

THE UNDERGROUND LAMP POST

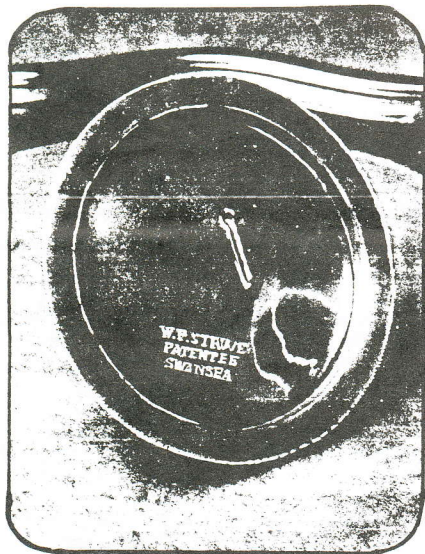


- MINERS WERE THE FIRST ECOLOGISTS -

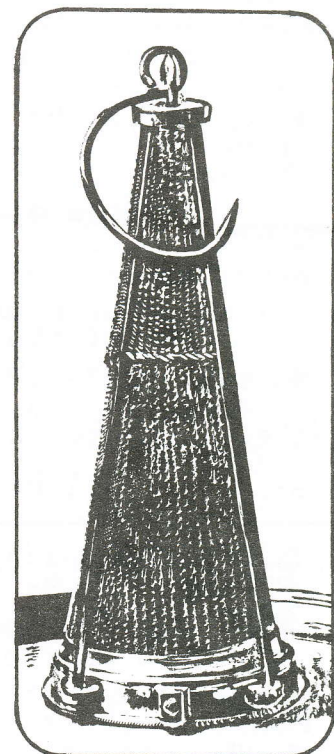
Vol. VI, No. 3

Fall, 1994

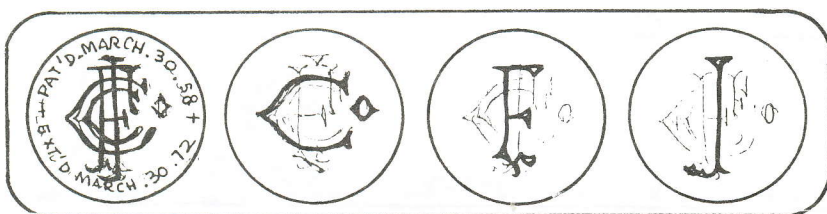
The Underground Lamp Post, devoted to old mine lamps, carbides, and candle-holders. Mini-editor: Henry Pohs, 4537 Quitman St., Denver, Colorado, 80212



STRUVE Safety Lamp - The conical-gauze (wire screen) STRUVE flame safety lamp has not been given much attention by historians in the definitive line of evolution after Sir Humphry Davy's original gauze work. We have always believed it to be a very important step because early on it anticipated the later laboratory and scientific design of the truncated cone-shaped gauze which has survived even until today. Tony Greensmith has sent these exceptional photos (color) from his collection and has reminded us that W. P. STRUVE (the patentee) was from Swansea, Wales, not just from England as



listed in our recent safety lamp history series of illustrations and descriptions. Many thanks, Tony. As usual, it is our correspondents who provide the real information exchange in the Lamp Post.



WINFIELD Oil Wick Cap Lamp -

The strange trade mark and the 1858 patent date on the cap of the WINFIELD oil wick cap lamps are still with us. Recall several previous theories about

what it might have meant. Skip Older from Canon City, Colorado, has come up with information about the patent date and the Consolidated Fruit Jar Co. . . . C F J . . . the patent was for the design of screw threads for cap closures and the method(s) of manufacture (tooling and equipment). Of course the application was not limited to fruit jars, cap lamps, medicine bottles or anything else. Patent markings on any product are not necessarily what they might seem to be. Trade mark illustrations based on Dotty Haynes' original art work.

A Few Words About Patents and Patent Drawings - Very few lay people fully understand the meaning and the use of patents, patent numbers and patent drawings. A patent date on a product may not necessarily relate to the major function of that product. A good example is the "1900" date on the hour glass-shaped BALDWIN cap lamps. The patent of that date actually was for a coaxial burner and reflector; patent owned, of course, by Frederic Baldwin. Baldwin simply wanted to one-up his competitors of that time with the earliest possible patent date; no care about historical researchers of today! More patent words on next page.

A Few More Words About Patents and Patent Drawings -

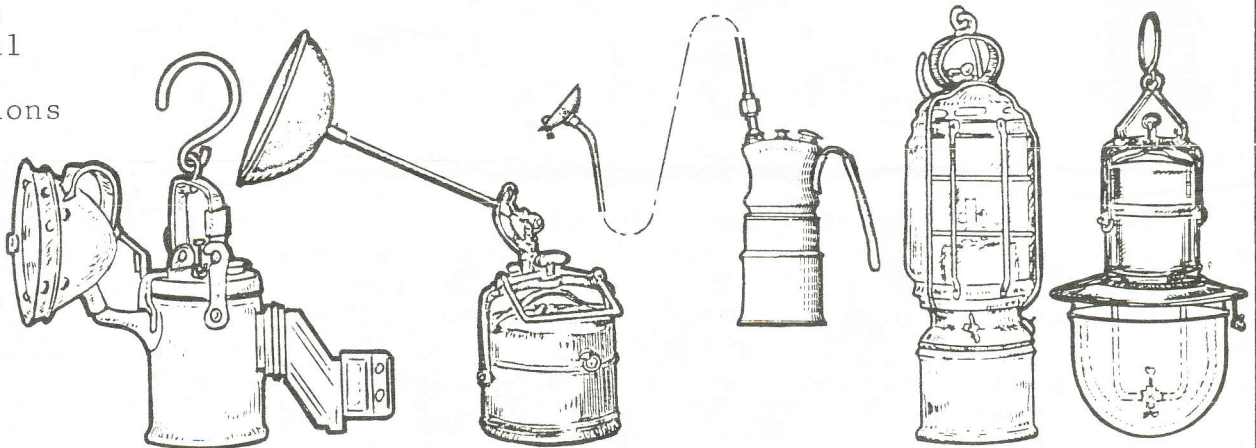
- It is an 'idea' that is patented; the 'idea' is described in words and in illustrations, often with mechanical drawings;
- Claims for protection of the 'idea' are made and "Letters Patent" are awarded (written) by the government for the 'idea,' not for the drawing(s);
- The "Letters Patent" is worth little; only the 'protection' it promises is a valuable asset; "Letters Patent" actually is a license to sue and to be sued;
- A patented product can be manufactured and sold, protected from exact copy or competition; but, it need not look exactly like the patent drawing(s) as long as it conforms to the language and the 'idea'; the mechanical, chemical and/or electrical function of the 'idea' is what has been patented and protected, not the drawing(s); the product must 'work' as described by the "Letters Patent";
- Therefore the researcher and the collector need not look for production items (products) which conform exactly to certain patent drawings; it is "letters Patent" that are issued by the Patent Office, not "drawings Patent"; the drawings only help explain the "Letters";
- Manufacturing changes are often made in the appearance of the product between the time of the awarding of the patent and the time of eventual sales, but the product is still protected as long as it functions within the realm of the described 'idea'; it may now even look different;
- Major Patent Office classifications also exist for "Design Patents" and "Trademarks" as well as for "Mechanical Patents"; when protection for these two product features are desired, the patentee can submit drawings under these classifications; they are entirely separate from the "Letters Patent" class.



**TIP AND
PILLAR**
No. 118

One more part - Mr. Victor Verity, 4025 Pioneer Road, Medford, Oregon, 97501, 503-535-2956, is very thankful for the help he received since his appeal for parts in our last issue. Now he finds that he needs one more part to complete a Little Giant family heirloom. Can someone help him find the burner tip and pillar which is illustrated at the left? These parts are difficult to locate, but there must be some available parts "out there." Thanks.

Shown here are several catalog illustrations of WOLF carbide lamps which are seldom published.

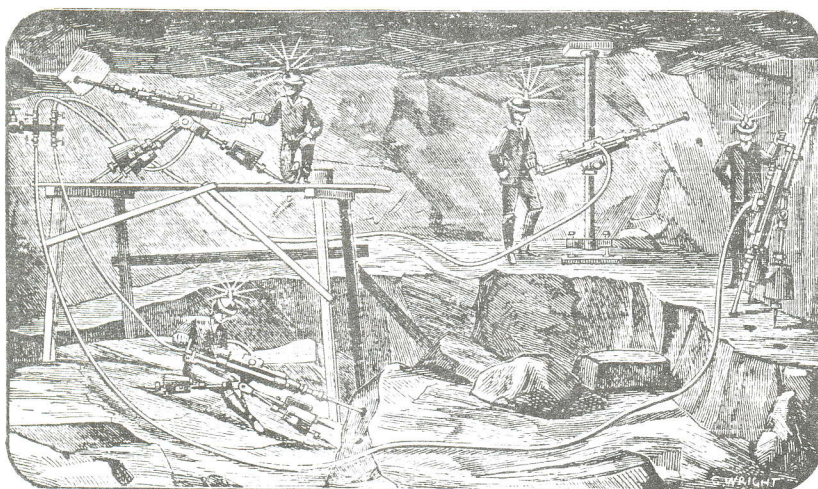


Gratitude - Each issue of the Lamp Post is the result of the kindness and thoughtfulness of many readers. We continue to thank all who have sent postage to complement the donated printing from Tennessee. This time we thank the following locations: Wyoming, Virginia, Kentucky, West Virginia, Washington, Canada, Missouri, Switzerland, Arkansas, Arizona, Illinois, California, Germany, Florida, Utah, Texas, France and Belgium. Thank you all so much. Now that all of the contemporary information is going to the other publications, we continue to refer to historical sources for interesting information. Lamp Post © Copyright, Henry A. Pohn, 1994

Apology - We feel that we owe an explanation and an apology of sorts to our readers. Page 6 of our last issue was a "COMING SOON" anticipation announcement flyer for our new book. We did not expect that the announcement would be received as well as it was but, judging from the hundreds of phone calls and letters we have received, many of you thought that the book would be ready for sale very soon. So did we! We expected to have a selling price, shipping costs and an order form ready for this issue. But, we did not expect the two power outages and the subsequent computer disc damage which we have experienced . . . we "lost" 186 pages to a damaged removable disc despite what we thought was adequate backup. Although we salvaged the raw text and the illustrations (photos and drawings) data, it has now taken almost six months to reconstruct the 186 page designs. Also, a new computer program on the network we are using now requires that we rescan many of the photos . . . this will extend our production lead time frame further.

Therefore, our plan to have prices and order forms in this issue of the Lamp Post has had to be postponed. The price has not yet been established . . . that can only be calculated when the work is finished and we conclude a printing/binding contract.

Such are the hazards of the self-publishing business. We are sorry so many have been disappointed by our anticipation and do sincerely apologize. We now hope for better luck this fall and winter, and expect to have final information in our next issue.

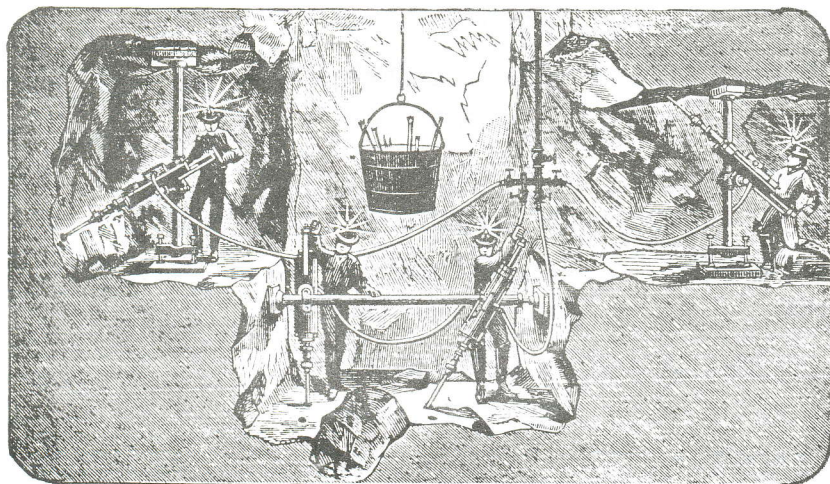


Drilling and lighting -

These two illustrations are from A Manual of Mining by M. C. Ihlseng, C.E., E.M., PhD, Professor of Engineering, Colorado State School of Mines; (John Wiley and Sons, New York, 1896, pp. 359, 360).

The text and drawings dealt with drilling rock and mining methods.

The lack of detail about the lights poses the question . . . What kind of lights were used?



These illustrations support our belief that most early illustrations paid little attention to the exact details of the lights and their exact design. For the most part, the lighting was taken for granted.

The New Book - We have prepared so very much interesting information for the new book that it is hard to know where to begin the anticipation process. We may have been too close to the material for too long a time to be able to make proper judgements. At least, we now know that the time-line has been extended despite our eight hours a day at the computer for almost two years . . . with ample time off for travel and vacations.

So, for what it is worth, we reproduce below a condensed part of the Table of Contents page. The various Level (Chapter) headings have been selected to try to give a full coverage for the historical story of underground lighting.

Pages 5 and 6 of this issue represent excerpts from the historical section of the book. We hope that everyone will enjoy the information.

the ADIT

CONTENTS

the ASSAY

BREAKING GROUND

LEVEL 1

LEVEL 2

LEVEL 3

LEVEL 4

LEVEL 5

LEVEL 6

LEVEL 7

LEVEL 8

LEVEL 9

LEVEL 10

LEVEL 11

LEVEL 12

LEVEL 13

LEVEL 14

LEVEL 15

LEVEL 16

LEVEL 17

LEVEL 18

LEVEL 19

LEVEL 20

LEVEL 21

the LAMP HOUSE

the MAN WAY

SHAFT SIGNALS

CROSS CUTS

the DRIFT of THINGS

the ORE BODY

ORE PRODUCTION

HIGH GRADING

STILL in the STOPE

the CONCENTRATOR

FOREWARD

PROLOGUE

TYPES of UNDERGROUND LIGHTING

ANCIENT MINE LIGHTING

MEDIEVAL MINE LIGHTING

BEGINNINGS of MANUFACTURED LIGHTING

MINER'S HANGING OIL LAMPS

MINER'S CANDLES and CANDLESTICKS

MINER'S OIL WICK LAMPS

MINER'S FLAME SAFETY LAMPS

ACETYLENE CARBIDE MINE LAMPS

FLAME SURVEYOR'S LAMPS

CROSSBREED LAMPS

COLLECTOR'S CORNER

APOCRYPHA

APPENDICES

FOOTNOTE REFERENCES

BIBLIOGRAPHY

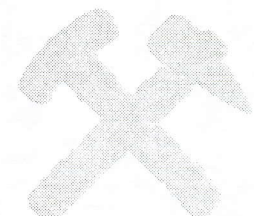
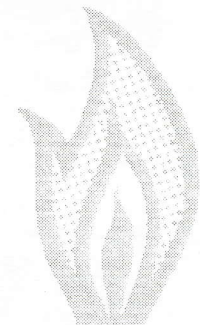
SPECIAL CREDITS

ACKNOWLEDGEMENTS

RETROSPECTIVE

COLOPHON

INDEX



MINER'S EMBLEMS

One of the oldest traditional miner's symbols or emblems is the crossed hammer and gad. It is used in many countries including the United States where it is part of the official symbol for the American Institute of Mining Engineers (AIME) of the Society of Mechanical Engineers (SME).

In Germany it is the official emblem for all mining and has only one unique title . . . *schlägel und eisen* (hammer and iron). Several expressions exist in English . . . hammer and chisel . . . hammer and wedge . . . mallet and wedge . . . but the Prussian preciseness of "hammer and gad" prevails in classic European references.

The crossed hammer and gad represent the ancient mining tools which were used for hundreds of years for the fragmentation of ore before the introduction of explosive blasting powder.

The hammer was about 2 to 4 pounds (0.91 to 1.81 kg) in weight. It was a hand span long with a square cross section and bounded on both ends by flat planes. There was a small eye in the center for the handle. The gad was a hammer-like tool, one end of which had been sharpened to a wedge. It was shaped so that the cutting edge ran across the handle of the gad.

Working with a hammer and gad, the miner would first pick up the hammer with his right hand, then the gad with his left. He would place the sharp wedge of the gad on the rock and strike the flat edge with the hammer. When two miners worked together, one held the gad while the other swung a somewhat heavier hammer. Western U. S. mining jargon developed unique terms for a similar drilling system based on the Cornish miners nickname of "Cousin Jack" . . . single Jack and double Jack; and later, "Jackhammer" for a mechanized drilling machine.

Traditional German practice showed the use of the *schlägel und*

eisen with the hammer head to the upper left and crossed on top of the gad (at the upper right) because the majority of right-handed miners would use it that way. The handle of the hammer would not protrude out of the head, while the handle of the gad would protrude beyond its head. The head of the hammer was slightly curved according to the arc in which it was swung. The gad was formed as a straight four-sided wedge.

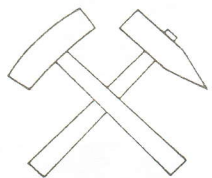
However, this German passion for exactness is not supported by historical references. One of the oldest *schlägel und eisen* symbols is found in the round Chapel of St. Andrew at Kremnitz, the famous gold and silver mining center in Czechoslovakia . . . gad left and hammer right . . . dating from 1250. Another emblem, pick and scraper crossed with a cross above it, can be found in the Hospital church of the same city dated 1382-1393.

A hand-held fore-runner of the traditional symbol is found in the ancient seal of the Miner's Relief Association at Zeiring, Upper Styria, Austria, ca. 1400.

In 1520 the *schlägel und eisen* emblem . . . *schlägel* left, *eisen* right . . . was incorporated in a stained glass church window in the parish church at Villanders, Tyrol, Austria. And, in 1521 a *schlägel und eisen* crest . . . *eisen* left, *schlägel* right . . . was placed in the Franciscan Monastery at Schwarz in Tyrol.

Thus, this famous traditional mining symbol, in whatever form, seems to be not only of German origin, but indigenous to Austrian mining lore and heritage also. It was proudly carried on tools and lamps to other European areas and to the new world by immigrants to America in the eighteenth and nineteenth centuries.

The well-known German term *glück auf* is also found on many miner's flame lamps from the past three centuries. It continues today as a salutary written motto for literature



The traditional miner's hammer and gad (*schlägel und eisen*) emblem in its precise modern form; hammer left, gad right.



Hand-held gad left, hammer right; found in the ancient seal of the Miner's Relief Association at Zeiring, Upper Styria, Austria; ca. 1400.



The *schlägel und eisen* was incorporated in a stained glass church window in the parish church at Villanders, Tyrol, Austria; ca. 1520; hammer left, gad right.

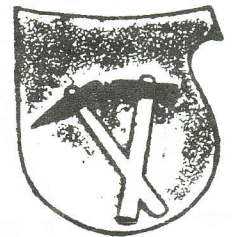
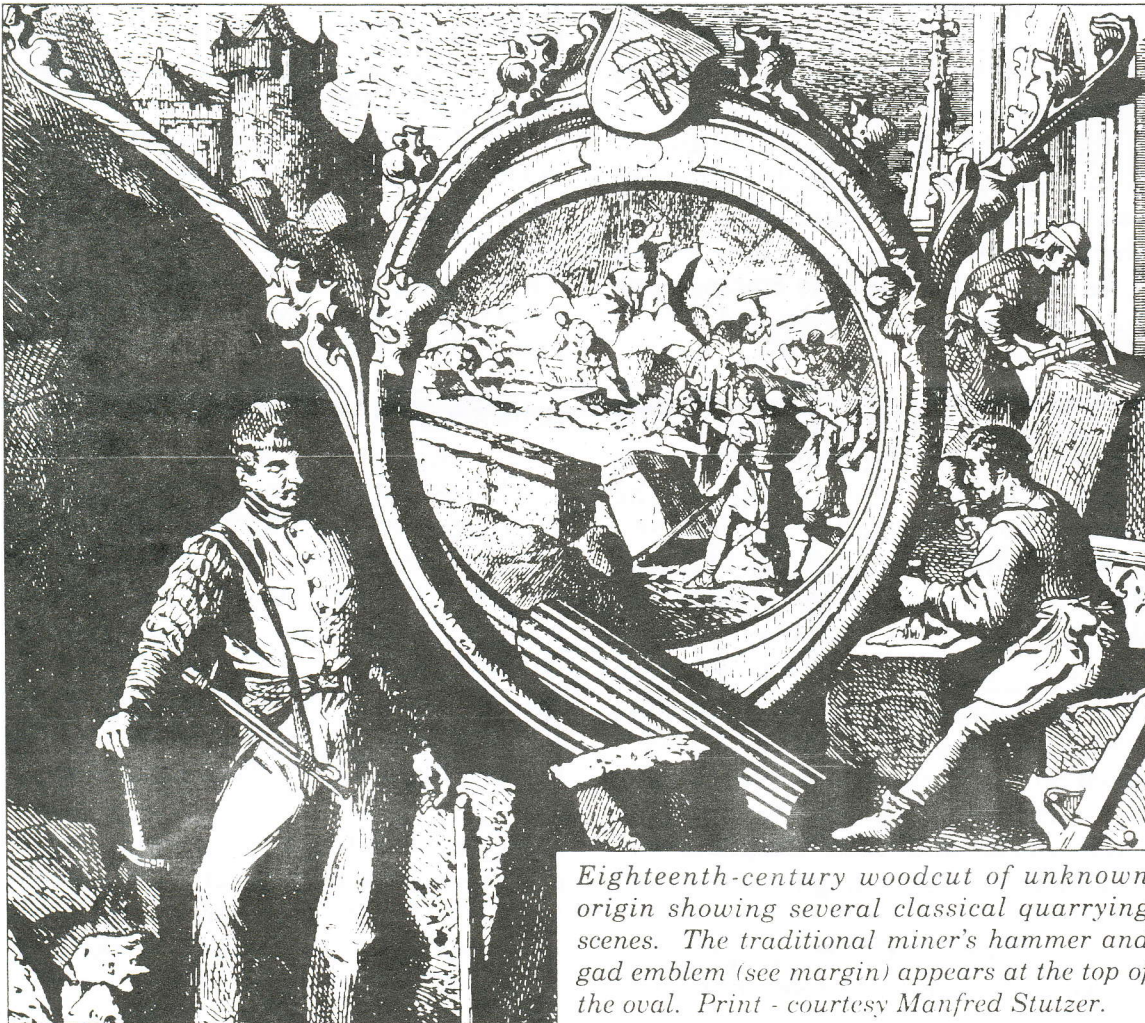
and for exhibits as well as for a parting good wish on correspondence. Its "good luck" implies a good wish to return happily to the surface from the underground mine.

Christian symbols on mine lamps are often seen, as well as fraternal and personal mottos. The religious heritage reflects the historical setting of the miner's crafts and guilds which were spiritually oriented in the Middle Ages. Religious services were often held underground in chapel rooms which were well maintained. One of the better known coal mine chapels in the world was the one that miners erected seven hundred and fifty feet (22.86 M) underground in the Myndd (sic) Newdd (sic) Colliery near Swansea, South Wales, in the late eighteenth century. Candles furnished the only illumination.

Finally, the German miner's work clothes became the costume symbol of his trade for public appearances and parades. This "costume" attained a high level of esteem and tradition. The *kniebügel* (knee pads) were round leather pieces tied around the knees for crawling in the mine. The miner's leather *arschleder* (apron) remained unchanged throughout the centuries; it also protected the rear while sliding over rocks or sitting on wet ground. Around his waist the miner wore a leather pocket *lichttasche* (light box) which contained his steel piece, flint, tinder and a sponge for lighting his lamp. He often had a *tzscherper* (miner's knife) in the belt pocket (which then became a *tzscherper-tasche*). The *fahrkappe* (headgear) and *mooskappe* (hood) furnished head protection from falling dust, rocks and water.



Miner's emblem in the Round Chapel of St. Andrew's Church in Kremnitz, Czechoslovakia; ca. 1382-1393; gad left, hammer right.



Architectural keystone crest in a cross-passage of the Franciscan Monastery at Schwarz, Tyrol, Austria; ca. 1521; gad left, hammer right.

Eighteenth-century woodcut of unknown origin showing several classical quarrying scenes. The traditional miner's hammer and gad emblem (see margin) appears at the top of the oval. Print - courtesy Manfred Stutzer.