

# MINE

# ARTIFACT

# COLLECTOR

Issue Number 4 Summer 1989



**ARIZONA STATE CODE OF MINE BELL SIGNALS**

1 BELL STOP IMMEDIATELY IF IN MOTION  
 HOIST MUCK.  
 1 ... RELEASE CAGE SKIP OR BUCKET

2 BELLS LOWER.

3-1 ... HOIST MEN. IF BELLS RING SLOWLY  
 3-2 ... LOWER MEN. MOVE SLOWLY

4 ... STEAM ON OR OFF

5 ... BLASTING OR READY TO SHOOT.  
 THIS IS A CAUTION SIGNAL AND IF THE ENGINEER IS  
 PREPARED TO ACCEPT THE MUST BE KEPT IN MOTION  
 RAISING BUCKET IN CAGE FEW FEET THEN LOWER AS  
 17 SOON AFTER RECEIVING THIS SIGNAL ENGINEER  
 MUST BE PREPARED TO HOIST MEN AWAY FROM JUST  
 AS SOON AS SIGNAL 7 BELL IS GIVEN AND  
 6 BELLS AIR ON OR OFF.

7 ... DANGER SIGNAL. FOLLOWED  
 BY STATION SIGNAL CALLS CAGE TO THAT STATION  
 THIS SIGNAL TAKES PRECEDENCE OVER ALL OTHERS  
 EXCEPT AN AUGUSTED BLASTING SIGNAL.

**STATION SIGNALS**

1-2 BELLS COLLAR OF SHAFT.  
 3 BELLS 1<sup>st</sup> LEVEL 4-5 BELLS 13<sup>th</sup> LEVEL

1-4	2 <sup>nd</sup>	5-1	14 <sup>th</sup>
1-5	3 <sup>rd</sup>	5-2	15 <sup>th</sup>
2-1	4 <sup>th</sup>	5-3	16 <sup>th</sup>
2-2	5 <sup>th</sup>	5-4	17 <sup>th</sup>
2-3	6 <sup>th</sup>	5-5	18 <sup>th</sup>
2-4	7 <sup>th</sup>	6-1	19 <sup>th</sup>
2-5	8 <sup>th</sup>	6-2	20 <sup>th</sup>
4-1	9 <sup>th</sup>	6-3	21 <sup>st</sup>
4-2	10 <sup>th</sup>	6-4	22 <sup>nd</sup>
4-3	11 <sup>th</sup>	6-5	23 <sup>rd</sup>
4-4	12 <sup>th</sup>	7-1	24 <sup>th</sup>

STATION SIGNAL MUST BE GIVEN BEFORE HOISTING OR LIFTING  
 SIGNAL. THE ENGINEER SHALL NOT MOVE A CAGE SKIP OR  
 BUCKET UNLESS HE UNDERSTANDS THE SIGNAL. ONE COPY  
 OF THIS SIGNAL CODE SHALL BE POSTED ON THE SIGNALS  
 TABLE ONE AT EACH STATION & ONE BEFORE THE ENGINEER  
 OR DOUBLE ENDED SHAFTS.

No. 1110 Arizona Code  
 Size 18x36 in.

IN ALL SHAFTS AND SLOPES WHERE  
 PERSONS, COAL AND OTHER  
 MATERIALS ARE HOISTED BY  
 MACHINERY THE FOLLOWING  
**CODE OF SIGNALS**  
 SHALL BE USED

1 RAP or WHISTLE TO HOIST COAL

1 RAP or WHISTLE TO STOP CAR  
 OR CAGE WHEN  
 IN MOTION

2 RAPS or WHISTLES TO LOWER CAR  
 OR CAGE

3 RAPS or WHISTLES TO HOIST  
 PERSONS

4 RAPS or WHISTLES TO TURN THE  
 STEAM ON TO  
 PUMPS.

THE ENGINEER SHALL SIGNAL BACK WHEN  
 READY. AFTER WHICH THE PERSON SHALL  
 GET ON THE CAR OR CAGE, AND THEN ONE  
 RAP OR WHISTLE SHALL BE GIVEN TO HOIST.

No. 1107 Penn. Bituminous  
 Code  
 Size 14x20 in.

**SIGNALS**

FROM BOTTOM TO TOP

1 RING or WHISTLE -- Hoist Coal or Empty Cage

1 RING or WHISTLE -- Stop When in Motion

2 RINGS or WHISTLES -- Lower Cage

3 RINGS or WHISTLES -- DANGER Hoist Slow

4 RINGS or WHISTLES -- DANGER Hoist Slow

5 RINGS or WHISTLES -- ACCEPTANCE

6 RINGS or WHISTLES -- Hoist Cash Stop

FROM TOP TO BOTTOM

1 RING or WHISTLE -- GET ON CAGE

2 RINGS or WHISTLES -- Send Away Empty Cage

No. 1135 General Code  
 No. 1106 Illinois Code  
 Size 14x20 in.

Station and Level  
 Signs 3 in. x 9 in.  
 All other signs (ex-  
 cept Codes) are  
 7 in. x 10 in. Made  
 of 18-gauge Steel  
 Porcelain Enam-  
 eled. \$1.10 each.

STATION  
 20

LEVEL  
 20

CAGE CALL  
 PUSH BUTTON  
 GOING UP - 1  
 DOWN - 2

HANDS OFF  
 DO NOT GIVE  
 SIGNAL UNLESS  
 ON CAGE



TO  
 RELEASE  
 CAGE  
 SKIP OR  
 BUCKET  
 SIGNAL  
 1

THIS  
 WAY  
 OUT

TO SHAFT

TO MAIN  
 SHAFT

TO AIR  
 SHAFT

TO  
 ESCAPE  
 SHAFT

TO SURFACE

HANDS  
 OFF  
 BELL CORD

TROLLEY  
 WIRE  
 DANGER

FOR CAGE  
 FLASH  
 1-2

FOR SKIP  
 FLASH  
 5-4

PARA JAULA  
 TOCA  
 2-2

HANDS OFF  
 FOR  
 CAGEMEN  
 ONLY

**Stonehouse**  
 SIGNS, INC.  
 STONEHOUSE BLDG. 842 LARIMER ST. DENVER, COLO. U.S.A.





(702) 323-4566 FAX (702) 323-4501  
320 S. WELLS AVE., RENO, NV 89502

#### MINING MAPS

##### ARIZONA: GOLD ROAD DISTRICT, MOJAVE CO.

Tom Reed Gold Road District, Haff & Colwell, 3/1916. Early blueprint, fancy, 1" = 500'. \$90.00

Same area, no title block, blueprint on canvas, folded for field use, shows some geology. \$90.00

Same area, ten maps in all. Various early prints of the district, or claim groups. \$250.00

##### SAN FRANCISCO DISTRICT, MOJAVE CO.

Two maps, Haff & Colwell, 1/19/1916. Motherlode Mining Co. Roadside group, surveyors plat, and associated claim map. \$75.00

##### COLORADO

Maps of patented claims, Needle Mtn. Mining District, La Plata County. Early blueprint, about 24"x40", by J. E. Tiffany, Dpty. Mineral Surveyor, data base circa 1875. Classic. \$200.00

##### NEVADA

Map of the Golden Rule, Eureka Co., Nevada. 8"x12", pink & black on white, circa 1875. Attractive. \$45.00

##### OTHER STATES

Please call us for maps from other areas. We have Alaska, Washington, etc. Also original Wheeler survey, Fremont survey, early state maps.

##### REVERSE GLASS MINE PROMOTION

12"x16" glass broadside from 5/1916, Colorado Gilpin Gold and Radium Mining Co. On reverse glass are two large gold retort products (crude ingots.) Ore mining and recovery information fill the rest of the space. Fancy and attractive but glass is cracked or broken across the lower left corner. Does not affect the picture. \$150.00

##### BLASTING, MINING, AND ASSAY PAPER

Assay certificates. We have assay certificates from all over the west, 1860 to 1920. Call for your area.

Climax Fuse Co., N.Y. Letter, 7/12/89, fancy vignette. \$30.00

Hercules Powder, 8/14/1913. Fancy logo and masthead, "EXPLOSIVES," letter. \$22.00

Union Carbide billhead, 10/15/1914, \$12.00

Miner's Sunshine, oil lamp advertisement, circa 1910. Shows two miner's lamps. \$20.00

Justrite pictorial advertisement, circa 1910. Shows Justrite on stick and carbide tin. \$24.00

Union Carbide billhead, 4/26/1916, for 2000# Carbide Miners Lamp. \$17.00

Judson Dynamite & Powder Co., 3/27/95. Letter. \$15.00

Giant Powder Co., 10/15/90. Circular, very fancy masthead. \$18.00

Same. 11/20/1889. Letter on blue paper, fancy. \$20.00

Pelton Water Wheel Co., 2/19/94. Letter, fancy blue masthead. \$15.00

Hercules Powder Co., 11/3/1916. Invoice, red. \$14.00

Hercules Powder Co., 11/3/1916. Invoice, black. \$12.00

Giant Powder Co., blasting application, 1918. \$14.00

Hercules blasting permit, 1918. \$14.00

DuPont Powder, 11/1875. Advertising on billhead, Eureka. \$12.00

California Powder Works. Pictorial broadside or ad on orange paper, 6"x8", circa 1875. Very fancy. \$100.00

California Cap. Co. Wells Fargo cover, circa 1890. \$25.00

Giant Powder Co., 1886. Five page letter with fancy vignettes. \$100.00

##### ALSO:

Postcards showing underground scenes, lighting equipment including Copper Queen related cards, etc. Call or write.

##### COLORADO TERRITORY CHECKS

11/30/1864. To Charles Lynch, signed by John Fillmore an Assistant Treas. of U.S. Red, vignette of Liberty with flag at left. \$130.00

12/5/1864. Same, only the date is different. \$130.00

##### COLORADO CHECKS

Denver. 12/11/1866. Green, FNB Denver, to Heron Johnson, signed by J. S. Fillmore. Fancy vignette, Liberty at left. \$60.00

Boulder, 8/31/78. National State Bank of Boulder, red on white, RN-G imprint, signed by C. W. Tyler. \$11.00

Boulder, National State Bank 4/7/79. Black on white, RN-G imprint, C. W. Tyler signature. \$10.00

Central City, Iron City Concentrating Co., Blackhawk. FNB, 7/24/1919. \$5.00

Cripple Creek, FNB, 3/6/23. Gray. \$5.00

Cripple Creek, FNB, 12/26/11, fancy monogram. \$8.00

Cripple Creek, FNB, 11/6/99. RN-X imprint, Craig Bale Brokerage Co. \$10.00

Cripple Creek, FNB, 12/12/13, Fraternal Order of Eagles. \$6.00

Cripple Creek, FNB, 5/15/99. RN-X imprint. \$15.00

Cripple Creek, FNB, 2/19/94. \$7.00

Denver, 2/19/96, Adit Mining Co. \$7.00

Fairplay, promisory note, 10/2/1915. Bank of Fairplay. \$10.00

Goldfield, Treasurer's check, 10/14/26. Fancy reverse. \$5.00

Grand Junction, FNB, 6/6/1892. \$7.00

Lake City, Hinsdale County Bank, 4/23/77. \$12.00

Lake City, Miners & Merchants Bank, 9/29/1882. \$12.00

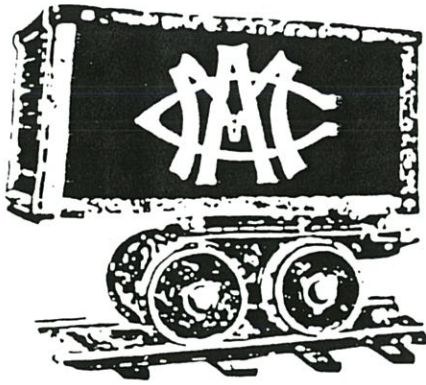
Leadville, Manville Hardware, RN-G, 11/23/80. \$15.00

Leadville, Thompkins Hardware & Mine Supplies, Trimble Hunter Bankers, 2/2/87. \$11.00

##### Mail Bid Sale

If you collect paper related to mining, let us know, or get on our bi-monthly mailing mail bid sale list. If you are an active bidder, you will continue to receive catalogs.





## MINING ARTIFACT COLLECTOR

### On the Cover

A J. W. Stonehouse Sign Company  
ad from a 1921 Mining Congress  
Journal. See article in this issue.

### Table of Contents

- Page 1 - Editorial
- Page 3 - Carbide Section: Victor-Defender-X-Ray, and cap lamp bottom guide (part one).
- Page 15 - Candlestick Section: Colorado and Randsburg fancy sticks, Bernier stick, and mining candles.
- Page 19 - Safety Lamp and Oil Wick Section: Anton wick box and an unusual oil lamp.
- Page 21 - Blasting Item Section: Blaster's handbooks, Victor blasting machine, fuse lighter, General Explosives Co., and Atlas cap crimpers.
- Page 25 - Stock and Paper Section: On Strike in San Miguel County, Colorado.
- Page 27 - Miscellaneous: J. W. Stonehouse Sign Co., pulp balances, mine bell sign, reunion report, museum review, and much more.
- Page 37 - Ads

### Subscriptions

The MAC journal is published four times a year in the months of January, April, July, and October. The rate is \$20 for domestic delivery and \$30 a year for overseas airmail delivery. We will not accept subscriptions for more than one year (4 issues) at a time.

Mail subscription requests to: Ted Bobrink, 12851 Kendall Way, Redlands, CA 92373

Back issues are available for \$6 domestic delivery and \$8.50 overseas delivery.

### Article Submission and Ad Policies

Articles and other submissions should be sent to the appropriate editor. Drawings and other artwork should be of high quality and ready for reproduction. Although we cannot guarantee publication of any submission, we will make every effort to do so. Articles should be submitted early and as a general rule, should reach the editor at least six weeks before the month of publication.

Ads for trade items are free and are limited to 80 words. Continuing ads must be resubmitted for every issue.

Ads with items for sale are charged at \$5 for up to 40 words for subscribers and \$10 for non-subscribers. Four consecutive ads are charged at \$15 for subscribers and \$30 for non-subscribers. Business cards may be submitted for publication at the same rate as for sale ads. Other types of advertising are available upon inquiry. All advertising artwork must be ready for publication. The deadlines for ads are December 15, March 15, June 15, and September 15 and acceptance is subject to availability of space.

We reserve the right to refuse ads deemed objectionable or otherwise inappropriate. We are not responsible for the accuracy of any ad or the honesty of any advertiser. Please report any problems to the editor.

### Addresses

Editor/Carbide Editor: Len Gaska, 1688 E. Corson St., Pasadena, CA 91106 (818) 405-0647

Treasurer/Candlestick Editor: Ted Bobrink, 12851 Kendall Way, Redlands, CA 92373 (714) 794-5518

Oil and Safety Lamp Editor: Jim Steinberg, 2425 Cooley Place, Pasadena, CA 91104 (818) 791-3795

Blasting Item Editor: Mark Bohannon, Star Rt. Box 107E, Oro Grande, CA 92368 (619) 246-4418

All other articles that do not fall into the four main categories should be sent to Len Gaska.



## The Editor's Page(s)

by Len Gaska

### A Failed Experiment

Well folks, we made a BIG mistake on the Spring issue. In an effort to save money, we sent the MAC out via bulk mail. Although the post office assured us that it would take two weeks or less for delivery, some readers did not get their issue until an entire month had passed. We apologize for the delay and assure you that future mailings will be via first class mail.

### Read Your Mailing Label

The date on your mailing label is the last issue you will receive on your current subscription. And speaking of which, our subscription policy has never been clearly stated, so here goes. To simplify matters, all subscriptions run from the fall issue of the current year through the summer issue of the next year. All new subscribers get four issues starting with the last fall issue through the next summer issue. For example, if you subscribed in February, you would receive two back issues, the previously published fall and winter issues, plus the next two issues, spring and summer. Those of you who had sent in \$12 for a subscription and included extra money for back issues, take note. The extra money you sent will be credited toward your \$20 subscription fee for the next year. Money will be refunded to those who have credit coming and decline to renew their subscription.

### I Do Make Mistakes!

A couple of readers have roundly criticized the MAC for letting typographical errors slip by. First of all, any typographical errors are my fault and my fault alone. It is the editor's responsibility to correct such mistakes before printing. Secondly, no matter how hard I try, errors will occur. We all have full time jobs and putting the MAC together is a "labor of love." Please, let us know when we make major errors such as incorrect, misleading, or omitted statements. Rest assured that we will do our best to eliminate simple misspellings and grammar errors.

### This is Not a Contest!

Perhaps it is just my imagination, but I sometimes get the impression that there are collectors out there who feel that this hobby is a competition. As in "he who dies with the most lamps... wins." People are free to collect for any reason they wish; but if it is just a matter of acquiring artifacts, they are missing out on the real essence of the hobby. As I stated in a previous editorial, the genuine rewards are in sharing information with other collectors, telling tall tales about the "one that got away," and digging into the history and personalities behind the artifacts. As my esteemed colleague Ted Bobrink has often stated, "What would collecting be like if you were the only one in the world interested in this stuff? Would you enjoy it as much?"

### What's This Junk Worth?

One of the most perplexing aspects of mine artifact collecting is determining the value of items. This is particularly true for the new collector as well as the old hand that decides to expand his collecting interests. Well, I can only give you some thoughts and guidelines on how to determine values. As with most aspects of life, experience is the best teacher.

Mine artifacts occupy a rather unique place in antiques and collectibles. Consider the following points which are concerned primarily with carbide cap lamps, but apply equally to virtually all areas of mine artifact collecting.

- A one-of-a-kind carbide cap lamp may be worth \$1500 to \$2000 at most. Compare that with a one-of-a-kind antique gun, coin, or stamp which may be valued at \$50,000 or more.



- Most rare collectibles can be purchased with little trouble. Almost any rare coin or stamp is available for the right price. On the other hand, many rare carbides simply cannot be purchased quickly, but must be obtained via trading or spending years trying to locate one at flea markets or antique shops.
- Most rare carbides initially enter the collecting community at "flea market prices." Compared with other collectibles, bargains still abound.
- Price guides are non-existent which ultimately helps the collector. The absence of price guides does sustain the attitude among antique dealers that "all carbides are alike and worth about \$25 a piece."

The worth of carbides strictly follows the laws of supply and demand. On the supply side, rarity and availability are the only considerations. On the demand side, rarity is a factor, but not necessarily the most important one. As a Justrite specialist, I know that there are many varieties of horizontal Justrites that are quite rare, but have little demand because to most collectors, they are just "another horizontal Justrite." The factors that appeal to most collectors are uniqueness of design and the brand name or manufacturer. Another important consideration is how well an item fits into a collection. Most collectors eventually specialize and put more value on items in their speciality. Condition is also a very important consideration. If a collector has a choice, he should pay a premium price for an item in excellent or mint condition and forego an average specimen at a reduced price. Most collectors will be much happier with an almost mint carbide and it will be much easier to dispose of if the need should ever arise. By now you are probably wondering "when is this guy going to shut up and get to the point?" Here it comes, the key to:

### **Building a Successful Collection**

- Determine what your focus is going to be. Choose a speciality and devote your time and money to that speciality. If you decide you are going to collect a little bit of everything, collect the best in each category.
- Truthfully ask yourself if you would rather have one rare \$500 lamp or 20 common \$25 lamps. Unless you have a lot of disposable income, you may have to make a choice.
- Pay particular attention to condition. Don't necessarily pass up the chance to obtain a rare lamp in only average condition, but don't pass up the chance to upgrade either. Sometimes, the marginal cost of upgrading to a lamp in better condition is quite small considering that the other lamp can be sold or traded.
- Average the price of your acquisitions to obtain a more realistic cost of your hobby. If you just paid \$500 for a rare carbide, but your last 5 acquisitions were only \$25 apiece, the average cost is much less.
- Learn as much as possible about the value and desirability of all mining related collectibles. Items not of particular interest to you may be good traders for the items you do want.

### **The MAC Carbide Cap Lamp Survey**

On the back of the subscription form included in this issue, you will find a questionnaire on the number of carbide cap lamps in your collection. We urge you to fill out this questionnaire as completely and as accurately as possible. No, it is not a prelude to a price guide. The intent is to produce the most comprehensive and accurate carbide cap lamp rarity list to date. The results will be for your benefit when you decide to buy, sell, or trade a rare cap lamp. Specific owners of rare lamps will be kept confidential; only the numbers of lamps reported will be published. In the future, we will be conducting similar surveys on other categories such as candlesticks, oil lamps, and blasting cap tins.

### **Again, a Hearty Thanks to Wendell Wilson**

Who graciously supplied us with an updated carbide cap lamp bottom guide for the MAC. Because of space limitations, the second part will appear in the Fall 1989 issue. If you have cap lamp bottoms in your collection that you believe have not appeared in Wendell's guide, please send him a good quality photo or drawing so we may include it in the next issue. Send your photos and drawings to Wendell Wilson, 4631 Paseo Tubatuma, Tucson, AZ 85715.



## VICTOR - DEFENDER - X-RAY A Study in Variations of Lamp Design

by Mike Puhl

The Justrite Victor cap lamp, and its sister lamps, the Defender and X-Ray, have always been one of my personal favorites. The lamp has a distinctive ornamental design, and probably has more lettering on its various parts than any other lamp. The Victor lamp also went through the constant minor design changes that Justrite was famous for, and which makes collecting Justrite products a never ending quest. In an attempt to document many of these design variations, I have compiled the following article.

Justrite was not the first carbide cap lamp manufacturer to use the Victor name. There are in existence several non-Justrite Victor cap lamps. These lamps bear a strong resemblance to the Scranto style lamps, and the manufacturer is unknown [Editor's Note: See "Baldwin, Scranton, Victor and the Monogram WV & B" by Dave Thorpe in MAC, Issue 3, Spring 1989]. Even though these lamps do not have the Victor name stamped on the lamp, the name Victor is given to them because several have been found unfired in original cardboard boxes bearing the name Victor.

On May 22, 1920, William J. Frisbie, an employee of Justrite Manufacturing Company of Chicago, Illinois filed for a design patent which was eventually to be produced as the Victor carbide cap lamp (see design patent No. 57037, assigned to William J. Frisbie).

Justrite started producing Victor cap lamps before the design patent was granted, probably around May 1920. Why Justrite made the marketing decision to enter the cap lamp market with a different brand name, while its Justrite brand name was extremely popular, is unknown. Perhaps they felt they could implement new design changes into the market without risking any potential negative impact on their existing lamps, adding only those design changes which the marketplace had accepted. Lamps which were produced during this time period have the "Patent Appl'd For" marking (top mark 1). The design patent was granted on February 1, 1921, initiating a design change to incorporate that date into the marking on top of the lamp (top mark 2).

At approximately the same time, Mr. Frisbie was also applying for patents on other features which would be incorporated into the Victor cap Lamp. On May 3, 1920, Mr. Frisbie filed for a patent which was later to be incorporated into almost all Justrite cap lamps. Patent No. 1,407,141, granted on February 21, 1922 is for the polygon water feed found on all Victor cap lamps. As was normal for Justrite, they started producing this water feed before the patent was granted, hence the two different stampings on the water feed lever.

Another patent of note was No. 1,424,463, which was implemented as a method of improving the way side braces were attached to the lamp. These side braces went through various stages of development, which forced modifications to both the braces and the lamp body. The earliest Victor has round wire side braces which are soldered to the outside of the water tank. The next development has the round wire brace piercing the water tank high up. The wire brace was then moved down approximately 1/4 of an inch, requiring a tank modification. Flat strip braces were the next improvement, requiring yet another tank modification. The final



change came when Justrite went full circle, and ceased piercing the water tank with the braces, instead simply soldering them to the outside of the water tank again.

Other patents which are used on the Victor lamp include no. 1,424,464, which was for the reflector brace that was necessary for the vertical tank style of the Victor, and patent no. 1,431,447, which was for an improved felt retainer, which was later incorporated into both cap and hand lamps.

In April of 1922, Justrite retooled the body of the Victor, replacing the vertical stripes with raised dots. They named this lamp the Defender, and started to market it. The "Defender" trademark was applied for and on May 1, 1923, it was granted Trademark No. 167, 518.

Sometime soon after this, Justrite retooled again, and started to market the X-Ray cap lamp. This is not the first use of the X-Ray trademark. In Justrite's catalog no. 3, a lamp with an X-Ray trademark stamped on the bottom is shown. It is the belief of many collectors that Justrite was the manufacturer of this earlier X-Ray, and possibly its sister lamps, the Imperial and the Fulton. Evidence which points to this, besides the catalogs, is the similarity in bottom design, the similarity in striker design, and in Frisbie's design patent for the Victor, the top view is that of an early style X-Ray. Why Justrite discontinued the X-Ray trademark under one design style of lamp and reinstated it in another is unknown.

Victor, Defender, and X-Ray cap lamps can be found in both vertically striped tank styles, and dotted tank styles. This is possibly due to assembly error, or possibly Justrite planned on making all three lamps in both styles.

The bottom which is used on the Victor cap lamp is a normal Justrite bottom. This bottom comes in many variations, not all of which have been noted on Victors. There are five distinct bottom marks found, but only marks 3 and 4 have been found on Victors. There are also two variations concerning the number of raised ridges on the bottom. I believe this to be simply a retooling effort by Justrite, and any lamps, whether of the Justrite trademark, or Victor trademark, made before the retooling have 21 raised ridges. Those made after the retooling have 22 raised ridges. This retooling apparently occurred during the time period when bottom mark number 3 was being produced. Therefore all bottoms with marks 1 and 2 always have 21 raised ridges, and those with marks 4 and 5 have 22.

The water doors used on the Victor is also of standard Justrite design, changing with the improvements that were also being implemented on the normal Justrite lamps. The final design used on Victors uses the water door style whose hinge is integral with the door and has an insert which is pressed into the water opening. This style of water door lasted throughout Justrite's manufacture of brass lamps, and can be seen on the last Streamlined that Justrite made.

While the reflector nut found on most Victors is of the knurled round style, lamps do exist with a normal Justrite wingnut. This nut is also seen in many Victor ads.

The Victor cap lamp was eventually replaced by the vertical style Justrite. This lamp closely resembles an earlier brand name of Justrite, The Buddy. Once again, why Justrite dropped brand names, and changed lamp styles is unknown, but it must have been a marketing decision.



I have used the same cataloging system as Paul Kouts has started in his "Miner's Cap Lamp Reference" series. This system allows numerous variations to be listed, allowing the collector to readily identify each lamp. This list of known lamps is by no means complete, since I only surveyed several collections.

This article would not have been possible without the efforts of many other collectors, especially those who have seen fit to publish information in the past. I especially want to thank Henry Pohs, Gregg Clemmer, Tony Moon, Wendell Wilson, Paul Kouts, Bill Spence, and Dave Thorpe. Without their articles, books, and newsletters, this article would not have been possible. I hope this article will entice other collectors to start researching other brand names so we can all learn more about what is available to be collected.

## List Of Known Variations

### Victors

TA1 - NP - NR	with [W1 - D1]
TA1 - BR - NR	[W1 - D1]
TA1 - NP - WRWE	[W1 - D1]
TA1 - BR - WRWE	[W1 - D1]
TA1 - BR - WIWI	[W1 - D2]
TA2 - NP - WIWI	[W1 - D2]
TB2 - NP - WRWI	[W1 - D3]
TB2 - BR - NS	[W1 - D4]
TB2 - BR - WRWI	[W1 - D4]
TC2 - BR - WRFI	[W1 - D4]
TC3 - BR - WRFI	[W1 - D2]
TC3 - NP - WRFI	[W2 - D2]
TC3 - BR - WRFI	[W2 - D2]
TC3 - BR - NS	[W2 - D2]
TD3 - BR - WRFI	[W2 - D2]
TC3 - BR - NS	[W2 - D5]
TC3 - BR - WRFI	[W2 - D5]
TC3 - NP - WRFI	[W2 - D5]
TC3 - BR - WRFI	[W2 - D6]
TC3 - BR - WRFE	[W3 - D7]

### Victor Style Bottoms

BA2 - BR  
 BA2 - NP  
 BA3 - BR  
 BA3 - NP

### Defenders

TD4 - NP - WRFI	with [W2 - D2]
TD4 - BR - WRFI	[W2 - D2]
TC4 - BR - WRFI	[W3 - D6]

### Defender-Style Bottoms

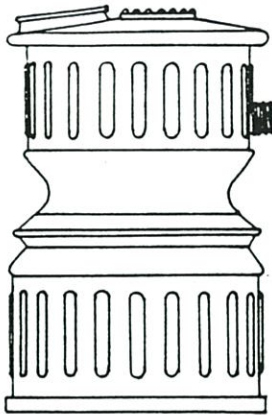
BC3 - BR  
 BC3 - NP

### X- Rays

TD5 - BR - WRFI	with [W2 - D2]
TD5 - NP - WRFI	[W2 - D2]
TC5 - BR - WRFI	[W2 - D5]



Tank Style TA

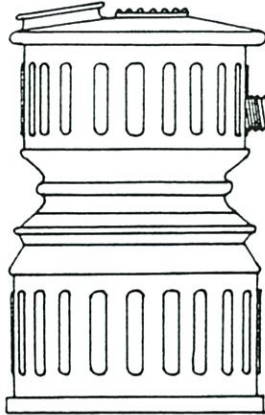


20 Raised Ridges

21 Raised Ridges  
(see narrative)

Bottom style BA (21 ridges)  
Bottom style BB (22 ridges)

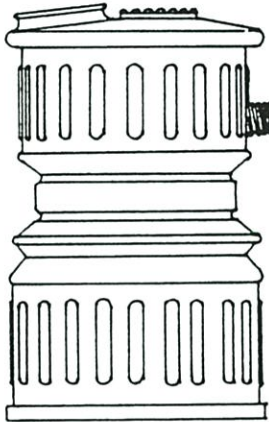
Tank Style TB



Top Mark 1



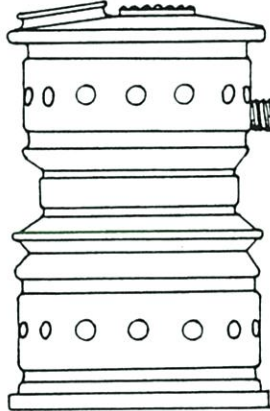
Tank Style TC



14 Raised Dots

14 Raised Dots

Tank Style TD



Top Mark 2



Bottom Style BC

Top Mark 3



Top Mark 4



Top Mark 5



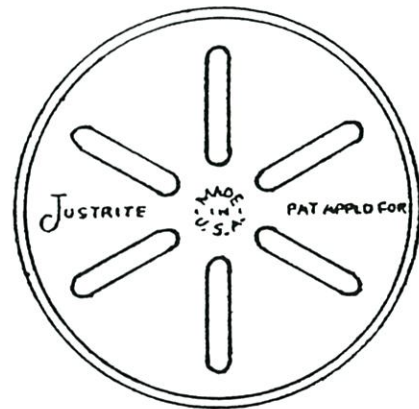


Bottom Mark 1



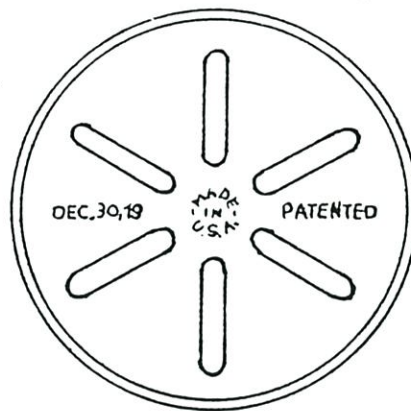
(always 21 notches)

Bottom Mark 2



(always 21 notches)

Bottom Mark 3



(both 21 & 22 notches)

Bottom Mark 4



(always 22 notches)

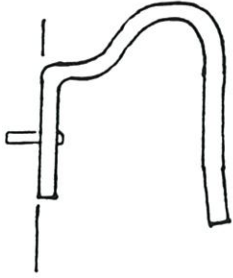
Bottom Mark 5



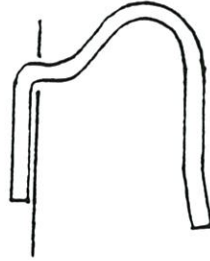
(always 22 notches)



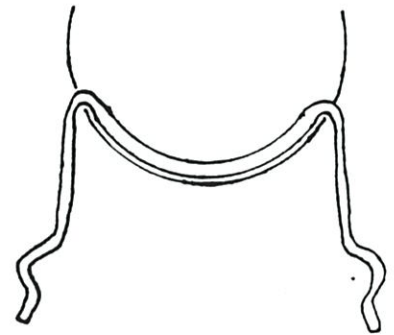
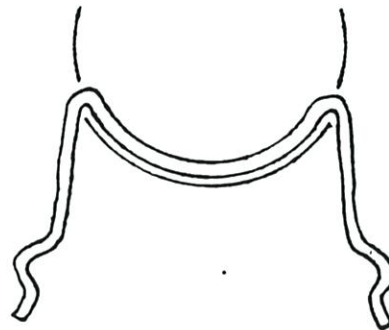
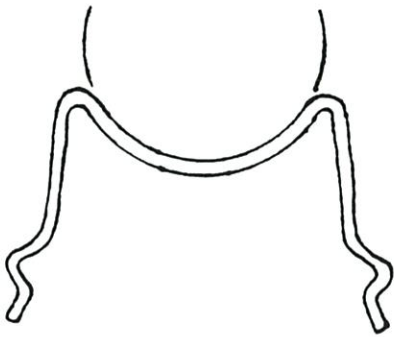
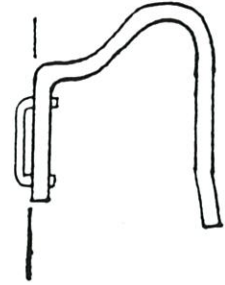
Round hook used with  
brace style WRWE



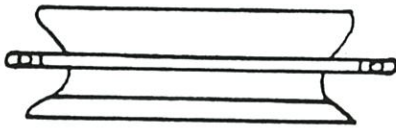
Round hook used with  
brace style WIWI



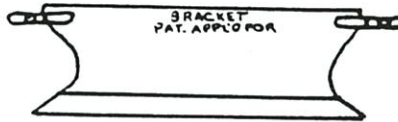
Round hook used with  
styles WRWI, WRFI, WRFE



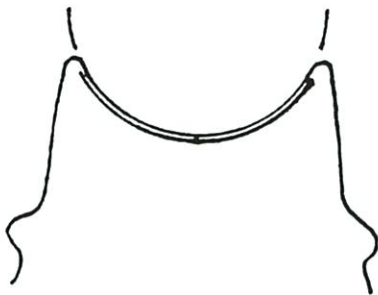
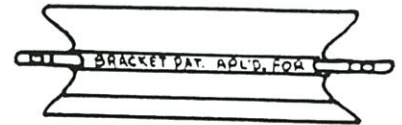
Wire Brace  
Style WRWE



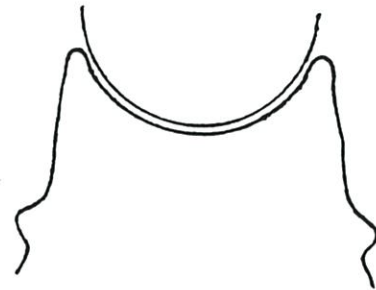
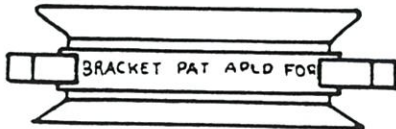
Wire Brace  
Style WIWI



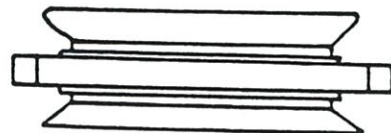
Wire Style  
Style WRWI



Flat Strip Brace  
Style WRFI

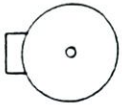


Flat Strip Brace  
Style WRFE

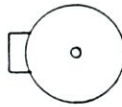




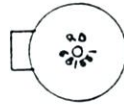
WATER DOORS



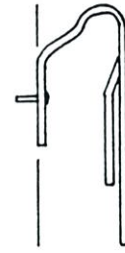
Style D1



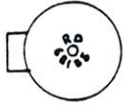
Style D2



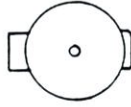
Style D3



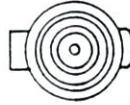
Narrow Spade  
Style NR



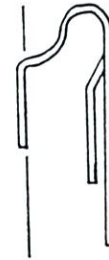
Style D4



Style D5



Style D6  
Style D7  
(integral hinge)

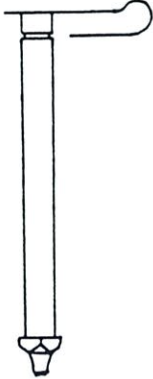


Narrow Spade  
Style NS

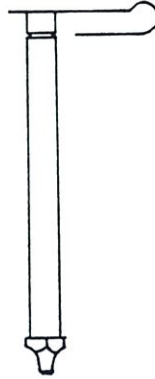
WATER FEEDS



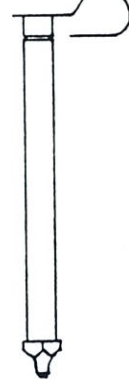
Style W1



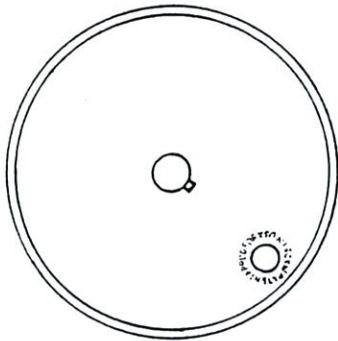
Style W2



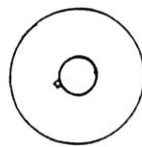
Style W3



Back View  
Both Styles



Reflector (back view)  
(some without raised notch)  
(some without lettering)



Reflector Brace  
(some without notch)



Reflector Nut



Felt Holder



1,424,463.

Patented Aug. 1, 1922.

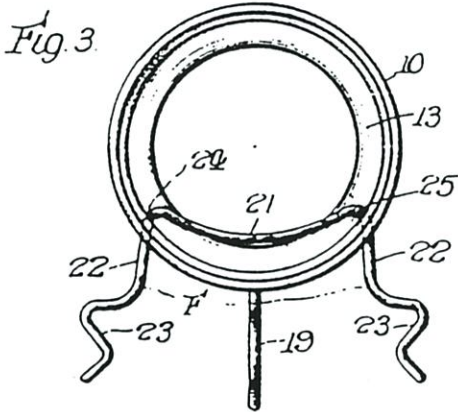
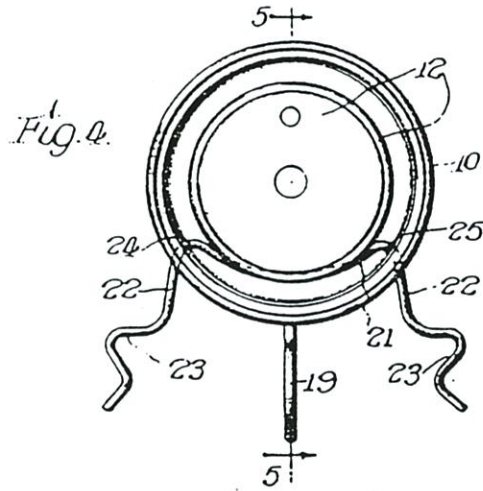
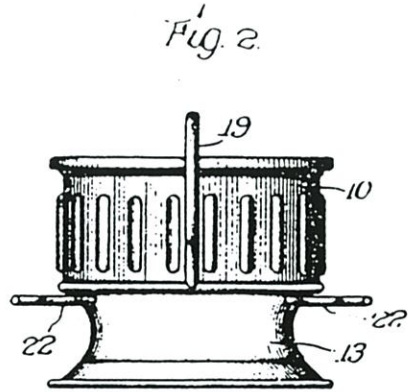
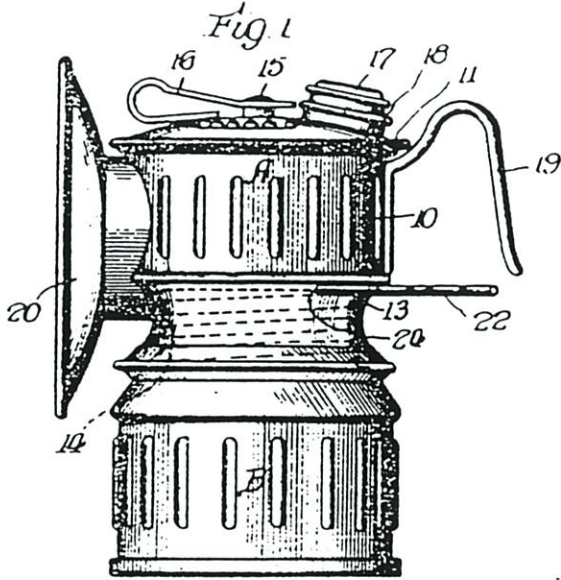
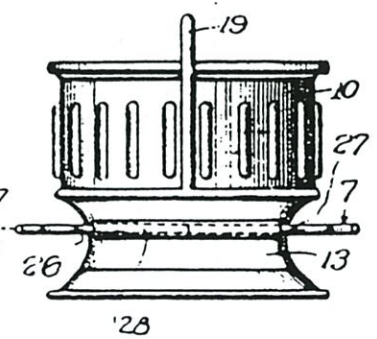
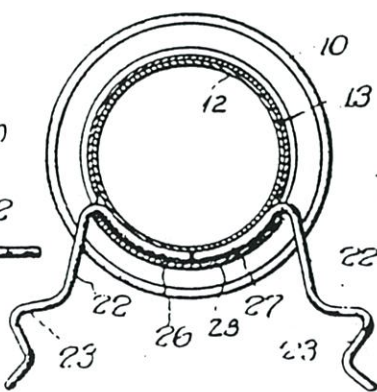
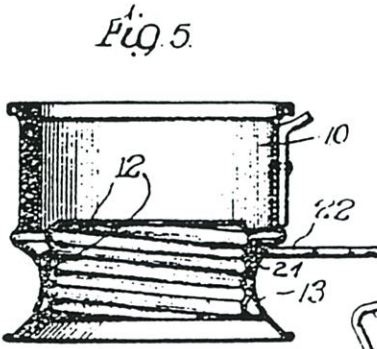


FIG. 6.

FIG. 7.



Witness  
 A. J. Sawyer

Inventor  
 William J. Frisbie.  
 by Charles J. Schmitt





# The <sup>nearly</sup> Complete Bottom-Guide for Carbide Cap Lamps

by Wendell E. Wilson

## INTRODUCTION

Pictured here are 99 lamp bottoms or carbide chambers for American-made carbide cap lamps. Because there has never been a detailed reference on carbide cap lamps, it has often been difficult to identify spare bottoms, to correctly match tops and bottoms, and to recognize mismatches. Perhaps these drawings will help.

This collection of drawings is not exhaustive. . . there are undoubtedly many other varieties out there which I have not seen. Furthermore, some drawings were made from photos of marginal quality, or from the drawings of other collectors, and so a few errors are likely. The reader should also bear in mind that these are sketches, not rigorously drafted engineering-quality drawings.

Every known brand of lamp is represented here by at least one drawing, except the following: belt-generator models (Columbia-C, Lunkenheimer, Justrite, Brilliant Searchlight), models without normal bottoms (S.E. Simmons, Standard), and models I have never actually seen (Pocahontas, Hardsocg, What Cheer). I would appreciate receiving any information on lamp bottoms.

The drawings show a side and a bottom view. A question mark on the bottom indicates that I have been unable to examine one and do not know if there are markings on the bottom face.

A number of people were kind enough to examine a preliminary draft of this booklet and to provide much additional information. I would particularly like to thank John Leahy, Henry Pohs, Chuck Young, Rich Finch and Ralph Blankenbecler.

## CLEANING

I would like to take this opportunity to say a few things about the practice of cleaning carbide cap lamps. Some collectors like to leave their lamps uncleaned and heavily tarnished. But I think the majority prefer clean lamps, restored as much to their like-new condition as possible, like antique automobiles. I have yet to see a properly cleaned lamp lose any of its value. It will look better as a display piece (though less like a "relic"), and will be more easily sold or traded. However, improper cleaning can do irreversible harm. If you can't or won't take the time to clean a lamp right, please don't clean it at all. . . its next owner will thank you.

The key to proper cleaning is to remove the tarnish without disturbing the surface underneath. Scraping with a blade or brushing with a stiff wire brush hopelessly ruins the surface underneath. Obviously a chemical rather than a physical approach is best, and also a lot less work. Very mild abrasives can be used in stubborn cases, and a polishing agent can bring up the luster a little when all cleaning is completed. Let's take these one at a time:

### ACIDS and BASES

Acids and bases are both corrosive and will remove tarnish. Acids are best for dissolving the lime

deposits and heavy black coatings on the insides of lamps, but should not be used on the outside of brass lamps because they tend to leave a pink copper residue. Bases, for some reason, are less likely to leave a copper coating. The copper can be scrubbed off with some difficulty because it is only a very thin layer, but one might as well use a base instead.

The best base compound for cleaning brass lamps is **Brass-O**, which contains anhydrous ammonia. Household ammonia (hydrous) works too, and just about as well. A container big enough to hold the lamps and its parts is filled with **Brass-O**, covered, and left to soak for from 1 to 2 hours to overnight. (The container should be covered or sealed somehow to prevent evaporation of the ammonia.) When the lamp is removed, the tarnish can be gently knocked off with a soft toothbrush.

The disadvantage of **Brass-O** is its cost, in view of its limited life. Any acid or base will become neutralized and lose its effectiveness after a certain amount of use. However, it does contain an excellent polishing ingredient as well (diatomaceous earth).

About the only other readily available base is lye (sodium hydroxide), which may be purchased as crystals (household lye, **Drain-O**) or as spray-on oven cleaner (**Easy-Off**). However, lye is very dangerous to skin and eyes, and I prefer to avoid it.

Among the acids, my favorite is **Lime A-Way** (phosphoric acid) because it is cheapest in large quantity. However, Naval Jelly (phosphoric too), Tarn-X (acidified thiourea), vinegar (acetic acid) and ordinary hydrochloric acid can be used as well. Nickel-plated lamps clean well in acid, though the worn spots may turn pink. Chrome or nickel-plated reflectors, too, are best cleaned in acid.

### ABRASIVES

In difficult cases one may resort to abrasive bathroom cleansers such as **Ajax** or **Comet**. The gentlest and safest method of application is to rub the cleanser over the tarnish with your thumb, though this is tough on the thumb after a while. The use of steel wool is drastic and should be reserved for use on the inside of lamps only.

### POLISHING

For some collectors, the dull luster obtained after soaking in **Brass-O** or rubbing with cleanser will do just fine. However, the lamp was brighter when it was new, and most collectors like a bit more shine. The best agent for this is again **Brass-O**. The depth of polish is optional, depending upon how hard one rubs. The oily **Brass-O** can then be quickly removed from lamp and hands by a quick spray of **Dow Bathroom Cleaner**.

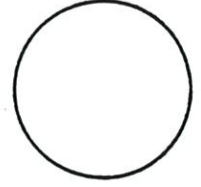
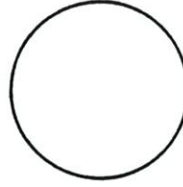
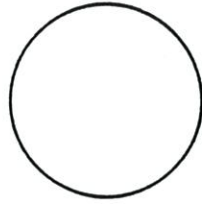
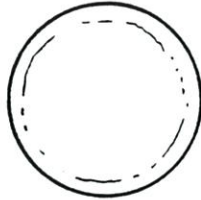
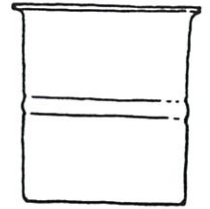
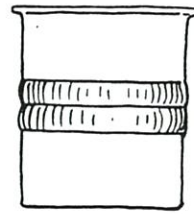
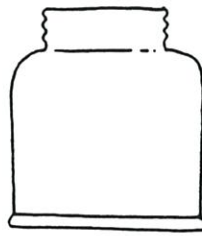
### SOLVENTS

Solvents have no effect on tarnish, but some lamps may still retain some of their original lacquer coating which was applied to prevent tarnish. The lacquer is unsightly in patches and can be removed with paint remover, as can paint or other markings applied by the miner. This should be done before cleaning in **Brass-O**. Nail-polish remover (acetone) will work just as well, and is not so painful on the skin.



©1982, Wendell E. Wilson





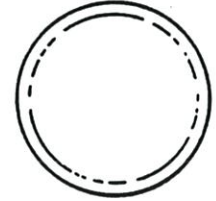
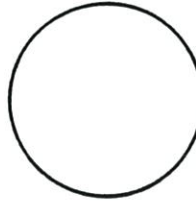
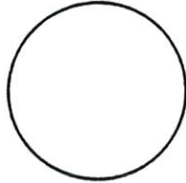
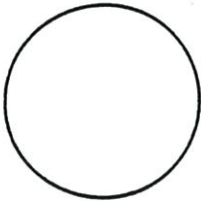
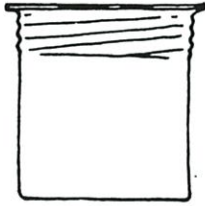
ABERCROMBIE  
& FITCH

AMERICAN

"ANTHRACITE"

"ANTHRACITE"

"ANTHRACITE"



ANTON  
CUBIC TOP  
(or only a Justrite?)

ANTON  
(cylindrical)

ARROW  
(and)  
AUTO-LITE

early  
AUTO-LITE

early  
AUTO-LITE



height varies



AUTO-LITE

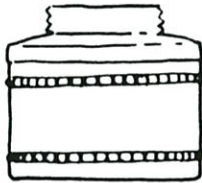
AUTO-LITE

AUTO-LITE

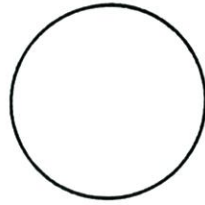
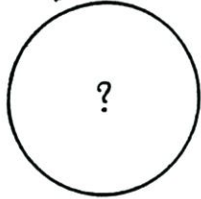
AUTO-LITE

BALDWIN





(Known only from an advertisement)



Some Bottoms Unmarked

BLACK DIAMOND

BRITE-LITE (Hoppe Mfg. Co.)

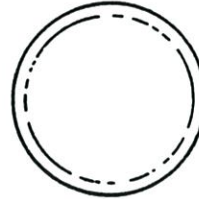
BRITE-LITE (Harker Mfg. Co.)

BUDDY

BUDDY



Some Bottoms Unmarked



Some Bottoms Unmarked

BUDDY

DEFENDER

DRYLITE

DAYLIGHT (American-made)

ELKHORN



height varies



ELKHORN

ELKHORN

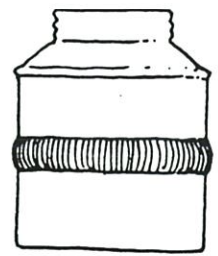
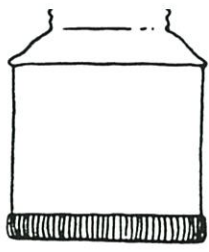
EVER-READY

FORCE FEED

FULTON



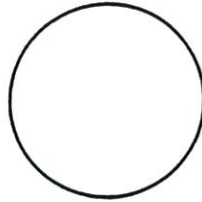
height varies



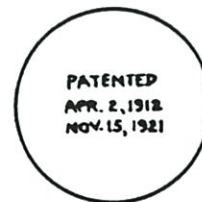
FUNK BROS.



GEM and GEE-BEE hand-cap lamps



GEM



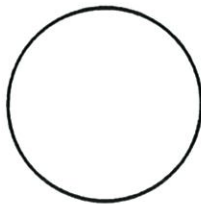
GRIER BROS. horizontal (and Gee-Bee?)



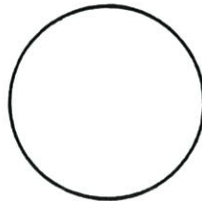
GRIER BROTHERS superintendent's lamp



GRIER BROS.



GRIER BROS. (horizontal)



GRIER BROS.



earliest GUY'S DROPPER



GUY'S DROPPER (and Squarelite?)



GUY'S DROPPER "Tall Boy" (and) SQUARELITE



early GUY'S DROPPER



GUY'S DROPPER



GUY'S DROPPER



GUY'S DROPPER

(to be continued in the next issue)



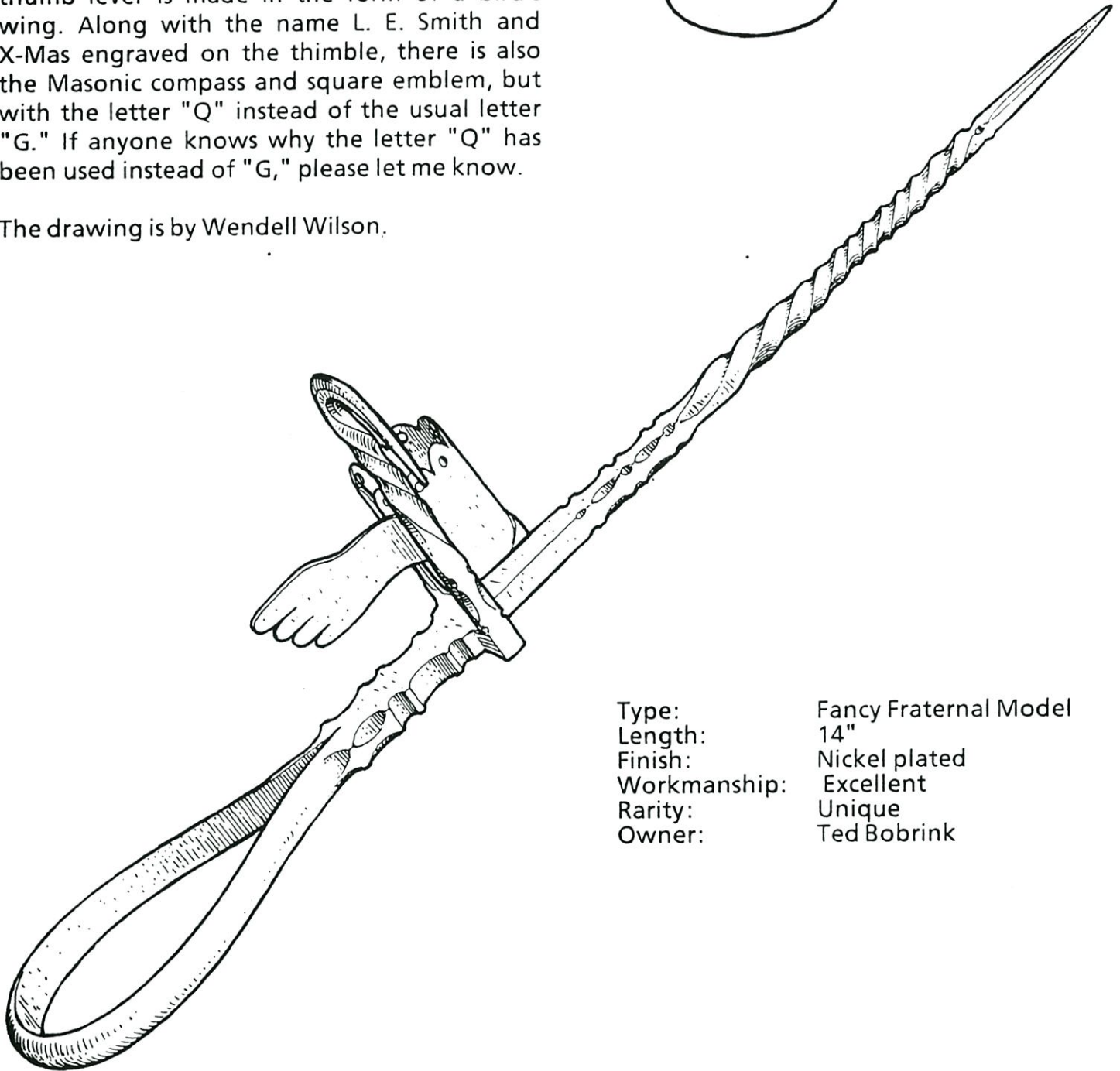
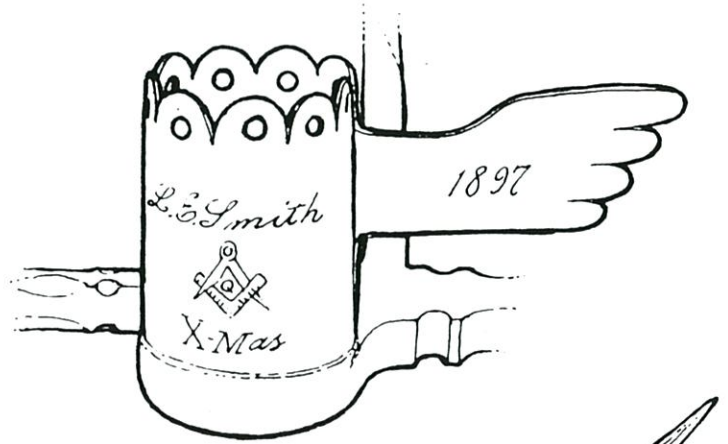
# A Fancy Candlestick From Colorado

by Ted Bobrink

Judging by the engraving on the thimble and thumb lever, this candlestick must have been a Christmas present. The person that previously owned this candlestick stated that it came from the Cripple Creek mining area of Colorado.

The most unique feature of this candlestick is the numerous graduating twists of the spike and hook. The thimble is serrated and the thumb lever is made in the form of a bird's wing. Along with the name L. E. Smith and X-Mas engraved on the thimble, there is also the Masonic compass and square emblem, but with the letter "Q" instead of the usual letter "G." If anyone knows why the letter "Q" has been used instead of "G," please let me know.

The drawing is by Wendell Wilson.



Type:	Fancy Fraternal Model
Length:	14"
Finish:	Nickel plated
Workmanship:	Excellent
Rarity:	Unique
Owner:	Ted Bobrink

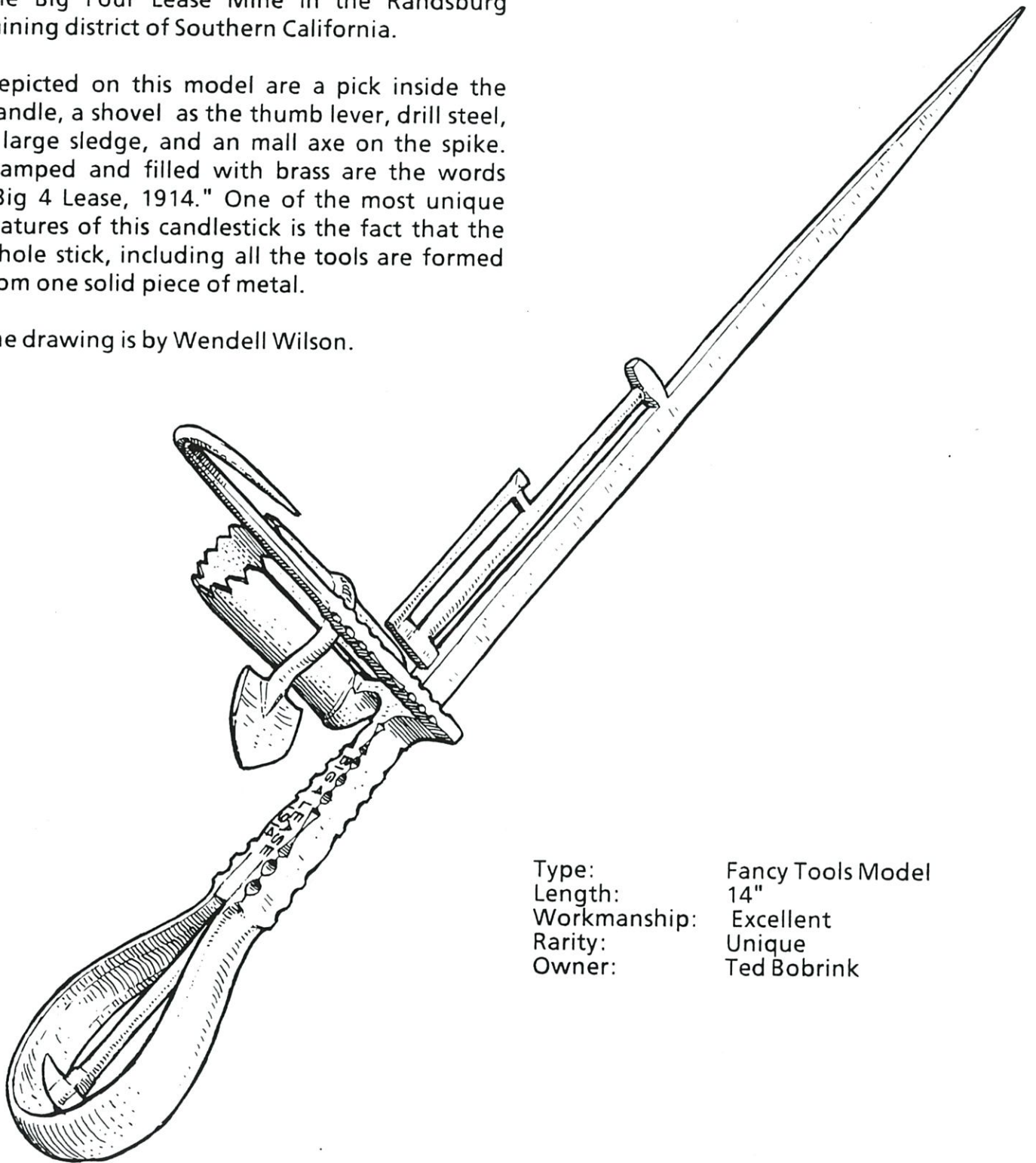
# A Fancy Tools Model Candlestick From Randsburg, California

by Ted Bobrink

This fine example of a tools model candlestick was a presentation to celebrate the opening of the Big Four Lease Mine in the Randsburg mining district of Southern California.

Depicted on this model are a pick inside the handle, a shovel as the thumb lever, drill steel, a large sledge, and an mall axe on the spike. Stamped and filled with brass are the words "Big 4 Lease, 1914." One of the most unique features of this candlestick is the fact that the whole stick, including all the tools are formed from one solid piece of metal.

The drawing is by Wendell Wilson.



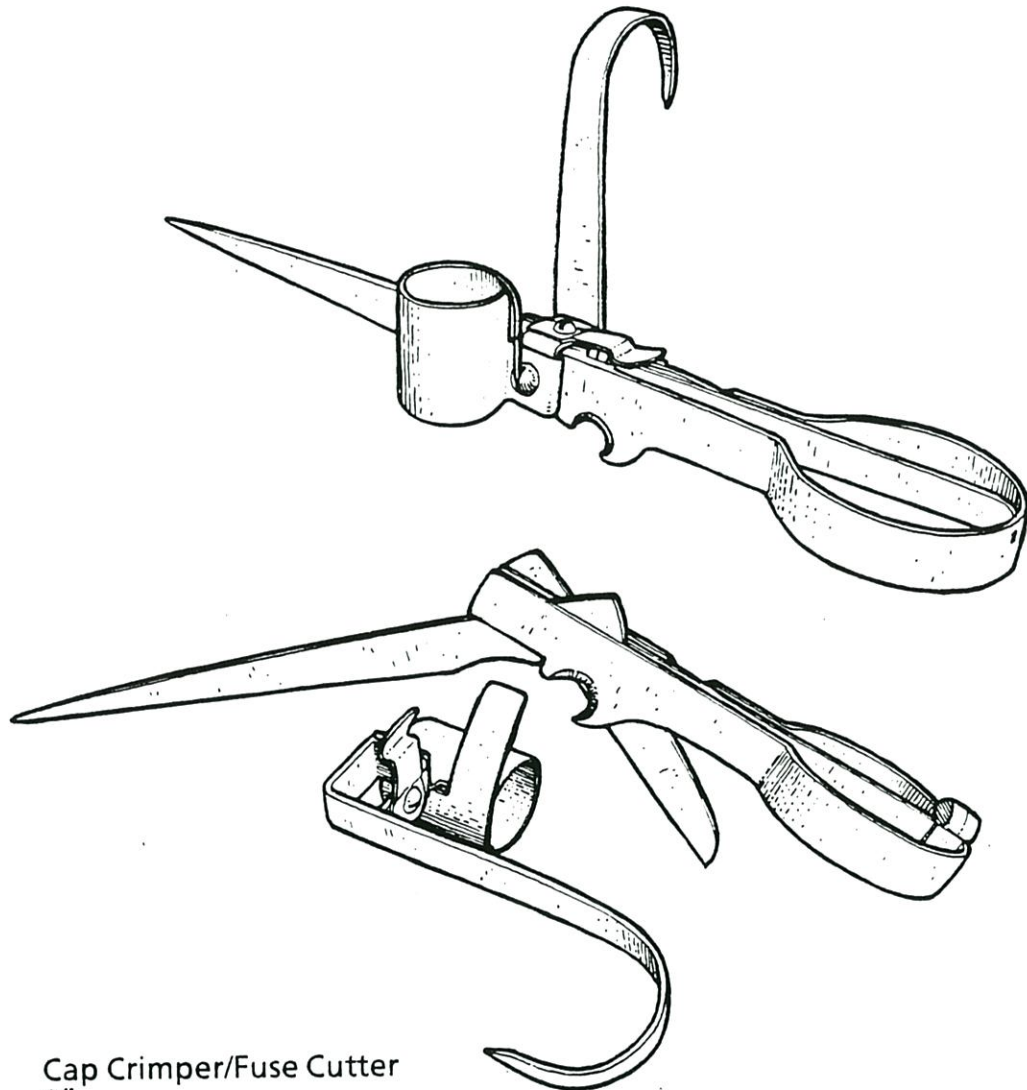
Type:	Fancy Tools Model
Length:	14"
Workmanship:	Excellent
Rarity:	Unique
Owner:	Ted Bobrink



# The Bernier Candlestick Patented August 22, 1899

by Ted Bobrink

This candlestick, although unstamped, has all the unique features described by patent no. 631,270 granted to Amede Bernier of Victor, Colorado on August 22, 1899. The unique design of this candlestick allows the user to convert it into a tool used for blasting. By lifting a latch on the top of the stick, the hook and thimble can be removed thus leaving a complete blasters tool consisting of a knife blade for cutting the fuse, a cap crimper by folding the spike, and the spike itself can be used as a powder poke. All the other candlesticks with blasting tools that I know of have to be used with the candleholder still attached. As for myself, I would not want to be crimping a blasting cap onto a fuse with a lighted candle just inches away. I am sure that is one of the reasons that candlesticks with blasting tools are not common. The drawing is by Wendell Wilson.



Type:	Cap Crimper/Fuse Cutter
Length:	9"
Finish:	Nickel Plated
Workmanship:	Excellent
Rarity:	Very rare (4 known)
Owner:	Jim Ewing

## Mining Candles

by Ted Bobrink

The Schaeffer Bros. & Powell Co. of St. Louis Missouri, was one of the smaller but prolific suppliers of mining candles. Powell candles are somewhat softer than most other mining candles and thus burned much faster. This must have been the reason they were much less expensive, as I remember reading a comparison done in an old Mining Scientific Press. They matched the burning time against the cost of Goodwin, Schneider, Werk, and Powell, and Powell proved to be the cheapest to use. Miners were normally given five candles to work an eight hours shift, perhaps six if the company used Powells. (Note, Powell candles are not stamped).



End of a Schaeffer Bros. & Powell candle box found in the Copperworld Mine, Clark Mountains, California. Circa 1895.



Advertising on the back of a Schaeffer Bros. & Powell envelope dated 1900.



## The Anton Oil Lamp Wick Box

by Len Gaska

Carbide lamp collectors have an advantage in that there are many accessories and related items to collect. Not only carbide flasks, but repair kits, cleaners, extra bottoms, parts, and parts boxes. The oil lamp, safety lamp, and candlestick collector does not enjoy this advantage. Related items for these categories of collecting are few in number and are very scarce.

The F. M. Anton oil lamp wick box illustrated below is in mint condition and contains 12 wicks, six of the number 1 size for face lamps, and six of the number 2 size for driver's lamps. Affixed to each wick is a red string to facilitate installation of the wick. The string allowed the miner to pull the wick through the spout. The box is manila in color with red lettering and is 7 1/2" long, 2" wide, and 1" high (dimensions approximate).

The Anton family of Monongahela, Pennsylvania is well-known for their manufacture of oil and Sunshine lamps. Brothers George, John, and Christopher all manufactured lamps either alone or as partners. Although I am only speculating, there is little doubt that F. M. Anton was related to the aforementioned Anton brothers.

THIS PACKAGE CONTAINS ONE DOZEN  
**ANTON'S MINERS' PATENT LAMP WICKS.**  
**READY TO BE PUT IN THE LAMP.**  
YOU CAN BUY THE WICK TO FIT YOUR LAMP, AS IT IS PUT UP IN DIFFERENT SIZES--Nos. 1 & 2.  
NO. 1 WILL FIT ANY ORDINARY LAMP. NO. 2 IS LARGER  
Manufactured only by **F. M. ANTON, & CO.**  
**PATD. JULY 8<sup>TH</sup> 1890. MONONGAHELA CITY, PA.**

*This Wick is the best and cheapest in the market. It is the best because it is made of superior cotton to our own special order and is free from knots, and is twisted together evenly and to the exact size for the spout of your lamp. It is the cheapest because you can buy a box as cheap as you can a ball, saving the labor of making a wick each time you need one. For sale by all wholesale and retail merchants dealing in miners' supplies.*

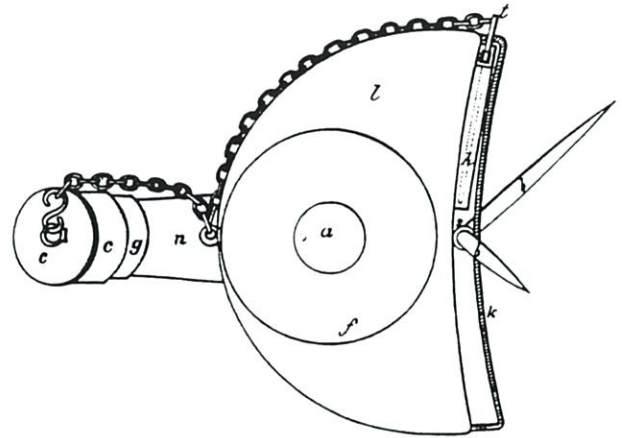
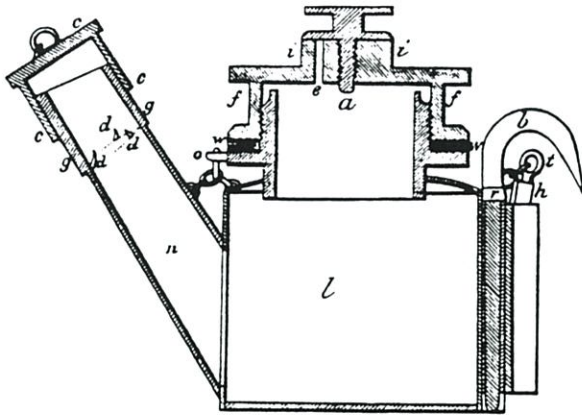
**WE EARNESTLY INSIST ON THE MINERS TO BUY A TRIAL BOX OF OUR HANDY WICKS. THEN WE WILL ASSURE THEM THAT THEY WILL USE NO OTHER THEREAFTER.**

*Why continue to buy the common ball cotton and still have trouble to make the wick for your lamp when you can buy the wick ready-made to fit your lamp just as cheap, and thus save yourself the labor of making your wick, and at the same time assuring you a much better and cleaner wick than you can make.*



# An Unusual Miner's Oil Lamp

by Wendell Wilson



## AN IMPROVED MINING LAMP FOR ENGINEERS.\*

BY DR. PERSIFOR FRAZER, PHILADELPHIA.

THE accompanying diagrams represent a lamp provided with certain improvements which render it more serviceable for the use of the engineer or other mining official who is often compelled to visit several mines a day remote from each other, and may be called on to use the magnetic needle in any or all of them.

These requirements demand that the material of which it is made should be copper, and that it should be capable of being closed oil-tight, for emptying and refilling the lamp at each mine would be a less expeditious as well as a less cleanly process, and transporting a lamp of the ordinary kind over rough roads on horseback or in wagon, would result in spilling the greater part of its contents.

The general form of the lamp, including the false back to keep the heat from the head, is the same as that sold for some years by Heller and Brightly.

The following is a nearer description of its parts :

- a. Screw, with milled head and flange, opening or closing
- c. Air-vent.
- c. Cap, fitting on a, which it surrounds loosely.
- i. Collar, to give bearing to screw closing air-vent.
- f. Large screw cap for filling lamp, bearing on
- w. Washer of leather or rubber.

- o. Ring in front to which are attached chain to cap and chain to
- t. Trimming needle.
- h. Sheath of latter, lying between
- k. False back, and
- l. Main body of lamp, which contains the oil.
- a. Socket between k and l, on which turns
- b. A piece of stout brass wire, forming at the upper end a hook for attachment to the hat or projections of rock, etc. The plane of this hook is at right angles to the lower end of the wire, which forms a spike for driving into "dig," timbers, etc.
- r. Collar on the upper part of b, to prevent vertical movement.
- g. Cylindrical brass ring, attached to the upper end of
- n. Conical copper spout.
- d. Three small wire points inclined upwards to prevent the wick descending.

The writer used this lamp in its developing stages during the superintendence of several mines in Virginia, which were remote from each other. A preliminary note, written hastily before his departure for Europe, in October, 1881, was kindly interpreted and published by the Secretary of the Institute. Since then the lamp has been examined and favorably criticised by the writer's friends and former professors in the Mining School at Freiberg, Saxony, at which town a dozen were manufactured by one of the best tinsmiths and sent by freight to Philadelphia, in order to test the comparative cost of manufacture here and abroad.

The lamps made in Freiberg are light, weighing about seven ounces each. They are of copper fitted with brass.

M. Daubrée, member of the French Institute and director of the School of Mines in Paris, expressed also a favorable opinion of the lamp.

\* Read at the Virginia Meeting, May, 1881.

The above article was published in Transactions of the American Institute of Mining Engineers (1882, vol. X, p. 498-500). Considering that a dozen examples were actually made, in copper with brass fittings, in addition to earlier prototypes which the author says he used, it seems possible that at least one may have survived. Has anyone seen such a lamp? It should make quite an attractive display piece.



## Blaster's Handbooks

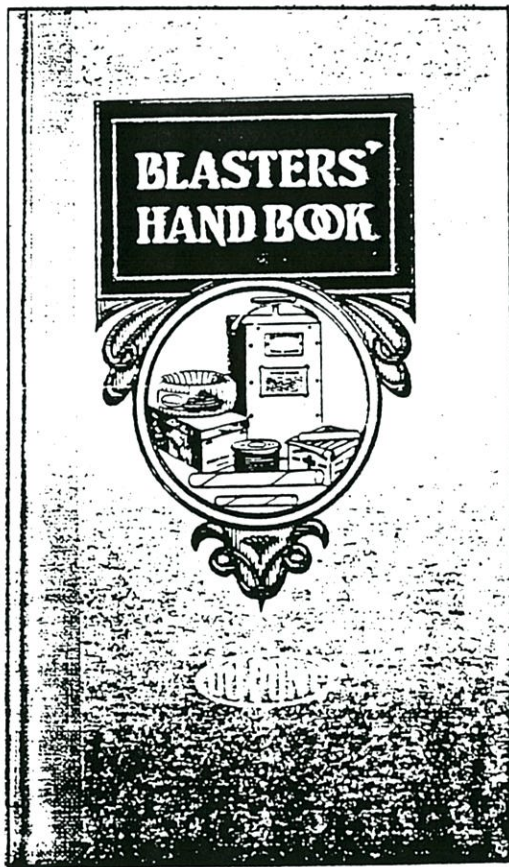
by Ted Bobrink

If you collect mining related items such as blasting machines, blasting cap tins, cap crimpers, and other things related to blasting, you will enjoy collecting the blaster's handbooks issued by the E. I. DuPont De Nemours & Company.

These books were mostly presented with the compliments of DuPont to anyone doing business with them. They are 4" by 7" and range from 150 to 205 pages, the earlier editions being smaller. The earliest copy I know of is 1922 and the latest 1942.

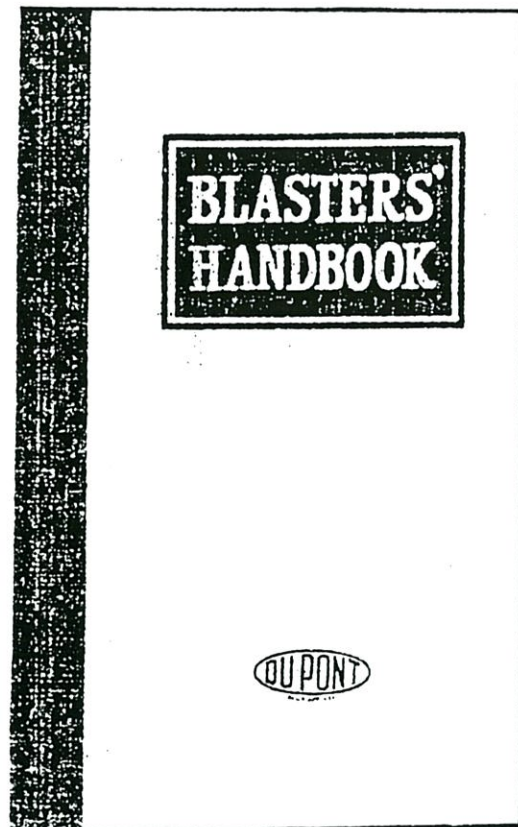
The information found in these books can really be found nowhere else as they thoroughly explain the use of all the blasting items we collect: blasting machines, galvanometers, crimpers, miner's spoons, and other items.

I know of six different copyright dates, 1922, 1925, 1928, 1934, 1939, and 1942. The 1922 and 1925 books are not marked as editions while the 1928 is marked as the fifth edition, 1934 as the eighth edition, 1939 as the tenth edition, and 1942 as the eleventh edition. If anyone knows of any other dates and editions, please let us know, as with your help, we may be able to complete all the known dates. (Note: the types of blaster's handbooks we are referring to are the small early varieties, not the larger and much more recent editions.)



1922

Ted Bobrink Collection



1925

Len Gaska Collection

# The "VICTOR" Magneto Blasting Machine

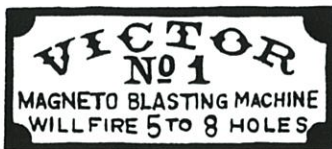
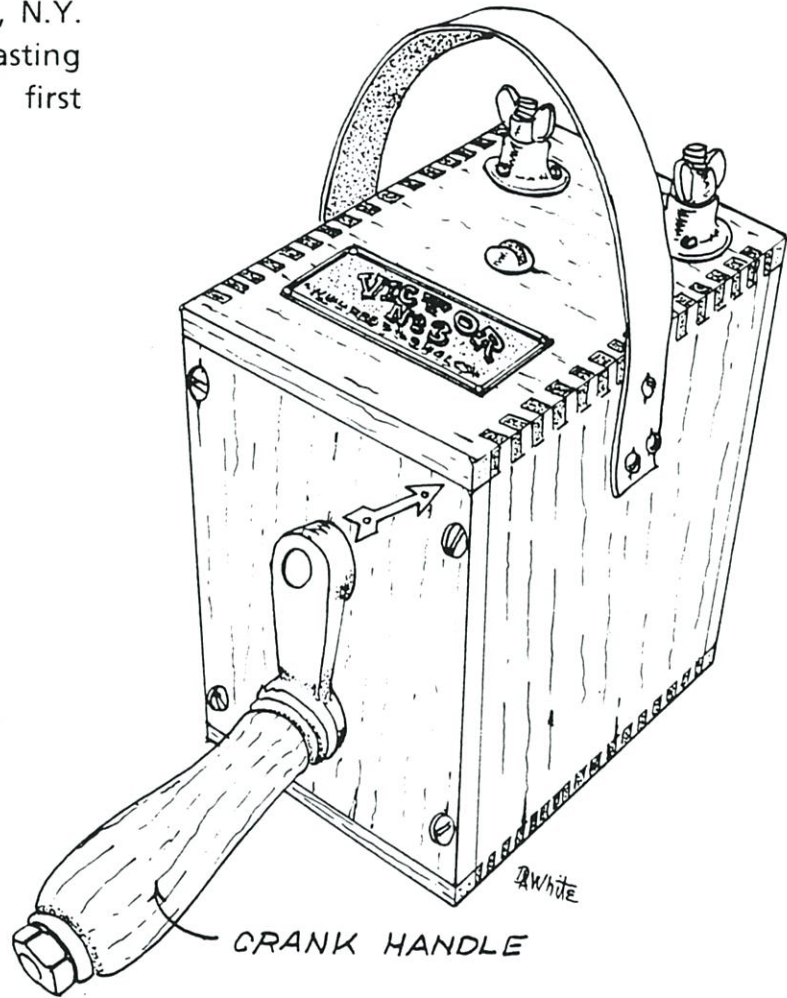
by Don and Dave White

Another unique design manufactured by JAMES MACBETH & CO., New York, N.Y. was the "VICTOR" crank operated blasting machine. This machine was first manufactured in the 1890's.

Made in three sizes:

- No. 1 (illustrated) - fired 5 to 8 holes
- No. 2 - fired 20 to 30 holes
- No. 3 - fired 60 to 70 holes

No. 1 - wood box dimensions:  
5" x 7 1/2" x 7", wt. 14 lbs.



cast brass ID plate (shown 1/2 size)

To fire the "VICTOR," a quick half turn of the crank handle (clockwise), was usually all that was required to detonate the charge. The quicker the motion, the more current was generated. The metal arrow mounted in the upper right corner above the crank handle, was the recommended starting position when cranking.

We are unsure whether JAMES MACBETH & CO. produced their "VICTOR" machine for any powder companies of the time. Our machine has only the ID plate illustrated above.



## Hot Wire Fuse Lighter

by Mark Bohannan

The hot wire fuse lighter is a wire which is covered with a moisture-proof composition which burns slowly and at a fairly steady rate and a intensely hot flame. This device is very similar to a fireworks sparkler and is lit with a match. The hot wire fuse lighter is used to ignite safety fuse by holding the burning portion against the freshly cut end of the fuse.

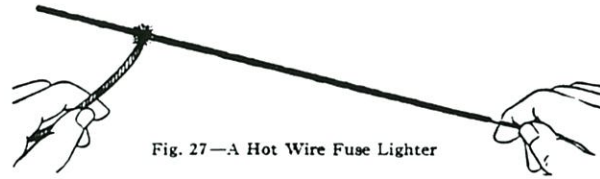
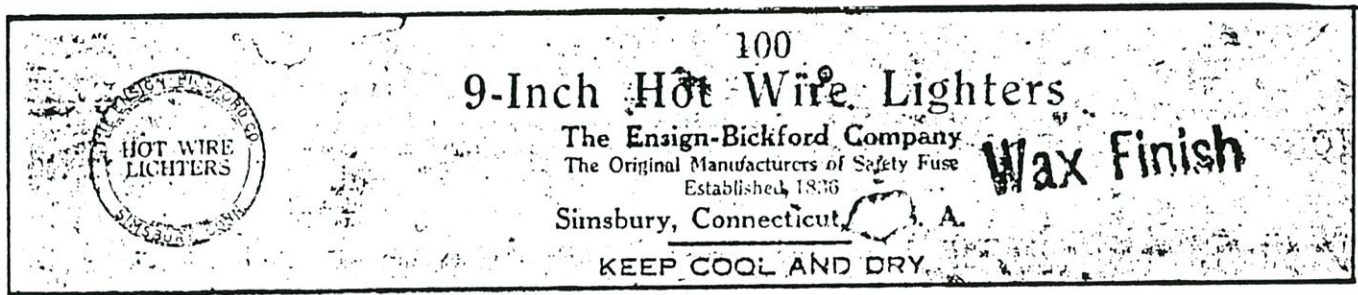


Fig. 27—A Hot Wire Fuse Lighter

These lighters were supplied in 7 inch, 9 inch, and 12 inch length, packed in boxes of 100.

Shown below is a cardboard box of 100 nine inch hot wire fuse lighters made by the Ensign-Bickford Company. Also shown is an illustration of the lighter from the 1942 Dupont Blaster's Handbook.



## General Explosives Company

by Mark Bohannan

The General Explosives Co. was incorporated on July 21, 1916 to manufacture the usual grades of dynamite and gelatins near Joplin, Missouri.

On November 16, 1922, the company was reorganized as a Delaware corporation with a capital of \$1,500,500. It was acquired by Dupont on August 1, 1924.

The cap tin illustrated below is painted brown with black letters. It has just recently been discovered and is in the collection of Ted Bobrink.

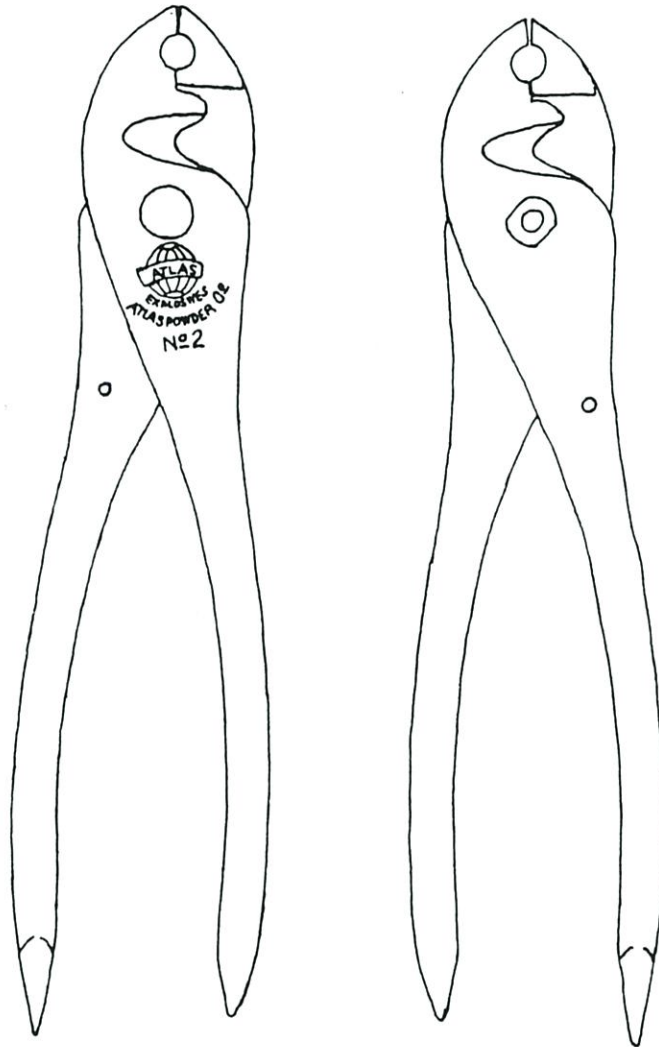



## Atlas No. 2 Cap Crimpers

by Mark Bohannon

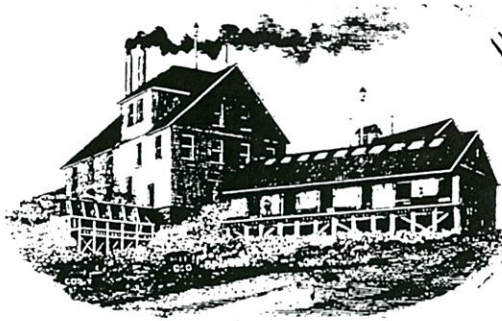
The Atlas No. 2 cap crimper is probably the second most common cap crimper that is found. The cap crimper is made of heavy-duty polished steel and is 7 inches long. This crimper is combined with a fuse cutter. At the end of one handle is a screwdriver blade for prying open dynamite boxes. The other handle is rounded for punching holes in dynamite.

Shown below is the Atlas cap crimper along with the original box. All cap crimper boxes are rare. This box is 7 1/2 inches long, 2 inches wide, and 3/4 inches high. The box is dark red with black letters.



<b>ATLAS CAP CRIMPER NO. 2</b>		
Blasting cap should be crimped on fuse with a good cap crimper.		The use of a cap crimper promotes safety and effectiveness in cap and fuse blasting.
<b>ATLAS POWDER COMPANY</b> WILMINGTON, DELAWARE		





# INDEPENDENCE MINE

W.S. STRATTON.  
OWNER

*Victor, Colo.*

Brian Levine

## SYZYGY GOLD MINING CO.

P.O. Box 465

Victor, CO 80860-0465

[719] 689-2155

A company for historians and collectors who want a share of America's mining past. Whether that be stock certificates, USGS publications, maps, prospectuses, photos, ore specimens, mining hardware, directories -- whatever history has to offer.

## On Strike in San Miguel County, Colorado

by Brian Levine

Telluride - location of the Smuggler-Union, Gold King, Cimmarron, Virginius, Tom Boy, Liberty Bell, and Silver Pick mines. The site of the Smuggler lode, which, by 1905, had yielded over \$12 million in gold and silver. A lode that had been traced for at least 4 miles, cutting through a mountain range at the elevation of 13,200 feet.

Telluride - the place where some 700 millmen and miners went on strike in September 1903 over a dispute with the San Juan District Mine Owners' Association ("Association").

Why would these miners quit such a rich mining district? Pay and hours. On November 28, 1901, Miner's Union No. 63 of the Western Federation of Miners ("WFM") made an agreement with the Telluride Mining Association. This agreement fixed the following scale:

Occupation	Old Scale		New Scale	
	Wages/day	Hrs/day	Wages/day	Hrs/day
Crusher men	\$3.50	10	\$3.00	8
Battery men	\$4.00	12	\$4.00	8
Concentrator men	\$4.00	12	\$4.00	8
Amalgamators	\$4.00	12	\$4.00	8
Firemen	\$3.50	12	\$3.50	8
Blacksmiths	\$4.00	9	\$4.00	8
Solution men	\$4.00	12	\$4.00	8
Machinists	\$4.00	9	\$4.00	8
Laborers and shovelers	\$3.00	10	\$3.00	8

Note: the revised wage scale did not include millmen. The WFM in 1903 wouldn't have that. Negotiations began, but ended in a fury.

On September 1, 1903, about 100 men quit their jobs at reduction mills and cyanide plants -- after cleaning the sites up and leaving them in good working order. This work stoppage effectively closed the Smuggler-Union, Tom Boy, Liberty Bell, Nellie, Columbia, and Menona mills. These closures didn't appear to affect the Association. So, on September 4th, the Telluride Federal Labor Union called out cooks, waiters, and other service-oriented employees. This shut down the Smuggler-Union and Alta mines.

By September 6, 1903, over 700 men had left Telluride looking for employment in other mining districts. Soon, mill managers thought it best to include their employees in the wage scale agreed upon in 1901. Once that happened, several of the larger producing mines went back into operation. Unfortunately, the Tom Boy Mine opened its mill in October with nonunion men, and the labor strike flared up again.

But now, labor strikes were occurring all over the State of Colorado. In the mills of Colorado City. In the gold mines of Cripple Creek. And in the coal mines of Trinidad. The WFM was flexing its muscle, trying its new power on for size. It wasn't long before the entire state was engulfed in a labor war. A war that cost many lives and ended up breaking the WFM.

## NOTICE.

On and after the 1st DAY OF DECEMBER, 1904, employees of the Smuggler-Union Mining Company will be paid according to the following scale:

### Mines, Under Ground.

Miners,	\$3.00 for 8 Hours
Machine Men,	4.00 for 8 Hours
Trammers and Shovelers,	3.00 for 8 Hours
Drivers, Caring for Horses,	3.25 for 8 Hours
Drivers, Not Caring for Horses,	3.00 for 8 Hours
Timbermen,	3.50 for 8 Hours
Timbermen Helpers and Laborers,	3.00 for 8 Hours
Nippers,	3.00 for 8 Hours
Hoisters, Engineers,	4.00 for 8 Hours
Station Tenders,	3.00 for 8 Hours
Cage Tenders,	3.50 for 8 Hours

### Mines, Outside.

Engineers,	\$3.50 for 8 Hours
Engineers, if Hoisting Men	4.00 for 8 Hours
Firemen,	3.00 for 8 Hours
Blacksmiths,	3.75 for 8 Hours
Blacksmiths' Helpers,	3.00 for 8 Hours
Tool Sharpeners,	3.25 for 8 Hours
Carpenters	3.75 for 8 Hours
Laborers,	\$3.00 for 8 Hours

### Tramway.

Gripmen and Loaders,	\$3.00 for 8 Hours
Brakemen,	3.75 for 8 Hours
Linemen,	4.00 for 8 Hours

### Mills, Cyanide Works, Etc

Crushermen,	\$3.00 for 8 Hours
Batterymen,	3.50 for 8 Hours
Batterymen Helpers,	3.00 for 8 Hours
Huntington and Chili Millmen,	3.00 for 8 Hours
Concentratormen,	3.50 for 8 Hours
Concentratormen Helpers,	3.00 for 8 Hours
Engineers	3.50 for 8 Hours
Firemen	3.00 for 8 Hours
Blacksmiths,	3.75 for 8 Hours
Carpenters	3.75 for 8 Hours
Laborers and Shovelers,	3.00 for 8 Hours
Canvas Plant Employees,	3.00 for 8 Hours
Solutionmen,	3.50 for 8 Hours

The rate of wages for all labor not enumerated hereon and including Foremen, Shift Bosses, Head Mechanics, etc., shall be subject to special agreement.

Apprentices will be employed under special arrangement.

All Men are required to go to and from their work on their own time.

Contracts, where made, are to be in writing.

One dollar per day will be charged for board and lodging.

**The Smuggler-Union Mining Co.,**

By BULKELEY WELLS, Manager.

A heavy cardboard broadside from the Smuggler's Union Mine. Ted Bobrink collection.



## The J. W. Stonehouse Sign Company of Victor, Colorado

by Ted Bobrink

The largest maker of mine bell signs and mining related signs was the J. W. Stonehouse Sign Company of Victor, Colorado. In 1863, William Stonehouse opened a sign shop in Chicago and taught his son, James Wesley (known as J. W.) the art of sign painting. The lure of the west drew J. W. away from Chicago in the early 1900's and, as a sign painter, his wanderings brought him to Douglas, Arizona. Here he set up business in a small store proudly announcing, J. W. Stonehouse, painter of good signs.

Not content to stay in one place too long, J. W. left Arizona, followed the mining boom from one area to another, and finally settled in the Victor-Cripple Creek region of Colorado. It was here that the accident prevention sign business was born. The need for safety in the workplace occurred to J. W. when he realized that the miners coming to Colorado from other states were bringing with them different bell signals used to control the hoists that raised and lowered men and materials in the shafts. Because these different bell signals were the cause of numerous accidents, J. W. went to the Colorado Bureau of Mines and emphasized the need for a uniform code of bell signals. J. W. was confident that his persuasive logic would be acted upon. So when the bell system was standardized, he was ready with silk-screened codes on oilcloth. He then sold the bell signs to the mine operators and, hence, the birth of the J. W. Stonehouse mine bell signs we all love to collect today.



A porcelain Stonehouse Colorado station level sign. Blue with white lettering, 9" by 4".



A porcelain Stonehouse Colorado station number call sign. Blue with white lettering, 9" by 6".



## Mine Bell Signs

by Ted Bobrink

This porcelain Colorado State mine bell sign is considered to be one of the earliest of the Stonehouse metal type, due to the fact of the name Victor, Colorado and the patent applied for at the bottom. Later signs of this same type, but with the name Denver and a patent date of 1912 are known. These signs are blue with white lettering and measure 18" by 36". Any old porcelain mine bell sign in fine condition without a number of chips and dents is considered very rare, as these signs were used underground, and were very much abused. Early mine bell signs of any type are rare, as they were only used in mines with shafts and there was only one bell sign on each level plus one at the headframe. If a mine was worked out, it would usually flood thus ruining the signs forever.

**COLORADO STATE CODE OF MINE BELL SIGNALS.**

**1 BELL HOIST**  
1 " STOP IF IN MOTION

**2 BELLS LOWER**

**3 " MEN ON, RUN SLOW**

**7 " ACCIDENT HOIST OR LOWER BY VERBAL ORDER**

**3-2-1 " READY TO SHOOT**  
ENGINEER SHALL AFTER SIGNAL 3-2-1 RAISE BUCKET OR CAGE TWO FEET AND LOWER AGAIN AND SHALL REMAIN AT HIS POST UNTIL FINAL SIGNAL IS GIVEN AND COMMAND EXECUTED.

**LEVELS**

1-1 BELLS 1 <sup>ST</sup> LEVEL	4-1 BELLS 11 <sup>TH</sup> LEVEL
1-2 " 2 <sup>ND</sup> "	4-2 " 12 <sup>TH</sup> "
1-3 " 3 <sup>RD</sup> "	4-3 " 13 <sup>TH</sup> "
1-4 " 4 <sup>TH</sup> "	4-4 " 14 <sup>TH</sup> "
1-5 " 5 <sup>TH</sup> "	4-5 " 15 <sup>TH</sup> "
2-1 " 6 <sup>TH</sup> "	5-1 " 16 <sup>TH</sup> "
2-2 " 7 <sup>TH</sup> "	5-2 " 17 <sup>TH</sup> "
2-3 " 8 <sup>TH</sup> "	5-3 " 18 <sup>TH</sup> "
2-4 " 9 <sup>TH</sup> "	5-4 " 19 <sup>TH</sup> "
2-5 " 10 <sup>TH</sup> "	5-5 " 20 <sup>TH</sup> "

**RULES GOVERNING SIGNALS.**

**RULE 1.** IN GIVING ORDINARY SIGNALS MAKE STROKES ON BELL AT REGULAR INTERVALS SIMILAR TO "READY TO SHOOT" 3-2-1 BELLS, EACH (-) MUST TAKE THE SAME TIME AS EACH STROKE OF THE BELL.

**RULE 2.** WHEN MEN ARE TO BE HOISTED OR LOWERED, GIVE SIGNAL "MEN ON, RUN SLOW" 3 BELLS, MEN MUST THEN GET ON BUCKET OR CAGE, THEN GIVE SIGNAL TO HOIST OR LOWER, 1 OR 2 BELLS.

**RULE 3.** AFTER SIGNAL "READY TO SHOOT" 3-2-1 BELLS, ENGINEER MUST GIVE SIGNAL THAT HE IS READY TO HOIST BY RAISING AND LOWERING BUCKET TWO FEET. MINERS MUST THEN GIVE SIGNAL "MEN ON" 3 BELLS THEN SPIT FUSE GET ON BUCKET OR CAGE AND GIVE SIGNAL TO HOIST.

**RULE 4.** ALL TIMBERS, TOOLS, ETC., LONGER THAN DEPTH OF BUCKET OR PLACED WITHIN A CAGE MUST BE SECURELY LASHED BEFORE BEING HOISTED OR LOWERED.

**RULE 5.** SIGNAL OF 3 BELLS MEANS "MEN ON, RUN SLOW" AND NOTHING IN CONFLICT THEREWITH WILL BE ALLOWED. SIGNALS TO MEET LOCAL DEMANDS AND NOT IN CONFLICT WITH THE ABOVE MAY BE ADDED BY INDIVIDUAL OPERATORS, BUT THE SAME MUST BE POSTED IN CLEAR AND LEGIBLE FORM IN CONJUNCTION WITH ABOVE CODE.

**T. R. HENAHEN, COM. OF MINES.**

J. W. STONEHOUSE SIGNS, VICTOR COLO. COPYR. T. D. FOR.

Ed Hunter collection



# The Ancient Order of Hibernia and the Molly McGuires

by Jim Steinberg

On the morning of June 21, 1877, the final chapter of the Molly McGuires began. In Mauch Chunk (now called Jim Thorpe) Pennsylvania, four convicted members of the Molly McGuires were hung. By 10:57 A.M. "Yellow Jack" Donohue, Edward Kelley, Micheal J. Doyle, and Alex Campbell were dead. In Pottsville Pennsylvania, by twos starting at 11 A.M., six more Mollies were hung. James Boyle, Hugh McGeheh, James Roarity, James Carroll, Thomas Duffy, and Thomas Munley. From March 25, 1878 to January 16, 1879, nine more members of the Molly McGuires were executed in various towns of Pennsylvania. Finally, on October 9, 1879 in Sunbury, the 20th and last of the Molly McGuires to be hung was Peter McManus. Three decades of terror and lawlessness in the coal fields of Pennsylvania were over.

Who were the Molly McGuires? Where did they come from? According to one source, the Mollies were named after the 17th century Irish partisan Connor Maguire and the fact that they were sometimes dressed in woman's clothing for purposes of security. Originally formed in 1845 in Ireland to oppose the landlords, they came to the United States to escape the Irish potato famine. In the United States, a prerequisite for joining was membership in the Ancient Order of Hibernia. The Ancient Order of Hibernia was formed in Ireland in 1565 to resist the power of the English. It was sort of a Catholic answer to the Orange party in Ireland. Started in the United States in 1836, its symbols are the Irish harp and the clover. The Ancient Order of Hibernia still exists today.

Shortly after the civil war, the U.S. experienced a depression. The difficulty of foreign workers finding jobs in the face of veterans preference, plus low wages and poor working conditions in the mines did not contribute to good relations. The Irish miners often found themselves working for absentee landlords who were their old hated enemies, the English. The miners often lived in two room shacks, with one family in each tiny room. Additional irritation was the view of the superintendent's multiple floor homes on spacious lots. The Irish received poor treatment at the hands of the English and Welsh who had little respect for them.

The activities of the Mollies may have began early in the 1850's. Unlike the fledgling labor movement with which they have often been confused, the Mollies engaged in a form of terrorism. Until 1877, three counties of Pennsylvania were virtually at the mercy of the violence of the Mollies. Between 1862 and 1875 in Schuylkill County alone, there were 142 murders and 212 felony assaults that went unsolved. A substantial portion of victims were mine officials. Sometimes, before the violence, the victim would receive a "coffin notice" signed by a "Son of Molly McGuire."

Cause injury to a Molly McGuire by firing him, and a mine official risked being beaten or killed. Just cause for a firing did not ameliorate the risks. The official's home might be burned, the colliery where he worked might be blown up. Molly justice could be fast. Being a secret society, one could not be sure who was or wasn't a Molly or the friend of one. Speak the wrong words to the wrong person and serious trouble could arrive swiftly. Even the clergy wasn't immune. Though there were many Irish who did not approve of the Molly McGuires, their power became sufficient that opposition was virtually non-existent.

Ultimately, the mine operators became irritated enough that they hired the Pinkerton detective agency to destroy the Mollies. Allen Pinkerton decided to do this by planting a spy within the organization. This task fell to James McParland, an Irish immigrant himself. Using the name of James McKenna in the guise of a murder fugitive, he became popular with the Irish miners. He became a member of the Mollies, and eventually ascended to the position of secretary. During this time, McParland was tipping the authorities whenever he could, to prevent murders and other acts of violence.

McParland himself came under suspicion and even had to evade men sent by the Mollies to kill him. But for the Molly McGuires, time was running out. The Pinkertons had a list from McParland of 375 Mollies and what their crimes were. On May 6, 1876, in Pottsville, James McParland appeared as a witness for the state against the Molly McGuires.

One by one, 21 men were convicted of murder and sentenced to hang. The death sentence of one John O'Neal, a moron, was reprieved to a life sentence. In May of 1877, the Ancient Order of Hibernia revoked the charters of almost all its chapters in Schuylkill, Carbon, Northumberland, and Columbia counties.

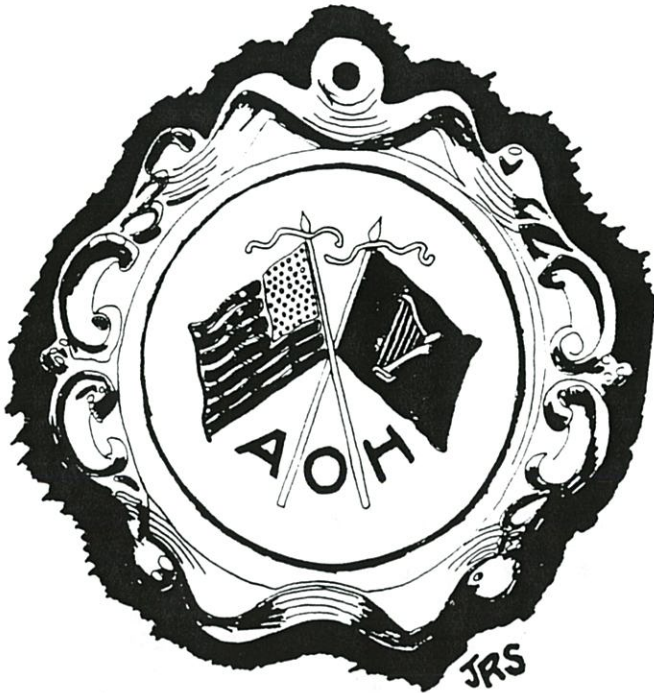
Most of the convictions of the Mollies revolved around the information provided by one man and a few of the accused who turned states evidence. Some of these informants later repudiated their testimony. Some of the



convicted were likely innocent. By today's standards of justice, some of the evidence is not considered very convincing. James McParland was rewarded with a job in the western United States.

References:

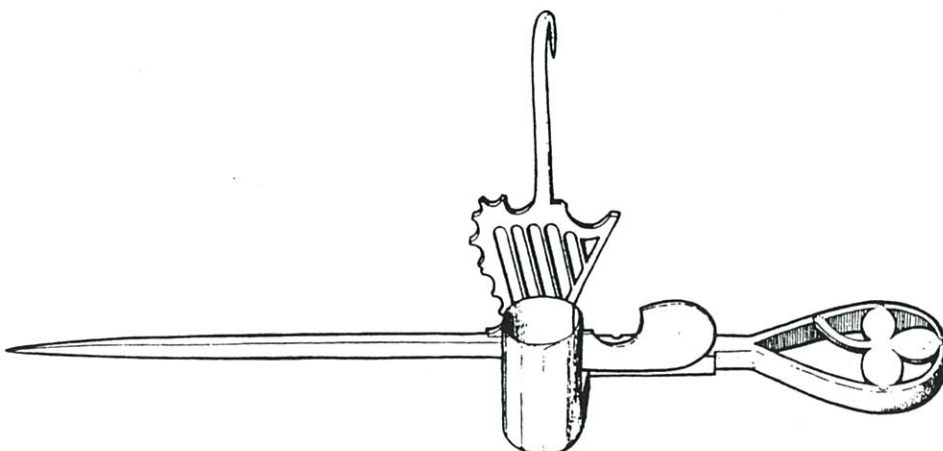
1. Lament for the Molly Maguires, Arthur H. Lewis, 1964, Harcourt, Brace & World
2. A Pictorial History of American Mining, Howard N. & Lucille L. Sloane, 1970 Crown Publishers.
3. Organized Labor in American History, Philip Taft, 1964, Harper & Row
4. Collector's Guide to Miner's Candlesticks, Wendell E. Wilson & Ted Bobrink, 1984, Mineralogical Record.



The Ancient Order of Hibernia medallion shown above measures 1.5 inches in diameter. The metal is of a gold finish with the middle area being white. The U.S. flag is in red, white, and blue. The Irish flag is a yellow (gold?) harp on a field of green. The flagpoles and ribbons are done in yellow. Lettering is black. From the Jim Steinberg collection.



The AOH lapel pin shown above is 5/8 inch tall. The base metal of the pin is brass. The background color of the face is white. All the clovers are done in green. Brass provides the color of the sun rising over the hills, the fraternal shaking hands and the Irish harp. The pin borders are green. From the Jim Steinberg collection.



A fancy candlestick from Tombstone, Arizona with the AOH harp and clovers. From the Jim Steinberg collection.



## The 4th Annual Mining Artifact Collectors Reunion

by Len Gaska

The fourth annual mining collector's reunion held on June 10 at the home of Herb Dick, was a resounding success. Not only was the turnout larger than ever, almost every major collector in the western U.S. was present. Dave Gresko came from Toledo, Ohio and received an award for coming the longest distance. The award consisted of a bolo tie fashioned out of a Justrite Streamlined cap lamp top and was crafted by Jim Steinberg. The MAC gave Herb Dick an unfired Guy's Dropper cap lamp in the original box as a token of appreciation for hosting the reunion. We all want to thank Herb Dick and his wife Emilee for their gracious hospitality and all their hard work that made this event a success.

One of the primary purposes of the reunion was to engage in trading and many people went home with new and prized items. Some of the trades we know about are as follows. Dave Thorpe traded a C. Cleaves candlestick for Ted Bobrink's early style Hughes Bros. Pathfinder carbide cap lamp. Errol Christman traded a fancy candlestick for Jim Steinberg's Pocahontas carbide cap lamp. Rick Yarborough traded a mine bell sign, a candlebox, and a rare Justrite cap lamp for a blacksmith folding candlestick from Ted Bobrink. Len Gaska traded his American carbide cap lamp for Errol Christman's Maumee Duplex carbide cap lamp. Tim Callaway traded an Argonaut mine map for two candlesticks from Jim Steinberg.

For those who only brought cash to the reunion, Dave Gresko saved the day by bringing a fairly large collection of items for sale. Sales were brisk as there was something for everyone and Dave's inventory was severely depleted by the end of the day.

Most attendees are already excited about attending the event next year. For those of you who couldn't make it this year, we hope to see you there in 1990.



Kneeling, left to right: Dave Thorpe, Bill Spence, Len Gaska, Tony Moon, Ted Bobrink, Ken Roberts, John Coons, Rick Yarborough, Jim Steinberg, Phil Casdorff, and Errol Christman.

Standing, left to right: Steve Scott, Don White, Dave Gresko, Mark Bohannon, Stephan Moon, Dave White, Craig Stolberg, Randy Marcotte, Jay Buscio, Herb Dick, Mike Hunerlach (behind Herb) and his father, Steve Eady, Leonard Piskiewicz, John Johnson, John Slentner, Ron Bommarito, Jack Ramsdell, and Tim Callaway.



# The Franklin Mineral Museum

by Jim Van Fleet

Franklin, New Jersey is one of the most famous mineral localities in the world, boasting many rare minerals found nowhere else. These minerals were brought to light by the mining operations of the NJ Zinc Company, which operated between 1848 and 1954, and the Sterling Hill Mining Company, which operated into the 1980's. For the mining artifact collector, Franklin is also a rarity; one of the few Eastern hard-rock mines, and one which is preserved in memory by a museum.

I visited the Franklin Mineral Museum on the first Sunday in May, the date of their annual Miner's Reunion. I had a chance to talk with John L. (Jack) Baum, the curator, and several other former miners for NJ Zinc, Nick Trofimuk and Paul Silver. They told me a few things about carbide lamps, which they used at Franklin through the early 1950's. When the gaskets on their lamps were lost or got brittle, they replaced them for free -- by taking the gaskets off the compressed air hose couplings on ore cars! The miners owned their own lamps, but the company kept the carbide flasks in the lamp house. They were issued full at the start of each shift, and returned at the end of the working day. Mr Baum remembers "there always seemed to be a blinded miner around, someone who had drilled into a charge or something." The carbide flasks were refilled by a miner known as "Blind Alex."

After the reunion festivities, I spent some time looking at the collection. The museum includes a replica mine with two levels, where you can see original artifacts from the Franklin mine in place. There are more than a dozen different enameled metal signs, several large rock drills with their accessories, and tools of the blasting trade. A display case holds miner's hob-nailed shoes and ice-creepers, horseshoes from the mules used at Franklin, a Drager self-rescue device, blasting cap tins, carbide flasks and tins, some common oil wick and carbide lamps, drill bits, and ore samples.

The surprise comes when one views the mineral collection area of the museum. Here among the beautiful mineral specimens is a display of mine lighting devices. There are 13 very nice safety lamps on permanent loan from Lehigh University in Pennsylvania. These include two nickel-plated Hughes Brothers Davy lamps, and two unusual lamps from J. Davis and Sons, Baltimore. There is a unique unmarked safety lamp with a solid brass body with two glass windows, an open gauze above, and a large handle on gimbles (Editor's Note - Probably a Wolf engineer's lamp).

Safety lamps were never used at Franklin, but the collection also includes Western style candleholders, oil wick lamps, and carbide lamps, all of which saw use in the mine's 140 year history. There is a minimum of labeling or interpretive material display with the lamps, but a collector can recognize among the oil wicks a "VL" with a spade mount. Many of the 14 wick lamps on display have the narrow spade mount. Several lamps were adapted for using Sunshine fuel with a copper wire and loop inserted in the spout. The museum's carbide lamps include a Sun-Ray, Lu-Mi-Num, a Baldwin No. 39, and an assortment of Guy's Droppers, Justrites, and Auto-Lites, again with the Michigan spade mount preferred by metal miners.

Steve Sanford, the museum's manager, showed me a corroded carbide lamp water tank which could still be identified as a Simmons lamp. It had been found in the Buckwheat Dump, the quarry behind the museum which was filled with the waste rock from mining operations. Today the dump is usually full of rock hounds with hammers and portable ultraviolet lights, and along with mineral specimens, they still find an occasional drill bit, horseshoe, or lamp part.

I hope the chance to see this collection and search the dump for a small fee will draw some mining artifact collectors. I can recommend the day of the miner's reunion as a real treat. Within a year, this area will be an even more interesting visit with the reopening of the Sterling Hill zinc mine as a mining museum.



## Pulp Balances

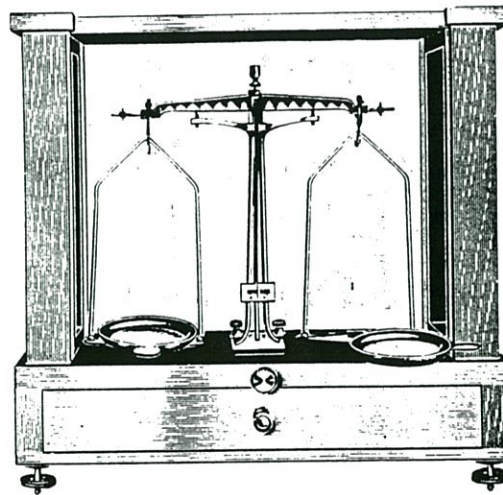
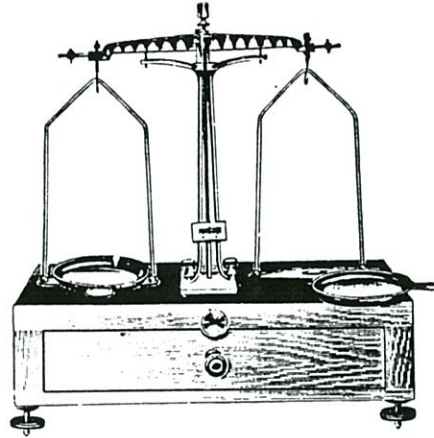
by John Shannon

As has already been mentioned in the article on "Gold Scales" in the MAC issue No. 2, Winter 1989, a number of balances were used in the assay lab. It is the purpose of this article to explain the use of one of those - the pulp balance - in the assaying process.

The pulp balance was made in two general styles, enclosed and open. The case of the enclosed balance was constructed very much like an assay or analytical balance. It was made from the same Honduran mahogany wood with glass on the sides and top, and a sliding front glass panel to allow access. The majority of the pulp balances used seem to have been of the open type. The column was mounted on a wood base measuring approximately 6" x 14" x 3" with a single drawer in the base. It is interesting to note that in many early catalogs of balance manufacturers, the same balance is listed both as a pulp balance and as a prescription balance.

The enclosed pulp balances generally had pan rests to assist in controlling the oscillations while the open pulp balance relied on the pans resting on the top of the base while in the rest position.

The pulp balance was used to weigh the pulp which is the result after crushing, quartering, and screening the ore. It was at this stage that the assay ton weights were used. Since the gold and silver assays were always reported in troy ounces per ton (2,000 pounds avoirdupois), if the ore charge (pulp) were weighed in grams and the button in milligrams, considerable figuring would be necessary to convert the result into troy ounces per ton. The system of assay ton weights greatly simplifies the computation. In short, one assay ton weighs 29,166 milligrams, just as many milligrams as there are troy ounces in an avoirdupois ton. Therefore, if an ore charge of one assay ton is taken, each milligram that the resulting button weighs represents one ounce (troy) of the metal in a ton of ore.



As in the case of the assay balance being made just for the assay of metals, the set of assay ton weights was made just for the assaying process. They generally came in two different sets; ranging from one assay ton to the 1/20 assay ton, and four assay tons to 1/20 assay ton.

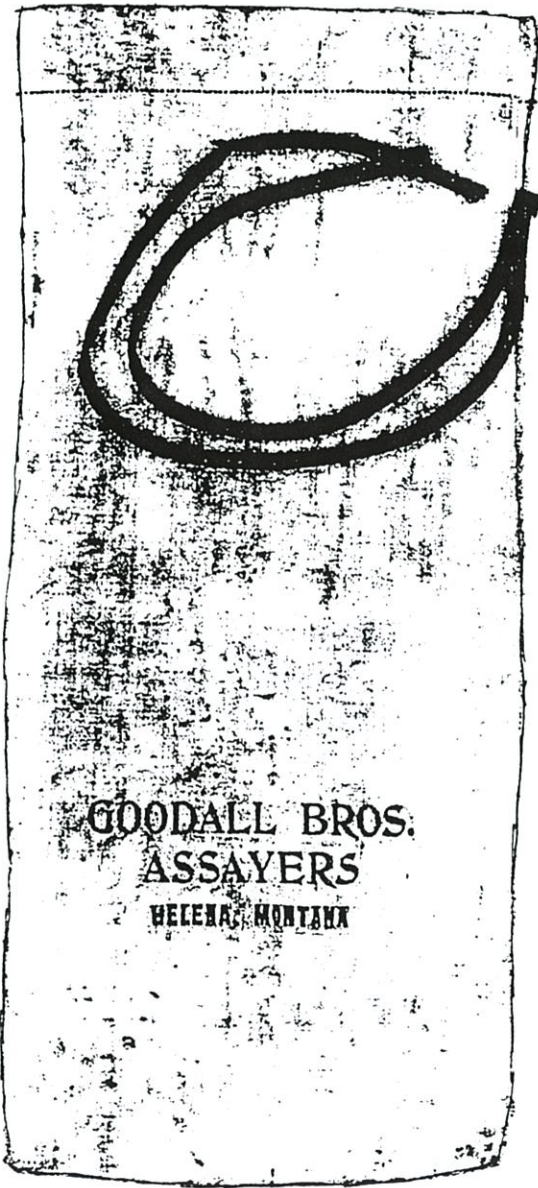
It is interesting to note that an 1898 catalog of Eimer & Amend for chemical and physical apparatus and assay goods does not list a pulp balance as such. However, it does picture two balances very much like the later pulp balances and indicates they are balances "for pharmaceutical, bullion, specific gravity, gold, sugar, and other purposes where accuracy is required." The 1905 catalog of the Denver Fire Clay Co. shows four pages of pulp balances from Thompson, Ainsworth, and Troemner. A 1900 (?) catalog of Justinian Caire Co. of San Francisco shows pulp balances from Becker, Troemner, and Ainsworth.



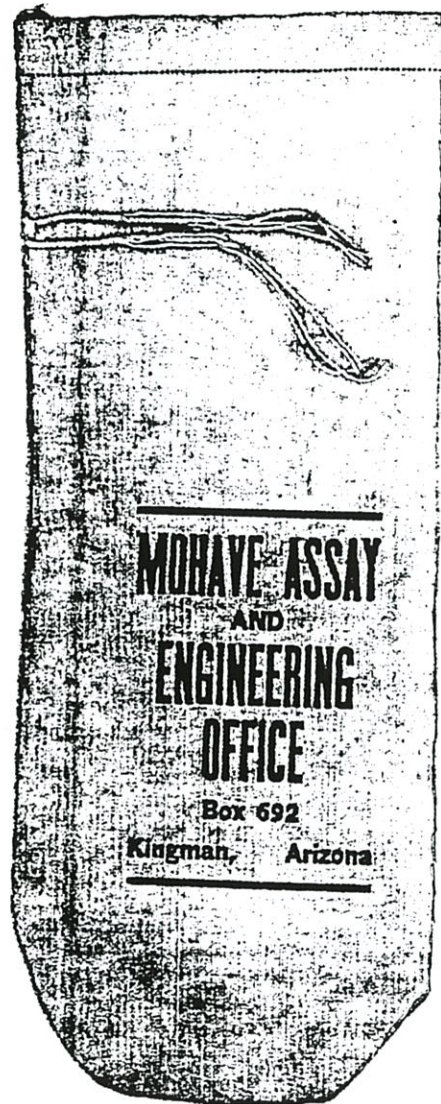
## Assayer's Sample Bags

by Ted Bobrink

Assayer's bags were sold or given away by local assaying companies to the mines or miners they did assaying for. A prospector locating a new claim or a mining company opening up a new ore body had to take samples of their ore and have it assayed. These samples were put into small cloth bags about 14" long and 6" wide. Two sample bags are illustrated below. Most of the assayer's bags were unmarked, and the ones that were stamped with the assay company are rare and sought after by mining collectors.



Jim Steinberg Collection



Ted Bobrink Collection



## Mining Artifacts on Official Government Media

by Jim Steinberg

Mining artifacts show up as art in a number of media. Shown here is a postage stamp for bulk mailing which is in current use in the United States. I would appreciate hearing about other stamps and coins which depict mining hardware or mining scenes.



Normal Size



This Belgian 50 Centime coin should be easy to acquire with its relatively recent minting. On the front of the coin is the head of a miner wearing a bump hat of leather(?), and next to it, a safety lamp. The coin is 3/4 inch in diameter.



Front



Reverse

## Ask Dr. Lampbottom

***Dear Dr. Lampbottom, how come almost all the early miner's caps and helmets I find are small sizes?***

Since many of these caps are found in mint condition, they probably represent unsold stock of seldom used sizes. However, the American people have increased substantially in size during the last 100 years due to better diet and medical care. Average height, weight, and overall body size has increased significantly. The smaller size of our ancestors probably played a part in the large number of small miner's caps that are found.

An additional factor might be due to the genetics of the miners who were often immigrants of Polish, Scandinavian, and Welsh descent. Were these people, in general, smaller than immigrants from other countries? For those of you who like to spend time in libraries (Dr. Lampbottom does not!), this may be a good research topic.

***Dear Dr. Lampbottom, I would like to acquire a book that lists and illustrates all the different mining related items that were ever made. Does any such book exist?***

Dr. Lampbottom also wishes he had such a book as he continues to learn about new items. And then he wonders how often he passed up those items because he did not realize that they were mining artifacts. Experience is the only teacher in addition to old hardware catalogs, mining supply catalogs, mining trade journals, mining books, other collectors, museum displays, and of course, the Mining Artifact Collector.

***Dear Dr. Lampbottom, I am confused! I have been hearing conflicting information on the number of mine lamps that were actually named after a mine. What is your opinion?***

Only one American made carbide miner's lamp was purposely named after a specific mine and that is the Copper Queen hand lamp made by Justrite (see MAC issue no. 1). Other lamps such as the Victor and Acme have names that are identical to existing mines, but I know of no proof that they were named after a specific mine. Names such as Victor and Acme are very common and of course there would be both lamps and mines with those names. I have seen the following mine names on maps: Uncle Sam, Giant, Red Star, Baldwin, and American. Does that mean that lamps with those names were named after those mines? Of course not. In virtually all cases, the reason for a particular carbide brand name was never recorded and speculation is the best we can do.

Do you have any questions of a technical or historical nature for Dr. Lampbottom? If so, please submit them to the MAC editor and we will forward it to the good Doctor. Of course Dr. Lampbottom is an avid collector and is almost always on the road looking for good mining items. For that reason, Dr. Lampbottom cannot send personal answers to each and every one of you. And by all means, if you have information that contradicts one of Dr. Lampbottom's answers, please contact us. Dr. Lampbottom is a snooty old fellow and the editors love to prove him wrong!



## Sale and Trade Ads

---

**For Trade:** Blasting cap tins. I have a good collection of tins for trade. Most are California Cap Company and some are in excellent condition. Interested in trading for tins not in my collection (want list available on request). I am always interested in information on rare tins and the companies that made them. I also collect powder boxes and candle boxes. Andy Martin, PO Box 94, Piscataway, NJ 08855 (201) 699-6131.

---

**For Sale and Trade:** Carbides, oil wicks, safety lamps, stocks, postcards, scrip, maps, blasting items, etc. Send SSAE for list. David Johnson, 6807 Homestead Dr., Indianapolis, IN 46227

---

**Wanted:** Mine surveying instruments of all types. Also, gimbaled plumb-bobs, assay related instruments and kits, early microscopes, and goniometers. Dale Beeks, Box 2515, Coeur d'Alene, ID 83814 (208) 667-0830

---

**For Trade:** Several folding candlesticks, Pocahontas carbide cap lamp, mint Scoby duplex carbide cap lamp, brass Brite-Lite Bulldog carbide cap lamp, several Buddys, Griers, Springfields, X-Ray. Many oil wicks available. Errol Christman, PO Box 313, Cedar Ridge, CA 95924 (916) 273-3268

---

**For Trade:** Mining stock certificates. Send for free list of mining stock certificates for sale or trade. Also buying or trading for non-coal mining certificates, mining company prosp[ectuses], mining books, mineral books, mining photographs, and other mining-related paper. Mining, 13057 S. California St., Yucaipa, CA 92339.

---

**For Trade:** Carbide hand lamps. English Premier "Crestella" with grey metal water tank and brass reflector. English Premier "Crestella" with brass water tank and brass reflector. Pinnacle No. 5, all aluminum and made in Melbourne, Australia. Have a number of the above lamps. Mining scrip from Broken Hill, Australia dated 1890 to 1910. Gerry Dillon, 16, Warramunda Cres., Banksia Park, Adelaide, South Australia 5091

---

**For Trade:** Lu-Mi-Num, nickel plated Sun-Ray, and Shanklin Metal products carbide cap lamps. Varney candlestick. Blasting cap tins: M. C. Mfg. Works, No. 6, red and white rectangular. Hercules No. 6, yellow and black round. Western No. 8, blue and gold rectangular. Will trade for blasting items. Don and Dave White, 1500 Olympic Drive, Milpitas, CA 95035 (408) 946-3288

---

**For Trade:** Brass Baldwin cap lamp, Gee-Bee cap lamp, American blasting cap tin, black "turtle shell" hardhat with brass UMWA tag, "Dreadnaught," "Bear," and "Sequoia" brands safety fuse wrappers framed with original sample of fuse. Other miscellaneous blasting items. Will trade for a Np Simmons Pioneer bottom, brass Ashmead Buddy bottom and reflector, Np X-Ray bottom, and explosive related items. Mark Bohannon, Star Rt. Box 107E, Oro Grande, CA 92368. (619) 246-4418

---

**For Trade:** F. Schmidt Leadville, Colo. hutch soda, circa 1883; Cripple Creek Bottling Works, Cripple Creek, Colo. blob top beer, circa 1897; A. W. Kenison, Auburn, Cal. blob top beer, circa 1900; Victor, Colo. sterling silver souvenir spoon, circa 1910; **Wanted:** mining town bottles and souvenir spoons. Michael Ebers, 122 Susanne Drive, Clinton, TN 37716 (615) 457-5019

---



---

**All For Trade, Some For Sale:** Copper Queen carbide hand lamp, fair condition. Brite-Lite brass supervisors/cap lamp, excellent condition. Lu-Mi-Num cap lamp, almost mint. "The Justrite" Np horizontal small hand lamp, very good condition. Horizontal Grier cap lamp, good condition. Justrite #2 repair kit with a few parts. Brass Arrow cap lamp, excellent condition. F. Anton wick box with wicks. Denver Fire Clay Co. Catalog, No. 12. Want carbides and related items. Specific wants are: Senior Conflow calendars #1 and #2, stick for Justrite Anaconda Special, carbide cap lamp thread cleaner with box, and Justrite "Jiffy" lamps. Len Gaska, 1688 E. Corson St., Pasadena, CA 91106. (818) 405-0647

---

**For Trade:** Dry-Lite carbide cap lamp in near mint condition; will trade for Maumee Duplex in same condition. Ted Bobrink, 12851 Kendall Way, Redlands, CA 92373 (714) 794-5518

---

**For Trade:** Boxed unfired Auto-Lite, boxed unfired Guy's Dropper cap lamp, Justrite vertical style cap lamp, Justrite belt generator with fancy headlamp, Justrite spiral feed cap lamp, Milburn No. 22 area lamp, unfired Wolf safety lamp, Justrite No. 2 repair kit box, plain wrought iron miner's candlestick from Honduras, miner's stearic wax candle. Trade for carbide lamps. Also have copy of Greg Clemmer's book American Miner's Carbide Lamps for trade for lamp parts. Rich Finch, Tennessee Technological University, Box 5062, Cookeville, TN 38505

---

**For Trade:** Hughes Bros. Davy, Hughes Bros. "Pathfinder" bottom Atlas "Schlaflers System" detonator. Want Ashmead bottom for Buddy and other Davy style safety lamps I do not have.. Tom Stranko, 2478 Stephanie Lane, Binghamton, NY 13903 (607) 724-4018

---

**For Trade:** Dynamite boxes, California Cap Tins, and other miscellaneous mining items. Will trade for mining items or other antiques. Gary or Mark Parker, PO Box 114, Randsburg, CA 93554

---

**For Trade or Sale:** Hand-held air drill (similar to Gardner-Denver S45) used in gilsonite mines. I.C.S. Reference Library volume on mining (placer, ore, assaying, etc.). Beall Brothers picks (coal and contractors), no handles. Brilliant Search Light "1911 Model," headpiece only. Desire Columbia Model C cap lamp with belt generator and other carbides. Bill Collins, 512 N. 300 W., Vernal, UT 84078.

---

**For Sale or Trade:** F. W. Braun gold mold. F. W. Braun assayer's oven. Nice early stoper drill (widowmaker). Phil Casdorff, 28340 Live Oak Canyon Road, Redlands, CA 92373

---

Trade ads up to 80 words are free and encouraged. For-sale ads are only \$5 per issue or \$15 for four consecutive issues. Send ads to the editor: Len Gaska, 1688 E. Corson St., Pasadena, CA 91106.

### **Please read:**

Ok folks, the policy of requiring that trade ads be resubmitted isn't working. So here is the new policy. If you submit or resubmit a trade ad for each issue, I guarantee that it will be printed. At my discretion, I will print other trade ads. In most cases, trade ads will only run for two issues unless they are resubmitted.

For only about \$1 in postage, you can reach about 250 fellow collectors four times a year. You will be hard pressed to find such a bargain elsewhere. -- Len Gaska



## VERN POTTER

Dealer in Western Americana

BUYING AND SELLING ALL WESTERN MINING  
AND BANKING PAPER MEMORABILIA

CHECKS • WARRANTS • CD's  
EXCHANGES • MAPS  
RECEIPTS • STOCKS • BONDS  
ENGRAVINGS

P.O. Box 10040  
Torrance, CA  
90505-0740  
Telephone (213) 328-0406



**The Irish Rovers**  
*Items unique and antique*

Gerry and John Shannon

303-232-1534

11146 West 26th Place • Lakewood, Colorado 80215

## SIERRA HILLS



ANTIQUES  
&  
COLLECTIBLES

Open 7 Days  
10:00 am - 5:00 pm  
Visa & Mastercard

Brian & Jane Ross  
134 E. Main St.  
Grass Valley, CA 95945  
(916) 273-9095

Specializing in Technical Mining Books

### OLD PAPER WANTED

WESTERN MINING DOCUMENTS: ASSAY,  
STOCKS, BONDS, CHECKS, SCRIP, DEEDS,  
MAPS, PHOTOS, STEREOVIEWS, ETC. IF  
IT'S PAPER, I AM INTERESTED. SEND  
PHOTOCOPIES, PRICE, AND THE NUMBER  
AVAILABLE TO :

RAY MILLER (805) 942-1820

PO BOX 4189 LANCASTER, CA 93539

### The Great Gold Rush Collection

Rare Antique Treasures, Photographs,  
Scientific Instruments, Maps  
Keith and Brenda Williams

PO Box 5690  
Avon, Colorado 81620  
USA

Beaver Creek  
Village Plaza  
303-949-5606

KEN PRAG

PAPER AMERICANA

OLD POST CARDS • STOCKS & BONDS  
STEREOPTICON VIEWS • TRADE CARDS  
TIMETABLES • PASSES • WELLS FARGO

PHONE - SAN FRANCISCO  
(415) 566-6400

MAIL - P.O. BOX 531  
BURLINGAME, CA 94011

Shop - Hunter's Depot Antiques  
204 Sir Francis Drake, San Anselmo

Brad Ross

107 Westminster Drive  
St. Clairsville, Ohio 43950

(614) 695-1468

Dealer of Eastern Coal Mining  
Artifacts

Fred Holabird  
Columbus Industries Inc.

Large Selection of Mining Paper,  
Photos, and Artifacts

320 S. Wells Ave.  
Reno, Nevada 89502

(702) 323-4566

**DAYS OF '60's**

1115 FRONT STREET, #11  
(916) 448-4060

OLD SACRAMENTO, CA 95814

**JOHN HELEVA**

**Books**  
Old & Rare  
Bought & Sold

**Catalog #1:**  
Mining, mineralogy, gemology  
& jewelry

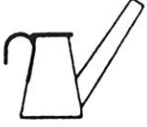
**Catalog #2:**  
Early science, technology &  
scientific instruments

Send \$2.00 each for:  
Catalogs #1 & #2      Send \$5.00 for:  
Catalog #3

The Gemmary  
P. O. Box 816  
Redondo Beach, Ca 90277  
(213)372-5969

**Catalog #3:**  
Scientific Instruments -telescopes,  
globes and orreries, dials, compasses,  
surveying, navigating, drawing,  
calculating and laboratory apparatus


**Scientific  
Instruments**

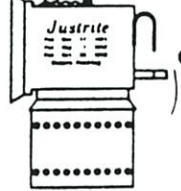



**Len Gaska**  
1688 E. Corson St.  
Pasadena, CA 91106  
(818) 405-0647

Collector of Mine Lighting  
and Other Mining Items

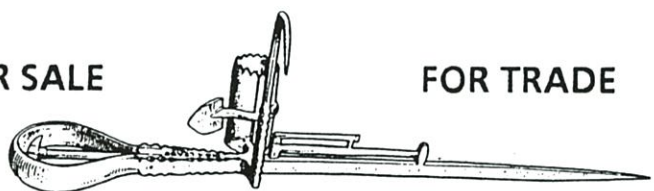
*Buy-Sell-Trade*



**Your business card here  
for only \$5 per issue or  
\$15 per year (four issues).**

**FOR SALE**



**FOR TRADE**

**Ted Bobrink**  
12851 Kendall Way  
Redlands, CA 92373  
(714) 794-5518

---

**MINE BELL SIGNS:**

1. Arizona, porcelain, blue with white lettering, mint	500.00
2. California, cloth, white with black lettering, average	275.00
3. Nevada, cloth, white with black lettering, mint	225.00

---

**CANDLEHOLDERS:**

1. Mt. Shasta, Wilson-Bobrink #42, mint	275.00
2. California Wilson-Bobrink #30, mint	275.00
3. Sholder, Pat. June 17, 1890 Wilson-Bobrink #10	250.00
4. Ideal, L. S. W. Co., St. Louis, Wilson-Bobrink #39	250.00

---

**CARBIDES:**

1. Arnold carbide candle, MAC #2, page 6, mint unfired	1600.00
2. Simmons Pioneer, mint unfired	275.00
3. Wolf canister style 8 hr. w/ orig. reflector, MAC #1 page 7	185.00

---

**SAFETY LAMPS:**

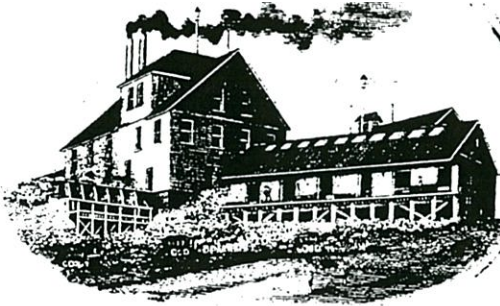
1. Early baby Wolf, MAC #2, page 21, mint	425.00
2. American Davy, near mint	285.00
3. Hughes Bros. Davy, near mint	285.00

---

**BLASTING ITEMS:**

1. Hercules blating machine #2	295.00
2. Peerless #6 cap tin, MAC #2, page 25	90.00
3. Trojan #6 cap tin	45.00
4. Illinois #6 cap tin, MAC #2, page 26	35.00
5. DuPont #1 crimpers, MAC #1, page 23	40.00
6. DuPont #4 crimpers, MAC #1, page 23	40.00
7. Atlas cap carrying case, MAC #1, page 22	65.00





# INDEPENDENCE MINE

W.S. STRATTON,  
OWNER

*Victor, Colo.*

Brian Levine

## SYZYG GOLD MINING CO.

P.O. Box 465

Victor, CO 80860-0465

(719) 689-2155

*Dealers in historical materials, specializing  
in Colorado gold and silver mining*

SYZYG is pleased to offer the following for sale:

### COLORADO:

- |   |          |
|---|----------|
| 1. Stock certificate: The Anaconda Extension Gold Mining Company, of Cripple Creek, issued in 1892, signed by H. A. W. TABOR as president | \$325.00 |
| 2. Stock: The Miner Boy Mining Co., of Leadville, issued 1881   | \$75.00  |
| 3. Stock: The Portland Gold Mining Co., of Cripple Creek, issued 1916 -- Colorado's Richest Gold Mine                                     | \$35.00  |
| 4. Cripple Creek Manual of 1900, compiled by Fred Hills, one of the best mining directories ever published, 495 pages, good condition     | \$275.00 |

### NEW MEXICO:

- |  |         |
|--|---------|
| 5. Stock: The Sierra Apache Mining Co., issued 1882, Lake Valley | \$75.00 |
|--|---------|

### NEVADA:

- |   |          |
|---|----------|
| 6. Stock: United Imperial Mines Co., issued 1923, Cherry Creek  | \$15.00  |
| 7. Stock: Massachusetts Gold & Silver Mining co., N.T. - 6/22/1864  | \$200.00 |
| 8. Stock: April Fool Extension Mining Co., issued 1906, Manhattan   | \$45.00  |
| 9. Stock: Lampazos Silver Mines Co., issued 1918, property in Broken Hills, signed by "Pirate of Promotion" George Graham Rice. | \$65.00  |

### CALIFORNIA:

- |  |         |
|--|---------|
| 10. Stock: Triunfo Gold and Silver Mining Co., issued 1865         | \$75.00 |
| 11. Stock: The California Copper Co., 1901, Daulton, Madera County | \$25.00 |

### ARIZONA:

- |   |         |
|---|---------|
| 12. Stock: Jerome Verde Copper Co., issued 1918, property: Jerome | \$20.00 |
| 13. Stock: Oatman United Mines Co., issued 1916, property: Oatman | \$15.00 |

### PHOTOS:

- |  |          |
|--|----------|
| 14. 3 cabinet-sized, taken of Creede, Colorado and surrounding mines, by Charles Goodman, 1892 | \$200.00 |
| 15. United Verde Mines and Jerome, Arizona, 20" length x 5" width                              | \$100.00 |

### MINING MAGAZINES:

- |  |  |
|--|--|
| 16. Hundreds, from \$1 to \$25 each (depending on articles and/or ads) |  |
|--|--|

### NEW BOOKS:

- |   |         |
|---|---------|
| 17. The Portland: Colorado's Richest Gold Mine, 1989, by Joe Vanderwalker and Brian Levine, limited hardback editon from \$25 to \$60; paperback \$4.95   |         |
| 18. Cripple Creek Gold, 1988, by Brian Levine, paperback \$10.95  |         |
| 19. Portland Mine Silver Commemorative Coin, only 100 minted, excellent engraving of Portland No. 2 in 1902 and relief map of Colorado and mining districts on obverse, 1 ounce/.999 fine, with velvet case | \$27.95 |

All items must meet customer satisfaction or returnable for full refund. The above is just a sampling of the 100's of items SYZYG has in stock.



# Williams Minerals

Keith and Brenda Williams  
P.O. Box 1599  
Idaho Springs, Colorado 80452  
303-567-4647

## MAPS

**Map of Colorado Territory** to accompany Hollister's Mines of Colorado corrected from the public surveys of 1866 - color coded, map size: 21 x 16 inches framed size: 28 1/2 x 23 1/2 . . . . . \$375.00

Leadville, Lake County. Colorado **Map of the Leadville Mining District** Edition of June, 1913 map size: 49 x 21 inches Framed size: 56 3/4 x 28" Map Lists major mines of the District with 25 feet contour interval. . . . . \$450.00

**Map of the Leadville Mining District** - compiled from official records and other reliable sources by: Chas F. Saunders January 1901 Scale 1200 feet to the inch Copyrighted 1901 by Chas. F. Saunders Map size: 38 1/4 x 30 3/4 inches Framed size: 46 1/4 x 38 3/4 inches map shows patented mining claims with partial color coding. . . . . \$395.00

Claims **Map of The Gold Belt of Lower Clear Creek and Gilpin County** near Central City, Colorado circa 1902 S.A. Rank Mining Engineer. Published by: The Williamson - Haffner Engraving Company of Denver. Two color coded claims map showing Central City, Nevadaville, and Northern Idaho Springs Districts. Also noted is the Gilpin Tramway. Map size: 38 3/4 x 26 1/4 inches Framed size: 46 1/2 x 33 1/2 inches. . . . . \$750.00

**Preliminary Map of Central Colorado** showing The region surveyed in 1873 Department of The Interior U.S. Geological and Geographical Survey of The Territories F.V. Hayden U.S. Geologist in charge map size: 23 x 17 inches Framed size: 30 1/2 x 24 3/4 inches. . . . . \$375.00

**Topographical Map Gilpin County, Colorado Mineral Belt** Gold Production \$125,000,000. Topographical colored map showing various mining areas of the district with Central City as the focal point. Back side Lists major production history for the district. Map size: 24 x 17 1/2 inches Framed size: 27 1/2 x 21 1/2 inches. . . . . \$595.00

## PHOTOGRAPHS

1. W.H. Jackson chromolithograph of the **Las Animas Canyon** with The Silverton - Durango narrow guage railroad. Circa 1890's. Two engines with six passenger cars. Picture size 20 x 16 inches Framed size: 26 x 21 3/4 inches. \$375.00

2. W.H. Jackson Photograph of **Pitkin, Colorado** #01049 Pitkin, The Valley of Quartz Creek and Alpine Pass. Detroit Publishing Co. circa 1890. An original solar print from Jackson's glass plate negative. Picture size: 20 x 17 inches Framed size: 26 x 23 3/4 inches. . . . . \$375.00

3. **Arkansas Valley Smelter** panoramic photograph, photographer: unknown. Photograph shows the entire smelter operation from the south, MT. Massive on extreme left in background. D & RG rail yard in foreground of buildings circa 1950 Picture size: 46 x 8 inches Framed size: 52 1/2 x 14 inches. . . . \$350.00

4. Panoramic photograph of **Bonanza, Colorado** by: Hume of Del Norte, Colorado. Circa 1915 - view shows "downtown" district with a few buildings and some homes. Mine operation on extreme left side of photograph. Some trucks present in scene. Picture size 27 1/2 x 7 1/2 inches Frame size 33 1/4 x 13 3/4 inches. . . . . \$300.00

5. Panoramic view of **Leadville, Colorado** August, 1909 Large panorama looking west over the downtown district. Features include: The Arkansas Valley Smelter, The Harrison Smelter, The Colorado Midland railroad Tressel, MT. Elbert, MT Massive, and downtown Leadville. Picture size: 34 x 8 1/2 inches Framed size: 41 x 15 inches. . . . . \$595.00



# The Great Gold Rush Collection

P.O. BOX 5690  
AVON, COLORADO 81620  
USA  
Beaver Creek Village Plaza  
(303) 949-5605  
(303-567-4647-Evenings)

## CANDLEHOLDERS

1. Justrite carbide Lamp Stick 8 1/2 inches long, holds a Justrite carbide Lamp (included). . . . . \$150.00
2. Simple model, 11 1/4 inches long with tear drop shaped handle, all one piece steel, excellent condition. . . . . \$200.00
3. Samuel Nash, Georgetown, Colorado patented 8 inch wire candleholder. Stamped June 2, 1896. . . . . \$200.00
4. Varney style stamped "Russell" 11 1/2 inches good condition. . . . \$125.00

## CARBIDE LAMPS: (Hand held)

1. ITP patented Dewar Mfg. Co. Brooklyn, New York (with label) complete good condition. . . . . \$125.00
2. Brevete S.G.D.G. "Simplon Lamp" Brass top, cast iron base. Swiss, overall 17 inches circa 1900. . . . . \$295.00
3. Austrian Lamp Made by Bleco circa 1910 complete with 4 3/4 inch brass reflector with brass Tag 1. Lamp Locks Together with screw Type hinging bracket. \$350.00
4. Wolf Safety Lamp Co. of America Patented 1673930 stamped "Wolf Hand Lamp-Made in U.S.A." 4 1/2 inch Tin reflector. . \$195.00

## OILWICK CAP LAMPS

1. Beall Bros. Alton, Illinois Trade Mark 4 inch spout, unfired with wick. . . . . \$100.00
2. Dunlaps, Pittsburgh 2 1/2 inch spout plated metal. . . . . \$65.00
3. Star Grier Bros. Pittsburgh, PA brass with drip ring unfired 3 inch spout. . . . . \$150.00
4. Stamped on Brass screw Top is Pat'd March 30'58 Ext'd March 30, 72, Hubbard, Ohio? 3 inch spout. \$85.00
5. Brass font with hinged Tin Top unknown make, 3 1/2 inch spout. . \$125.00
6. C. George Hazleton, PA stamped Pat May 26'08 on Lid, 3 1/4 inch spout. . . . . \$95.00

## MISCELLANEOUS

1. What Cheer Tool Company, What Cheer, Iowa "canteen" type carbide holder 4 1/4 inch diameter with belt hook. Complete with original red and white lettered label. . . \$95.00
2. Pocket size Clinometer English Manufacturer circa 1900 all brass abney type level used for sighting relative height measurements between two points. Cased in an all wood mahogany box. . . . . \$275.00
3. TYPE CARBIDE HOLDER 4 1/4 IITP carbide cap Lamp Float Feed "It's Trouble Proof" The Dewar Mfg. Company Lamp patented 2 3/8" reflector excellent condition. . . . . \$295.00