MINING ARTIFACT COLLECTOR

Issue Number 13 Winter 1992

BACK ROW (heads only) - Walter Goetz, Dave desMarais, Jim Hileman, Mark Zdancewicz, Bernard Haynes, Bob Schroth, Kelley Deem, Dale Ibberson, Bill Lorah, J. Roger Mitchell, Tom Stranko, Andy Martin.

MIDDLE ROW - Mr. & Mrs. Doug Demaree, Bill Vis, Jim Lackey, Dave Johnson, Duane Gregory, Bob Henninger, Gay Bindocci, Lester Bernstein, Dot Haynes, John Podgurski, Paul & Nancy Hyatt.

FRONT ROW (squatters) - Chuck Young, Mike Mostardi, Tony Moon, Neal Ressler (in the ore bucket), Hank Lienemann, Bob Hauck.

Mining Artifact Collector

ARTICLES

MINING MUSEUMS

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The Second Annual Eastern Mining Artifact Collectors Swap Meet and Reunion

by **Jim Van Fleet**
222 Market Street
Mifflinburg, Pennsylvania 17844

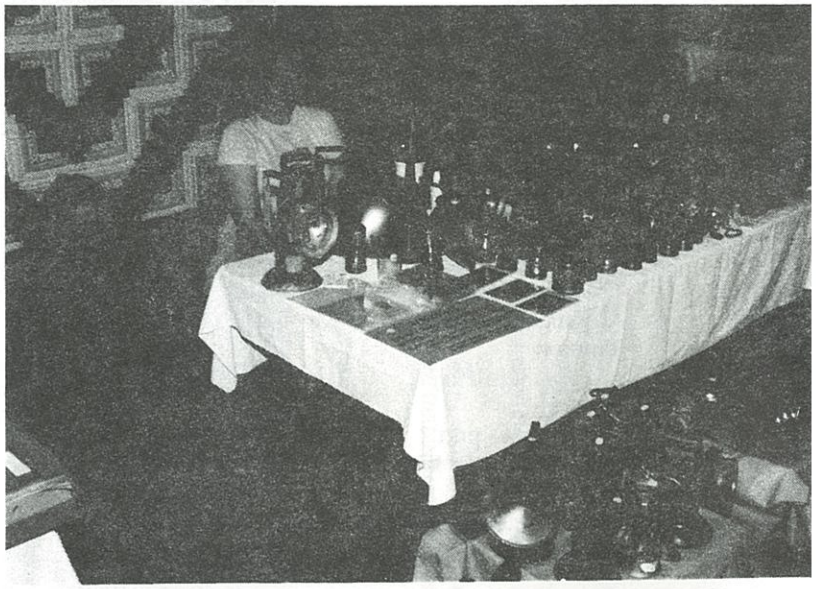
On the July 20 weekend, 1991, collectors gathered in Denver, Pennsylvania, for the second *Eastern Mining Artifact Collectors Swap Meet and Reunion*. The hotel was a beehive of activity Friday night, with collectors swapping, selling, and just showing off treasures in their rooms. It was a chance to meet many folks we had only talked to over the phone: Chuck Young arrived from Virginia, and Tony Moon from Utah. In all, over *75 collectors* attended from 16 states, as far away as California, Wyoming, Arizona and Georgia.

On Saturday, the tables were loaded with oil wick lamps, candlesticks, carbides, safety lamps, lamp accessories, blasting cap tins, signs, boxes, books, you name it. Every variety of mining collectable was available. Gregg Clemmer, Mike McLaughlin, and several other collectors prepared excellent exhibits for display.

Although the room got a little overheated, sales and trading activities were brisk. Changing hands were a sunshine can (see *MAC* cover), and a *Surelite* carbide cap lamp. Also sold were *Brite-Lite* , *Simmons Brite-Lite* (what we used to call "Anthracite"...see *MAC* no. 12, p. 36 - 37), and *Scranto* cap lamps, and some rare oil wick lamps. Trades included a *Hansen* cap lamp for a *ZAR*. Safety lamps moved slowly at the show, despite its location in the coal regions. One *Wolf* acetylene safety appeared for "show and tell," but not for sale.

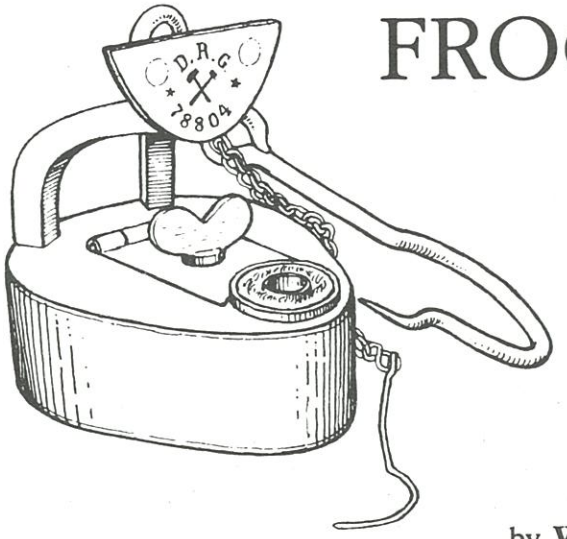
Some of the most exciting items were for "show only," including a *Maple City*; *Drylite*; a steel, enamel-finished *EverReady* cap lamp; and a unique unmarked carbide cap lamp that several collectors agreed is similar to the very rare *Nathan* hand lamp.

The show was quite a success, and we will do it again next summer. The likely location will be Morgantown, West Virginia, where a couple of collectors have volunteered to do the necessary organizational work. Look for more information in the early Spring. Hope to see you there!



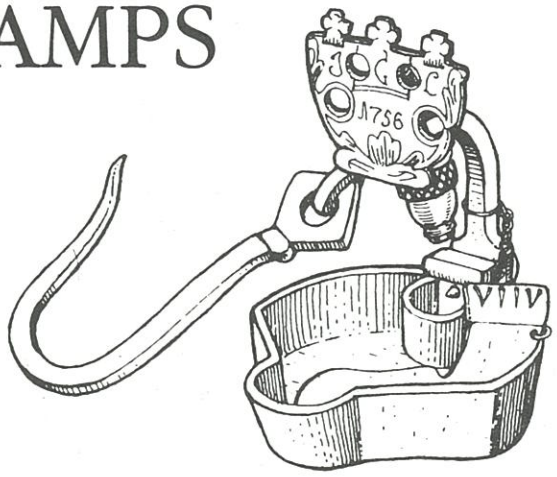
Craig Hindman and Carol Tidesman.

Gregg Clemmer's table; Kelley Deen and Rex Whetstone sitting in back.



FROG LAMPS

PART I



by **Wendell E. Wilson**
4631 Paseo Tubutama
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INTRODUCTION

Frog lamps bear a close relationship to the betty lamp so familiar to American collectors. They have a long and rich history going back to the Middle Ages, and they were imported to America and brought along by immigrant miners. Despite the fact that frog lamps are primarily indigenous to Germany and surrounding countries, they continue to turn up here for the resourceful and lucky American collector. And yet, because they are an artifact of a foreign culture, frog lamps are perhaps the least well understood of all types of mining lamps collected here. It will come as a shock to many mine lamp collectors that there are more different types of frog lamp then there are of carbide cap lamp!

The examples shown here are only those which could be located and documented in a reasonable period of time. Many more are certain to exist in private collections and museums, especially in Germany. Nevertheless, this selection should give a broad and relatively comprehensive view of these fascinating devises.

DEFINITION

Surprisingly, there was no published definition of a frog lamp prior to the publication of my book on the subject in 1981, though the term has long been in use. Below are five criteria for design which, together, serve to define a frog lamp.

(1) **Frog lamps were made to be used by miners.** This is an important point. Some people feel that if a lamp is used by a miner, regardless of what its maker intended it to be used for, it is therefore a "miner's lamp." I disagree. If a captain drives his Chevrolet off a pier that doesn't make it a submarine. The original intent of the maker is what counts.

In a few cases, the maker of a lamp is known, and the historical fact can be established that the lamp was made for a miner's use. In other cases we must decide by inference. Most miners' lamps were made fairly sturdy and strong, to withstand the rigors of that occupation. Sturdy construction is a clue but not proof, as there are some rather flimsy looking examples of frog lamps known.

(2) **Frog lamps have a "miner's hook,"** shaped rather like a fishhook without the barb. There are four or five minor variations on that general shape. Specifically not included is the "halberd hook" which looks like a small harpoon; this hook characterizes household lamps. When present on what is clearly a miner's lamp, the halberd hook precludes the lamp from being called a frog...one can only refer to it as a miner's betty lamp.

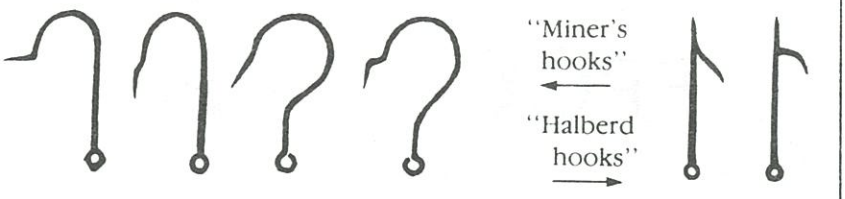


Figure 1. Hook shapes characteristic of miners' frog lamps (left) and household "betty" lamps.

(3) **Frog lamps have a shield.** This is mounted atop the bail (actually a half-bail), near the attachment point for the hook or hook chain. Shields come in a wide variety of shapes, marked and unmarked, brass, iron, or other metals. A little up-turned tab at the end of the bail does not qualify as a shield.

(4) **Frog lamps have a single oil pan** or chamber which is flattened in shape (not as deep as it is wide).

(5) **Frog lamps have a half-bail** connecting the shield and hook to the oil chamber. They do not have trammels or other leveling devices, though the bail may be removeable.

It is the combination of these five features which defines a frog lamp. Other types of lamps may possess one or more, but only the frog has all five.

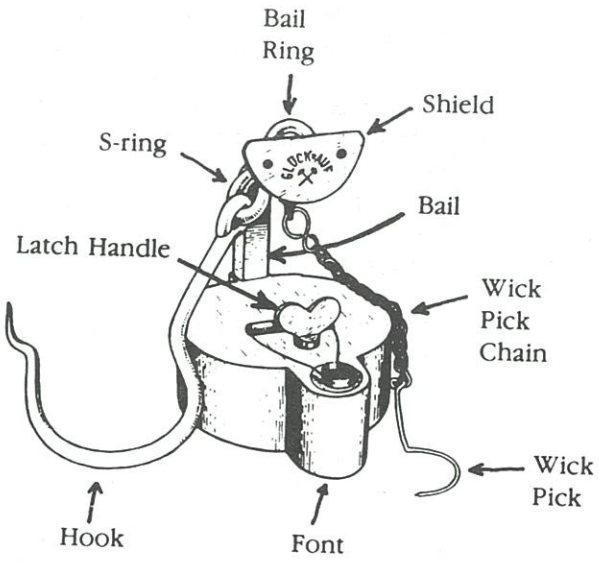


Figure 2. Parts diagram

HISTORY

Frog lamps have been used in the mines of Germany and adjacent countries since the 1500's. They evolved from open clay lamps having no handle or hook, just a thumb-hole as on an artist's pallet.

From the 1500's to the 1700's, frog lamps have burned lard or fat in an open pan. Many were provided with a little shovel (*Molle*) for conveying heat to the fat, to help it flow. Later, oils came into use, and so the font had to be covered to keep the fuel from sloshing out. Frogs made for ceremonial or presentation purposes, however, continued to be make in the traditional open style.

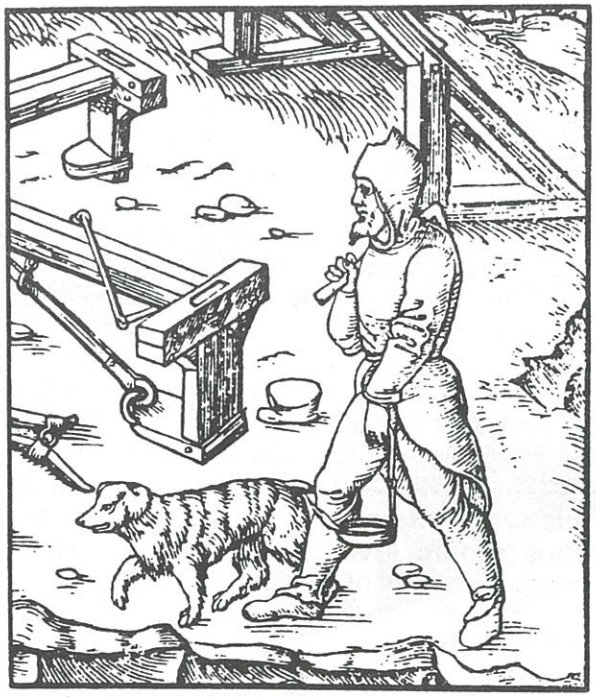


Figure 3. Sixteenth century miner carrying what resembles a frog lamp, although it lacks a shield and curved bail (the artist may have drawn it inaccurately).

Most frogs are constructed of brass or iron, though some extremely rare copper frogs are known. The brass lamps were generally used by supervisory personnel. Lamps given as presentation pieces or made only to be carried in parades were always made of brass.

In the late 1700's the practice arose of attaching a brass cover plate to the shield of an iron frog, either by rivets or solder. The purpose was probably only decorative. It did, however, provide a convenient little expanse of soft metal into which designs or printing could be worked.

A somewhat larger style of frog lamp was popular in the Austro-Hungarian Empire during the 1800's. This region was composed primarily of Austria, Hungary, Bohemia and Romania.

Only about a dozen makers of frog lamps are known by name. Most lamps are unmarked and their makers will probably never be known.

Welding was, of course, unknown during the time that frog lamps were being made. The earliest lamps, the open-pan type, were either cast in pieces (brass) or hand-forged. Later styles, including the Westphalian and Hessen types, were brazed together using brass as the low-melting bonding agent. The sides, top and bottom were made separately as three pieces, then clamped tightly together with a brass wire pressed between them. The assembly was filled with fine sand and heated in a furnace or over a fire until the brass melted and, in effect, soldered the pieces together. The resulting spillage of excess brass on the sides and bottom of frog lamps is a typical feature. Lamps made entirely of brass instead of the more common iron were brazed together with a different brass alloy of lower melting temperature, or with silver.

Karsten Porezag, in his book on miners' lamps (*Des Bergmanns offenes Geleucht, 1980*), provides an interesting discussion on the possible origin of the term "frog" lamp. He suggests that the name may simply refer to a vague similarity in shape to a frog. But more likely the usage stems from the toad as a symbolic guardian of treasures in German folklore, and as a symbol for alertness. It also happens that in Siegerland the lamp is called a *Hoche-Lampe*; *Hoche*, in the local dialect means frog or toad. The more common German word for frog is *Frosch*, and frog lamps are most commonly called *Froschlampen.*

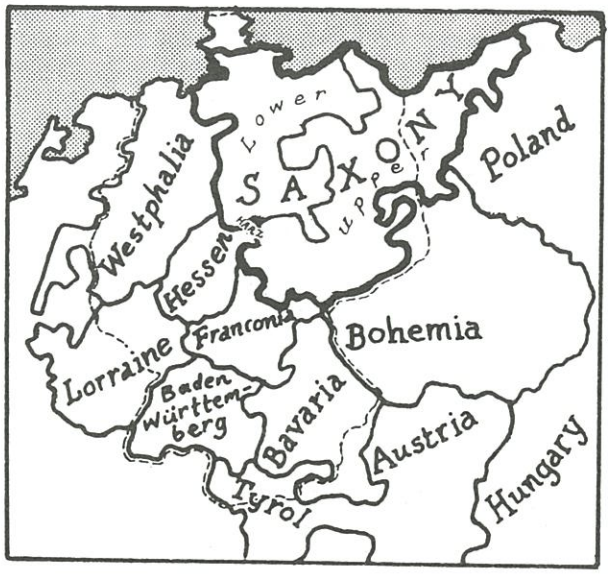


Figure 4. Map showing early geopolitical divisions in Germany and surrounding countries.

REGIONAL TYPES

Only a small proportion of frog lamps are signed. A few others have well established provenance even though unsigned. These form the basis for a regional design classification, allowing the tentative attribution of unsigned lamps to specific regions.

This classification , however, should not be taken too seriously. For one thing, the boundaries of the various kingdoms, duchies, etc. have changed repeatedly over the last 450 years. The town where a lamp was made may have been part of more than one region over the years The main uncertainty, other than boundary changes, is that there is no assurance of rigorous restriction of a design to a region. Many Westphalian-style lamps, for example, may have been made in Hessen, though they were most common in Westphalia.

The illustrations shown here are grouped according to probable region of origin. Within each section, the lamps are arranged approximately in order of age, oldest first, though many lamps cannot be very accurately dated. The regional groupings are: Saxony (depicted in this installment), Wesphalia, Hessen, Austria-Hungary, and Other Regions (all the subject of future installments.)

The frog lamp was developed in the early

1500's in the southern part of Saxony. From there it spread throughout the German Empire and into neighboring countries. The map shows the main geopolitical divisions in 1512 (present-day Germany is shown in dashed lines). The famous Harz Mountains district in Saxony is also shown (pronounced "Harts"). Divisions within Germany remained roughly similar through the 1800's, except for a significant reduction in the size of Saxony, the inclusion of Franconia into Bavaria, and the inclusion of northern Westphalia into Saxony.

SAXON FROGS

Because the frog lamp was invented in Saxony (then a kingdom), the earliest examples are from this region. Most Saxon frogs have a more or less triangular shield exhibiting various modifications. In general, the open-pan type has a triangular shield with three separated crosses at the top, whereas the closed-font type has a truncated lower point and a wavy upper edge without crosses. Many Saxon frogs are attributed to the Harz Mountains mining area. Unlike some other styles, the Saxon-style frog was never imported to America and is hardly ever found here.

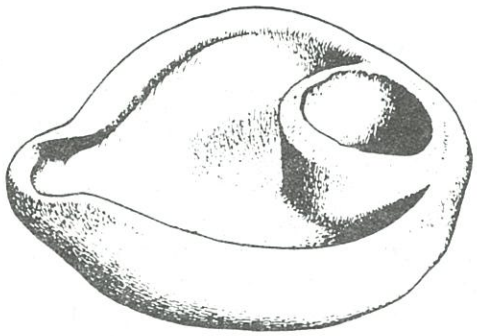


Figure 5. Clay Lamp. Blue-gray ceramic grease lamp used in mines in Germany and surrounding areas until the 16th century. The hole is for the miner's thumb.

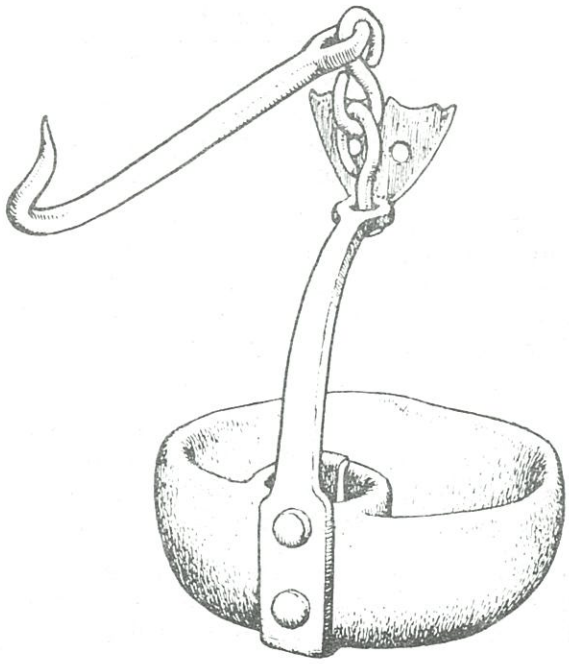


Figure 6. Annaberg Frog. This frog might be likened to a missing link. The font is clay (as in the previous figure), identical examples of which were used in the early 1500's and perhaps earlier, but without the bail. It was carried in the hand, with the thumb placed into the thumb-hole for stability. Subsequently someone got the idea of attaching a metal hanger, and the first frog lamp was born. This example has been dated 1529, and was used around Annaberg, a famous silver mining region. (Collection of the Kreismuseum, Aue)

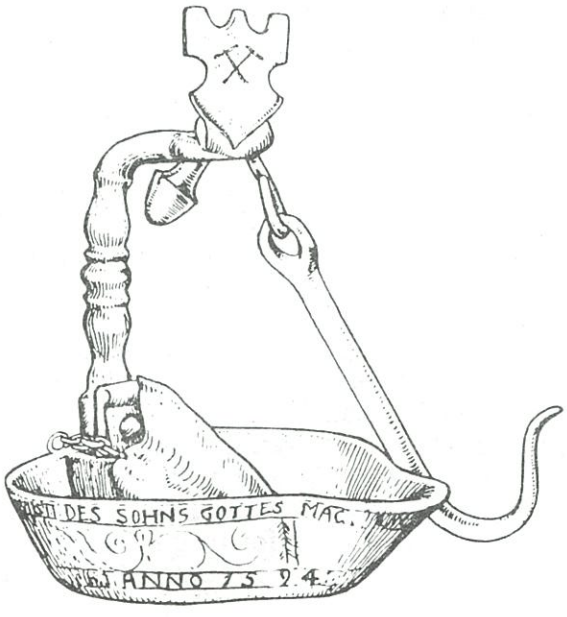


Figure 7. Freiberg Frog. This lamp comes from Frieber, Saxony. It is dated 1594 on the font, which also carries an inscription: "DAS BLUT JHESU CHRISTI DES SOHNES GOTTES MAC(H)T UNS REIN VON ALLEN UNSERN SÜNDEN." Roughly translated, it means: "The blood of Jesus Christ the Son of God cleanses us of all our sins." (Collection Kreismuseum Zwickau)

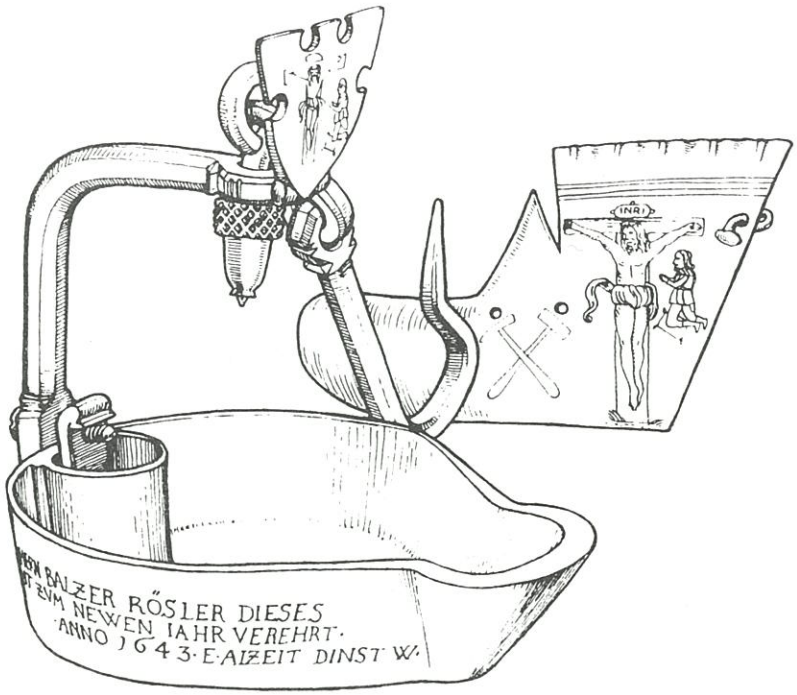


Figure 8. Saxon Frog. The inscription on this cast brass lamp indicates that it was presented to Mr. Balzer Rösler on New Years Day of 1643 by Severin Adeler. The elegant engraving on the shield and on the *Molle* (or *Schaufel*) depicts the owner as supplicant before the Crucifix. (Collection of the Bergakademie Freiberg)

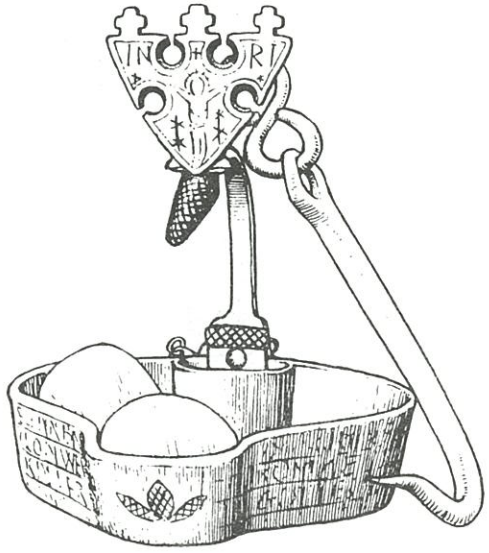


Figure 9. Saxon Frog. This lamp is dated 1643 on the inscription that runs around the font. The shield is surmounted by three crosses representing the Holy Trinity, and has a crudely engraved crucifix accompanied by the letters INRI (meaning "Iesus Nazarenus, Rex Iudaeorum," Latin for Jesus of Nazareth, King of the Jews"). Frog lamps of the 16th and 17th centuries commonly carried religious inscriptions as an aid in protecting the miner. (Collection of the Freiberg Mining Museum)

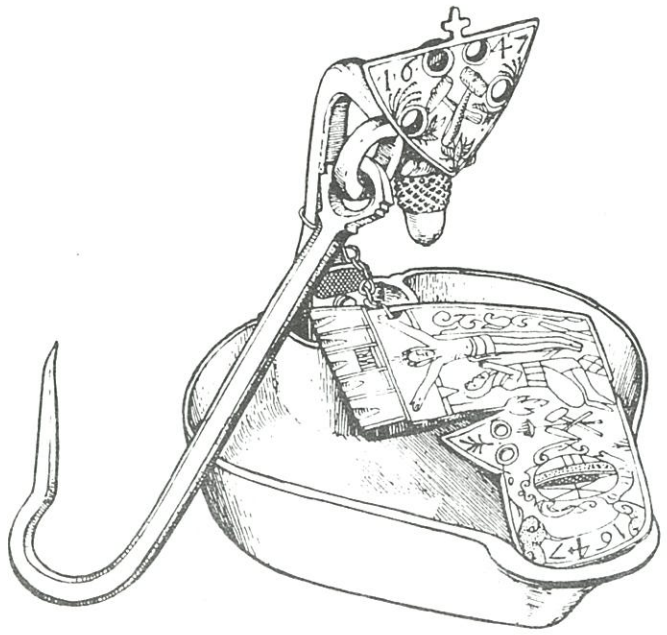


Figure 10. Saxon Frog. This elaborately engraved lamp is dated 1647 on both the shield and the *Schaufel*. The coat of arms on the *Schaufel* is that of Saxony. The shield is somewhat unusual in having only one cross instead of three. The shield is brass; the rest of the lamp is iron. (Collection of the Science Museum of Victoria, Melbourne)

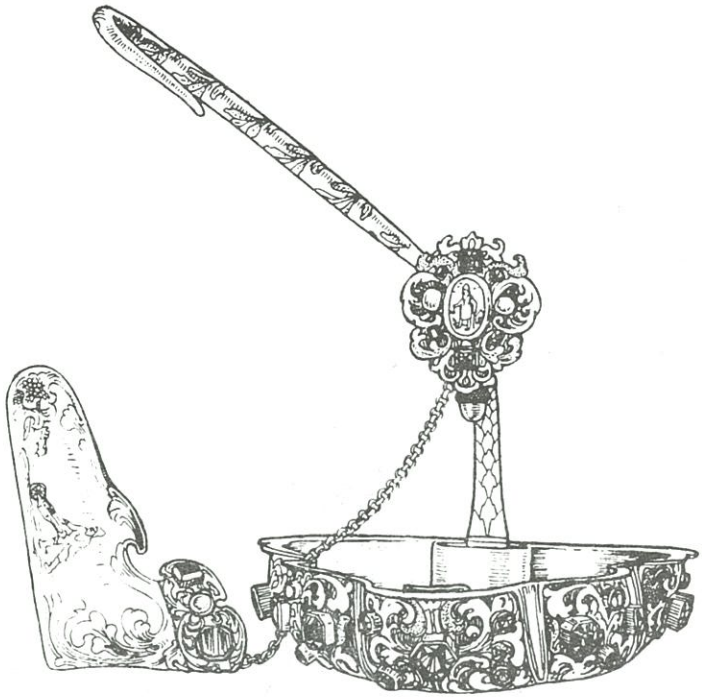


Figure 11. Samuel Klemm Saxon Frog. In 1677 the Council of Freiberg presented to the Saxon Elector Johann Georg II a complete miner's parade costume of the most lavish construction. Included was this remarkable parade frog, made of gilded silver from St. Daniel's mine at Schneeberg, and encrusted with garnets, rock crystal, opal, amethyst and smoky quartz, all gemstones found in Saxony. The lamp, and the rest of the costume, is the work of the famous Freiberg goldsmith Samuel Klemm the Younger. It is today a part of the famous collection in the "Green Vaults" of Dresden. (Staatlich Kunstsammlungen Dresden)

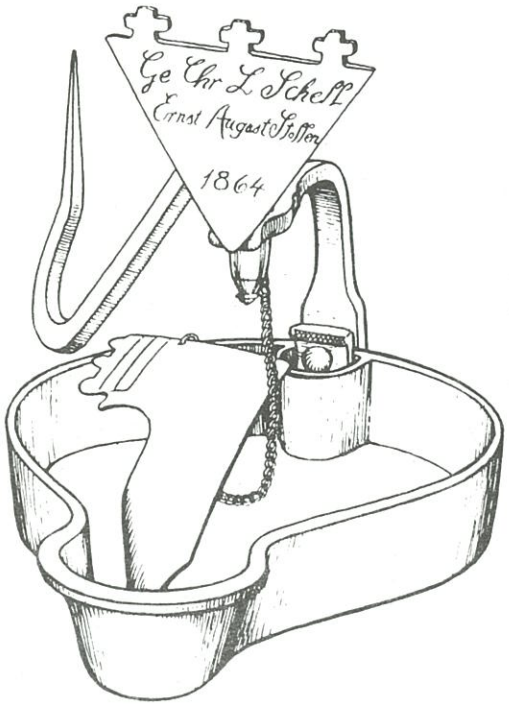
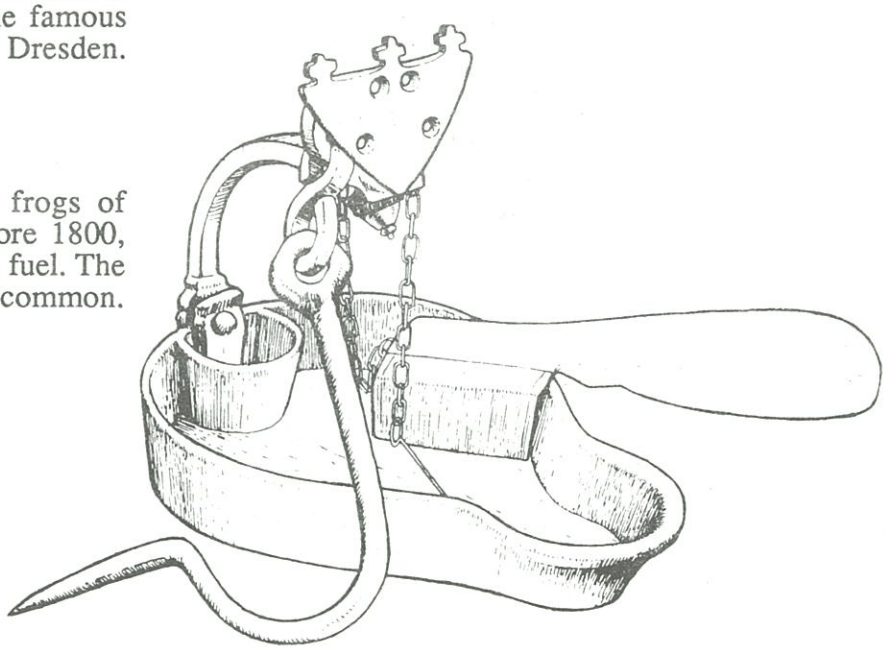


Figure 13. Harz Ernst-August Presentation Frog. This lamp was presented to Georg Christian L. Schell of Zellerfeld upon the completion of the Ernst-August tunnel in 1864. The tunnel, a masterpiece of German engineering and construction, required 30 years to complete. Perhaps as many as 17 of these all-brass presentation frogs were given out to the most important miners involved in the project. (Bochum Mining Museum collection)

Figure 12. Harz Frog. Open-font frogs of this type were used in the Harz before 1800, when lard instead of oil was the typical fuel. The four holes on the shield are rather common. (Owner unknown)



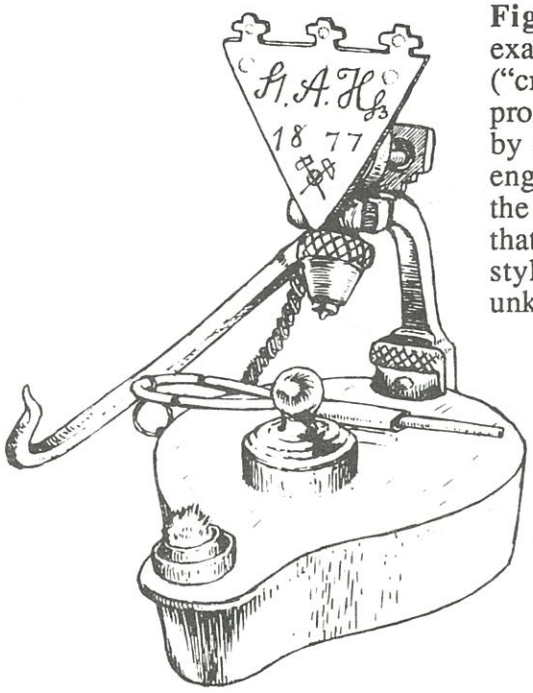


Figure 16. Harz Frog. This rather late example of the Harz frog still has a *Kreuzschild* ("cross shield," in reference to the three crosses; pronounced "kroitsshild"). The shield is covered by a brass plate affixed with six rivets, and is engraved with the owner's initials, the date, and the crossed mallet and gad. Porezag (1980) feels that the shield is of the wrong shape for the font style, and therefore a later addition (Owner unknown)

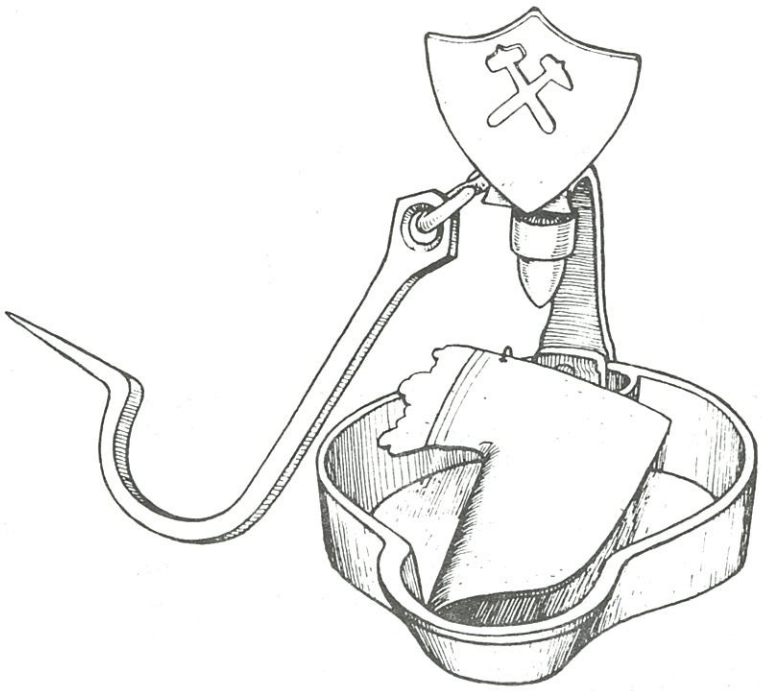
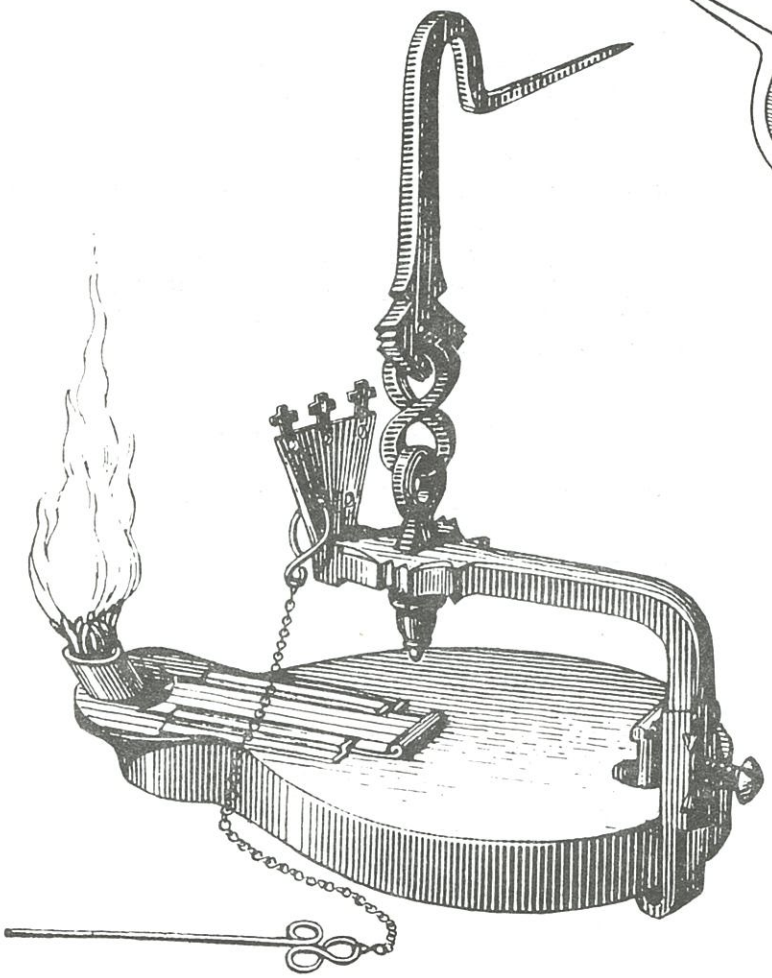


Figure 14. Harz Parade Frog. This all-brass open-topped frog was made to be used only in parades and ceremonial functions. The shape of the hook is characteristically Harz, though the shield deviates somewhat from triangular. Parade frogs were made in the obsolete open style long after the closed-font oil-burning frogs came into use, probably simply out of tradition. (Bochum Mining Museum collection)



← **Figure 15. Harz Frog.** This is an illustration from *La Vie Souterraine* (Life Underground) by Louis Simonin, published in 1865. Actual examples having this exact design are unknown. (Owner unknown)

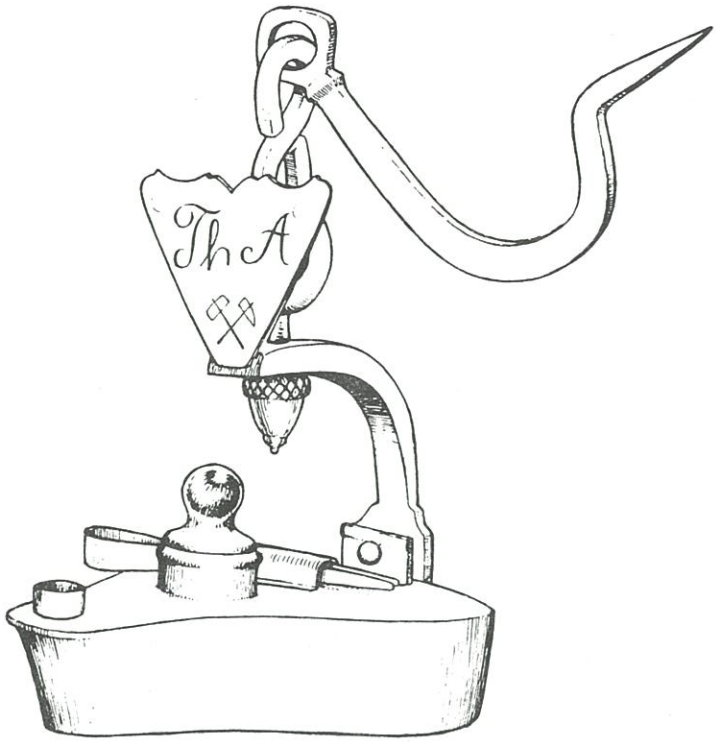


Figure 17. Oberharz Frog. The triangular shield, scalloped across the top, marks closed-font frogs from the Oberharz (Upper Harz) region.

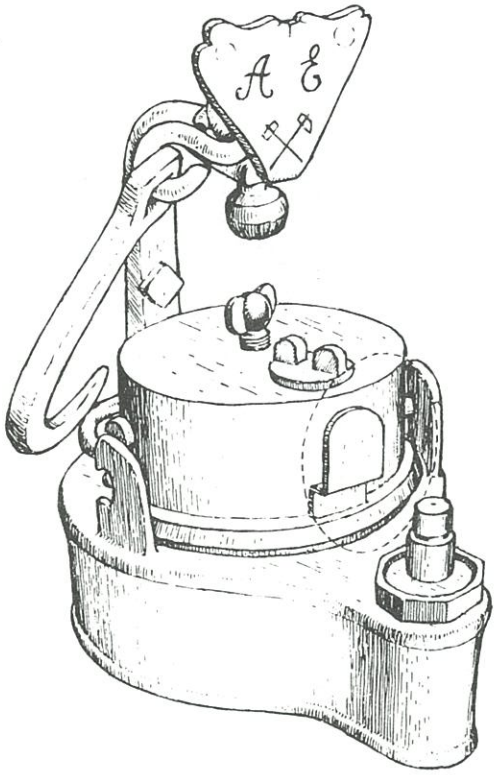
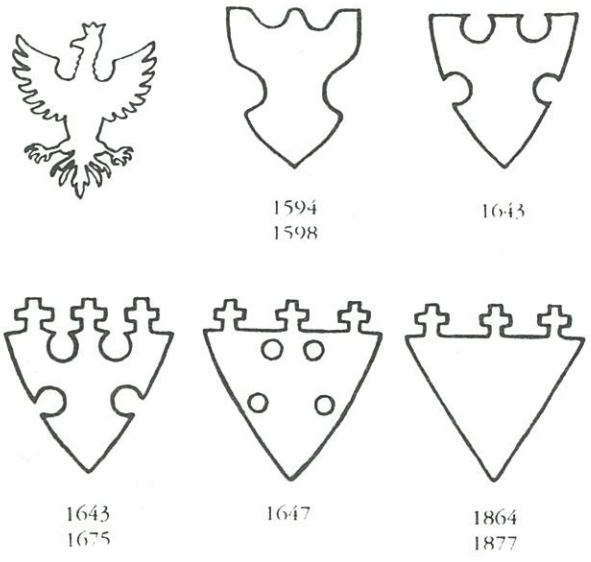


Figure 18. Carbide Frog. Among the most rare frogs is this bizarre item, a frog designed to operate on carbide and water. German patent No. 294759 on this lamp was issued to Albert Pfannenschmidt on 26 October 1906. A reflector (here missing) was hung on the small flat hook behind the burner. Used in the Oberharz (Bochum Mining Museum collection; another example bearing the initials "WW" is in the Hellmuth Kluge collection)

Figure 19. Evolution of the Saxon Shield. The inspiration for the earliest shields on Saxon frogs, which originated near Freiberg, may have been the emblematic eagle (upper left) which was a national symbol. This is only speculation, but the shapes are very similar as seen on frogs dated 1594 and 1598 (upper middle). This shape was stylized somewhat by cutting out the indentations with a drill or circular file, as shown in the example at upper right, dated 1643. Shortly thereafter the tradition arose of adding three crosses atop the shield, representing the Holy Trinity. Two examples of this type (lower left) are dated 1643 and 1675. Unfortunately this resulted in a weakness allowing the center cross to be easily broken off. As a result, the four holes were moved inward on the shield so that they did not intersect the shield edge (lower middle). by this time the holes had lost all design significance, but were retained out of tradition. Finally, in the 1800's (lower right) the holes were eliminated, probably to allow the engraving of a date and initials or other inscription on the shield.

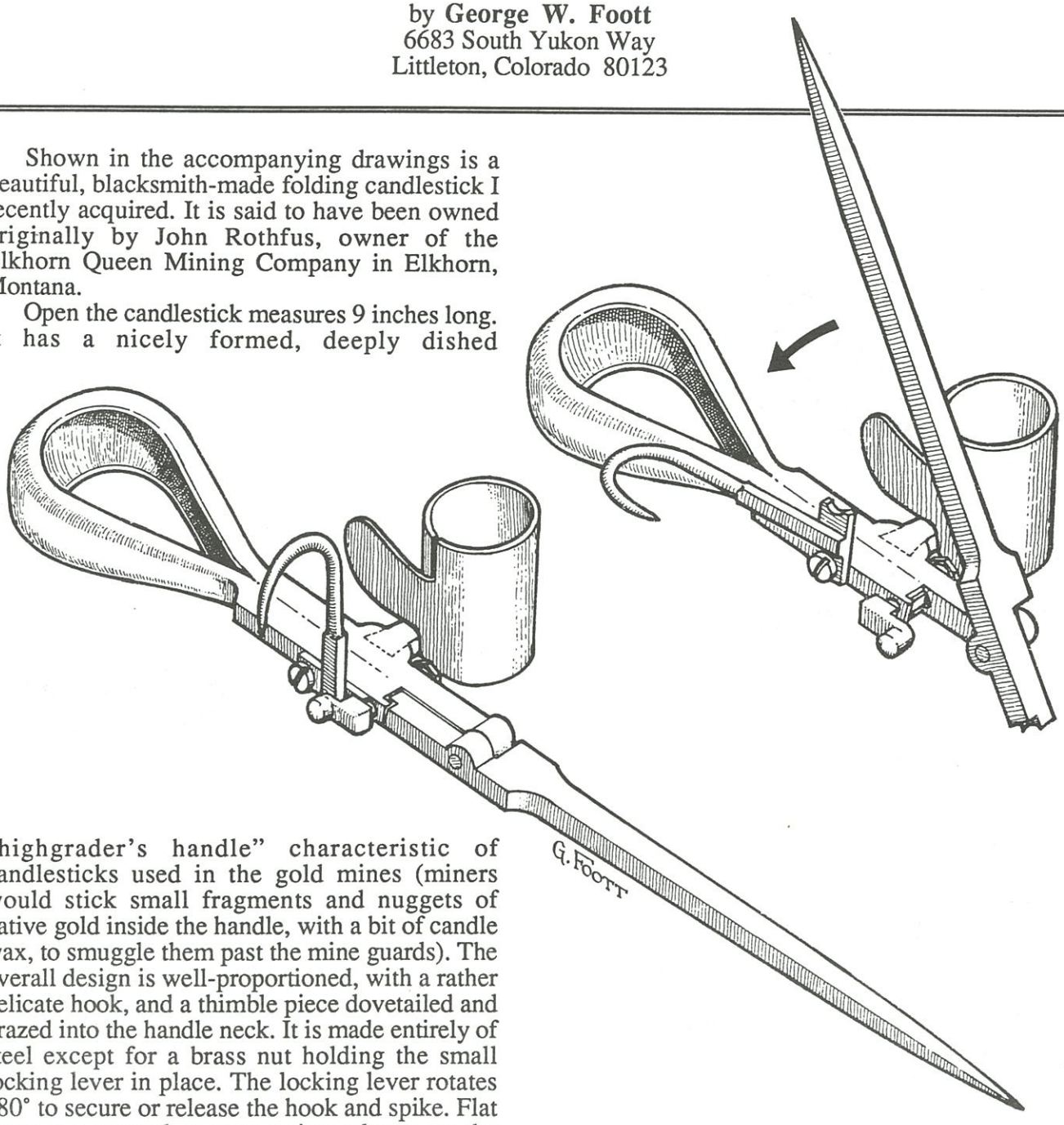


A Folding Candlestick from Montana

by **George W. Foott**
6683 South Yukon Way
Littleton, Colorado 80123

Shown in the accompanying drawings is a beautiful, blacksmith-made folding candlestick I recently acquired. It is said to have been owned originally by John Rothfus, owner of the Elkhorn Queen Mining Company in Elkhorn, Montana.

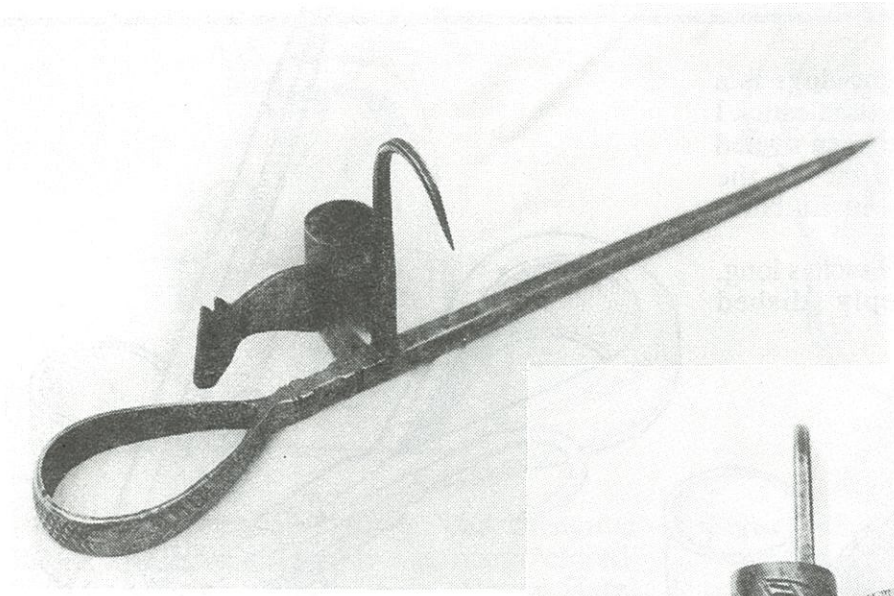
Open the candlestick measures 9 inches long. It has a nicely formed, deeply dished "highgrader's handle" characteristic of candlesticks used in the gold mines (miners would stick small fragments and nuggets of native gold inside the handle, with a bit of candle wax, to smuggle them past the mine guards). The overall design is well-proportioned, with a rather delicate hook, and a thimble piece dovetailed and brazed into the handle neck. It is made entirely of steel except for a brass nut holding the small locking lever in place. The locking lever rotates 180° to secure or release the hook and spike. Flat spots are ground at appropriate places on the locking lever shaft so that when it is rotated clockwise the hook and spike can be folded toward the handle. When the hook and spike have been unfolded they are locked in position by turning the locking lever back (counter-clockwise) 180°

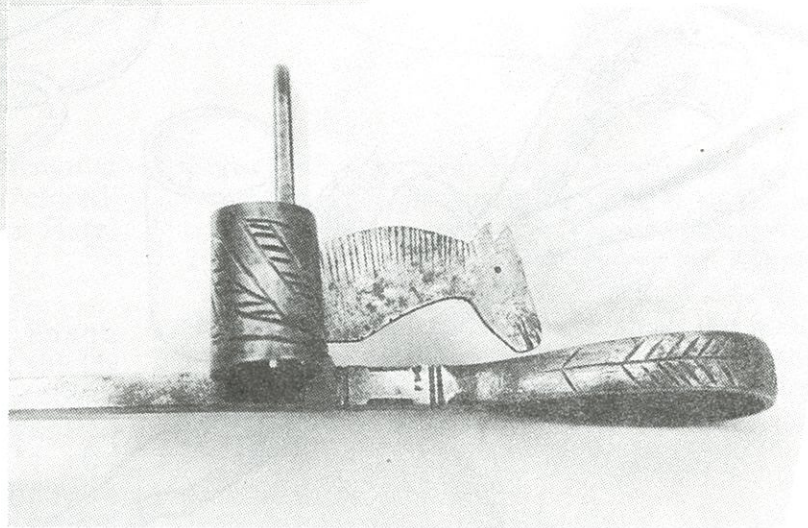


The workmanship on this candlestick is very good. All the parts are well made and the fit is excellent.

A Horse-Head Candlestick

by **Ted Bobrink**
12851 Kendall Way
Redlands, California 92373





Hans Christiansen collection, Garden Grove, California

Thumb levers on miners' candlesticks have been cut to resemble a variety of recognizable shapes, including a lady's leg, an arrow, a pistol trigger, a heart, an "iron cross," a cutlass handle, a leaf, a sledge hammer, a hand, a foot, and so on. I have also seen a few cut in the shape of a horse's head, but the example shown here is the most pronounced, with a full neck and mane.

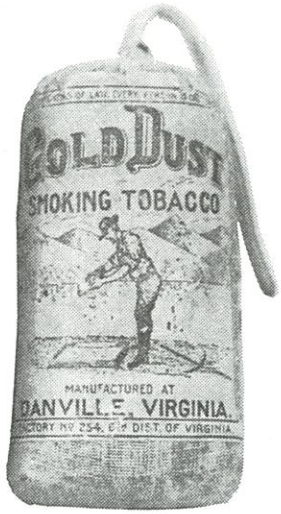
This horse-head candlestick came out of a collection in Butte, Montana, and was auctioned for $1,550 at the recent Mining Artifact Collectors' Reunion in California (see *MAC* no. 12, p. 3).

Although the thumb lever is the most interesting feature of this fine candlestick, it has a one-piece handle (split in the middle from a bar and opened into an oval...not an easy blacksmithing task), carved or filed details on both sides, and cross-hatching on the back face of the handle (perhaps intended as a match striking surface). What appear to be leaf designs are cut into the thimble.

The hook is plain and square in cross-section, tapering to a point, and measuring a rather long 3.25 inches. The spike tapers evenly from the hook to the point. Total length is 12.5 inches, and the workmanship is quite good.

MINING-RELATED TOBACCO PRODUCTS

by **Ted Bobrink**
12851 Kendall Way
Redlands, California 92373



People who collect anything and everything related to mining will want to keep an eye on the tobacco collectibles market. I have seen a number of interesting mining-related tobacco items, from cigar box labels to metal tins, bags, pouches, and advertising signs and posters. Miners were a significant part of the smoking population in many states, so it stands to reason that the tobacco industry would want to advertise to that market.

Tobacco tins are by far the most common items I have found while exploring old mines for collectibles, although I have never actually found a mining-related design underground.

Miners and Puddlers Long Cut is the best known mining-related brand, made by the B. Leidersdorf Company in Milwaukee. Their large, round metal can has a red, white and black painted label depicting three miners triple jacking. Less commonly preserved is the paper bag shown here; it carries a 1926 tax stamp (my round can has a 1910 tax stamp).

The *Gold Dust Smoking Tobacco* pouch, made in Danville, Virginia, is made of cloth with yellow and black lettering, and carries a 1902 tax stamp. It shows a miner panning for gold, with a miner's pick at his side.

The "Welcome Nugget" poster of the T.C. Williams tobacco company in Virginia depicts the discovery of the famous Welcome Nugget in Australia. The legend reads: "As the Welcome Nugget, weighing 2217 oz., exceeds in purity & value any lump of gold ever found, so this brand surpasses in quality any tobacco made."

The two bags pictured were purchased at Antique Advertising shows, and the poster was purchased through the *Antique Trader* ad of an advertising-specialist dealer.

Surely other such items exist. We'll be glad to publish photos which readers send us.

BLASTING CAP TIN COLLECTING

by **Bob Schroth**
P.O. Box 687
Twin Peaks, California 92391

Blasting cap tins are some of the most colorful mining artifacts around. While many collectors want only a few examples for display purposes, others will try to acquire examples of all the known cap tins. I have been collecting cap tins diligently for five years, and have traded heavily to acquire some of the rare one-of-a-kind tins.

The collecting bug bit after visiting Ted Bobrink and seeing several of the displays at his home; I had to have some of this stuff! The next problem was where to find these elusive cap tins. Underground dry mines seemed like a good bet, but most of the mines I'd been in on the West Coast contained only a few different examples of California Cap Company tins. Antique stores rarely have cap tins, but they do turn up every now and then. Flea markets and other tin collectors have been my best sources.

Traveling to seek out these prized mining collectibles has been a rewarding experience. I have met a lot of fine people and have seen several collections and different ways to display these artifacts.

I recently found out that taking my prized mining artifacts on board an airplane can be a very exciting challenge. The airport X-ray inspector was very interested in the identity of all of the small square metal objects that were in my carry-on baggage. You should have seen his face when he opened my bags and found a dynamite box, 21 blasting cap tins, six dagger-like weapons (candlesticks), and four brass gas-generating "grenades" (carbide lamps). From their reaction, you would have thought that they thought I was a terrorist or something. It took about ten minutes of pleading with the inspector's supervisor to let me board the plane, and even then I had to put all of the candlesticks with the check-in luggage. So, beware of airports!

The condition of blasting cap tins varies greatly, from mint unused, to poor and rusted. Often, cap tins were used as containers for nuts, bolts, tacks, nails, etc. I have seen several tins with a bolt size scratched into them. There's nothing sadder than finding a rare cap tin with - 3/8" - etched boldly across the lid. I will usually keep any different tin in any readable condition until I get a chance to upgrade it.

The good news is that blasting cap tins are still relatively cheap to buy. It seems that more and more collectors are getting in the hunt for them. I expect that with so many people looking for cap tins now, some new names and variations will turn up, possibly along with more information.

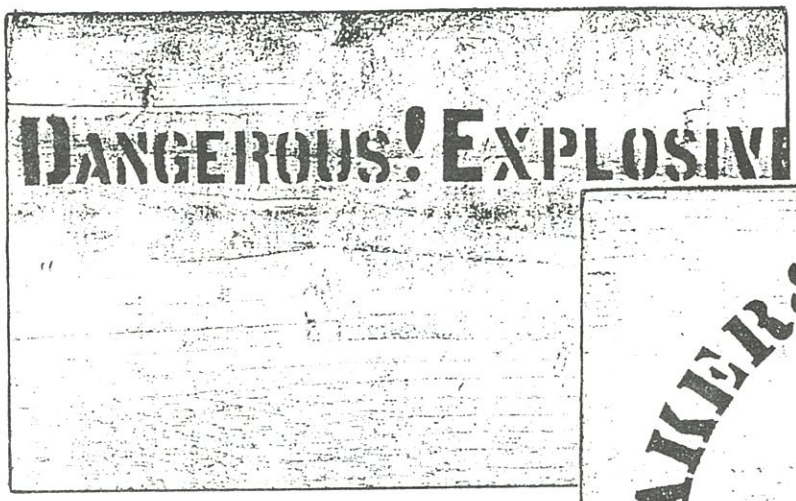
Mark Bohannan is currently compiling information on cap tins and other blasting-related artifacts for his book. If you have any new tins, please contact either Mark or myself. If anyone has any cap tins in the 50 count or other odd size, I would like to hear from you. Also, I have advertising in mining magazines and catalogs for several cap tins that have not yet been located; does anyone have information about these tins? A comprehensive reference book is in print and available from Andy Martin of Tucson, Arizona.

BAKER & HAMILTON

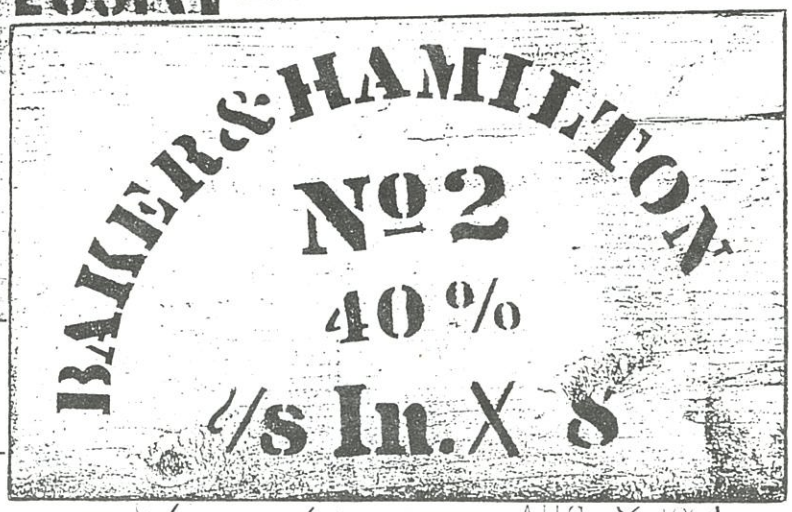
by **Mark Bohannan**
Star Route Box 107E
Oro Grande, California 92368

Baker & Hamilton was a large hardware and mining supply company in San Francisco, California; they more than likely did not manufacture their own dynamite, but probably special ordered it from some other powder manufacturing company. The Baker & Hamilton box ends are very similar to the stenciled ends, sides and top of the 25-pound box issued by the California Vigorit Powder Company (see *MAC* no. 6, pp. 25-28). Not only is the DANGEROUS! EXPLOSIVE(S!) identical, but only the California Vigorit Powder Company and Baker & Hamilton used the arched style to print the company name.

The box ends shown were found by Larry Kuester of Yorba Linda, California, in a mine in the Rand mining district of California. This mine was shut down around 1903. Shown are the two ends of a 50-pound dynamite box (the sides had no printing). Each end is 11 inches long by 6.57 inches high, and all of the lettering is stenciled in black.



Marc Bohannan collection



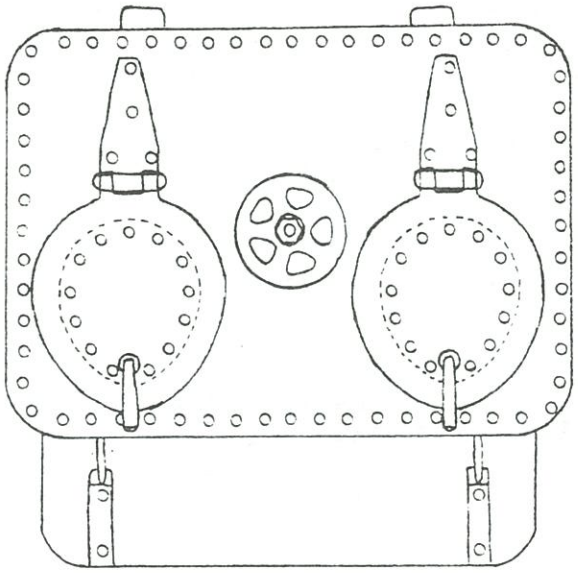
Fred Hollaburg collection

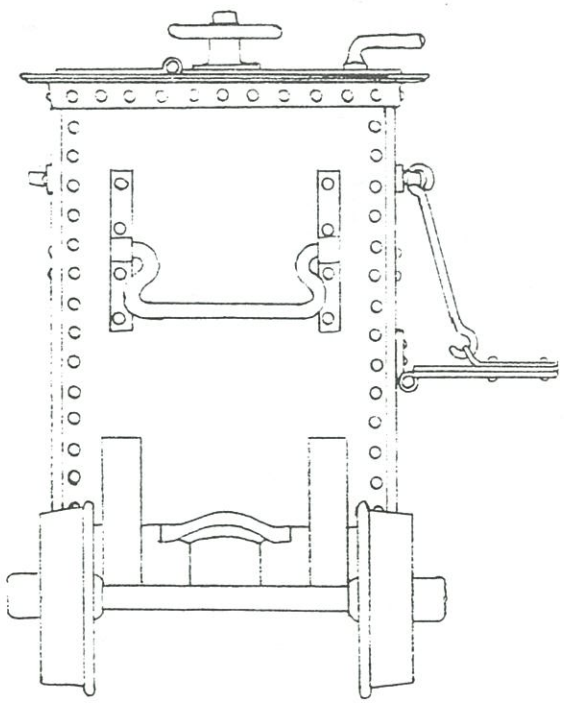
THE MINE TOILET CAR

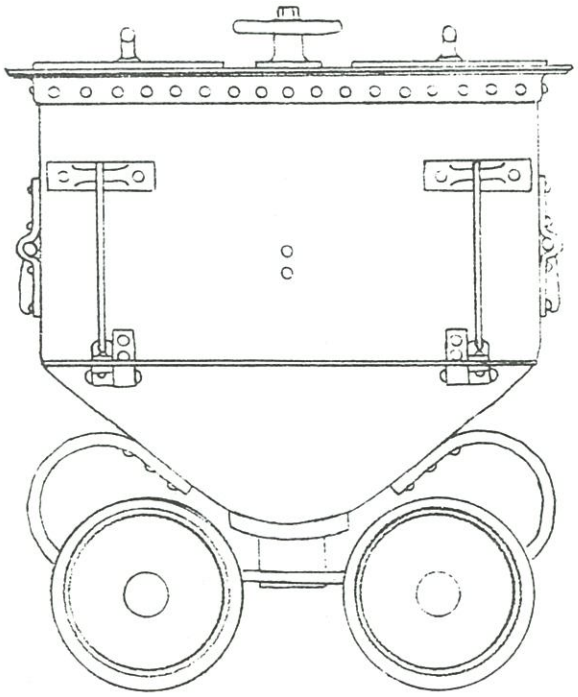
by **Mark Bohannan**
Star Route Box 107E
Oro Grande, California 92368

The mine toilet car, sometimes also called the crapper car or the potty car, was a mobile underground lavatory facility for miners. Such cars were usually used only in mines too deep and extensive for miners to conveniently visit surface facilities when necessary, and in mines employing sufficiently large mining crews to render fixed underground toilets impractical.

Toilet cars were generally made of steel and cast iron riveted or bolted together. A valve at the bottom could be opened for flushing and cleaning by turning a hand-wheel on top. Almost all such cars were two-seaters with hinged lids and a step made of wood and steel that could be folded up. Most toilet cars measure about 39 inches long, 28 inches wide (excluding the step), and 46 inches from the top of the track to the top of the valve wheel. A nice example is currently on exhibit on the front lawn of the Bisbee Mining and Historical Museum. The drawings shown here are from a 1912 hardware catalog of the Anaconda Copper Mining Company.







BABY WOLF LAMPS FROM ENGLAND

by **Tony Moon**
2763 E. Willow Wick Drive
Sandy, Utah 84093

Jim Steinberg's article (*MAC* no. 2) on the Wolf pocket safety lamp described the various Baby Wolf lamps that were sold in this country. A visit from a long-time friend and colleague whom I had not seen for over ten years prompts me to write this addendum.

My friend had recently been given a safety lamp that had been presented to his father upon his retirement several years ago from the Steel Company of Wales. Imagine my surprise when the lamp turned out to be the Baby Wolf lamp shown in Figure 1. The lamp had obviously been in use, presumably in the extensive coal fields in South Wales. It is the first example of a Baby Wolf that I have seen that was made in England. The lamp is the same size and is very similar in construction to the lamps made in this country, except for its materials of construction (steel and brass) and in a couple of minor details - the glass is protected by five upright posts (not four) and the lower brass ring on the bonnet has an adjustable air inlet. The lamp is marked "WOLF SAFETY LAMP CO. WM MAURICE LTD SHEFFIELD - BABY WOLF LAMP."

Figure 2 shows another English Baby Wolf with a corrugated bonnet and equipped for gas testing with a Fleissner platinum strip which is similar to the Beard-Mackie indicator. The lamp is described in Whitaker's *Mine Lighting* (London, 1928) as being 7 inches high (the same as other Baby Wolf lamps) and weighing 1 pound. The materials of construction were unfortunately not mentioned as part of the description.

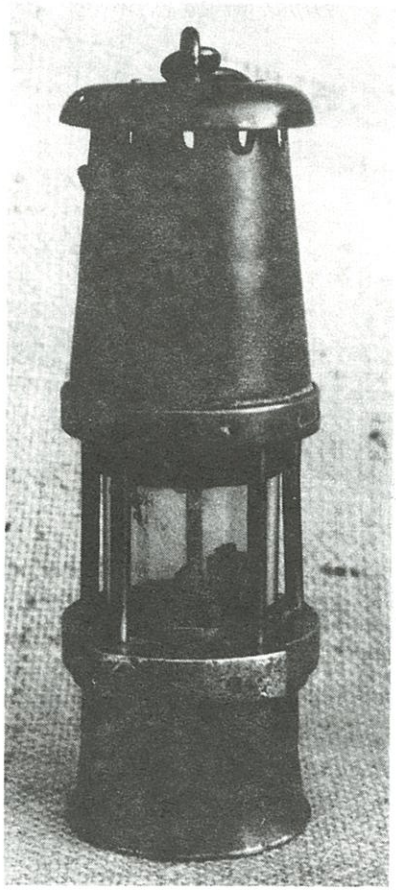


Figure 1.

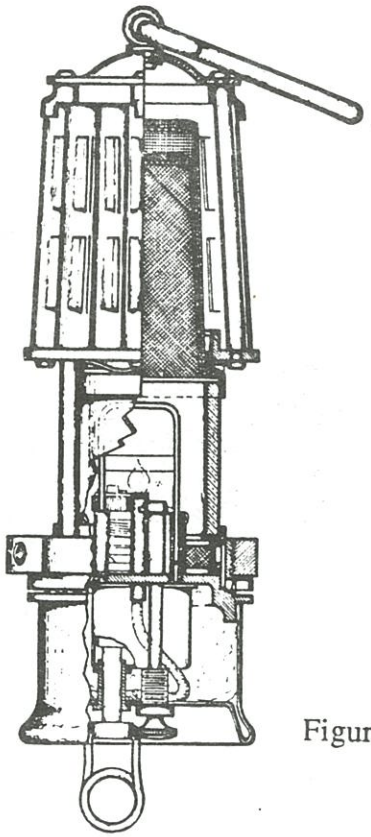


Figure 2.

MINER'S HAMMER PATENTS

by **Wendell E. Wilson**
4631 Paseo Tubutama
Tucson, Arizona 85715

One would think that a device as simple as a hammer, dating back to neolithic times in its basic design, would be so simple in concept as to be immune from patentable modification. Not so. Jim Mau of Mesa, Arizona, specializes in the subject, and has a file of nearly *one thousand* hammer patents. At my request he searched his file and discovered two that apply specifically to miners' hammers.

The first one (624,883; May 9, 1899), issued to Frederick R. Waters of Ouray, Colorado, consists of a grooved head which can be placed around the shaft of a stuck length of drill steel and hammered outward against the underside of the flanged drill head so as to dislodge and extract the drill. Seems reasonable, but no actual example of such a hammer head has been recognized.

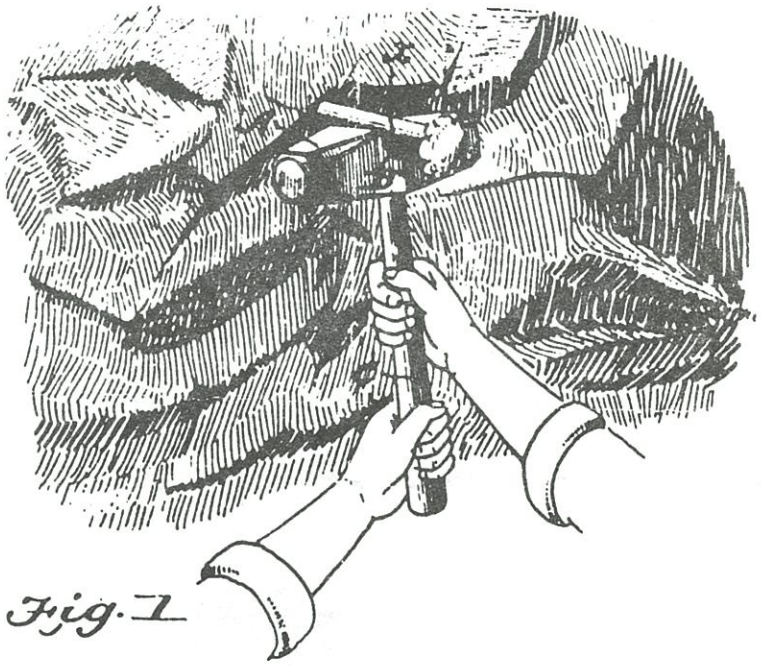


Fig. 1

No. 624,883.

F. R. WATERS.

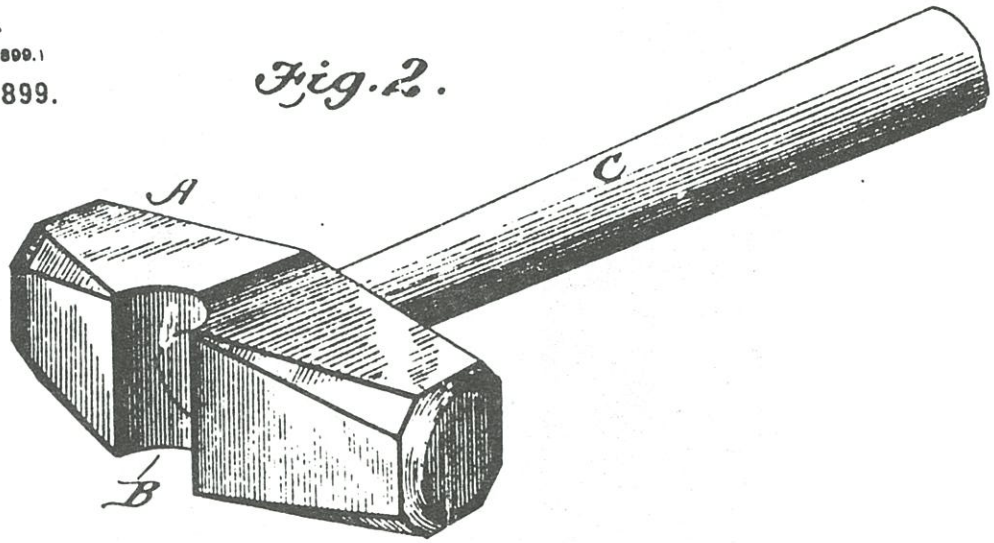
MINING HAMMER.

(Application filed Feb. 23, 1899.)

Patented May 9, 1899.

(No Model.)

Fig. 2.



WITNESSES:

M. D. Mondell

Amos W. Hart

INVENTOR

Frederick R. Waters.

BY Munn & Co.

ATTORNEYS.

No. 625,469. Patented May 23, 1899.

H. H. SCHEPERS.

HAMMER HAND SLING.

(Application filed Feb. 17, 1899.)

(No Model.)

Fig. 1.

The second one (625,469; May 23, 1899), issued to Henry Harman Schepers of Sandon, British Columbia, is a detachable hammer sling for underhand single-jacking. A hammer sling (of which this is not the first) allows the miner to relax his grip on each back swing, thereby helping to forestall muscle fatigue. No known example of this device has been found either. Once removed from a hammer it would be almost impossible to recognize.

Jim Mau says that, although these are the only two in his file pertaining specifically to mining use, he has several more patents involving geologists picks.

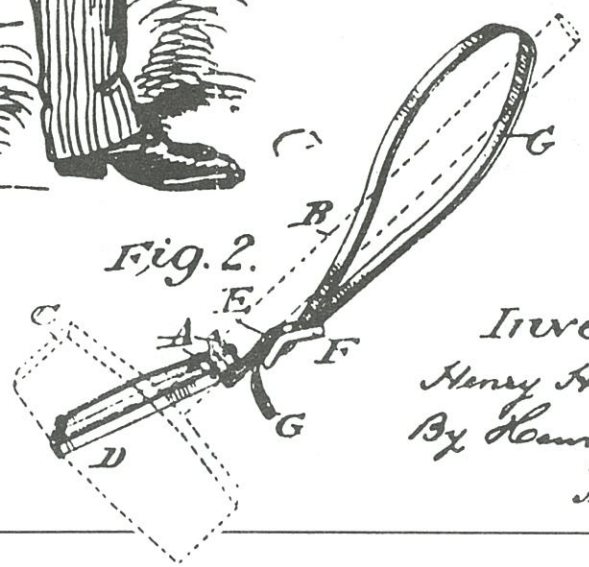


Fig. 2.

Witnesses
John Crist
H. C. Hardy.

Inventor.
Henry H. Schepers
By Henry Crist
Attorney.

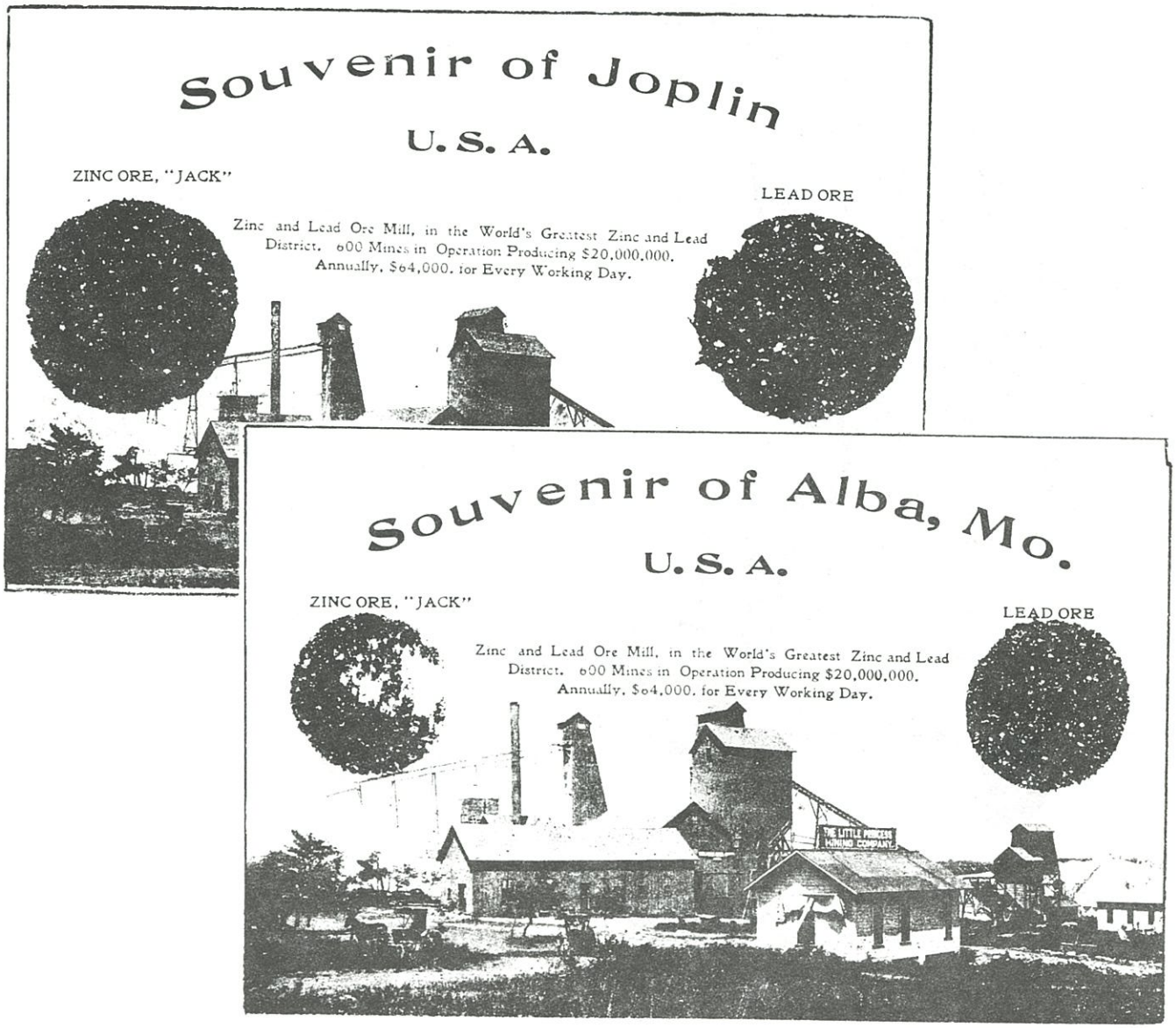
MINERAL-SAMPLE POSTCARDS

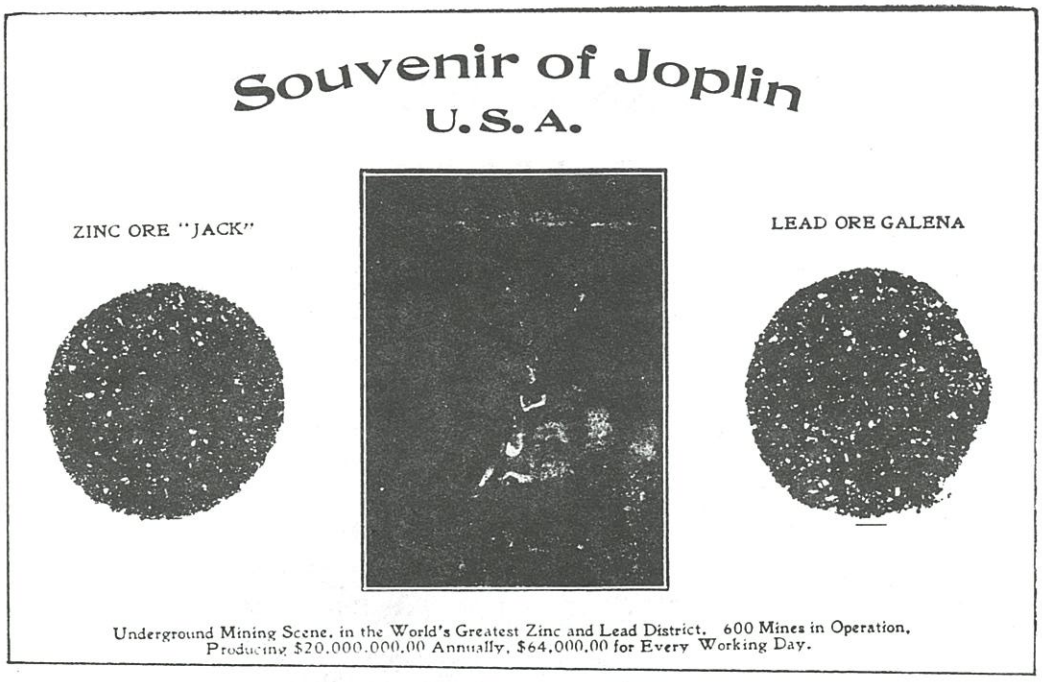
by **John A. Pawloski**
42 Squash Hollow Road
New Milford, Connecticut 06776

Over the years I have been able to find only a few postcards with actual mineral samples glued to the front of the card. The most frequently found cards of this rare type are shown below and on the facing page. Two of them depict the Little Princess Mining Company buildings in the Tri-State lead-zinc district of Missouri, although one gives the location as Joplin and the other as Alba. The third card shows an underground mining scene. Each card carries crushed samples of sphalerite (zinc ore) and galena (lead ore).

Other cards in my collection, from Columbia, California, show photographs of men panning for gold and pointing to the pans, where a tiny flake of real gold has been glued on.

Although such postcards are scarce, I would appreciate hearing from others having different varieties of mineral-sample postcards.





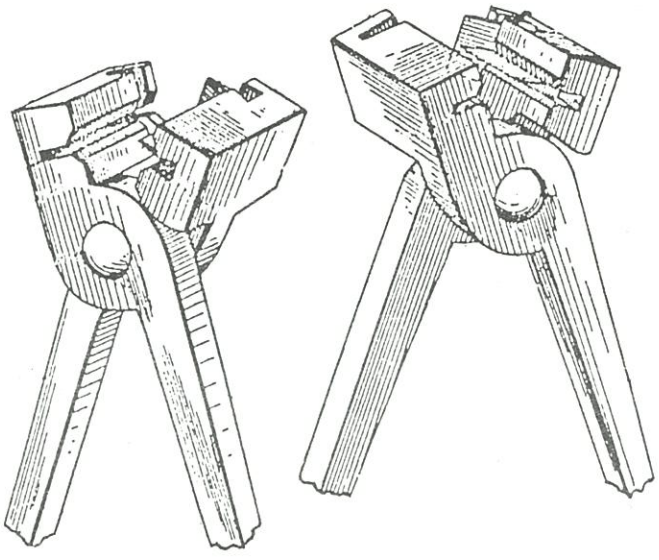
THE WHAT CHEER FUSE CUTTER AND SPLITTER

by **Ted Bobrink**
12851 Kendall Way
Redlands, California 92373

Jim Steinberg wrote a nice article on the What Cheer Tool Company of What Cheer, Iowa, in *MAC* no. 5, p. 15-16. The What Cheer oil lamps are well known among oil lamp collectors, as is the What Cheer oil canteen and a few very rare carbide cap lamps. Now a new item can be added to the possible stock list of the What Cheer Tool Company.

While gathering information for his forthcoming book on blasting cap tins and cap crimpers, Mark Bohannan came across a U.S. patent issued to the What Cheer Tool Company for a new type of fuse cutter and splitter. The unique thing about this model is that it can *simultaneous* cut and split a fuse in a single operation. The patent drawing shows a rather more massive tool than most fuse cutters, but oftentimes the manufactured version of patents shows a lighter construction than original drawings. In any case there is, as yet, no known example representing this patent. But if a reader should know of one, we hope he will let us know.

A. WALKER.
COMBINED FUSE CUTTER AND SPLITTER.
APPLICATION FILED MAR. 22, 1906.
PATENTED DEC. 18, 1906.
No. 838,924.

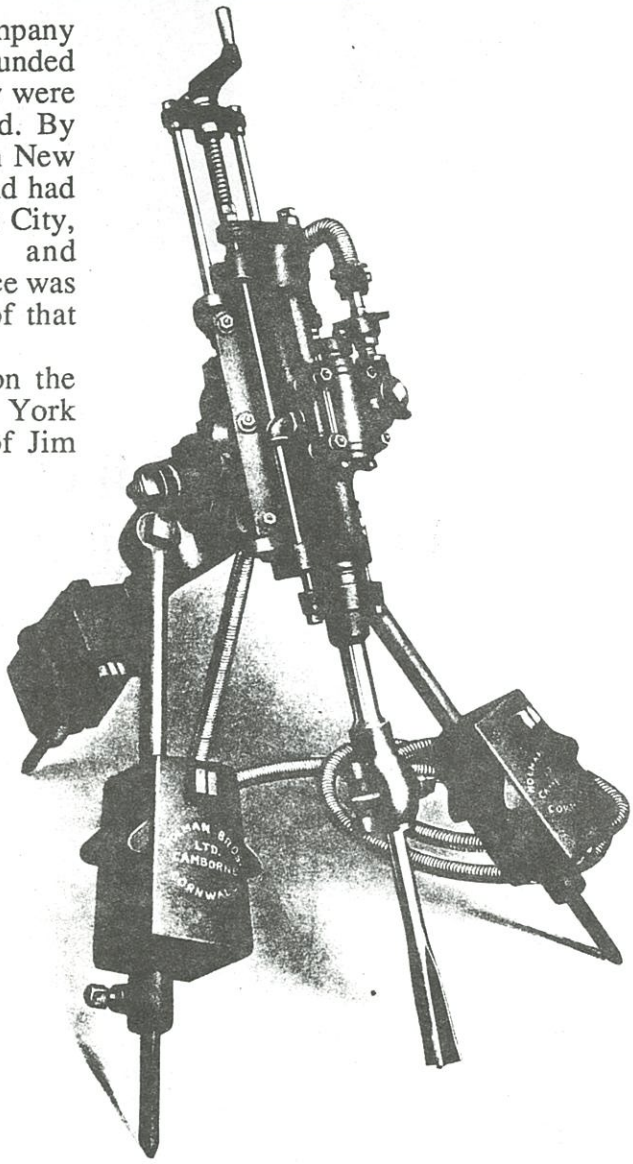


THE HOLMAN BROS. COMPANY

by **Mark Bohannan**
Star Route Box 107E
Oro Grande, California 92368

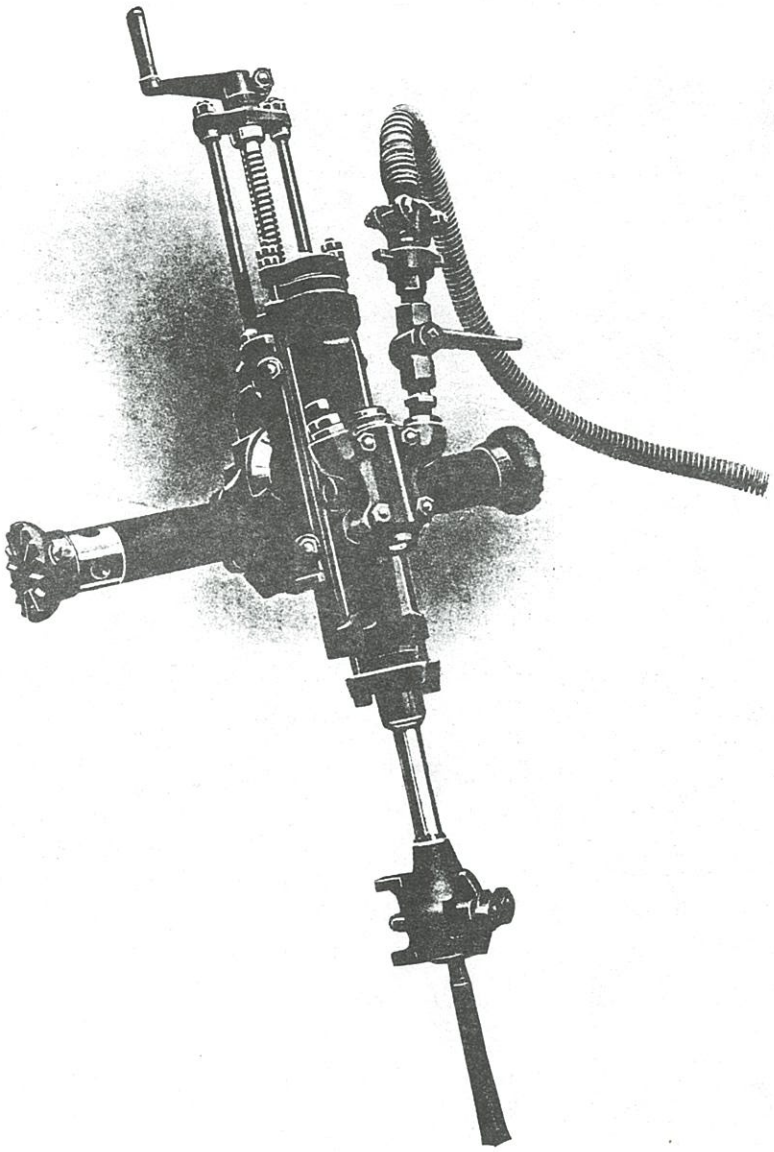
Holman Bros. was a mine supply company specializing in rock drilling equipment. Founded in 1839, their principal offices and factory were located in Camborne, Cornwall, England. By 1910 they had opened a "Main Office" in New York to sell Holman drills in America, and had established agencies in Montreal, Mexico City, Johannesburg, Melbourne, London, and Bulawayo (Rhodesia). The New York office was separately incorporated under the laws of that state.

The illustrations shown below and on the following two pages are from the New York office's catalog, dated 1910 (courtesy of Jim Steinberg).



HOLMAN UNIVERSAL TRIPOD

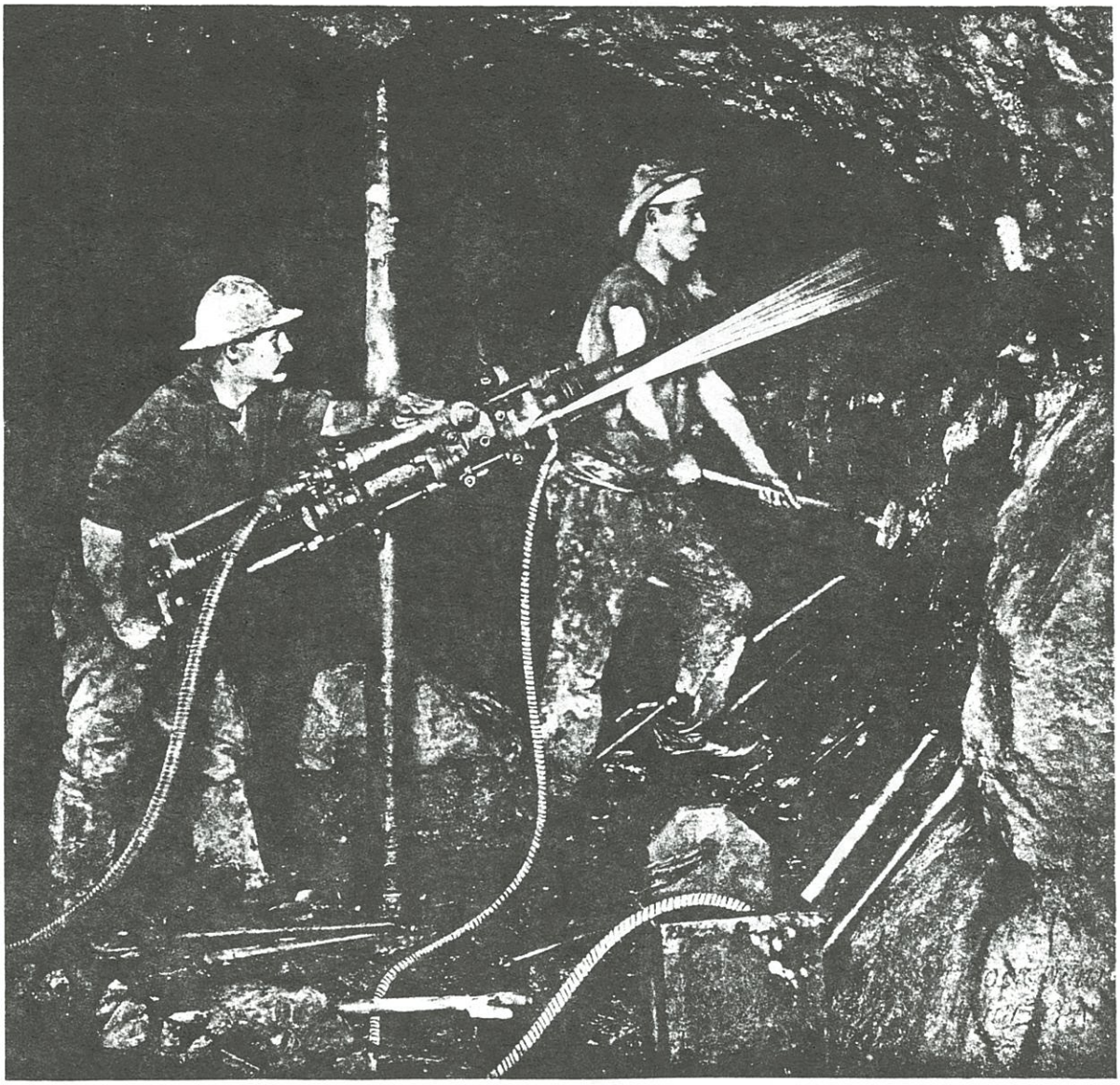
FOR work where a column is not applicable we furnish the Holman Universal tripod, which will be found a very strong and rigid appliance, and admirably adapted for the work it has to do. By means of a universal joint, the legs can be adjusted to any desired angle or position. These legs are telescopic, and may be lengthened or shortened, to suit irregular ground. The drill consequently can be easily set up, no matter how uneven the surface to be drilled. The tripod is made in four sizes.



HOLMAN STOPE DRILL

THIS is a light but powerful drilling machine, differing from the standard type in but a few instances. Made with a cylinder bore of 2⅛ inches, it weighs just 100 pounds. It is also made in the 2½-inch (140 pounds) and 2¾-inch (180 pounds) sizes. Designed chiefly for light mining work, such as stoping, cross-cutting, etc., it established a reputation for itself in South Africa, where it was introduced to meet the mining conditions there, and proved extremely successful in narrow stopes, some of which were only 18 inches. During the twelve months' contest under the auspices of the Transvaal Government and the Transvaal Chamber of Mines it vanquished its eighteen American, German and British competitors, for which it was awarded a cash prize of twelve thousand dollars ($12,000). It is an unquestioned favorite with the miners, because of its portability, simplicity, drilling speed and general efficiency.

HOLMAN BROS., 114 LIBERTY STREET, NEW YORK



HOLMAN DRILL WITH SPRAY

THE HOLMAN spray attached to the front end of the air chest of the drill is a practical device for the prevention of dust when drilling uppers. Producing a coarse spray, it overcomes the objectionable fog or mist which has heretofore attended the use of such contrivances through spraying too fine.

The spray comes into operation automatically as soon as air is turned on the drill and stops when air is turned off. Live air siphons the water from an open receptacle and sprays it around the hole, as shown. It is a sure preventive of miners' phthisis and can be supplied with all Holman drills.

More on Mine Bell Signs

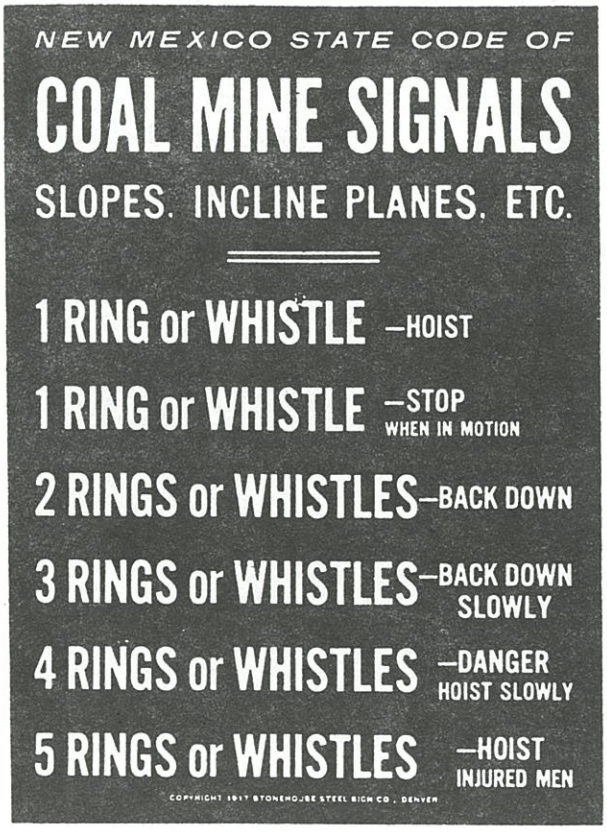
by **Ted Bobrink**
12851 Kendall Way
Redlands, California 92373

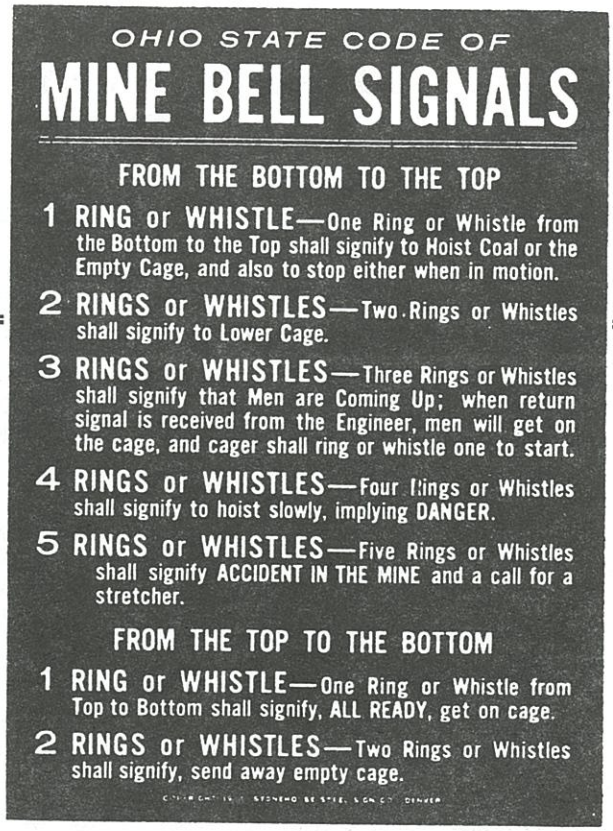
Here are two interesting mine bell signs, both made in 1917 by the Stonehouse Steel Sign Company in Denver. They are very similar in the signal codes, despite the mines being quite distant from each other.

The New Mexico State Code of Coal Mine Signals (left) is one of the simplest bell signs I have ever seen. I wonder if this simplicity was geared to the many non-English-speaking miners (mostly Indians and Hispanics) then employed in the New Mexico mines.

The Ohio State Code of Mine Bell Signals (right) has very similar codes, except that one or two rings or whistles meant different things depending on whether you were signaling from the top or the bottom of the shaft.

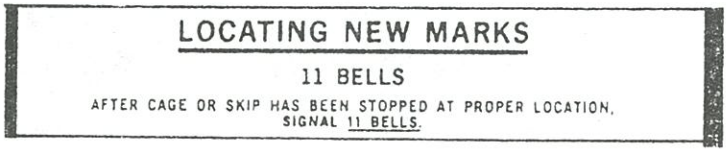
Mine bell signals are easy to photocopy on machines capable of reductions in size. Copy the sign in sections and make successive reductions of the copies until you have arrived at a convenient size which can be cut and assembled. Send a copy to us and we'll publish it in the *MAC*.





Bob Otto of Lead, South Dakota, sent an answer to our question in *MAC* no. 7 (p. 29). A mine bell sign from the Adirondack mine in Mineville, New York, shows a code for "locating new marks." Bob explains what that means:

"I worked in the homestake mine here in Lead before transferring to their Exploration Division. The cages and skips there are hoisted and lowered on braided wire cables. The engineer who runs the hoist has a large wheel or disc in front of him that shows how much cable has been let out. On this wheel he marks the different stations and skip pockets so that he will know exactly where to stop the cages and skips. The cage man rides the cage down and may signal for it to stop at a new level. When the cage has stopped at the correct depth, he signals the hoist engineer (11 bells) to mark the new stop on his wheel or disc, thus 'locating a new mark.'"



Mine Surveying Target Lamps From Germany

by **Tony Moon**
2763 E. Willow Wick Drive
Sandy, Utah 84093

Three types of German mine surveying lamps have been seen by the author on this side of the Atlantic, with the most recent being found at a flea market in Pennsylvania this spring! The use of this type of lamp and the design of the carbide version is well documented.[1] The lamps were used, mostly by smaller mining companies, in conjunction with a specially built compass which had a side opening for viewing the target.

An example of the carbide version of the lamp is shown in Figure 1. This example was made by F.F.A. Schulze of Berlin and is dated 1927. A similar lamp was also made by Sartorius, who are better known for their excellent analytical balances and who made similar lamps for the German railroad industry. The surveying lamps are all brass and are completely enclosed, with removable doors covering the glass on the sides and front. The front door has a special slit opening which can be covered and a round closing mechanism which allows the flame to be visible or obscured. The lamps have typical mining hooks attached by a chain to the wooden handle. The surveying lamps should not be confused with the railroad version of this lamp, which at one time was quite commonly found in antique shops. The railroad lamps have plain handles with *no hooks*, have only a plain front cover, are generally not brass, are painted black, and they have the "winged wheel" railroad logo and sometimes the eagle and swastika.

A second version of the carbide lamp has been examined that is made of brown plastic (probably a type of bakelite) and aluminum.

The oil version of the lamp is shown in Figures 2 and 3. The lamp has features similar to the carbide lamp except for the removable oil vessel. There is no maker's name on the example shown, which is in the author's collection.

[1]Prezag, K. (1982) *Das Bergmans Geleucht*. II Band, Verlag Gluckauf.

Figure 1. Schulze carbide target lamp, dated 1927

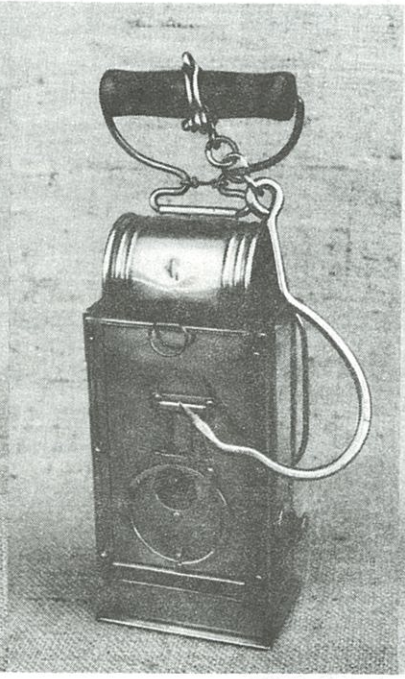


Figure 2. Oil target lamp, no maker's name

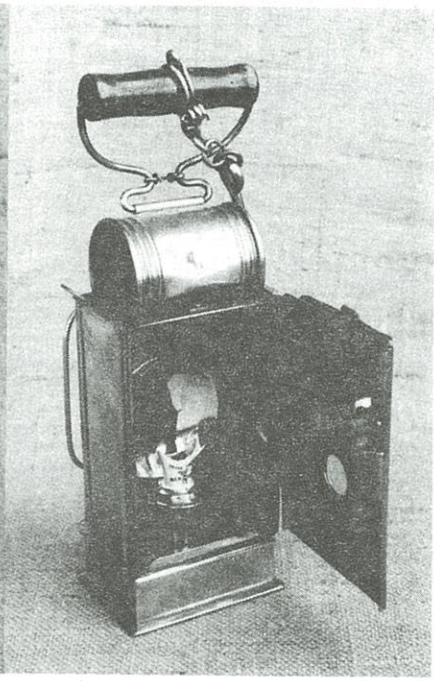


Figure 3. Oil target lamp, no maker's name

THE HOPPE BRITE-LITE

by **Wendell E. Wilson**
4631 Paseo Tubutama
Tucson, Arizona 85715

Charles Hoppe of Cincinnati is best known as the designer and original manufacturer of the *Ever-Ready* and the *Brite-Lite* carbide cap lamps.

The Charles Hoppe Company dates back to 1899 when (according to the *Cincinnati City Directory*) they were engaged in the manufacture of "metal goods." According to Clemmer (*American Miners' Carbide Cap Lamps*, 1987), the company began to make *Ever-Ready* carbide cap lamps in 1913, utilizing a design Hoppe had invented which was granted a patent on April 28 of the following year. Advertisements for the Hoppe *Ever-Ready* appeared in the *Engineering and Mining Journal* in 1914.

By 1915 Charles Hoppe had joined the Harker Manufacturing Company, where he worked on developing the Hoppe *Brite-Lite* carbide lamp. This lamp utilized the same patent of April 28, 1914. It was first introduced for sale in 1916 (Clemmer, 1987). Unlike the brass *Ever-Ready*, the *Brite-Lite* was made of steel, heavily tinned inside and painted flat black outside. The reflector was constructed of a nickel-plated brass. A few all-brass lamps are also known.

A number of variations in the *Brite-Lite* are known to exist. The **water doors** may be circular and screw-in (as on the *Ever-Ready*), or oval and hinged. The **hook** may be a flat spade mount or a round wire hook. The hook may be augmented by a lateral **brace** with a pivoting end, or by double **hand-loop** grips as on a superintendent's lamp. The standard reflector may also have a "**motorman's hood**" and glass lens which attaches by a bayonet mount. The **water feed** may be top-mounted as on a *Justrite*, or side-mounted as on an *Ever-Ready*. The **carbide chamber** may be smooth, or it may have a double row of raised dots; it may or may not have the Harker Brite-Lite name stamped on the bottom. Some models have an incorrect **patent date** (April 24 instead of 28) stamped on the top of the water chamber. There well may be other variations; but these are all I have seen.

Production of the Brite-Lite continued into the 1920's.

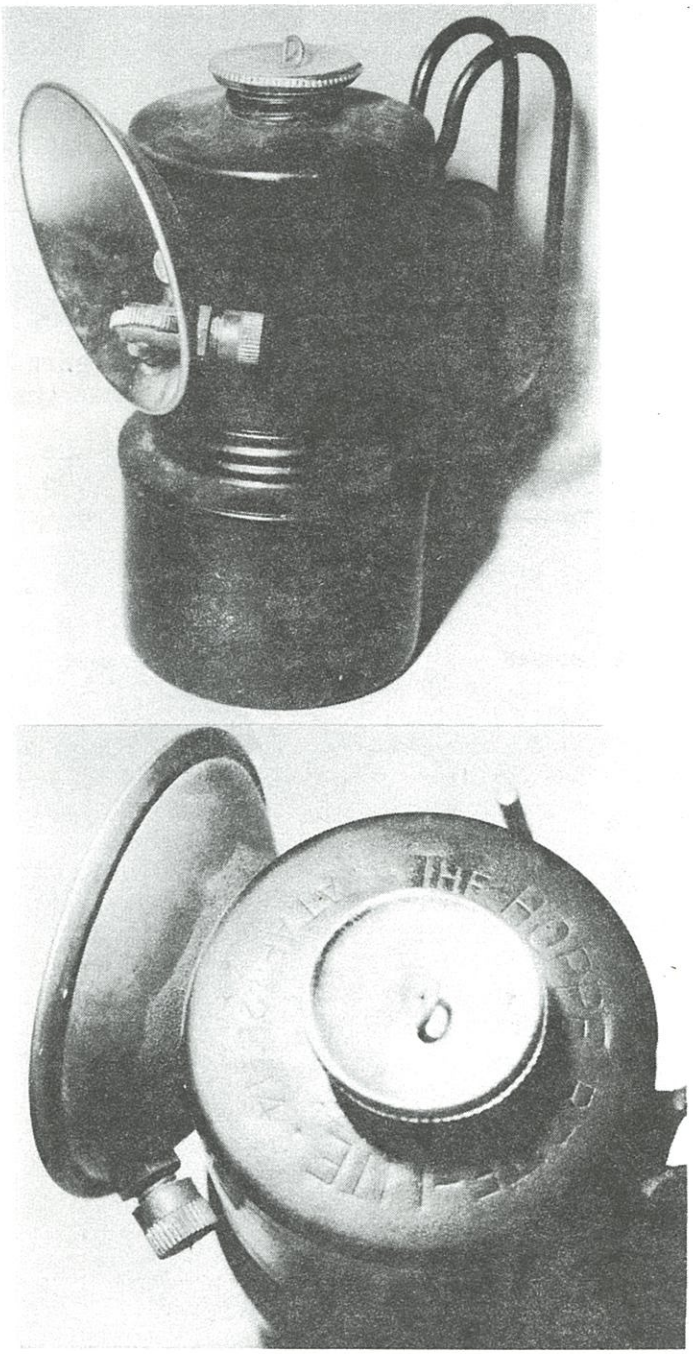


Figure 1. "The Hoppe Brite-Lite" superintendent's lamp.

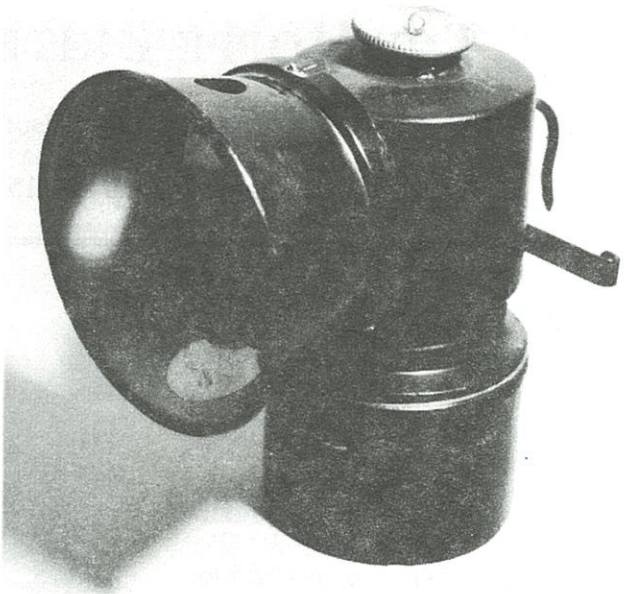


Figure 2. "The Hoppe Brite-Lite" motorman's lamp.

Figure 3. All brass Harker Brothers Brite-Lite with oval water door, knurled base and top mounted lever-feed. (ex Henry Pohs collection)

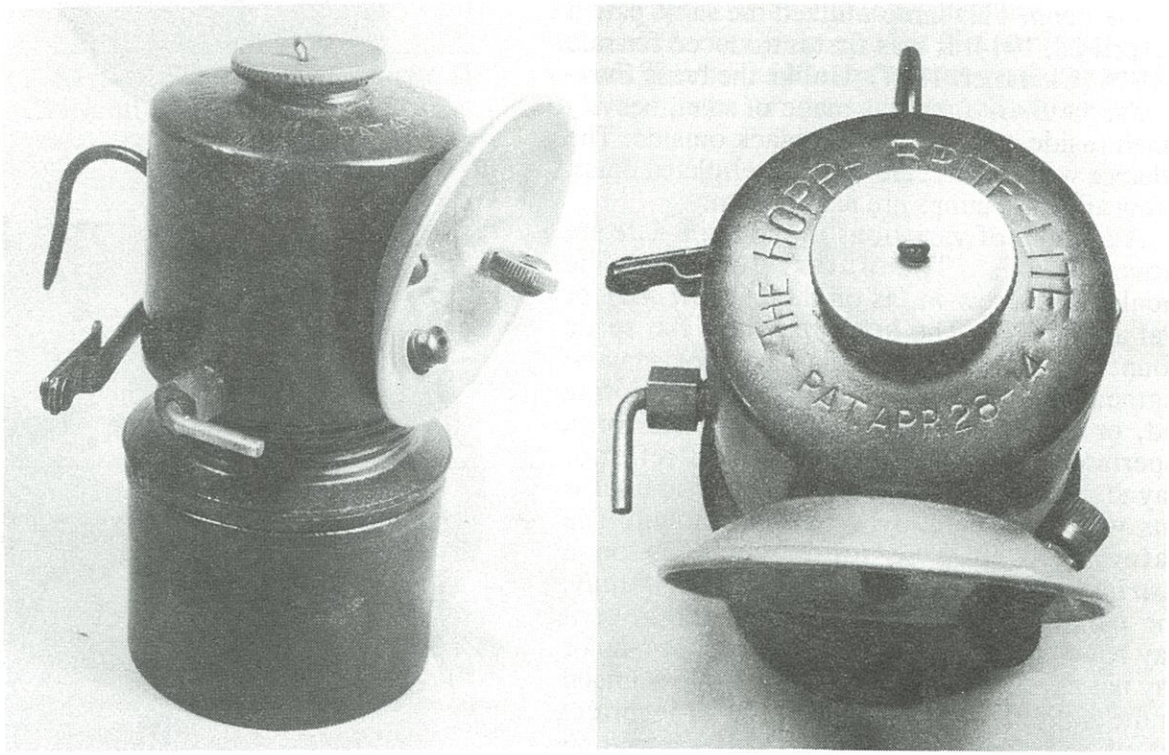


Figure 4. "The Hoppe Brite-Lite" with wire cap hook and flat brace. (Mike Puhl collection; photos courtesy of Dave Thorpe.)

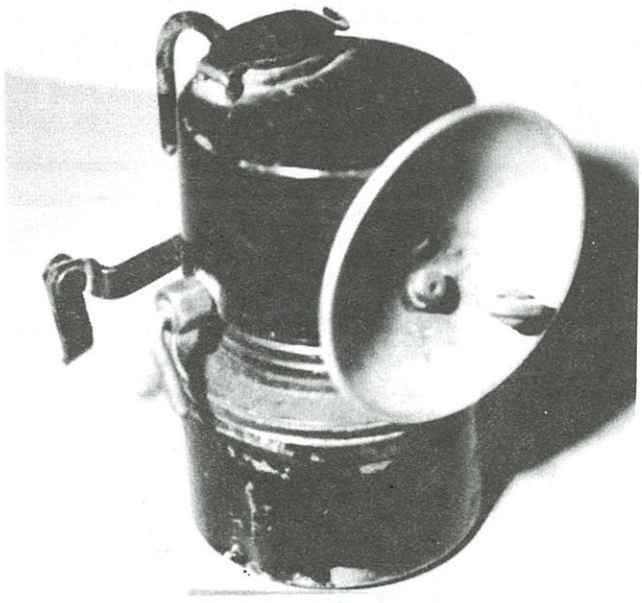


Figure 5. Harker Brothers "Brite-Lite" with oval water door, wire cap hook and hinged brace, and side-mounted water feed. (Dave Johnson collection)

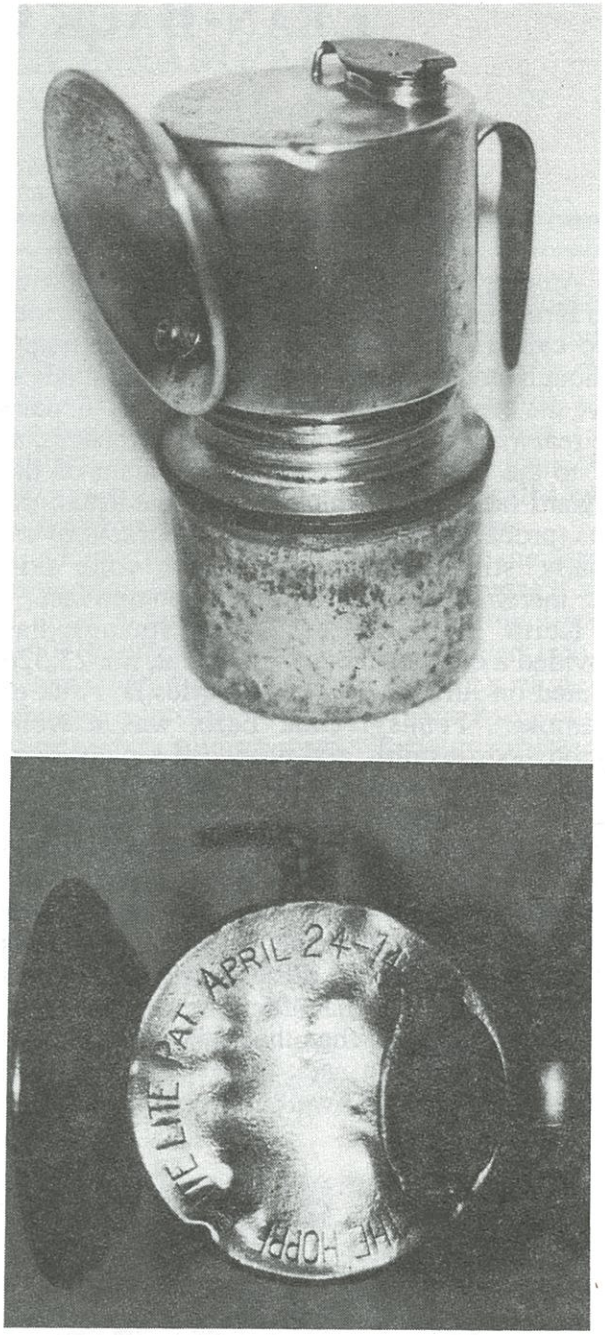


Figure 6. "The Hoppe Brite-Lite" with oval water door, side-mounted water feed, spade mount and incorrect patent date. Brass water chamber with steel skirt and carbide chamber. (Dave Johnson collection; photos courtesy of Dave Thorpe)

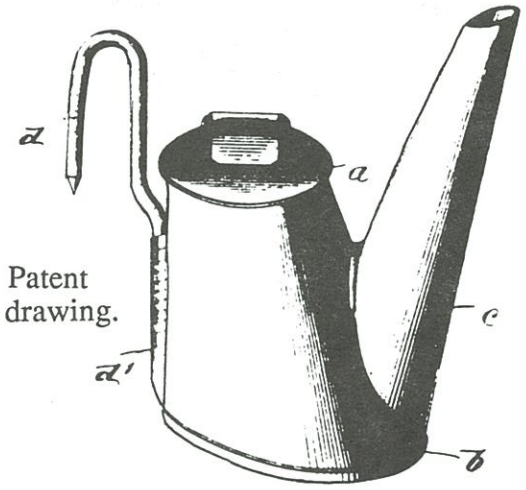
LEAN-BACK OIL-WICK LAMPS

by **Ted Bobrink**
12851 Kendall Way
Redlands, California 92373

Among the more interesting of the oil-wick cap lamps is the "lean-back" design, sometimes also called the "drunken" lamp. These lamps, although having a conical body like most models, have the cone axis tipped backward so as to make the rearward face of the cone vertical, that is, at 90° to the bottom. This results in a slant on the forward-facing side which is twice the usual; the caps (probably for simplicity of manufacture) are usually still perpendicular to the cone axis, and therefore not parallel with the bottom face.

Keith Williams of Idaho Springs has provided a copy of the design patent, no. 23,526 granted on July 31, 1894, to Charles D. Felix of Shamokin, Pennsylvania. Felix was a well-established tinsmith, and produced a number of lamp varieties stamped with his name.

The patent papers do not explain the reason behind the odd design, though it must have had to do with improving the angle at which the lamp sits when attached to the miner's cap. Whether this adjustment had much practical benefit is difficult to say, but the design patent expired in 1901, and few other manufacturers are known to have taken it up. On the other hand, the fact that so many of the lean-back lamps have survived suggests that they sold well in Pennsylvania.


DESIGN

C. D. FELIX.

MINER'S LAMP.

No. 23,526. Patented July 31, 1894.

Patent drawing.

Pictured here are three lean-back lamps manufactured by the Trethaway Bros. in Parsons, Pennsylvania. (Dave Johnson collection) ↓

THE GREENWATER STAMPEDE

by **Ted Bobrink**
12851 Kendall Way
Redlands, California 92373

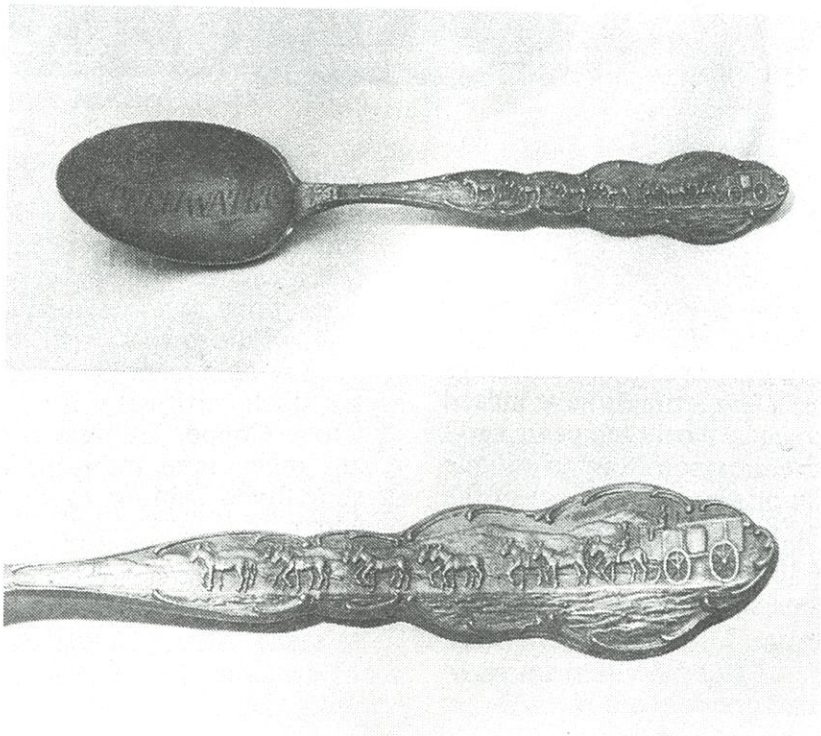
Ask anyone if they have heard of Death Valley and they will certainly answer yes. How about "Greenwater"? From Death Valley basin the western cliffs of the Black Mountains rise like a wall; and just a few miles southeast of a perch called "Dantes View" there was once located a boom town called Greenwater.

Although it was the promise of gold and silver that brought most men to Death Valley, Greenwater was built on copper. In December of 1904, a prospector named Arthur Kunze found some large boulders of copper ore and staked six claims. He then walked 180 miles across the Death Valley desert to record his claims at the land office in Keller.

After working his copper claims for about a year, Kunze sold out to the famous Charles M. Schwab (1862-1939), who was then president of Bethlehem Steel. Kunze received $150,000, much of it in company stock. When the word got out that Schwab was in, the stampede was on.

Greenwater called itself "the greatest copper camp on earth," and promised that within two years its copper production would exceed that of Butte, Montana, by factor of 100! For a short while, the world believed it. The Greenwater population soared from 70 to more than 1,000 within 30 days. In five months, more than 2,500 claims were filed, plastering practically every square foot of the desert in all directions.

Patsy Clark of Seattle financed the largest operation in Greenwater, the Furnace Creek Copper Company, for $200,000. From 1906 to 1907 another $4,000,000 was pumped into the Greenwater mines, but in the end not a single one showed a profit. George Graham Rice, one of the sharpest mining stock promoters of the day, called Greenwater the "monumental mining stock swindle of the century." However, the Greenwater Stampede was based, at least in part, on real ore deposits, some of which, no doubt, yielded rich assays. Reputable mining engineers approved some of the ground, and respected, savvy mining tycoons bought and developed



some of the claims. The extensive waste dumps which remain, demonstrate that significant mining and/or exploration took place.

I have visited the Greenwater site myself; today not even so much as a nail is left on the ground. All that remains are the large waste dumps and a few leveled areas where buildings once stood. However, a few artifacts have indeed survived from Greenwater. About ten years ago I bought a copper souvenir spoon from an antique dealer unaware of its origin. In the bowl of the spoon is engraved the name "GREENWATER," on the front handle is a team of twelve mules pulling an ore wagon, and on the back of the handle is a gold pan with crossed pick and shovel, a loaded prospector's burro, a bullfrog and a cactus. The spoon was not doubt sold to some poor sap in Greenwater during the few years of the town's existence.

The only other Greenwater artifacts I've seen are stock certificates for Patsy Clark's Furnace Creek Copper Company. If anyone knows of any other items traceable to this infamous and short-lived mining town, please write to the editor.

Mining Museums

THE IRON COUNTY MUSEUM

by **Robert L. Fox Jr.**
1235 Westfield Street
Oshkosh, Wisconsin 54901

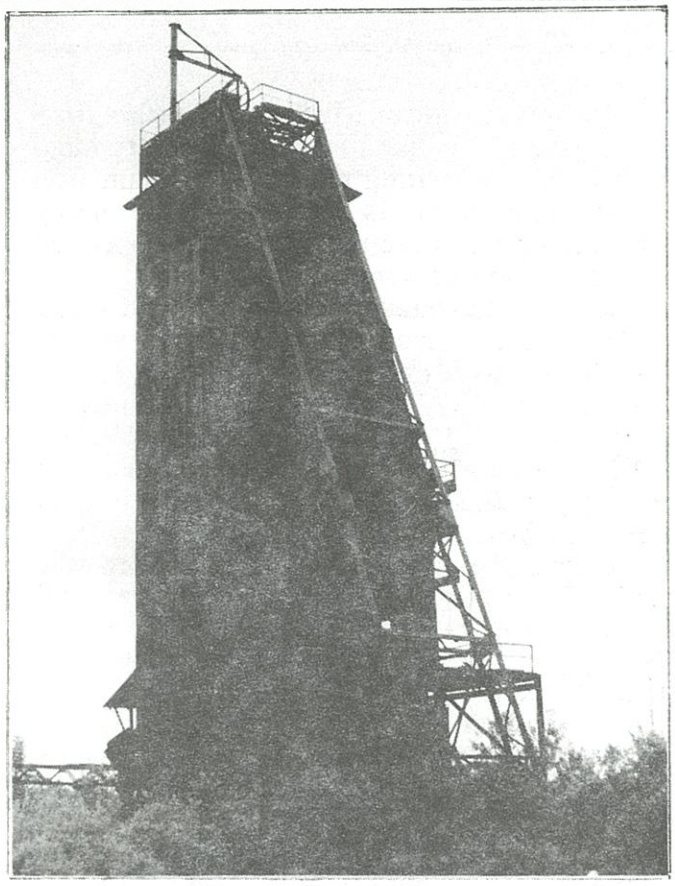
I was heading to Houghton, Michigan, to attend the "Red Metal Retreat" when I decided to take a little side trip to Caspian, Michigan, to visit the Iron County Museum. Approximately 79 iron mines have been recorded in Iron County.

The focal point of the mining section of the museum is the headframe that has been preserved from the Caspian mine. In 1963 the Pickands-Mather Company deeded 5.5 acres, including the headframe and engine house of the Caspian mine, to the Iron County Historical Museum Society. The mining headframe was build in 1921 and is believed to be the oldest surviving headframe in the State of Michigan.

The Verona Mining Company opened the Caspian mine in 1903. The mine shipped ore every year, 1903-1937 with the exception of 1921 and 1932. Total shipments amounted to 6,623,320 tons. The mine reached a depth of 539 feet and is now flooded.

The Peterson Mining Hall is located in the engine house. Here, I found a nice selection of mining lamps on display including candlesticks, oil-wick lamps, carbides and electric lamps. Several canary cages are displayed along with a selection of blasting cap tins. There are also several lunch pails on display, as well as a large collection of photographs. There are old leather and modern hard hats on display, and a good selection of mining tools.

One of the interesting features of the mining displays are the dioramas of several different mines that operated in the area. One diorama represents the underground structure of the Caspian mine. Another diorama represents the Hiawatha mine, which had 21 levels. There is one diorama of the Homer-Wauseca mine, which has the greatest reserves of ore. The largest glass diorama shows the geographic surface of 50 square miles and shows primarily the Hanna Company mine holdings. There is also a collection of rocks and minerals on display which includes many specimens from the local iron mines. A large specimen of "grape ore" (botryoidal hematite) catches your eye as you view the mineral display.



Headframe of the Caspian mine.

Outside the museum buildings you will find a

nice selection of mining machinery, mine signs, an underground ore car, diamond drill rig and an old railroad ore car.

The Iron County Museum contains numerous other displays, both inside and outside, including pioneer life displays, a miniature lumbering exhibit, the Carrie Jacobs-Bond House, an early gas station, and others. A few hours spent at this museum are instructive to an understanding of how life has been lived in this area over the past 100 years.

THE IRON MOUNTAIN IRON MINE

by **Robert Fox**
1235 N. Westfield Street
Oshkosh, Wisconsin 54901

Visitors to Vulcan, Michigan, can learn first-hand what it was like to toil in an underground iron mine, by visiting the Iron Mountain Iron Mine. This mine is typical of the many underground iron ore mines that once operated on the Menominee Range.

The Iron Mountain iron mine operated a total of 68 years and during that time mined a total of 21,625,000 tons of iron ore The mine began producing in 1877, and ore was shipped every year except 1921 and 1932, up to and including 1945. The longest stope measures 630 feet, the main adit is 2600 feet long, and the mine is 1300 feet deep. there were a total of 14 levels.

During the early prospecting era, ore was hauled by wagon to Menominee, Michigan, and from there it was shipped by vessel. After the Chicago and North Western Railway Company built a railroad to Vulcan in 1877, the mine went into full-scale operation and the iron ore was then shipped by rail to Escanaba. Therefore, this mine was the first on the Menominee Range to have ore shipped by rail.

Prior to 1882, the mine was operated by the Menominee Mining Company; from 1882 to 1923 by the Penn Iron Mining Company, a subsidiary of the Cambria Steel Company, which in 1923 became part of the Bethlehem Steel Company.

Visitors to the mine enter a building that serves as the ticket office and gift shop. After putting on a raincoat and hard hat you are ready to begin the tour. Once outside, the guide explains the history of the mine as well as the geology of the orebody. The guide demonstrates several pieces of mining equipment, including an

air compressor, drill and dump cart. I also noticed numerous mine signs mounted on the walls.

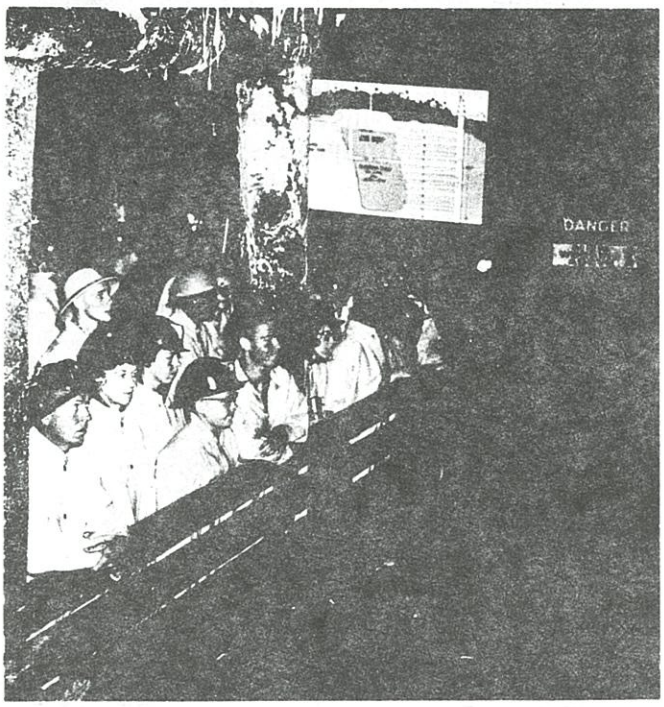
Visitors ride a train into the mine. The tour passes through 2600 feet of underground drifts and tunnels to a depth of 400 feet below the earth's surface. The temperature in the mine averages 46° F year-round. A portion of the tour involves walking to different features of the mine. At one point a demonstration is given on mine lighting. Electric lights are turned off and a candle is lit, giving people an opportunity to understand just how much light a miner had when he used a candlestick.

A highlight of the mine tour is the view of the big stope. This man-made underground cavity was created by years of mining. The stope is 630 feet long, 300 feet wide and 180 feet from the stope floor to ceiling. The lighting on the rocks creates an impressive view.

During the mine tour visitors learn how the double-jack method of drilling was used when this rich iron mine was discovered. Another demonstration shows how a water-liner drill was used. An experienced guide also explains the method of timbering that was used in iron mines. Inside the Visitor's Center you can view a collection of ore-related rocks and minerals.

The Iron Mountain Iron Mine is located 9 miles east of Iron Mountain, Michigan. Look for "Big John" standing 40 feet high, greeting all visitors to the mine.

(All photos courtesy of Dennis Carollo, Iron Mountain Iron Mine)



Source

Boyum, B.H. (1977) *The Saga of Iron Mining in Michigan's Upper Peninsula.* Marquette County Historical Society.

Collector's Talk

CARTRIDGE PINS.

We can furnish Cartridge Pins of any length or diameter. The usual sizes are 36 inches long, 1¾ inch at one end and 2 inches at the other. If this size is not suitable, send description of what your needs are.

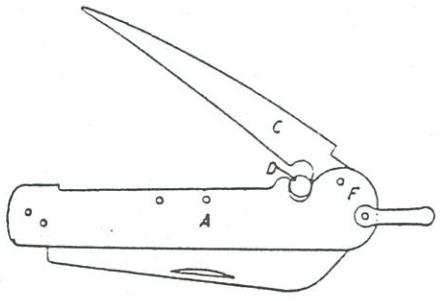
PRICE, ... per dozen, $.....

Cartridge Pins

A recent article of mine on blasting paper (*MAC* no. 10, p. 32) talked about wrapping the blasting paper around a wooden dowel called a cartridge pin. At that time I didn't know anything about cartridge pins. But recently, while going through some old catalogs, I found the following ad for cartridge pins in a 1901-1902 Bealle Bros. catalog. The cartridge pins were priced $1.40 per dozen.

Mark Bohannan

7538. Hickie. D. June 20.



CAP Crimping Knife

A while back, J. Rodger Mitchell of Glen Riddle, Pennsylvania, sent me this ad from a February 1990 issue of *National Knife Magazine* (p. 27). I have been unable, so far, to locate the patent for this knife, listed under his name or the date given in the ad. If anyone else has information about this knife, please let me know.

Mark Bohannan

Fusion Mixture

Bill Kidwell of Prescott, Arizona, sent in this picture of a metal tin published in a tin collector's magazine. Neither the owner, Ken Kennedy, nor the editors knew what it was; perhaps one of our readers has an idea?

It can be deduced as having something to do with the field of assaying, because of the company's description of itself as assayers and chemists. Furthermore, there is the cryptic line: "It has the blow-pipe beat a mile," so this "fusion mixture" was designed to serve the same purpose as blow-pipe analysis, but in some alternate way. Perhaps the biggest clue is the Devil himself, seated beside a stream and igniting something in his shovel.

Our guess is that RE-DU-CO Fusion Mixture was a combustible powder that could be mixed with powdered ore and ignited, melting the ore into a bead. In any case, the tin also states that the mixture is "patented," so perhaps a search of patent records will reveal the answer.

The tin is black on red, and measures 1.12 x 3.75 x 6 inches. Ricketts' *Notes on Assaying and Assay Schemes* (1876) makes no mention of the technique, nor is "fusion mixture" defined in the mining dictionaries we have at hand.

Candle Boxes

Deric English of Boron, California, sent us a description of his *Dearborn Manufacturing Company* candle box. It's a 20-pound box with a red and gold paper label. Readers may recall that in *MAC* no. 12 (p. 35) Larry Kuester showed a copy of his paper candle wrapper from the same company and wondered whether anyone had a corresponding box.

Shown here is a candle box illustration and text, taken from a 1919 catalog of the Anaconda Copper Mining Company Hardware Department in Butte, Montana. This "company store" sold anything and everything that a Butte resident might need, and put the Anaconda name on wherever possible.

I have never seen a real example but considering the white lettering, I would guess it to be printed on a paper label. If anyone has seen such a box or box-end, please write.

Ted Bobrink

WAX CANDLES

Made of pure stearic acid of the highest melting point; for mining purposes, particularly desirable in hot or drafty workings. Six candles in a set.

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14 Ounce—Weight per Set, 14 Ounces	$.....
16 Ounce—Weight per Set, 1 Lb	.....

Forty Sets in a Case

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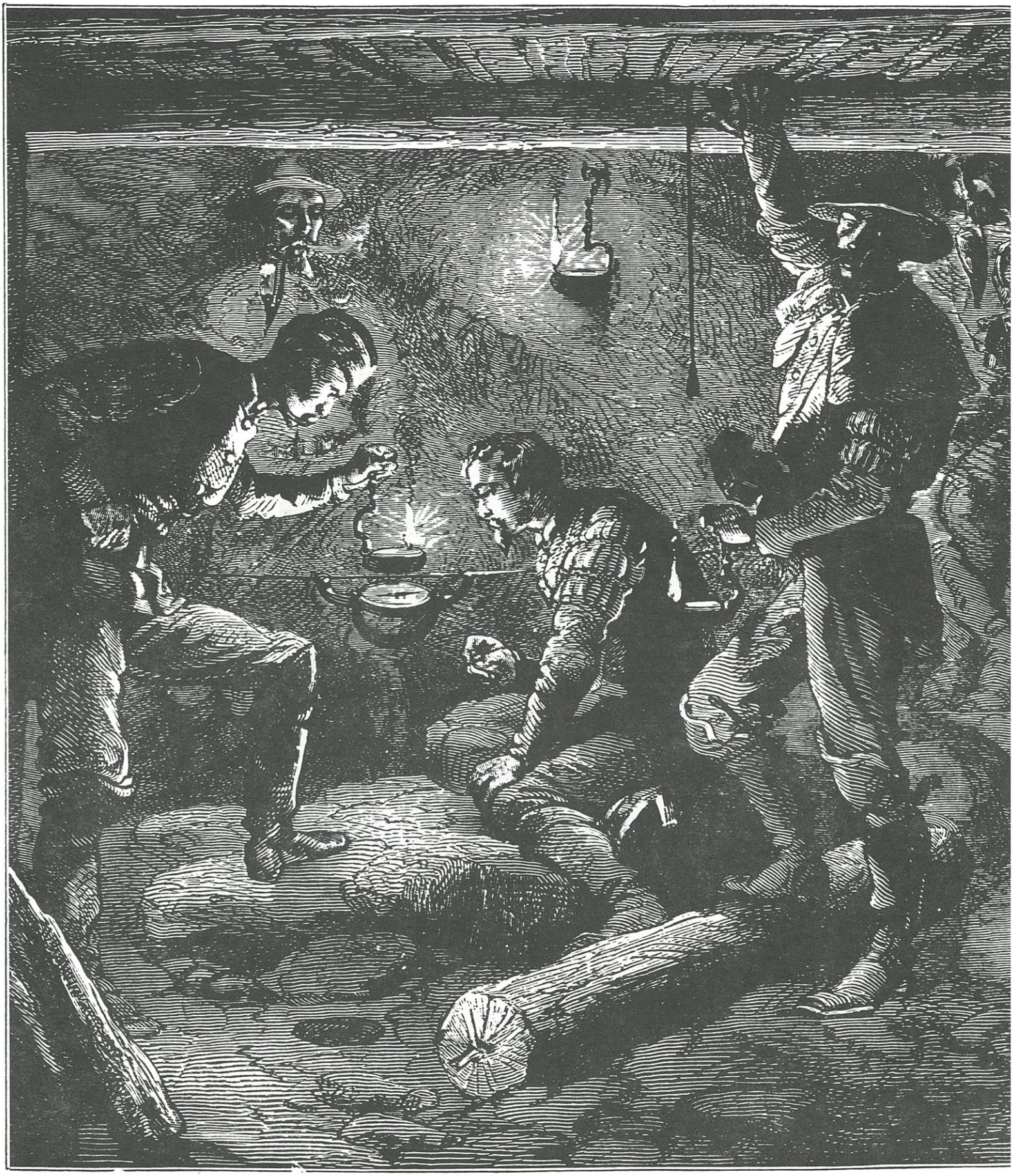

Dialling the Plan in the La Vieille-Montagne Mines. After F. Bonhommé. ca. 1850

Trades & Sales

Advertising Rates
Rates (per ad per issue) are: Full page, $100; half-page, $50; quarter-page, $35. Ads must be submitted camera-ready; we are not responsible for errors. Any ad may be rejected at the editor's discretion. Classified-style ads for trades or exchanges only (no sales) are free, subject to the availability of space.

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Winter Issue—Dec. 15
Spring Issue—Mar. 15
Summer Issue—June 15
Fall Issue—Sept. 15

FOR TRADE OR SALE: OIL WICKS: Frostburg, Dunlap-driver's, Felix, several unmarked. CARBIDES: Baldwin base with lid, Zar base with lid, Baldwin #72 candlestick for cap lamp, Shanklin #6 candlestick for hand lamp. SAFETY LAMPS: A.S.L. & M.S.Co. davy, Koehler aluminum, Hughes Bros. bonneted clanny, Eccles. OTHER: Coal breaker souvenir, mercury crock, large tin powder flask, UMWA pins, miners' check tags, Red Jacket Michigan bottle, "double safety" cloth hat. CANDLESTICKS: Unmarked blacksmith, unmarked "Ideal." Jeff Shanks, 1351 Apple Blossom Drive, Yardley, PA 19067.

FOR TRADE: Hazleton carbide hip flask, Justrite No. 77 carbide hip flask, Shanklin reamer cases (1-doz) boxed, early smooth Autolite base, Simmons base, Guy's hexagonal base. Mike McLaughlin, P.O. Box 607, Spotslyvania, VA 22553

FOR SALE: Trethaway Bros. oil-wick lamp, milkcan style, brass font, spout and lid ($135). Grier Bros. oil-wick lamp, modified milkcan, brass font, tin/copper spout, copper drip-ring ($115). Mike McLaughlin, P.O. Box 607, Spotslyvania, VA 22553

FOR TRADE: Old wooden foundry patterns for C.S. Card Iron Works mining equipment. C.S. Card catalogs, pictures of mining equipment, and equipment name plates. Trade for lamps, candlesticks, catalogs or ??. Wanted: C.S. Card Catalog no. 20. Jim Cox, 7295 So. Xanthia Street, Englewood, CO 80112. Tel: (303) 770-4996 before 9 p.m. please.

FOR SALE: Mining stock certificates. Free descriptive list. Each mining company carefully researched. List description gives available historical information, location of mines, names of important signatures, and vignettes. Russell Filer, 13057 California St., Yucaipa, CA 93299. (714) 797-1650

MAIL BID AUCTION: "EYE BRAND" brass hand-held Carbide Lamp, 8 1/2" to top of handle, 4 1/2" reflector, in good working order. Minimum bid $25. Write or phone for more information. Russell Filer, 13057 California St., Yucaipa, CA 92399. (714) 797-1650

FOR TRADE: 35 different blasting cap tins; Buddy cap lamp; Victor cap lamp; unfired Zar cap lamp; Want rare cap tins and boxed cap lamps. Bob Schroth, P.O. Box 687, Twin Peaks, CA 92391. Tel: (714) 337-7833.

FOR TRADE: "Hydraulic Press Adamantine Candles" box end, "Werk" candle box end, 25 - pound "Hercules" powder box; X-ray, Simmons, Grier Bros. and other carbide lamps. Will buy or trade for early carbide lamp boxes, lamp repair kits, or unusual parts boxes. Mark Bohannan, Star Route Box 107E, Oro Grande, CA 92368. Tel: (619) 246-4418.

FOR TRADE: Photo calendars featuring 14 photos of old Michigan copper stamp mills and mines. Each black-and-white photo is 8.5 x 11 inches with spiral binding. Mining postcards and photos wanted in exchange. Robert Fox, 1235 N. Westfield St., Oshkosh, WI 54901.

WANTED: R.B. Wardin-Philadelphia oil-wick lamp. James W. Queen & Co.-Philadelphia, PA. J. Roger Mitchell, 19 Eric Lane, Glen Riddle, PA 19037.

FOR SALE: Rare safety, carbide and frog lamps, "Freiberger Blende," ceremonial German miners' axes ("Barten"), miners' jackets, sabers, books, bronze sculpture, silver and tin plates, calendars, miniature coal mine model, etc., mostly from Saxony. Hans-Joachim Glapa, Postfach 1320, D-4352 Herten, Germany

FOR TRADE: Bound volumes of the *Columbia School of Mines Journal*, carbide lamps, postcards of mines and mills, many books and bulletins. Send for list. John Pawloski, 42 Squash Hollow Road, New Milford, CT 06776, Tel. (203) 354-0296.

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TED BOBRINK

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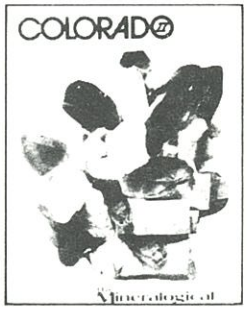

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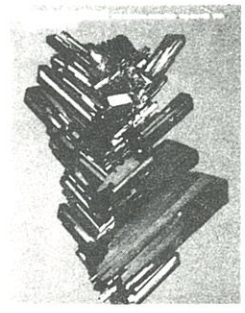

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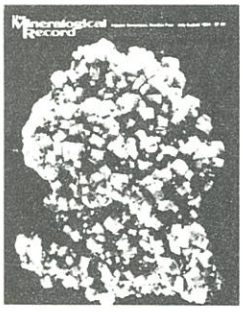

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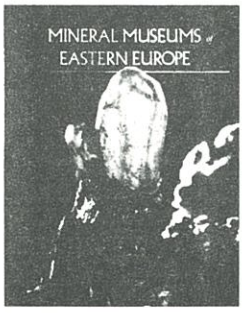

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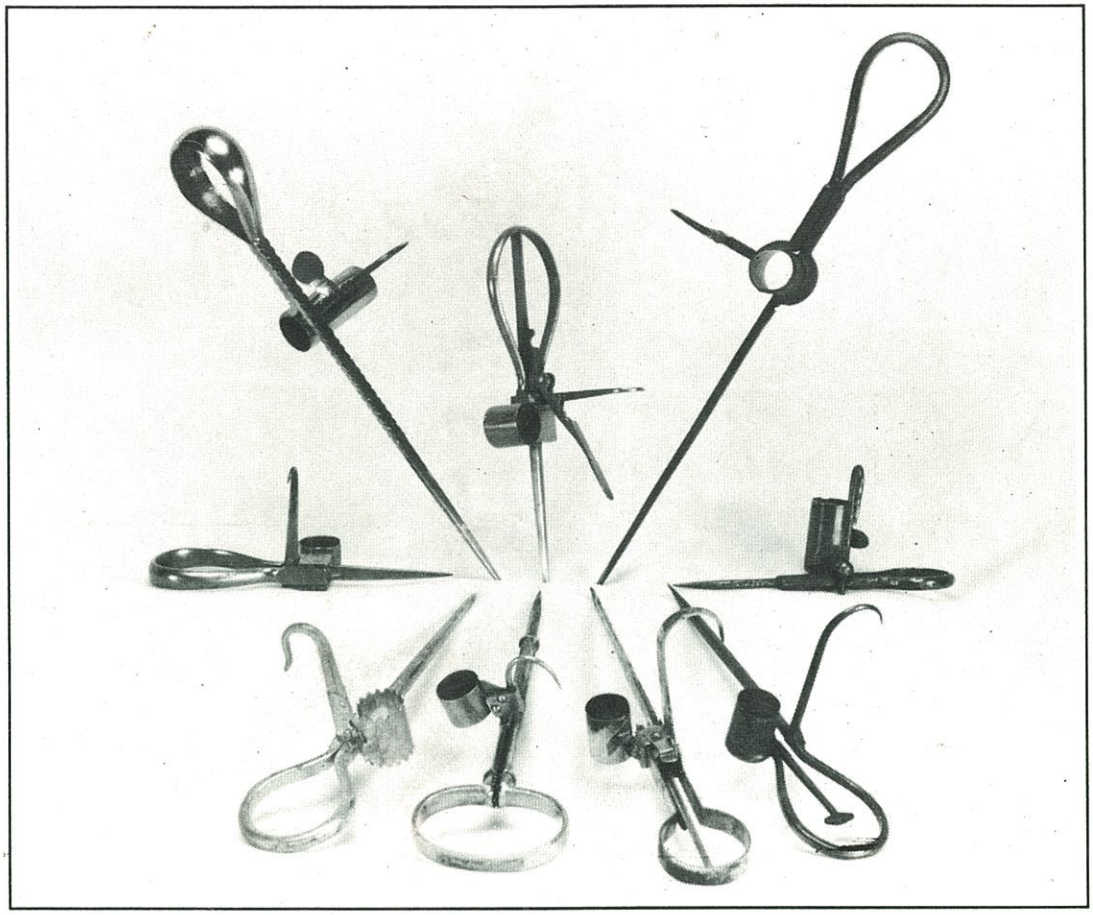

MINERS CANDLESTICKS

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Aetna Powder Co.	Chicago, Illinois
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Amede Bernier	Victor, Colorado
Cyrille Pateneaude (Eureka folding)	Helena, Montana Territory

plus many Folding, Fancy, and Hi-Grader Models

CARBIDES: Arnold, Hansen, Wolf, Arrow, Buddy, Luminum, Anthracite, X-Ray, Crestella, Little Giant, Baldwin No. 36, & others

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