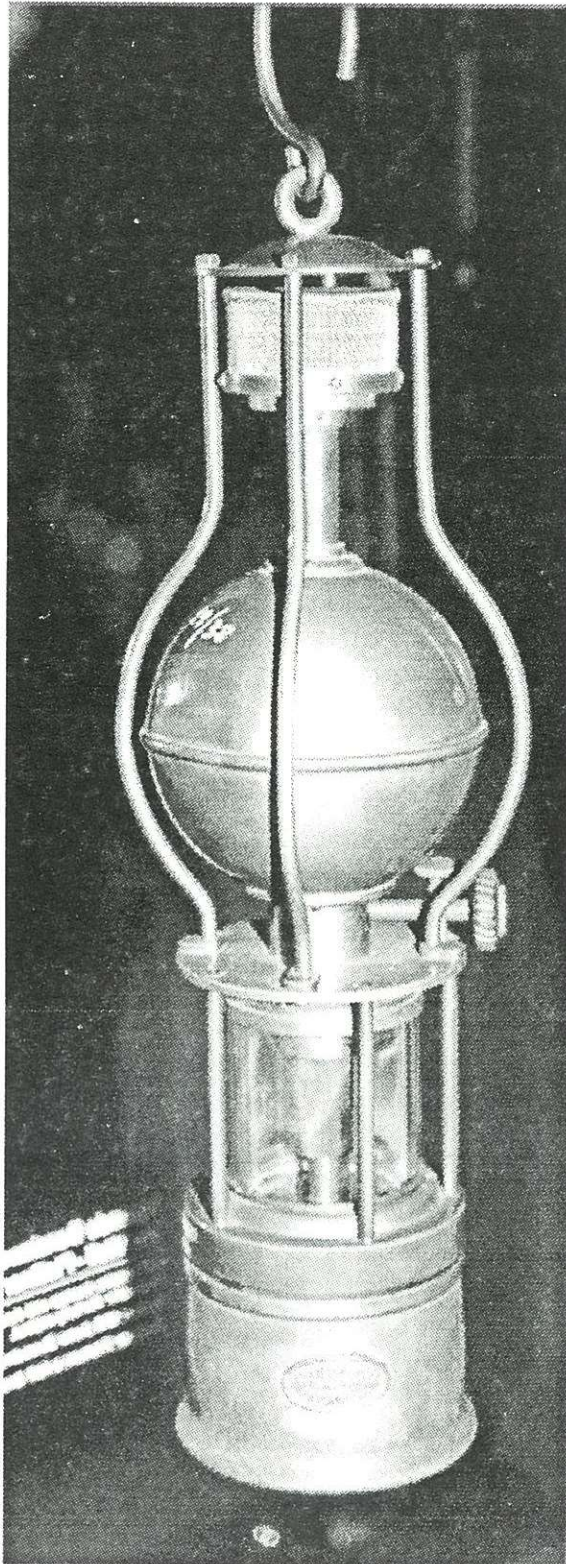
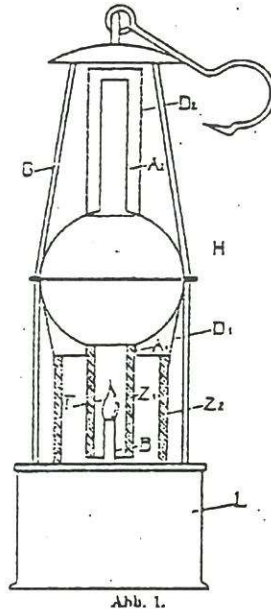


Wolf-Fleissner "Singing" Safety Lamps

Manfred Stutzer

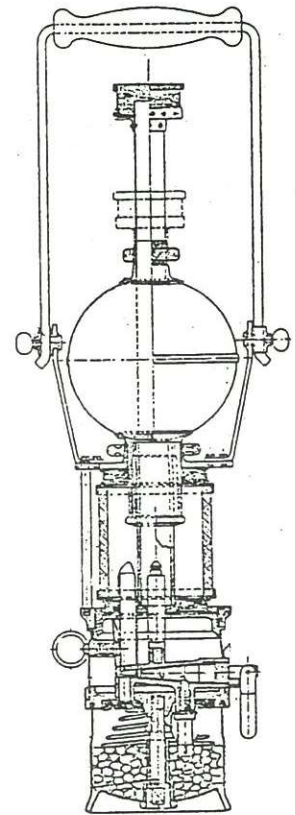
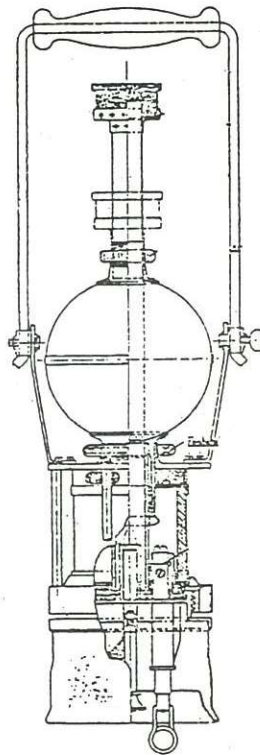


An original benzine "singing" trial safety lamp.



First design of a "singing" Fleissner safety lamp, 1916.

The so-called "singing" safety lamps are indication lamps, which indicate automatically the presence of firedamp (methane) with a kind of alarm sound. In addition to the articles published by Henry Pohn in the Underground Lamppost, Volume 2 no. 8, and by John Podgurski in the Mining Artifact Collector, Summer 1991, I have tried to search out some more details about the inventor Hans Fleissner and the lamps themselves.



Sketches of two trial lamps. Left: benzine. Right: carbide.

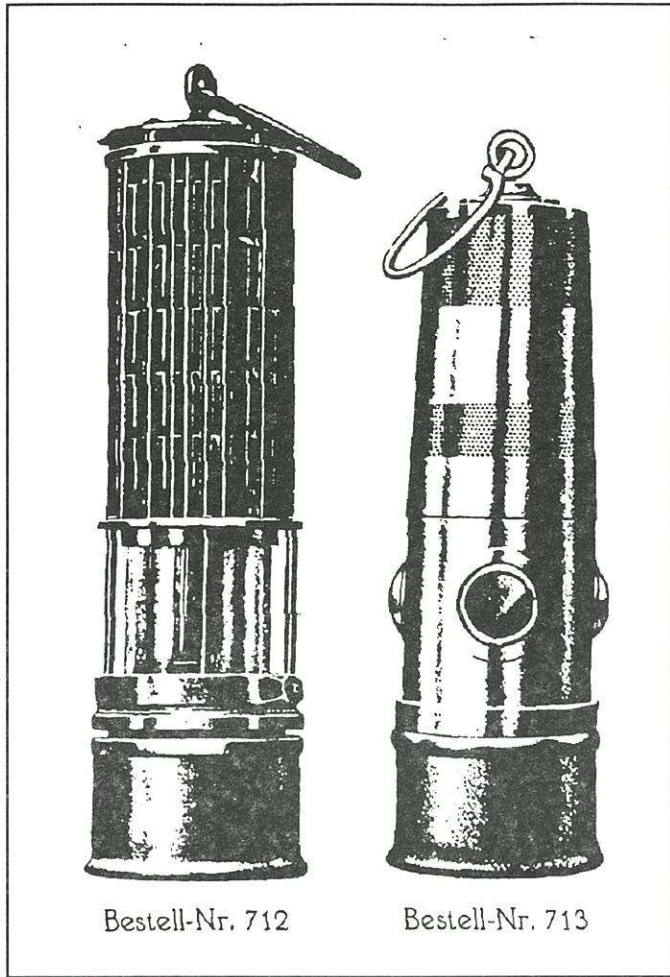
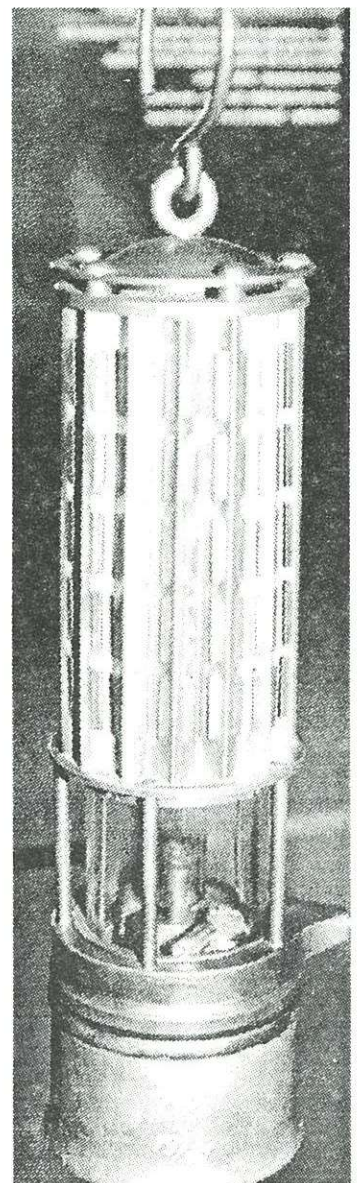
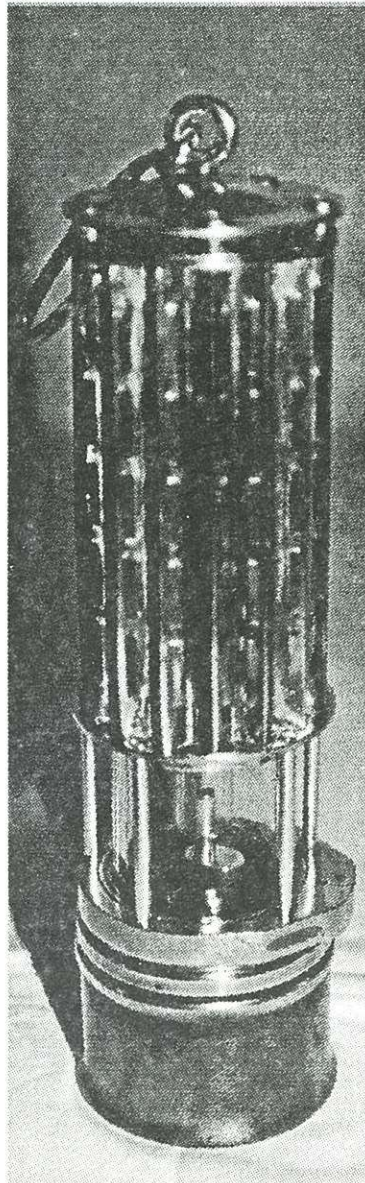
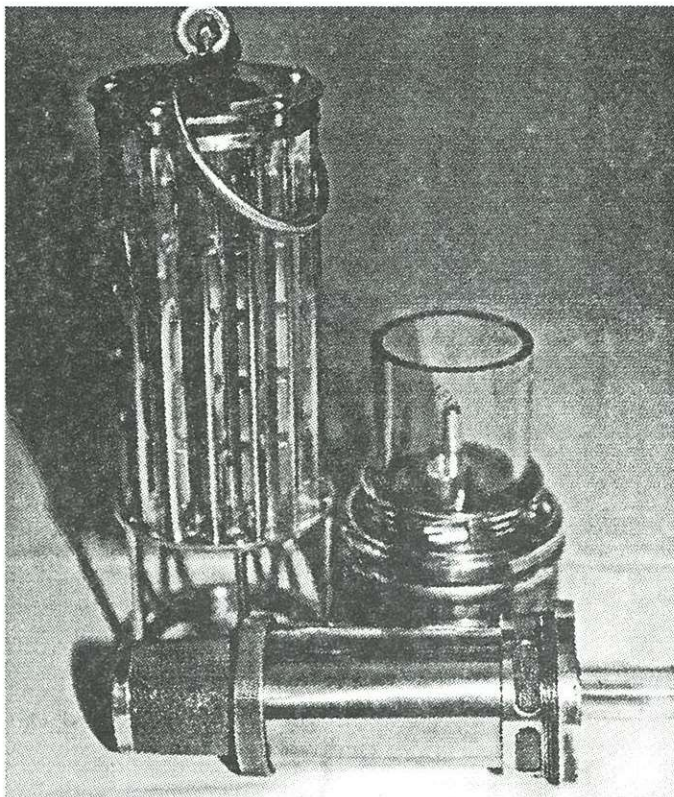


Illustration left: singing safety lamps as advertised in a Friemann & Wolf catalog, 1925. The No. 712 (left) was available in either magnetic or screw lock. Its order code was "Siegfried." The No. 713 is shown right. Its order code was "Siegfried, later segi."

Photos below: The No. 712 singing safety lamp is shown disassembled at far left. Center photo is a magnetic lock model from the author's collection. At far right, is a screw lock model, from the German Mining Museum in Bochum.



Hans Fleissner was born August 28, 1881 in Zwodau near Falkenau-on-Eger (Bohemia). His father was director of a coal mine in that area. To that time, Bohemia belonged to the Austrian monarchy. Hans Fleissner had a long academic career. After receiving a doctoral degree from the technical university in Prague, he went to Pribam, a famous mining site, to teach chemistry.

In the years between 1910 and 1918, for the Royal Mining Institute in Bruex, he was responsible for investigations in the prevention of fire-damp explosions and general dangers in the mines. After World War I, he was a professor at the Leoben Mining University. Fleissner died in Karlsbad on June 15, 1928.

Hans Fleissner began the development of the unusual "singing" safety lamp about 1916. In the magazine Bergbau und Hutte, Volume 7, 1917, he reported the basic principle: a flame in a certain position within a hollow body, open at both sides, is able to produce a sound if the flame rises due to the presence of firedamp. About 1916 Friemann & Wolf/Zwickau in Germany and Fleissner manufactured the first two trial "singing" safety lamps. One was constructed for benzine fuel, the other one was a carbide safety lamp, burning acetylene gas.

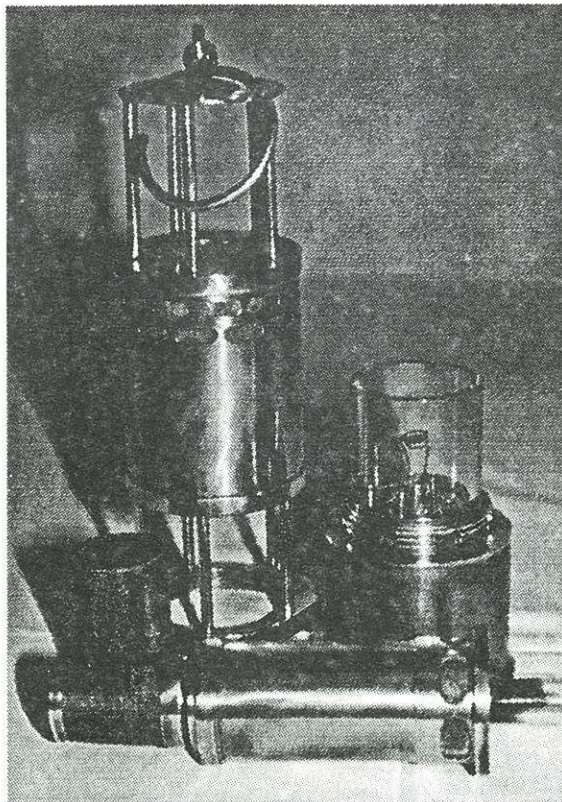
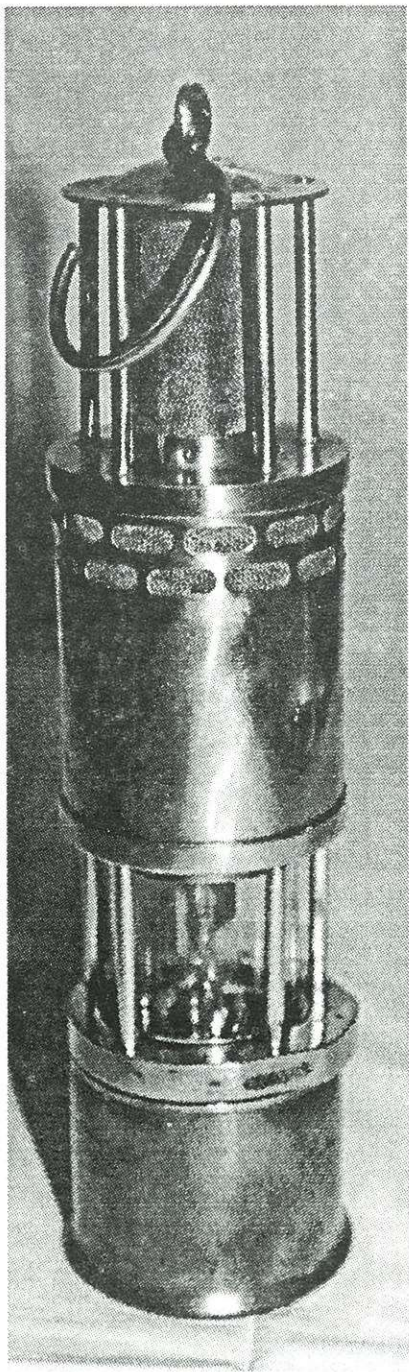
Fleissner reported that the benzine lamp was more sensitive in detecting methane in the air, 0.5% to 5% methane was detectable. However, the sound produced by the carbide safety lamp was stronger. A disadvantage of the "singing" safety lamp was that



"Singing" Wolf-Fleissner safety lamp No. 713a. Order code was: sigma, 1925. Lamp is fitted with screw lock, two lenses, and prismatic mirror. Height: 30.0 cm.

under noisy working conditions in the mine, the sound of the lamp could not be heard. Perhaps as a result of this shortcoming, few "singing" safety lamps were produced, and they are among the rarest of collectors' items today.

In addition to the "singing" Wolf-Fleissner lamps, I found in the literature only one other lamp which indicates the presence of firedamp with a sound. This is the Howatt Deflector Trumpet Lamp for Gas-Testing, written up in Practical Coal Mining, Volume 5, page 29, by W.S. Boulton.



Wolf-Fleissner Singing Safety Lamps



Up to recently it was only possible to detect mine gas by the action of the naphtha flame, visible to the eyes only. The Wolf-Fleissner Lamp will not only indicate to the eye methane and other explosive gas if 1% and up is present in the mine air, but also as soon as this Lamp is surrounded by explosive gas a sound will be heard which increases in strength whenever the percentage of gas present increases. This very efficient attachment will also be embodied in a very early date in the Standard No. 100 and 131 Lamps. Please write for further information.

Above and left is a "singing" Wolf-Fleissner dating to 1923. It is shown assembled and disassembled. It was advertised by Wolf Safety Lamp Company of America. The illustration, above right, is taken from an American mining catalog.

Acknowledgement: I wish to thank especially Mr. Jochen Beck, Madrid, whose family is related to the late Hans Fleissner, and who provided me with personal data on the inventor.

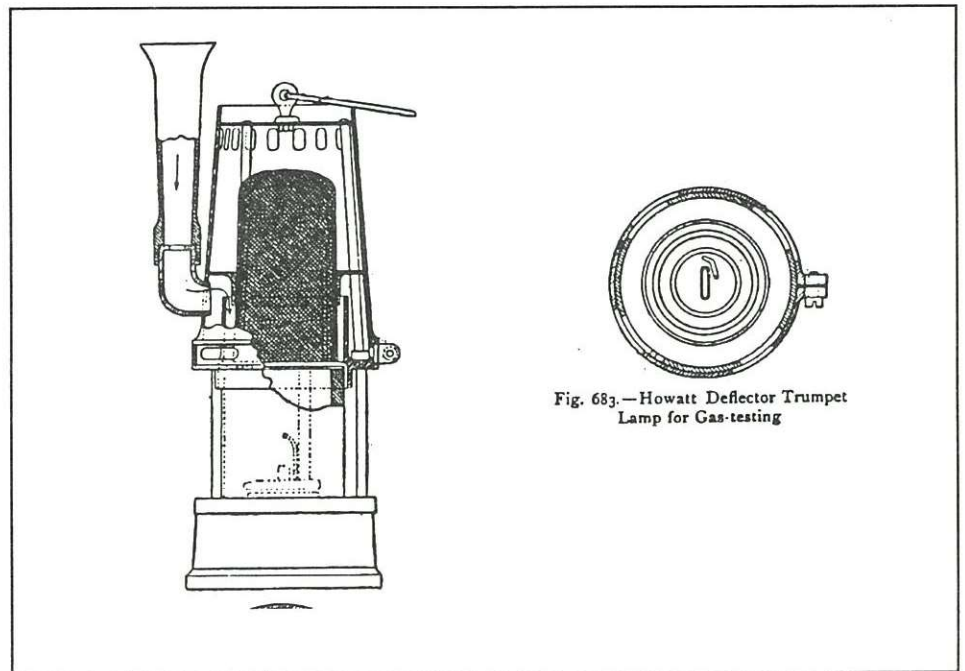


Fig. 683.—Howatt Deflector Trumpet Lamp for Gas-testing

Illustration of the Howatt Deflector Trumpet Lamp, the only non-Wolf lamp known to the author to indicate the presence of methane by sound.