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COLLECTORS

ISSUE NUMBER 3

SPRING 1997

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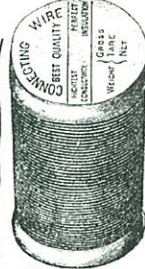
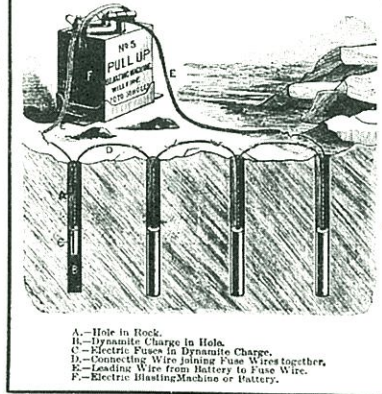
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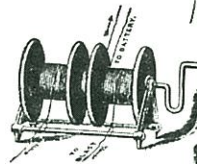


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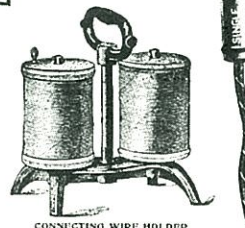
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Roots of the C & A
Mother J & Fraternity
Safety Blasting Machines
Mystery of the Silver Ingots

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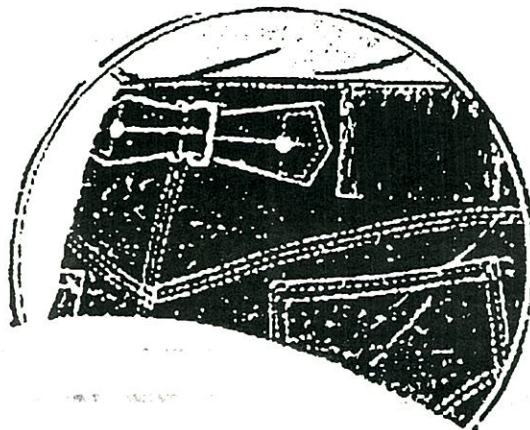
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Advertisement in the Engineering & Mining Journal
from circa 1900, displaying electric blasting equipment
from James MacBeth & Company, New York.

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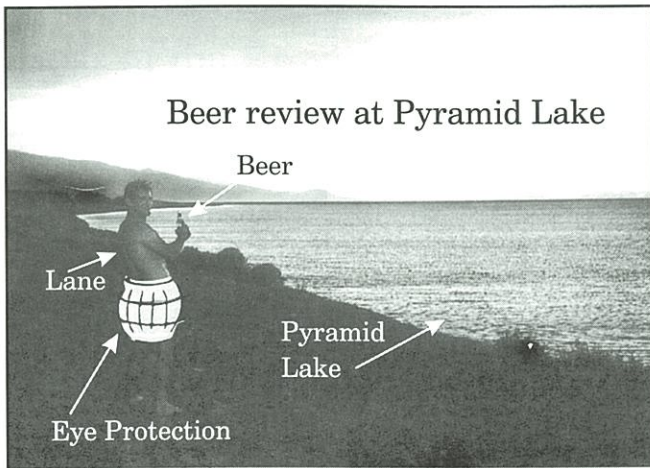
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REVIEW OF MINING



The players are the same but the game is changing. Mining artifact collecting has gone from a few informal reunions and lamp-ins to formal gatherings like Tucson, Phoenix and the upcoming Frisco show. Tucson and Phoenix were great successes. This trend will be just the beginning of a renaissance in mining history and artifacts. I welcome the change but hope the availability of good artifacts will remain abundant and prices reasonable — time will tell.



Klondike Centennial

The Klondike centennial is in progress and this summer the festivities will culminate in Fairbanks and Seattle. This was truly one of man's great gold pilgrimages and it will be commemorated in grand style. Fairbanks will host "Festival Fairbanks", a commemoration of the Alaska/Yukon Gold Rush on September 9-14. Seattle has already begun its celebration of its role in supplying men, supplies and publicity for the rush. The Klondike Gold Rush Centennial has an extensive schedule of events planned throughout 1997 and into the next year. Perhaps the highlight will be the recreation of the arrival of the S.S. Portland

with its "Ton of Gold" on July 19 and 20. There are many excellent books written about the Klondike rush as well as some recent videos. Robert Fox has prepared an excellent selection of these and he can be reached at, 1235 N. Westfield St., Oshkosh, Wisconsin, 54901. Information about the festivities at Fairbanks and Seattle can be obtained by writing the following:

Alaska Gold Rush Centennial
Division of Tourism
P.O. Box 110801
Juneau, Alaska 99811-0806

Klondike Gold Rush Centennial Committee
1301 Fifth Ave. Ste. 2400
Seattle, Washington 98101-2603
<http://www.klondike.org>

Explosives Convention

I had the pleasure of attending the International Society of Explosives Engineers' annual meeting in Las Vegas this February. In addition to a well organized, very informative convention, they had a display exhibiting explosive artifacts related to mining and oil exploration. Mickey Bradley of Wilburton, Oklahoma brought many of his explosives artifacts including an antique leather powder carrier, a powder thawer, and nitroglycerin cans. Those of us who have used ZEBCO casting reels for fishing were surprised to learn from Mickey that ZEBCO stands for Zero Hour Bomb Company and the company initially made electric time bombs for the oil well industry. I know, we would have better luck fishing with their original time bomb, but we'll save that for another article. Mr. Bradley is preparing an explosives artifact museum in Oklahoma and you can

REVIEW OF MINING

get additional information from him at RR 03 Box 770, Wilburton, Oklahoma, 74578.



Bats in Mines

If you've ever been in an underground abandoned mine you'll testify to the fact there are other crazy living things besides humans that have entered into this subterranean realm. If you go around and close the entrances to these man-made habitats (which was the subject of last month's editorial), guess what happens? Besides wasting huge amounts of our money, you've 'wasted' a valuable and irreplaceable home for bats. Bats are a necessary part of the ecological balance and their habitat is critical to their survival. Several bat species are on the endangered list, so their habitat must be protected as well, which means mines must now be evaluated before their closure. Yes, this means more government study and money, but at least they're giving it to guys like Scott Altenbach, who has an appreciation for the mining process as well. If you would like to learn more about bats in mines you can write to Bat Conservation International for additional information. They are supported by tax-deductible contributions which are used for public

education, research, and conservation of threatened and endangered bats. The address is P.O. Box 162603, Austin, Texas, 78716, or you can access the assistant director, Sheryl Ducummon by E-mail at:

sducummon@batcon.org.

Mining History Rendezvous

The Mining History Rendezvous was held in Phoenix, Arizona on April 11th and 12th at the Arizona Mining and Mineral Museum. The meeting had a unique multifaceted approach with a program of presentations about mining history, an auction of mining collectibles and tables where individual collectors could trade and sell artifacts. Mason Coggin hosted the rendezvous and Paul Kouts organized and coordinated all the activities for which he deserves a big thanks. I was able to 'shoot the breeze' with the likes of Bob Schroth, Andy Martin, Reg Pattee, Ed Chris, Charlie Moore and Henry Pohs. There were several interesting talks given: I especially enjoyed Mason Coggin showing slides of ghost town buildings of Arizona — many of which I'm told he lived in.

Sterling Hill Mining Museum

I received a newsletter from the Sterling Hill Mining Museum in Ogdensburg, New Jersey announcing the opening of the new Landmesser Tunnel (interesting name but not politically correct). Rising water since the mine closed has flooded the lower levels making this new tunnel the best way of seeing their interesting ore deposits in-situ. The event celebrating the opening is May 3rd. For more information on this and their newsletter contact;



Richard Hauck
Sterling Hill Mining Museum
30 Plant Street
Ogdensburg, NJ 07439-1126

California Gathering

A mining artifact gathering will be hosted by Don White at his new house in Cedar Ridge, California on May 23rd and 24th. Errol Christman has promised a well attended event with lots of new items. For details and directions call:

Don White - (916) 274-8203
or
Errol Christman - (916) 273-3268.

The Kennedy Mine

Another California attraction is the Kennedy Mine, an underground gold mine in the heart of the Mother Lode country. The Kennedy Mine Foundation has restored the surface facilities of this deep (over 5,000 feet) and rich (over 34 million in gold) mine by contributions and volunteer work. If you would like to visit, contribute or just get additional information, contact:

Mary Ann Tortorich
221 Hoffman Street
Jackson, CA 95642
(209) 223-9542

Photographing Artifacts

Outdoor Photos

The sun is one of the best light sources except that it is very directional and sometimes too bright, causing shadows that obscure many details. To reduce the shadows

use a flash to fill in the areas that the sun doesn't reach. If you don't have a flash or you have the type of camera that will not fire the flash in bright sun, use a piece of white cardboard or aluminum foil to reflect the sunlight into the shadows thus bringing out more detail..

Diffuse lighting is better than direct sunlight. An inexpensive, lightweight solution is to carry some cheesecloth. Spread one or two layers of cheesecloth between two sticks, poles or dowels, so that the light passes through the cheesecloth before striking the object. This will yield a more uniform light and pleasing results.

Indoor Photos

One of the most important things to remember when doing indoor flash photography is to move the artifact (or person) away from the walls. A flash will create a harsh shadow of the object on the wall rendering the photo less pleasing.

Remember too that most flashes are only effective from 5 to 15 feet, (especially in point and shoot cameras). Using a flash on an object under 5 may cause too much light to reach the subject and cause a hot spot which will "burn out" the image information in the photograph. At distances over 15 feet, many flash units are unable to produce enough light to adequately illuminate the subject.

The Color of Light

All light is not the same. Every light source has a color temperature measured in degrees Kelvin. The explanation of color temperature is to take a "Black Box" and apply heat to it and measure the temperature in degrees Kelvin. As the temperature is increased, the color radiated from the "box" changes from red to orange to yellow, etc. The

REVIEW OF MINING



lower the color temperature the redder the light. Each light source is assigned a color temperature based on the color properties of the light emitted:

- 100 watt light bulb = 2740° K
- Photo flood = 3200° - 3400° K
- Fluorescent = 3500° - 5000° K*
- Flash = 5000° - 7500° K
- Noon Sun = 5500° K+
- Afternoon Sun = 4800° K
- Late Afternoon Sun = 4300° K

* Most fluorescent tubes emit a light spike

in the green area of the color spectrum. We do not see the spike, but the film does.

Keep these temperatures in mind when photographing objects where the color of the object is important. If you are serious about your photographs, filters are available at camera stores that correct for color temperature and for shooting pictures under fluorescent lights.

When submitting photos for this publication, glossy originals yield the best results. If you have any questions you can reach me at (702) 425-1944 or E-Mail me at PMPPhoto@kali.sparks.nv.us ☒



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RESTORING MINING ARTIFACTS

by Roger Peterson

Mining artifact collectors generally find the subject of this article to be an issue that will spark debate among the most stoic of our membership. Historically, most collectors seem to favor items that were representative of how they “came out of the mine”, with little or no restoration to improve the artifacts condition. This leaning was probably driven by sad experiences with “replica” items and pieces that may have been restored and sold by unscrupulous people who failed to mention that the items had new, or repaired components. Unfortunately, as artifacts become harder to find, many times the only items available to the beginning collector are those that are in very poor shape: the “rejects” of more advanced collectors.

As one who began looking for mining artifacts fairly recently (about 5 years ago), and faced with a somewhat limited budget, I began to realize that attaining unique or rare items in most, if not all popular product areas (candlesticks, carbides, oilwicks, etc.) was going to be very difficult.

Through a series of interesting circumstances, I had the opportunity to restore one of the most desirable of all candlesticks: an Aetna Powder Company folding design which dates back to the late 1890's (see Fig 1).

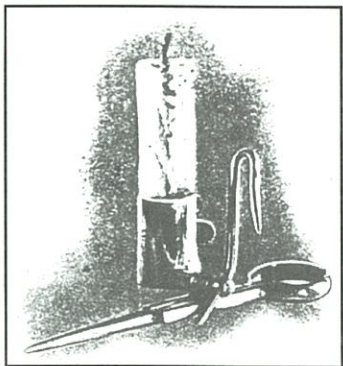


Figure 1. Advertisement for the Aetna Powder Company folding candlestick: from Fairbanks, Morse & Co. catalogue 49 issued in 1901 (authors collection).

Because of this experience I've become a strong proponent of restoration as long as the following criteria are met:

- 1) The item should be restored as closely to it's original condition as possible. The restorer should not take any license to go beyond what the original manufacturer/builder apparently had in mind. (In the case of Patented items, or pieces that were advertised in trade or catalogue publications, it is easy to follow this guideline: “Blacksmith” and custom-made items are often more difficult to evaluate in this regard.)
- 2) Any item that is replaced on a restored artifact should be durably marked as such so future buyers will not receive an unpleasant surprise (As far as I'm concerned, discrete markings are acceptable).
- 3) If at all possible, the item should be marked with the restorers name, date of restoration, and location of the restorer so that future collectors can identify the source of the restoration. Years from now this marking may help collectors identify and value the item based on the history and work quality of the restorer.
- 4) I like to mark the item, where possible, with a bit of history about who may have previously owned the piece, so future generations may find the artifact of more interest. To my surprise, I have found many items I get for restoration have

interesting histories to go with them. I believe this may be because these items, while undesirable to many, have been held on to by the really concerned collectors as they sense the historical value of the piece. Accordingly, they have saved it out of their concern to preserve that history regardless of outward appearance. These are also the type of collectors who take time to preserve what little may be known about the relic in hopes that someday it may further contribute to a better understanding of what mining and life was all about during that period.

Here's the story behind the first candlestick restoration I undertook:

Jim Watchous was a Denver collector of many historical items. His interests centered largely around gem and minerals, but as is so common with most of us, he couldn't ignore the opportunity to pick up an item of historical interest. Jim was born in 1931 in Collinsville, OK. His father was an employee of Boeing Aircraft and Jim apparently picked up interests in mechanical things from him. The family moved to the Denver, Co. area in the mid-1940's when Jim was in his last years of high school. He married his wife Betty in 1961, and enjoyed a career working for Albert Sechrist Co. (a manufacturer of lighting equipment) and later with EMJD, a Denver metal fabricating company. Working as a machinist with these companies led him to develop skills in silver smithing, metalworking and jewelry making that would ultimately lead to many awards, among which included the "Best Of Show" in the 1968 Denver First Federation Show.

While "rockhounding", Jim was able to pick up some very nice mining items from other gem and mineral enthusiasts. Unfortunately in 1993, at the age of 61, Jim

succumbed to a heart attack. He certainly had a keen eye for good mining artifacts, particularly miners candlesticks. At the time of his death he had managed to accumulate some excellent items, including a Kaba and Pelham patented folding candlestick, (Colorado Springs, Co. 1913) a "Hendrickson Cripple Creek Co." as well as the Aetna folding candlestick referred to above. Unfortunately, the Aetna had lost its original thimble (someone had attempted to replace the thimble with an inaccurate and unworkable design of the wrong material). It had suffered some severe corrosion on its steel components due to their galvanic differences with the brass material used in the handle. (See Fig. 2).

Galvanic Series*	
<i>Corroded end (anodic)</i>	This series is built up on actual experience with corrosion and laboratory measurements. Metals grouped together have no strong tendency to produce galvanic corrosion on each other; connecting two metals distant from each other on the list tends to corrode the one higher in the list. Voltage figures are not given because these vary with every new corrosive condition. Relative positions of metals change in many cases but it is unusual for changes to occur across the spaces left blank. The chromium-irons change position as indicated depending non oxidizing conditions, acidity, and chloride in solution. The series as it stands is correct for many common dilute water solutions, such as weak acids and alkalis.
Magnesium	
Aluminum	
Duralumin	
Zinc	
Cadmium	
Iron	
Chromium iron (active)	
Chromium-nickel-iron (active)	
Soft solder	
Tin	
Lead	
Nickel	
Brasses	
Bronzes	
Monel	
Copper	
Chromium Iron (passive)	
Chromium-nickel-iron (passive)	
Silver Solder	
Silver	
Gold	
Platinum	
<i>Protected end (cathodic)</i>	
*McKay & Worthington, "Corrosion Resistance of Metals & Alloys," A. C. S. Monography 71, 1936	

Figure 2. Galvanic Series Table—note the difference between Iron and Brass: This accounts for the corrosion often seen on old items which have components of both Iron and Brass. From *Burndy Electrical Connector Catalogue # 50*, issued in 1950, and as noted at bottom of table (authors collection).

After Jim's death Betty Watchous was reluctant to part with any of his various collections as she knew how much they meant to him. In 1994 she met Leo Stambaugh of

Powder Cache Antiques in Georgetown, Co. and was impressed with his interest in preserving mining history. Not only did he have a interesting shop with many unique Colorado and Western items for sale, he had also acquired one of the finest collections of mining artifacts in the Denver area and had housed it in a separate museum that told the background of many items and how they related to Colorado's history. Betty decided that was where Jim's mining artifact collection should reside and there is where you can now view it! Figure 3 shows the display Leo put together highlighting the collection and showing a picture of Jim with some of his prizes!

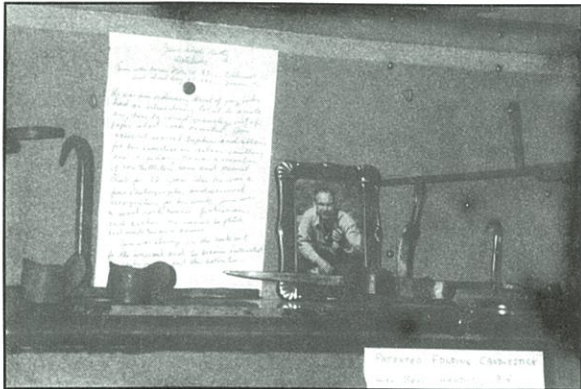


Figure 3. A photo of Jim Watchous surrounded by some of his prized mining items. Displayed in the museum of Leo Stambaugh, @ Powder Cache Antiques, 612 6th St., Georgetown, Co. 80444 – (303) 569-2848.

Leo knew I was interested in restoring and preserving artifacts and ask me if I would be interested in attempting to repair the Aetna. We were certain original parts would never be found to replace those that had been lost or corroded beyond salvation.

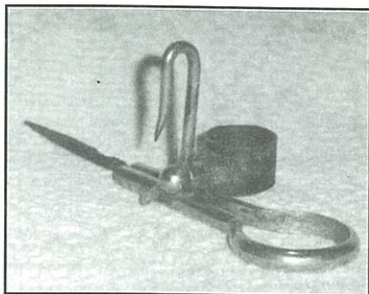


Figure 4. The Aetna folder pre-restoration: note the severe corrosion on the spike and the improper thimble.

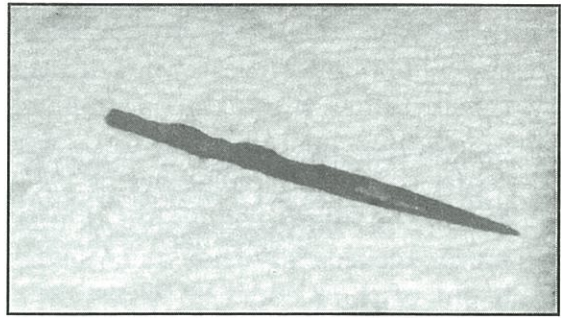


Figure 5. The heavily corroded spike of the Aetna pre-restoration.

Figures 4, & 5 shows the Aetna pre-restoration while figure 6 shows the finished product. Along the way I received lots of help and advice from folks like Chuck Tesch of Lead, S.D. who let me borrow one of his Aetna's (yes, you read right... he has **TWO!**) to make exact measurements on thimble size, print, thumb piece details etc., Steve Rush of Conifer, Co. whose sharp eye spotted one of my little dimensional "boo-boo's", Henry Pohs for telling me that proper restorations are O.K. ("they restore auto's don't they?") , Leo Stambaugh for having the faith to let me try it, and my wife Connie for putting up with some of my emotional outbursts when things didn't go just right! Lastly, a **HUGE** appreciation of Jim and Betty Watchous for having the good sense to hang on to the rough Aetna pieces and not let them end up in the trash!!

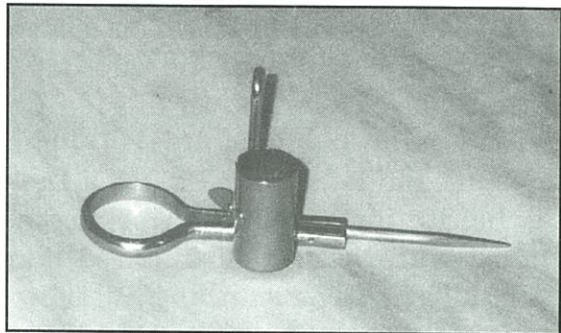


Figure 6. The Aetna after restoration: The print on the outside of the thimble is an exact duplicate of that on existing Aetnas: THE AETNA POWDER CO. CHICAGO
The inside of the thimble contains the following inscription:

From the collections of:
Jim Watchous & Leo Stambaugh
Georgetown, Co.

Restored by Roger Peterson, Conifer, Co. 9-95

Since I undertook this first restoration I've done a number of pretty exotic candlesticks including a Wythe Walker patent (Beaver, Utah Terr. 1877: apparently one of (Colorado Springs, Co. 1913), Amede Bernier patent (Victor, Co. 1899), and a "Eureka" (Cyrille Pateneau patent: Helena, Montana Terr. 1883). "Before" and "after" photos of the Pateneau restoration are shown in figures 7 & 8.

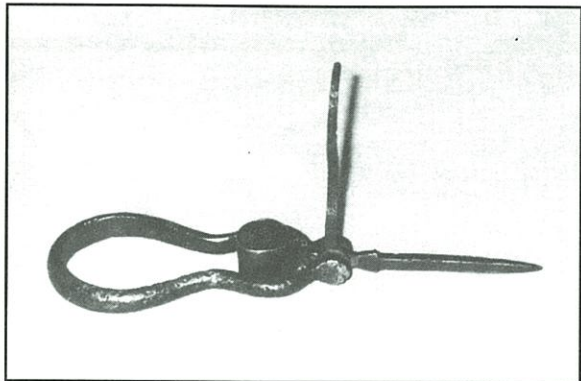


Figure 7. A "Eureka" reciprocating folder pre-restoration (courtesy of George Gaspari, Santa Cruz, CA).

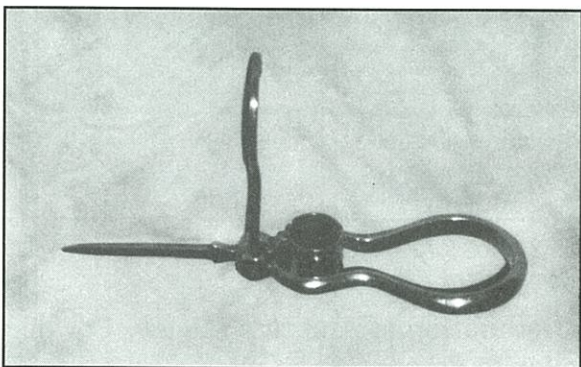


Figure 8. The "Eureka" folding candlestick shown in fig. 7 after restoration.

Inscription inside the thimble reads:

"EUREKA"
CYRILLE PATENEAU PAT.
1883

Restored by Roger Peterson
Conifer, Co. 12-96

Other than having to endure some typical and expected frustrations during the restorations, I've found this provides further rewards to what was already a fascinating hobby. Quite possibly the restoration efforts have prevented these pieces from unwittingly

being thrown away by some person because he or she didn't feel they were of significant value.

**THAT IS A THOUGHT THAT
MAKES ME FEEL GREAT: IT MAKES
ALL THE EFFORT EVEN MORE
REWARDING !!**



Postscript...

Repair or restoration has become a controversial subject not only in the field of mining artifacts but virtually all other areas of collectibles and antiques. The very antiquity we desire creates deleterious changes in the integrity and collectibility of the artifact. This was the subject of the spring issue of the 'Mineralogical Record', vol. 28, no. 2, Mar-Apr, 1997. The mineral collecting community is suffering the same confrontation as we are in deciding whether to accept restoration as an acceptable procedure within the collecting community. I think we can conclude, from Roger's article, that restoration is a part of collecting antiquities if it is done responsibly and clearly identified as such...ED.

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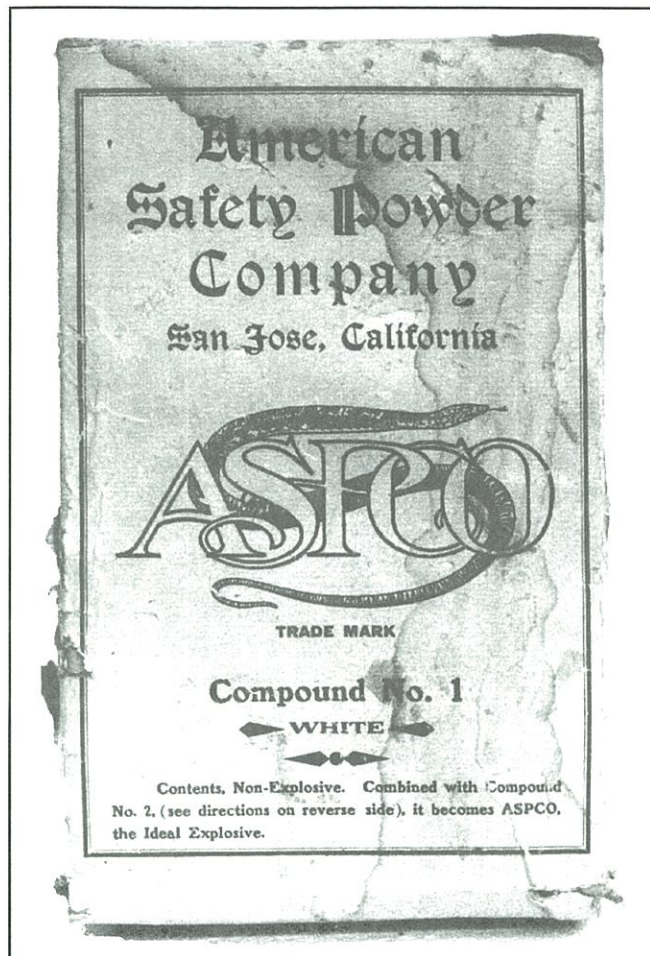
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AMERICAN SAFETY POWDER COMPANY BOX

by Deric English

Founded in 1907 and folding in 1909, the American Safety Powder Company (ASPCO) was a short-lived powder company that produced a chlorate blasting powder. This company was listed in the San Jose, City Directory in. The United Powder Company, in the Auzerias Building of San Jose, acquired ASPCO in 1909, but little is known regarding the United Powder Company. Due to the short time ASPCO was in existence, any item from this powder company would be quite uncommon.

This particular box contained a "Compound No. 1" that was to be mixed with an equal portion of "Compound No. 2." Instructions on the box call for a pliable oil cloth, rolling pin or bottle, and sieve or sifter to prepare the powders for mixing. Most likely these items, if used at all, were substituted with a piece of canvas, whiskey bottle and window screen. When Compounds No. 1 and 2 were mixed and blended to a uniform color, no further mixing was required. When large quantities of ASPCO were needed, a patented mixer, funnel and cartridge filler were available from the manufacturer. The patented cartridge filler could fill six cartridges at a time. One could also obtain, from ASPCO, waterproof paper cartridges to hold this explosive. (All of these would be interesting blasting collectibles.)



5" x 6" x 9.75" cardboard American Safety Powder Company box, CA - 1907.

Detonation of American Safety Powder is similar to detonation of most explosives, but ASPCO recommended that Lion or XXXXX (Quintuplex) blasting caps be used. ☒

BLACK HILLS - ROCKY MOUNTAIN MINING COLLECTORS' CONVENTION FRISCO, COLORADO

June 13-14, 1997

Friday, June 13, 1997

3pm — 6pm

7pm — 8pm

8pm — ???

Check-in Holiday Inn Frisco

Gluck-Auf cocktail party, Grand Foyer

Trades, Sales, Reunions, What ever

Saturday, June 14, 1997

9am — 10am

10am — 1pm

Set up for Mining Collectibles Show

Mining Collectibles Show and Sale for Convention

Participants Only

Lunch-on you own

Mining Collectibles Show and Sale for general public

6pm — 7:30pm

Buffet Dinner - Holiday Inn

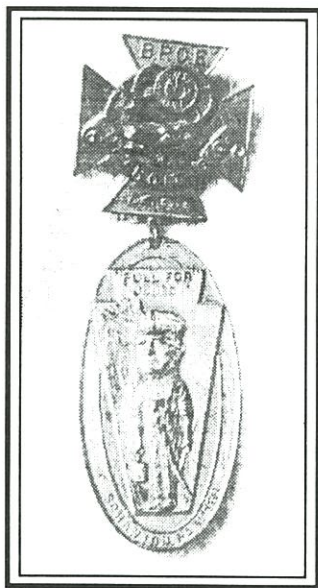
8pm — 10pm

Auction of mining related Treasures

Mother Jones and Fraternity

by Deric English

An Elk Grand Lodge Reunion badge from the 1910 Benevolent Order of the Elks convention in Detroit was presented in issue number twenty-two of the *Mining Artifact Collector*. This badge, (shown below) from the Scranton, Pennsylvania lodge, depicted a coal miner with his pick, lunch bucket, and oilwick lamp. Above the miner was the phrase, "PULL FOR JONES." Readers were urged to offer their ideas on the significance of this phrase and Mr. Robert Williams of Gretna, Louisiana responded. He suggested that this phrase might be referring to the Scranton lodge's support of the legendary Mother Jones.

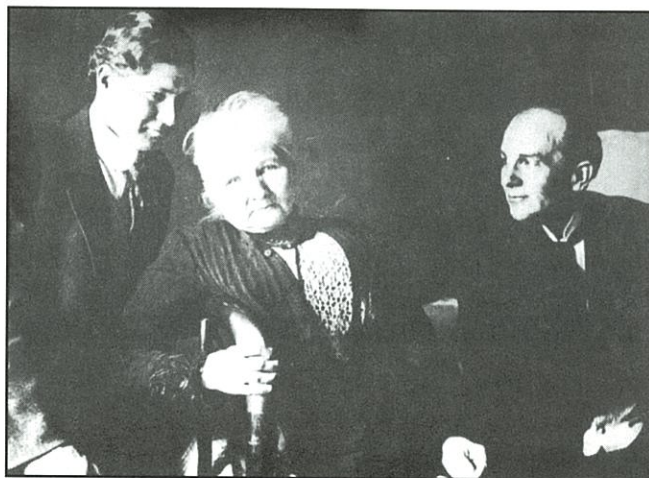


Benevolent and Protective Order of Elks badge from the Detroit Grand Lodge Session, 1910. Scranton lodge, number 123.

Mary Harris Jones was born May 1, 1830 in Cork, Ireland. Her father emigrated to America in 1835 and worked as a railroad construction laborer. His work took him to Toronto, Canada where Mary was raised. In 1861 Mary married a member of the Iron Molders' Union. In 1867 her husband and four children died in a yellow-fever epidemic and in 1871 she lost her possessions in the Chicago fire. Following these tragedies, she began attending Knights of Labor meetings

and her involvement in labor struggles continued for half a century.

She was known to friends as Mother Jones and to her enemies as the most dangerous woman in America. She was one of the most gifted and independent labor organizers in American history. Expressive of her fearless commitment to improving the lives of the working class is a phrase from her speech delivered at the 1911 United Mine Workers convention: "No man, no set of men will ever have owned me except the working class." This maternalism endeared her to many and it followed her throughout her career.



John Lawson, President of District 15 U.M.W. of A., Mother Jones, and Horace Hawkins, member of the Denver Bar and U.M.W. of A. attorney.

Often Mother Jones' labor organizing efforts came at great expense. Her defiance of America's mine operators and political cronies led to her being harassed, jailed, deported, and even labeled a prostitute. Sleeping in tent colonies and facing the end of a guard's rifle barrel was not an uncommon experience. One of her more memorable moments of defiance was when she gained national attention by organizing striking United Mine Workers' wives in marches, armed with mops and brooms. In

Pennsylvania, West Virginia, Colorado, and many places between, Mother Jones fearlessly marched side by side with miners of Miners and United Mine Workers of America.

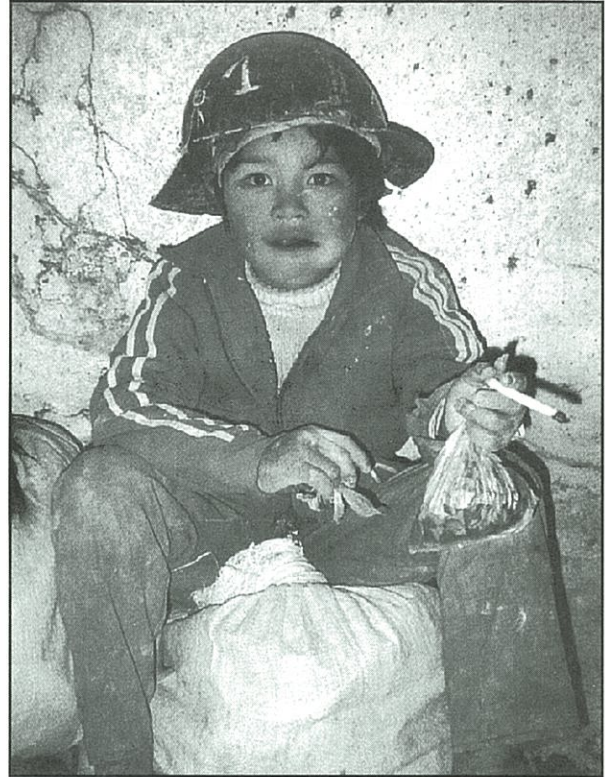
On May 1, 1930, hundreds of friends celebrated Mother Jones' hundredth birthday, and on November 30, 1930, she died peacefully. As she requested, she was buried along with her "boys" in the cemetery of the United Mine Workers at Mount Olive, Illinois.

References:

Atkinson, Linda, Mother Jones, The Most Dangerous Woman in America, New York: Crown Publishers, 1978.

Foner, Philip S., Mother Jones Speaks, Collected Writings and Speeches, Monad Press/New York, 1983.

Steel, Edward M., The Correspondence of Mother Jones, University of Pittsburgh Press, 1985. ✕

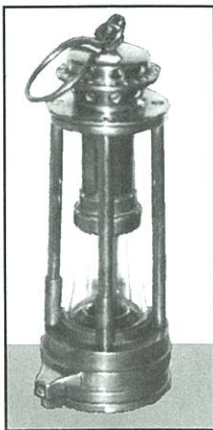


Six year old Bolivian miner subsisting on a steady diet of cigarets and coca leaves. Mineralien-Welt, 7.Jg., Heft 6, Nov.-Dez. '96, page 39

**EIGHTH MEETING
OF THE
MINING HISTORY ASSOCIATION**
at
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June 5-8, 1997

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Top Prices Paid for Uncommon Safety Lamps



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- Twist Blasting Machines
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- Miscellaneous Mining



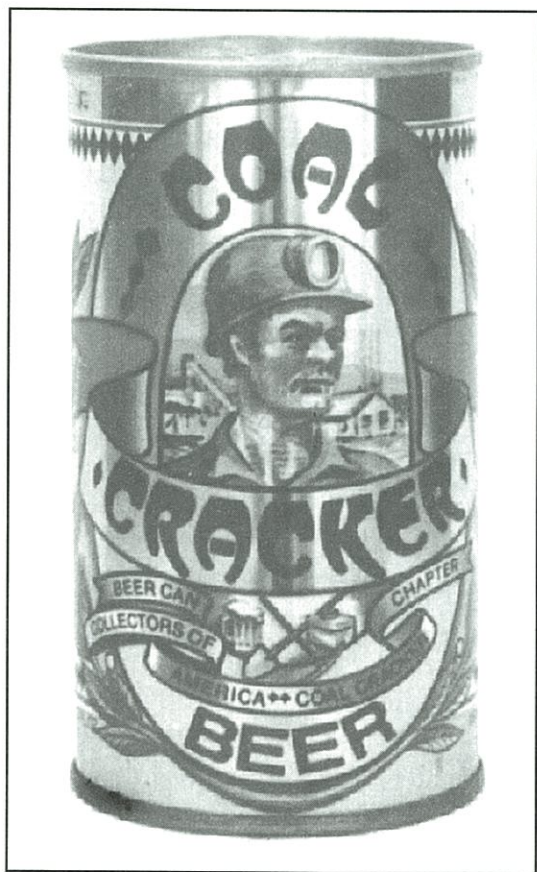
1915 Justrite Ad

*Reproductions available for \$50
Embossed steel, in color 16½" x 11½" wide
Genuine original also available*

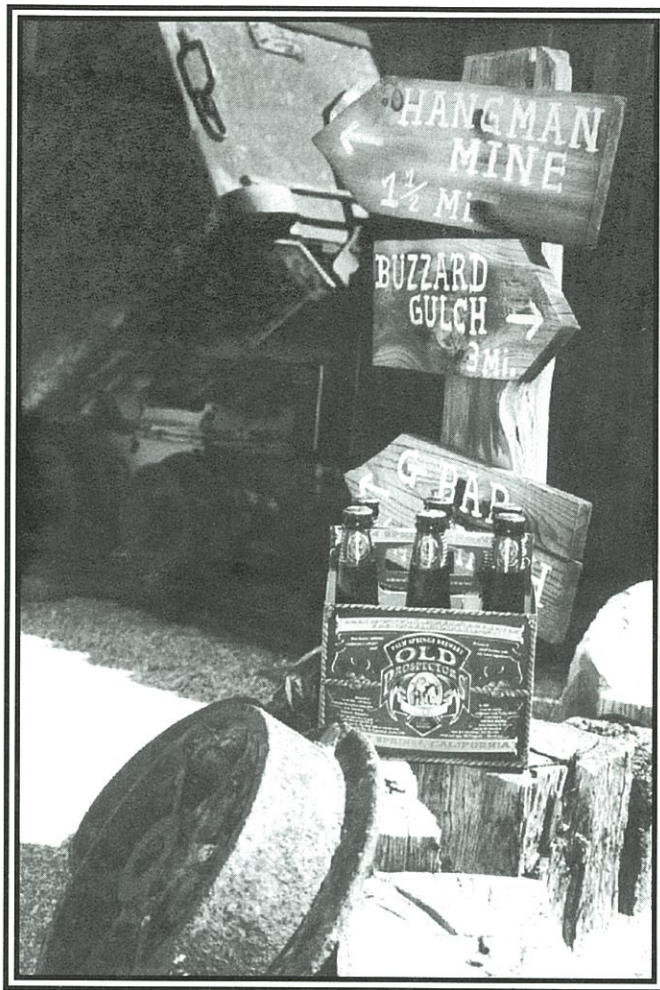
Mining Themes for Liquor Labels

by Rory Gibson

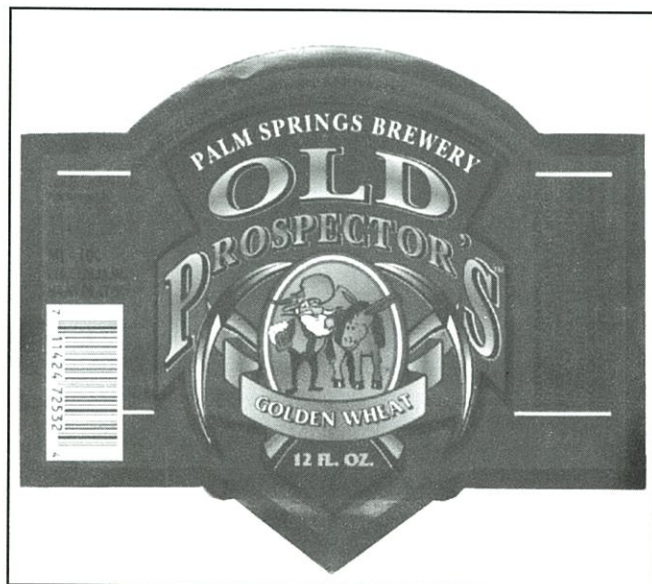
Mining has left an indelible impression on the minds of Americans and the symbols of mining such as the pick, the prospector, and the head-frame have been used for expressing the independent adventurous spirit of the prospector. Of course, advertisers have been aware of this for some time but there seems to be a resurgence of the 'miner theme' especially in regard to liquor sales. This association is by no means serendipitous, the two activities have had a long association. The following labels of beer and wine bottles represent some of the latest:



*Coal Cracker Beer
Submitted by Deric English*



Mining display at the Palm Springs Brewery



Old Prospector's Beer Label

Mining Themes for Liquor Labels

by Rory Gibson



Rory Gibson has done some investigative 'beer reviewing' in Palm Springs, California where he found a great micro-brewery called the Palm Springs Brewery. They have renovated a historical building and added a mining theme. The beer itself has a mining flavor as can be seen by the "Old Prospector" label. The gold rush mining graphics appear to be a winning strategy to give the brewery a dynamic image that also ties in with the heritage of California. For more information and maybe a free beer, contact Rory at:

P.O. Box8665
 Palm Springs, CA 92263
 (760) 327-MINE



MINE SHAFT

DOC TIFFANY'S LADIES OF THE NIGHT WHITE

A CALIFORNIA WHITE WINE
 ALCOHOL 12.5% BY VOLUME

As the story goes, the good old doc had more than gold, he had a secret tunnel! Ladies of the night used his tunnel to get to the hotel across the street. When the women in town found out just how their men were being entertained, the hotel burned down.

Taste fine wine, see the lady of the night and life size animated miner at the
MINE SHAFT
 9525 Main Street
 Plymouth, CA 95669

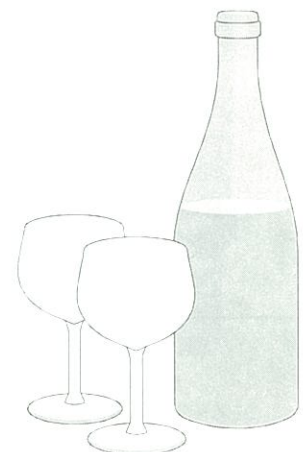
Bottled by
 Charles B. Mitchell Vineyards
 9221 Stoney Creek Road
 Somerset, CA 95684

GOVERNMENT WARNING
 (1) ACCORDING TO THE SURGEON GENERAL, WOMEN SHOULD NOT DRINK ALCOHOLIC BEVERAGES DURING PREGNANCY BECAUSE OF THE RISK OF BIRTH DEFECTS.
 (2) CONSUMPTION OF ALCOHOLIC BEVERAGES IMPAIRS YOUR ABILITY TO DRIVE A CAR OR OPERATE MACHINERY, AND MAY CAUSE HEALTH PROBLEMS.

CONTAINS SULFITES

A Label from a wine bottled by Charles B. Mitchell Vineyards and obviously served at the Mine Shaft, Permosa, CA.

Submitted by Jim Swallow

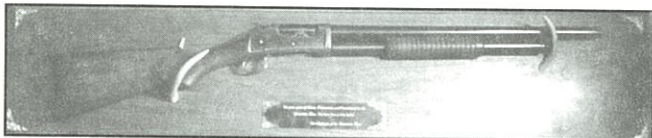


Guarding the Bullion

by Al Winters

Western gold and silver mines presented many security challenges for the operators throughout the mining, milling, storage and shipping processes. Coarse gold in the ores became the target of a few underground miners and at least a few mill workers were tempted by the fines which collected in the stamp traps and on amalgam plates. Temptation however, was magnified many times over when the ores were finally processed into bullion. At this point bullion bars were as good as gold and received the utmost attention during the storage and final shipment from the property. Many highway robbery attempts and at least a few successes were recorded as bullion shipments were made from isolated mines and settlements throughout the vast Western territory.

Guards were hired and armed by the various gold mining and transportation companies to protect the mine's product from both internal and external theft. Gold bullion from the Homestake Mine was shipped by stage during the early years and later by rail after train service was established in the 1880's. The picture is that of a Homestake bullion guard and a bullion shipment to the



Winchester 12 Gauge Shotgun.



A turn-of-the-century guard stands watch over an impressive stack of bullion.

U.S. Mint. The guard is Mr. Harry Teer, who served Homestake in several capacities over many years. The arms used by the Homestake bullion guards during this period were the Winchester 12 gauge, riot Model 1897 shotgun with an outside hammer and Colt 1892, 38 caliber revolver.

Both weapons were marked with the letters HMC cut or burned into the shotgun stock and HMCO cut or burned into the pistol grip. The revolver shown is also numbered and the words Homestake 3 stamped into the metal Frame (probably means there are at least 2 others somewhere). The revolver and shotgun shown make

wonderful additions to my collection of Homestake artifacts and I only wish they could talk.



Colt 1892 - 38 cal revolver

Al Winters
 Consulting Mining Engineer
 P.O. Box 642
 Story, WY 82842
 (307) 683-2403 Phone & Fax



THE ELECTRIC BLASTING CAP

by Eric Twitty

Hardrock mining, coal mining, open pit mining, and quarrying had many technological differences, but they also had many similarities. One of the most fundamental characteristics they shared was their reliance on blasting for economic viability. Prior to the early 1870's the only explosive available to miners and quarrymen was low grade black powder ignited with safety fuse.

Then came nitroglycerine in the mid-1860s, and dynamite in 1867. Both high explosives could only be effectively detonated with blasting caps, also known as *exploders*. During the late 1860's and early 1870's inventors developed two basic classes of blasting caps - those detonated with safety fuse, and those detonated electrically. Electric caps set off dynamite according to identical principles as conventional caps and fuse, their explosive material was the same, and they also were made of copper or brass tubing. However, their internal construction differed; electric caps had a platinum bridge embedded in a densely packed mercury fulminate charge which abutted against another, looser fulminate charge in the tip of the cap. The wires attached to the poles of the

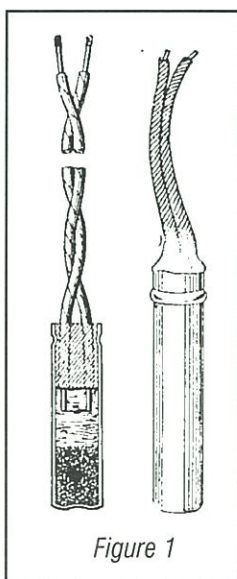


Figure 1

platinum bridge trailed out of the cap's end, which was sealed with a plug of sulfur glass (Fig. 1). The functioning of a cap was simple in its brilliance - as electric current passed through the wires, it met resistance in the bridge, which heated up to the point of detonating the mercury fulminate. Although each electric cap manufacturer had its own particular specifications,

most caps were designed according to the these general features.

The history of the electric cap has roots predating both nitroglycerine and dynamite, and its development was a result of explosives inventors trying to devise military weapons. Dr. Robert Hare, one such inventor, developed the forerunner of the electric exploder in Philadelphia in 1830 (VanGelder, 1927:738-739). Hare's contraption was a wood vial filled with sensitive potassium chlorate packed around multi-strand wires, which became progressively thinner inside the cap until only one hair-like wire remained. The purpose of reducing wire thickness was that its capacity for conducting electrical current decreased, resistance increased, and the thinnest wire functioned as a bridge. Without knowing it, Haze had established the basic form of the electric cap, which future inventors would only improve upon.

Between 1830 and approximately 1850 other inventors tinkered with electric exploders and came up with devices such as the "magnet fuze" and the Statham Fuze, but electric caps did not experience popularity because there was no efficient and reliable source of current to detonate them, the early exploders were unreliable, and igniting blasting powder with safety fuse was a cheaper alternative for the blasting done in the minerals industry.



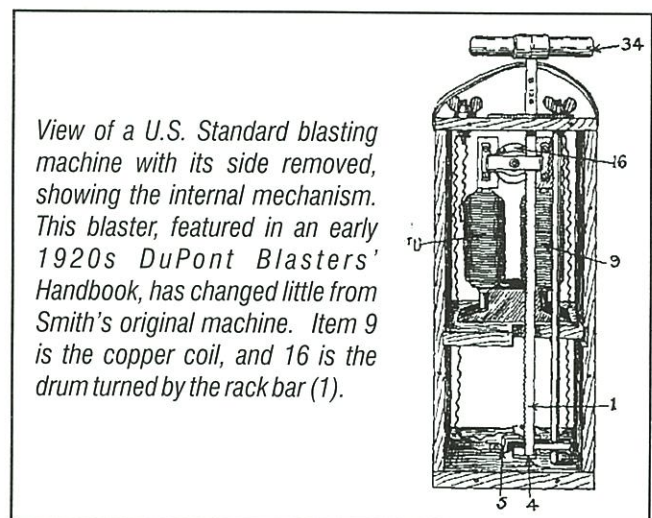
Alfred Nobel indirectly revived interest in electric exploders in the mid 1860's when he began manufacturing nitroglycerine. Proper detonation of nitroglycerine, Nobel found, required blasting caps, which included electric exploders. A number of progressive mining companies in the Mother Lode, the Comstock, Michigan's Upper Peninsula, and several construction contractors in the East began blasting with the liquid explosive, which they found performed much better in hard rock than blasting powder. A small demand for caps and electric exploders began to take shape.

Notable explosives pioneers, including H. Julius Smith who blasted on Massachusetts' Hoosac Tunnel project, T.P. Shaffner who was president of the U.S. Blasting Oil Co., Jabez B. Dowse, Charles A. Browne, and George Mordey Mowbray who also blasted on Hoosac, began to devise and manufacture electric exploders for their work with nitroglycerine. Mowbray beat his kindred explosives pioneers in devising the modern electric blasting cap during the late 1860's. Mowbray's cap consisted of a small charge of a powerful explosive wrapped in gutta purcha placed adjacent to a second charge, encased in a varnish-smothered copper tube. Like Haze's early exploder, Mowbray's cap utilized a bridge, albeit more sophisticated.

Electric blasting was not made practicable on the improvement of exploders alone, equally as important was the development of a portable, reliable source of electricity. The experimental blasting done between 1830 and 1865 utilized acid batteries weighing in excess of 100 pounds to generate the electric charge. Because of their fragility, their ease of spilling, and unreliable current, the one-hundred pound glass vessels of acid were not the best sources of electricity for military or commercial blasting. In the late 1850's or early 1860's Baron Von Ebner made the first great stride toward the first practical blasting machine in Austria (VanGelder, 1927:741).

The Baron's machine was a wood box encasing a heavy dynamo, turned by a hand crank on the box's side. Although the machine's weight was not much lighter than the batteries, it was certainly less fragile, had no acid to spill, and produced a reliable current.

The concept of Ebner's machine traveled to the United States where inventor Moses Farmer modified it into something practicable for blasting in mines and quarries. Farmer's machine weighed a mere 120 pounds, it also was activated with a hand crank, and when its operator had it turning at what he guessed to be the correct RPM, he depressed a key on the box's top, completing the circuit.



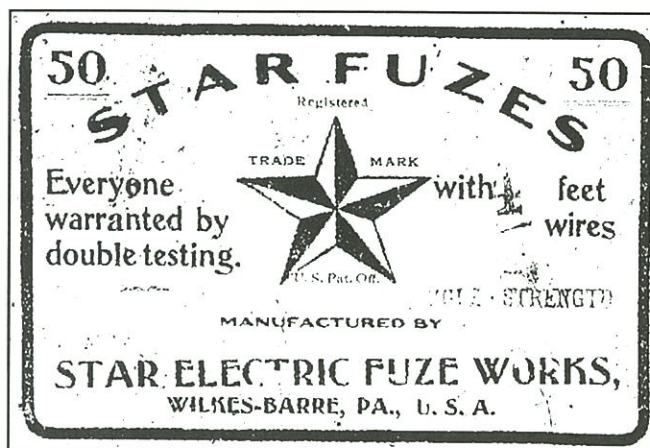
While working on the Hoosac Tunnel, explosives genius H. Julius Smith took the next steps toward improving blasting machines, bringing electric blasting closer to a form usable by the minerals industry. First, Smith took Farmer's machine, improved the dynamo, lighted the entirety to 77 pounds, and made the key self-activating when the machine produced the desired current. Not satisfied with the above machine, Smith continued development work, and devised another model in the early 1870's. Smith's alternative blasting machine measured five inches wide, eight deep, and sixteen high, it

weighed less than 30 pounds, and its smaller, more efficient dynamo was activated by rack and pinion gearing (VanGelder, 1927:750). To use the machine, its operator simply drew the rack bar up, and slammed it down, the pinion gear turning the dynamo. Smith had developed the modern blasting machine, which explosives engineers would improve, but never replace. At least as far back as the 1880's blasting supply makers began offering machines labeled *No. 3*, capable of shooting 20 to 30 holes, *No. 4* which could fire 40 to 50 caps, and the *No. 5*, which was a pull-up type capable of detonating 75 to 100 caps (Firing Blasts by Electricity, 1905: 55).

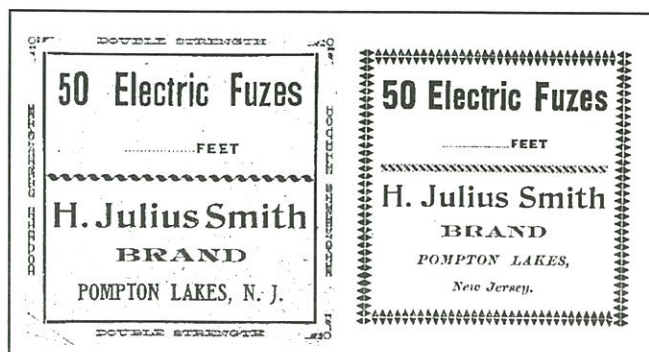
Inventors, electric blasting caps, blasting machines, and their demand were all in place by the early 1870's to support a small electric blasting industry. The Laflin & Rand Powder Co. and the Oriental Powder Co. were first in North America to undertake the manufacture of caps and machines with any measurable amount of energy. Between approximately 1869 and the early 1870's Smith's electric caps were sold by Oriental, and Browne's through Laflin and Rand. This arrangement changed in 1874 when the Browne brothers sold their small plant to Laflin & Rand, which hired H. Julius Smith as chief engineer at its Wayne Mills in New Jersey (VanGelder, 1927:748, 750). Smith continued development of caps and machines at Laflin & Rand's facilities. In addition to the above two companies, the Giant Powder Co. involved itself in the electric blasting market by developing and manufacturing its own exploders in 1874.

The electric blasting industry was quite small as the 1870's gave way to the 1880's, but through the decade it quickly picked up and a number of manufacturers went into business. Laflin & Rand was on the forefront of the industry, even when its relations with H. Julius Smith soured in 1886. Smith dissociated himself from the company and started his own electric blasting

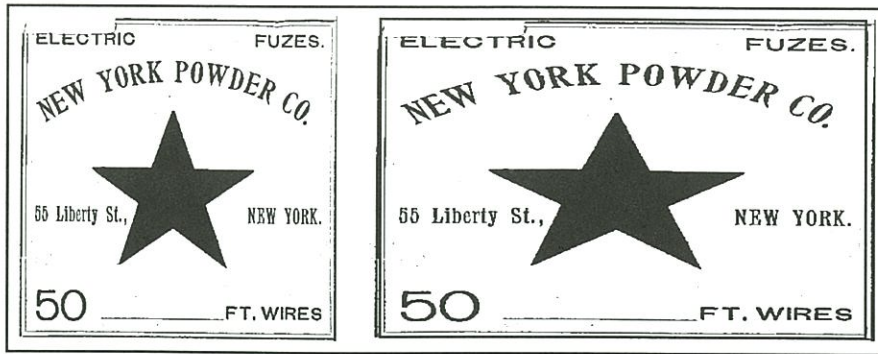
supply outfit, which became successful and provided Laflin & Rand with considerable competition (VanGelder, 1927:751). Smith's son took over their Pompton Lakes, New Jersey factory when H. Julius died in 1901, and when Smith's son died in 1905, holders of the estate sold the plant to DuPont, which ran it under its own name. At approximately the same time DuPont acquired Laflin & Rand and absorbed the large company. The H. Julius Smith and Laflin & Rand names would appear on electric blasting supplies and exploders no longer.



This label was used by the Star Electric Fuze Works, started by German interests in Pennsylvania's coal fields. During World War I the Alien Properties Custodian, a conservative government bureau, seized Star because of its German ownership. The government sold Star to the Atlas Powder Co. in 1919, with no proceeds going to its previous owners. According to the label, the caps were single strength and had four foot wires, indicating these were the least expensive, and they were used in shallow drill-holes. (Courtesy Lane Griffin).



These labels were used by H. Julius Smith between 1886 and 1905, the left being older.



The center row was used by the New York Powder Co. between 1891 and 1905, the left being older. (Courtesy Hagley Museum & Library).

Rising interest in electric blasting in the 1880's prompted a number of other manufacturers to go into business. Among them was the partnership of Walter Hill and J.J. Blakely in Rhode Island, which sold their plant to the Aetna Powder Co. in 1889 (VanGelder, 1927:752). During the mid 1880's, under the direction of Karl Sundstrom the American Forcite Powder Mfg. Co. began to manufacture electric caps, the Hecla Powder Co. entered the business, and the New York Blasting Supply Co. sprang to life. In 1887 Sundstrom left American Forcite, formed a partnership with James Macbeth and the two entrepreneurs went into the electric blasting supply business themselves. Sundstrom supplied the technical knowledge and Macbeth supplied the capital.

JUNE 2, 1900. THE ENGINEERING AND MINING JOURNAL.

Electric Blasting Apparatus

Adapted for Firing all kinds of Explosives used in Blasting.

Victor Electric Platinum Fuses

Superior to all others for exploding any make of dynamite or blasting powder. Each fuse folded separately and packed in neat paper boxes of 25 each. All tested and warranted. Single and double strength with any length of wire.

Blasting Machines.

The strongest and most powerful machines ever made for electric blasting. They are especially adapted for submarine blasting, large railroad quarrying, and mining works.

Victor Blasting Machine.

Fuses 8 to 8 miles; weighs 10 lbs.; adapted for prospecting, etc.

Insulated Wires and Tapes. Blasting Caps, Fuse, Etc.

SEND FOR CATALOGUE. MANUFACTURED ONLY BY

JAMES MACBETH & CO., 128 Maiden Lane, New York, U.S.A.

This advertisement, run by James Macbeth in the Engineering & Mining Journal from the late 1890s to the early 1900s, shows a pull-up blasting machine on the left, and the type of machine based on Smith's design on the right. (Courtesy Erroll Christman).

Together they formed James Macbeth & Co., which made rack and pinion blasting machines under the U.S. Standard name, pull-up machines, and electric caps and crank blasting machines under the Victor name (see cover). Last, the Electric Exploder Co. also went into business at this time. By 1905 DuPont, well on its way to

controlling the American explosives industry, acquired all of the above companies either through direct purchase or through its subsidiary, Eastern Dynamite.

Many early, visionary mining engineers touted electric blasting as being superior to conventional caps and safety fuse. Electric caps were more fool-proof than standard blasting caps, in part because they came from the manufacturer wired and ready for use. Since they required no assembly on the part of miners, as did conventional caps and fuse, the chances of electric caps causing a misfire were greatly reduced. In addition, since they required no assembly, miners spent much less time on preparing charges, which, in a large mine, added up to a considerable quantity of man-hours



Electric cap makers usually packed their caps into boxes using the form shown in the illustration.

Electric blasting offered several undeniable safety features. Because electric caps had no spark or open flame, they lessened the danger of setting off mine gas or coal dust in coal mines (Munroe & Hall, 1909:43). Electric caps were a sure-fire means of shooting a round in sopping-wet blasting conditions because they were waterproof (Coal & Metal Miners' Pocketbook, 1902:46; DuPont, 1932:61). Moreover, in some conditions, such as

underwater, there were the only reliable means or shooting a round. Last, electric caps offered no danger of hangfire, which is when the flame in safety fuse temporarily stalled, and resumed often when miners were examining the face to ascertain why one of their charges failed to go off.

Despite the benefits electric blasting offered, prior to the 1910's it was not popular among mining companies for four major reasons. First, purchasing a blasting machine, electric caps, and specialized supplies required capital, which many small mining companies either did not have or would not spend. Why should they spend the money when in the short run conventional caps and safety fuse cost least? Second, until approximately 1910 most available blasting machines were not suited for shooting the number of holes usually required by hardrock mining. Most blasting machines predating 1910 had a 10 cap capacity, while blasting most hard rock working faces required between 10 and 30 charges. H. Julius Smith and Laflin & Rand did offer higher-capacity machines, but they were exceedingly rare and had to be special-ordered, and they required a special wiring technique, discouraging would-be electric blasters. The most significant reason why electric blasting was not popular among mining companies was that early electric circuits detonated the charges simultaneously, which was very undesirable in hardrock mining, and only slightly less so in coal mining. Driving tunnels, sinking shafts, and bringing down ore or coal was accomplished efficiently by drilling holes in groups, and shooting the groups in a sequence known as a *firing order*. The *cut group* was shot first, and it blasted a cavity out of the working face which served as a weakness for the other groups. *Relievers* were shot next, and they blasted away the bulk of the working face, utilizing the weakness created by blasting cut group. *Trimmers* followed, outlining the tunnel,

shaft, or stope, and *lifters* defined its floor. Blasting these groups simultaneously, as electric blasting did, ruined the effect of using the firing order, necessitating a greater quantity of explosives and more drill-holes, which ultimately drove the cost up. In addition, bigger explosions had the potential to cause structural damage to the workings, and it scattered the shot-rock, making considerably more work for the mucker.

Prior to the 1910, the only way to adapt electric blasting to a firing order was to wire an expensive circuit delay box into the line, which was not made available until the 1890's, or wire each group of holes separately, run the wires to the blasting station, and hope shooting each bunch of charges did not damage the wires running to the individual hole groups to be shot later in the sequence.

Prior to 1910 electric blasting saw greatest popularity in quarries. The blasting pattern quarries often used was a line of closely spaced drill-holes, which was very effective at parting blocks of stone when the holes were shot at once. In addition to quarries, electric blasting became somewhat popular in coal mines prior to the 1910's for the safety factors it offered. Although it was more efficient to shoot the drill-holes in a coal breast in a firing order, it was not as critical as it was when blasting hard rock.

By the 1910's several events had come together to make electric blasting efficient and easier. First, shortly before 1900 H. Julius Smith, the Giant Powder Co., and other explosives inventors devised several varieties of delay-action electric caps. They had miniature lengths of safety fuse attached to them, which were ignited by the cap's platinum bridge. Once the length of fuse ignited, it burned to the cap's core charge, delaying the cap's detonation by the length of the fuse. By 1910 leading explosives makers offered three different delays, at last granting hardrock miners their firing order. The second event came in the 1910's when mining

and explosives engineers, explosives makers, and the Institute of Explosives Makers began pursuing a campaign aimed at improving the safety of blasting.

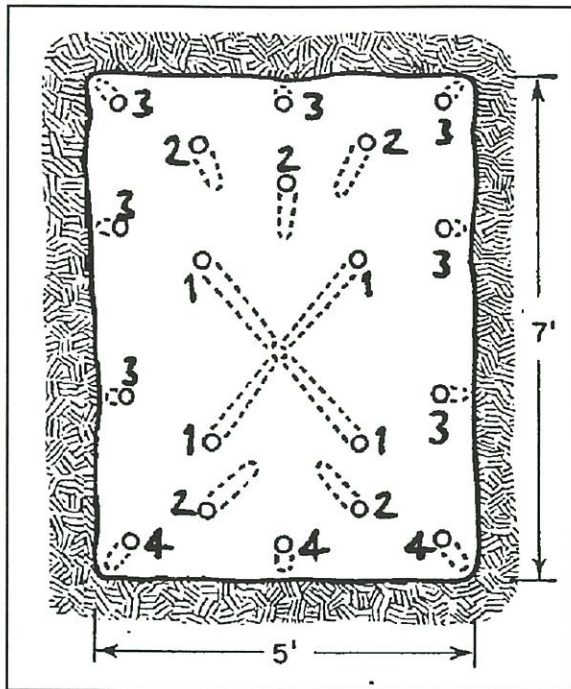
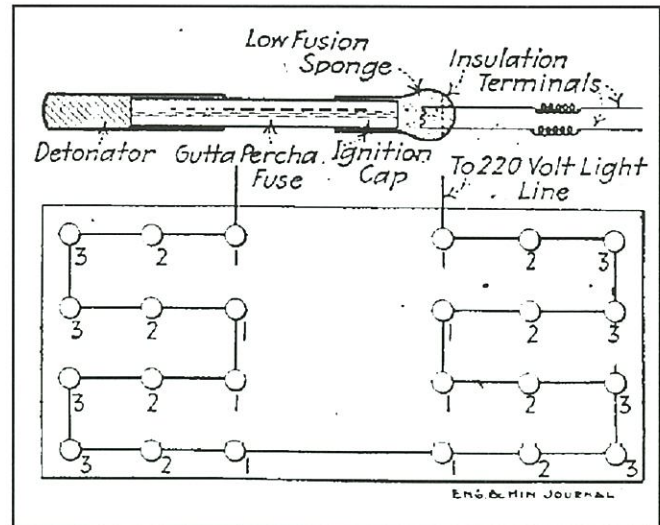


Illustration of the hole pattern miners commonly used for driving a tunnel, known as the Pyramid. The circles represent drill-holes, and the dashes show the hole angles. Group #1 is cut shot which miners loaded with standard electric caps, #2 is the reliever group which was loaded with 1st delay caps, #3 are trimmers loaded with 2nd delay caps, and #4 are lifters loaded with 3rd delay caps. (Author).

Some engineers felt electric blasting was one way of achieving this goal, and they set about educating miners and their bosses on the merits of and technicalities of electric blasting. Last, makers upgraded their standard blasting machines to a 30 cap capacity, enough to shoot most working faces in hardrock mines. Because of these improvements, by the 1920's many large metal and coal mines, underground and open pit, had switched to electric blasting.

When blasting electrically, miners had to prime their dynamite cartridges before

loading them into drill-holes. The process was similar to the methods used for priming with standard cap and safety fuse.



The top illustration shows a cut-away view of a delay-action cap. The schematic below the cap is a wiring diagram for shooting the working face of a shaft, which could not be done electrically without the delay-action cap. The hole pattern is a wedge cut, and all holes angle toward center. Circles numbered 1 are the cut shot and were primed with standard electric caps, #2 is the reliever group and were primed with 1st delay caps, and #3 are trimmers primed with 2nd delay caps. (Engineering & Mining Journal July 12, 1913 p65).

The most popular method was to side-prime and tie the cap's lead wires in a half-hitch knot around its waist (Coal & Metal Miners' Pocketbook, 1902:333). The benefit to this method was if the wires were tugged the knot tightened without dislodging the cap. Another method miners used to prime with electric caps involved inserting the cap into the end of the cartridge and passing the lead wires back to its middle and through a hole in the cartridge's center (DuPont, 1932:61; Young, 1946:136). A third method of priming combined the above two ways, but it was less popular because it took longer (DuPont, 1932:61; Young, 1946:136). Once

one cartridge for each drill-hole was primed, miners slit all of the cartridges to be loaded end to end so they could expand during tamping. Following this, the cartridges were laid out with the tools, and loading the round began.



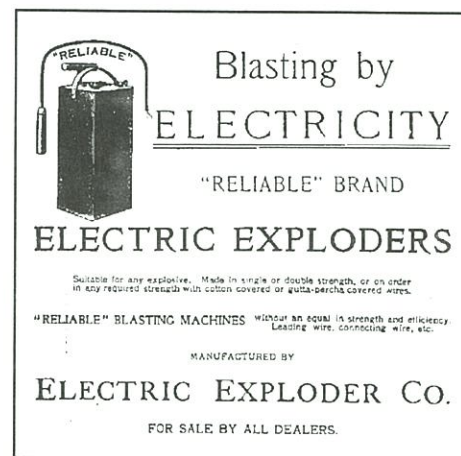
This advertisement was run by the California Cap Co. in the *Explosives Engineer* during the mid 1920's. The ad neatly illustrates standard electric caps, delay-action caps, conventional caps, and their respective packaging. Delay caps 1 - 4 were commonly used for driving most tunnels and shafts, while higher delays were used for blasting stopes and large tunnels (Hercules, Inc).

What a miner was faced with as he looked at a working face loaded and primed with electric caps was an array of sealed drill-holes with two wires hanging out of each one. How the miner wired the shot depended on the number of holes to be fired and the source of electricity to fire the shot. The easiest and most commonly used wiring arrangement was the *series*, represented by Figure 7 (Firing Blasts by Electricity, 1905: 55). If there were over 75 holes to be fired, then the *multiple series* pattern was best, ensuring each cap received adequate current (Fig. 9). H. Julius Smith, recognizing the multiple series as best for blasts containing numerous charges, developed a blasting machine with three screw terminals on its top; two positive and one ground terminal. The concept behind this arrangement was that breaking the wiring into two circuits provided adequate

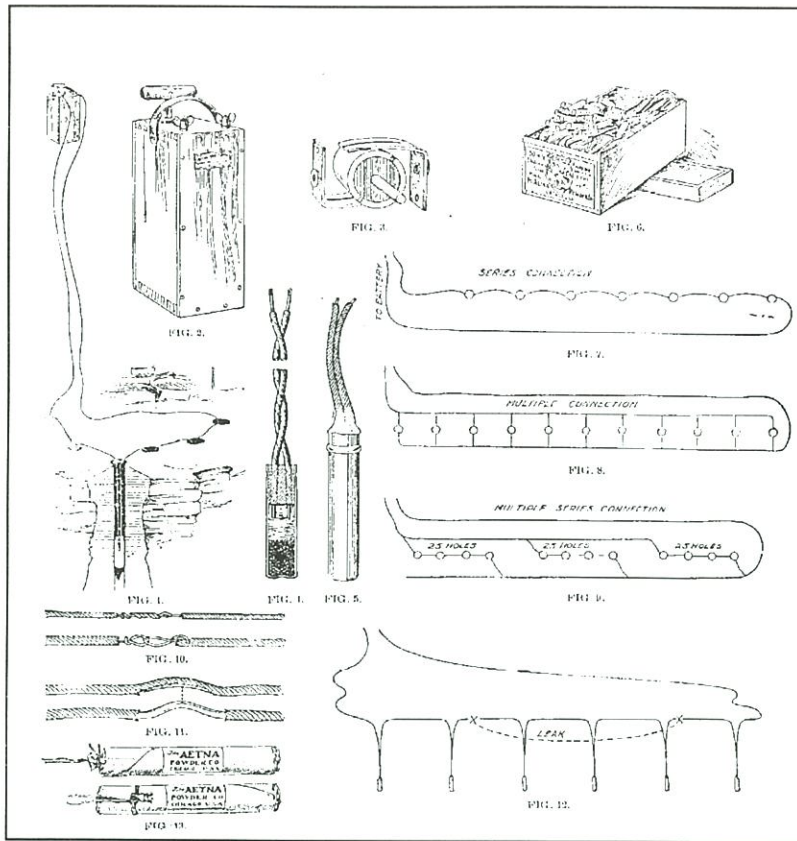
current to all caps (Firing Blasts by Electricity, 1905: 55). By 1910 manufacturers dropped these machines from their lines.

Some large mines, such as the Utah Fuel Company's Castle Gate Mine, used electricity tapped from the mine's electric lighting system to fire their rounds (Harrington 1909: 243). The problem with shooting holes with this source of power was that the electric current was so great it detonated the first cap, breaking the circuit before the others in the round went off. To overcome this problem, the *multiple connection circuit* (Figure 8) was devised, eliminating the circuit's dependency on each cap remaining intact long enough for all to receive their charge before exploding (Firing Blasts by Electricity, 1905: 55).

Once the miner checked and polished all of the connections after wiring the round together, he connected the circuit's two remaining free wires to spools of blasting wire and paid them out to the nearest point of safety, where his blasting machine awaited. When he thought all was clear, the miner connected the circuit's lead wires to the terminals on the blasting machine, shouted the traditional "fire in the hole" and slammed the blasting machine's handle down, shooting the round.



Advertisement run in the *Engineering & Mining Journal* by the Electric Exploder Co. between the late 1890's and early 1900's. The blasting machine shown is an accurate reproduction.



The Aetna Powder Co.'s illustration accompanying the article *Firing Blasts by Electricity* run in the *Mining & Scientific Press* in 1905. The box of electric caps shown in the upper right, the blasting machine in the upper left, and the dynamite cartridges in lower left are probably an accurate representations of the products Aetna offered between 1889 and 1914. The cardboard box in the upper right was standard packaging for electric caps until approximately the 1940's, but the label is indicative of pre 1920's.

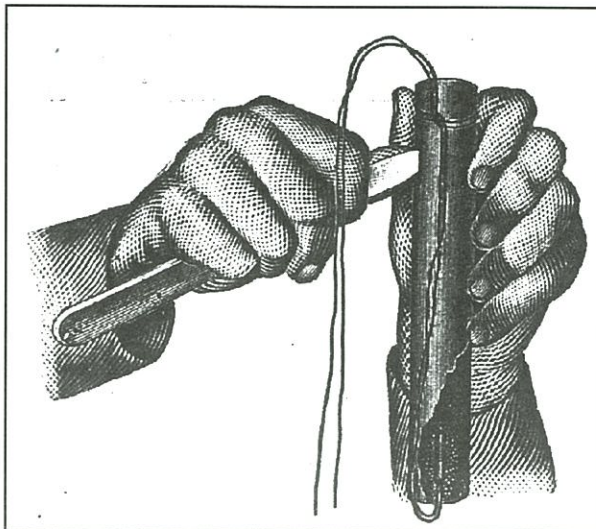
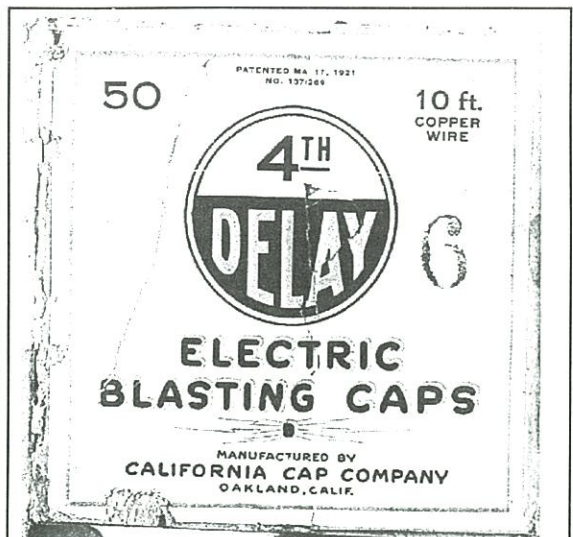


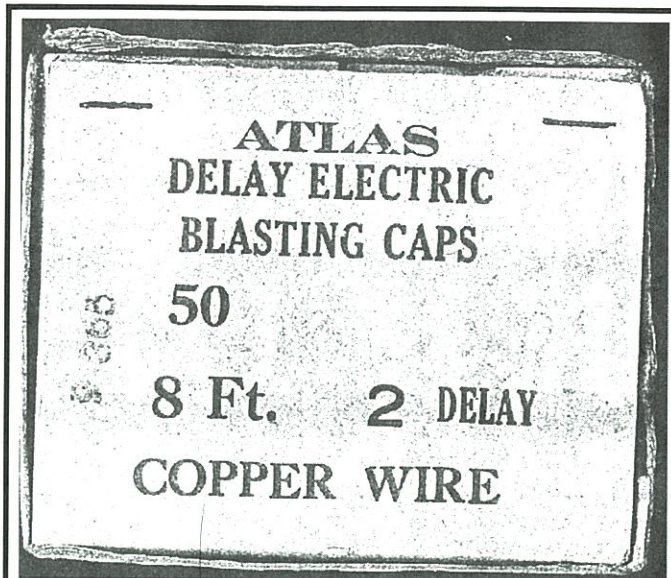
Illustration of a dynamite cartridge, properly primed with an electric cap, being slit end-to-end so it will expand in the drill-hole during tamping.



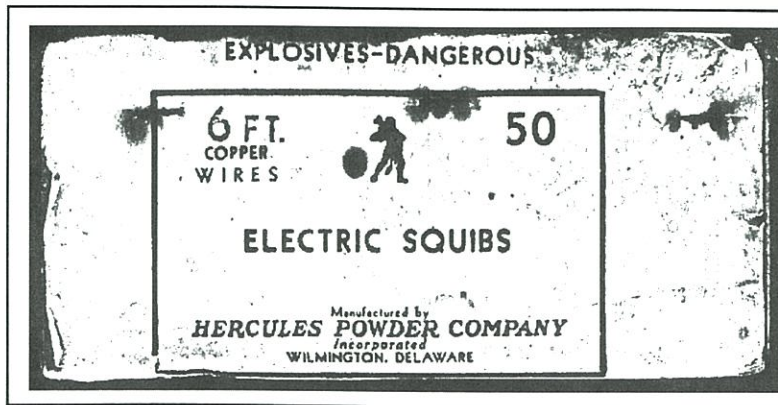
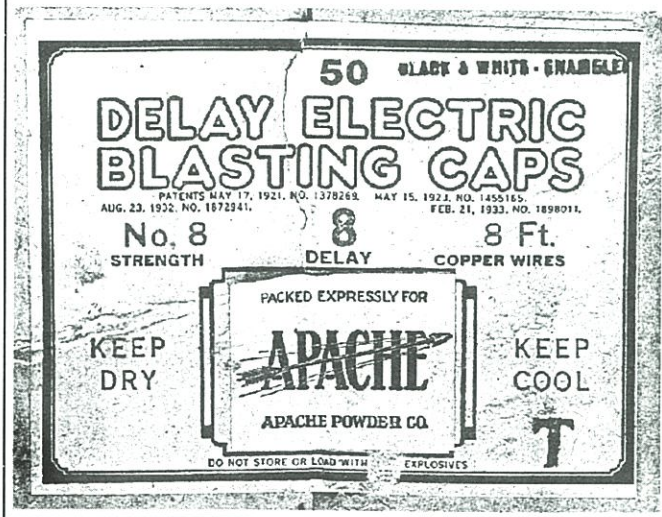
Photocopies of rare actual electric cap boxes made by the California Cap Co. sometime between the early 1920's and the late 1920's. Compare these labels with those shown in the ad. The variety of delays suggest either blasting in stopes, or driving a large tunnel. (Courtesy Andy Martin).



The two sides of a rare electric cap box sold by the Apache Powder Co. The patent numbers indicate this box dates between the mid and late 1930's. Several of the patent dates are those claimed by the California Cap Co. This fact, coupled with conventional California Cap tins featuring Apache's name, suggests the box was wholesaled from the California Cap Co. (Courtesy Andy Martin).



The two sides of a rare electric cap box sold by the Atlas Powder Co. The patent dates and company logo indicate this box dates between the late 1930's and late 1940's. (Courtesy Andy Martin).



Photocopy of a cardboard box containing electric squibs. Electric squibs operated according to the same principles as electric caps, and they were used to ignite blasting powder. They made their appearance in the 1910's, but never experienced popularity because safety fuse and match squibs were cheaper for igniting powder. Coal miners, which constituted the greatest consumers of powder, tended to buy the cheapest supplies. (Courtesy Larry Kuester).

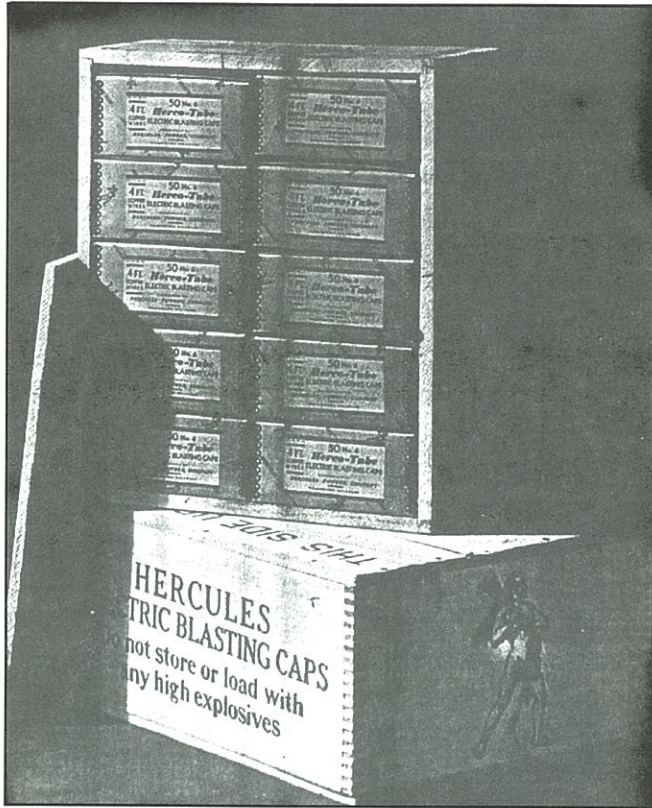
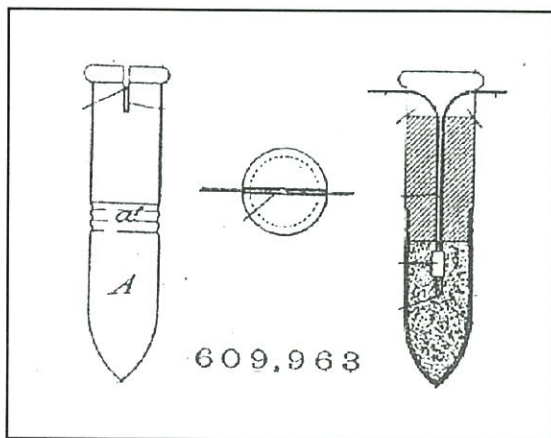


Illustration showing how manufacturers packed cardboard boxes of electric caps into the larger wood boxes for distribution to customers. The label on the wood box indicates it dates from the late 1920's to the mid 1930's. (Courtesy Larry Kuester).

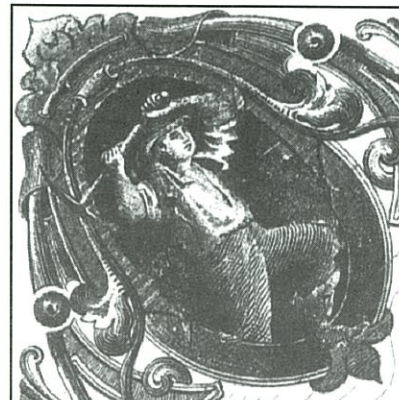


A fundamental step in priming a dynamite cartridge was piercing the paper wrapper so the cap could be inserted. In 1898 William P. Ferguson patented an electric cap with a pointed nose designed to save the miner the trouble. Why this concept never became popular for electric and conventional caps is a mystery.

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Note: Many of the photocopies had to be reduced from their original size to fit this publication. ✂



MYSTERY OF THE SILVER INGOTS

by Bob Weldin

Everyone loves a mystery, or at least I hope so-because I would appreciate your help in solving one. About a year ago, a lady from Southern California asked me to determine the origin, use and value of three small ingots (Figures 1 & 2). Recently she called again to say her silver bars might be for sale, at the 'right price'. Could I help her determine who might be interested and at what price?. As with most antiques, price is established by such factors as age, condition, scarcity, historical significance and, most importantly, the last price received for a similar item. I don't have the answers to some of these factors but perhaps, if I tell you what I know (or have been told) then you might share any information you have that might be helpful in making a value determination.

have been assured that all the other Joshua trees in the area were vigorously explored and these three ingots were the only ones found. Besides, this mystery is not a search for buried treasure, it is a search for historical data. In her search for information, the owner contacted numerous experts, such as numismatists, college history professors, museum officials and U.S. mint personnel. They either didn't know anything or didn't want to be bothered. Assuming you are not in one of those categories, let's take another look at the ingots.



Figure 1A

Figure 2A

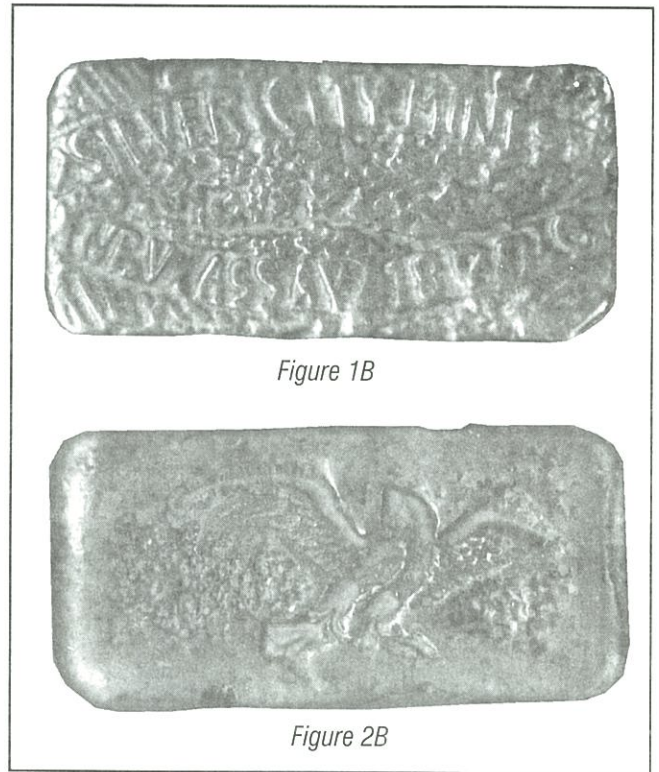


Figure 1B

Figure 2B

The ingots were apparently discovered by a boy digging under a Joshua tree near the edge of the California desert. Don't leave me at this point to go dig for buried treasure. I

Figure 1 shows the facing or raised sides and Figure 2 shows the back or recessed sides of each ingot. Each ingot weighs approximately three (troy?) ounces. Figures 1 & 2 have been slightly enlarged to show greater detail. The facing side of ingot 'A' (Figure 1) shows an eagle and the abbreviation P.M. C. 18?? (the last two numbers of the date are not readable). The

back side of ingot 'A' (Figure 2) also shows and Eagle with arrows in it's talons. The facing side of ingot 'B' reads as follows: 'SILVER CITY MINES NEV. ASSAY 1870 C.' The back side of ingot 'B' appears to be the same eagle that appears on the back side of ingot 'A'. The facing side of ingot 'C' (Figure 2) shows the imprint of a warrior facing seven stars.

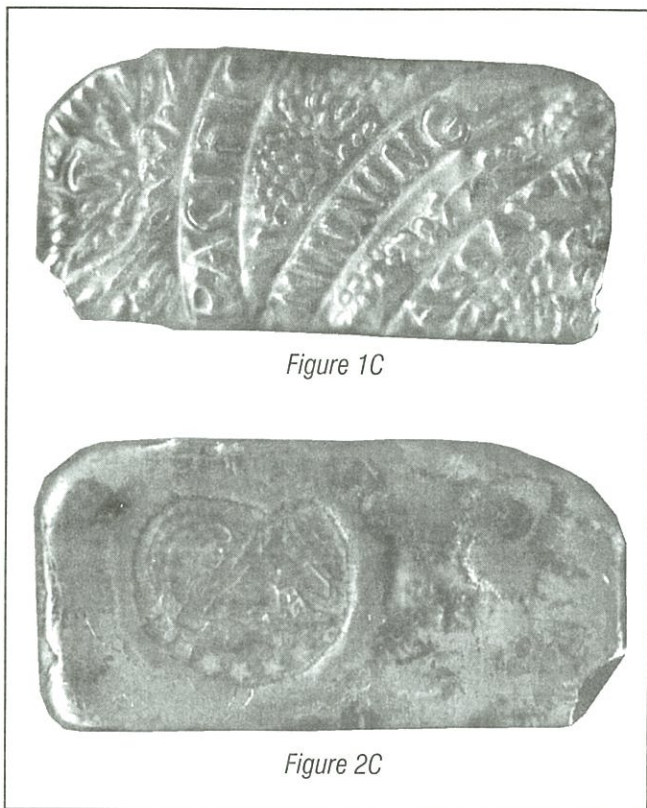


Figure 1C

Figure 2C

The explanation I originally gave the owner, based on the preceding information, goes something like this. "It would appear, the ingots were minted or cast by the Pacific Mining Company (P.M.C.) and Silver City Mines, Nev.- possibly part of the Comstock Lode, Virginia City, NV. (although I am not a Comstock historian and I'm not certain the Pacific Mining Co. was in that area). Nineteenth century silver mining companies in the 'Far West' frequently cast their own silver ingots to sell to the U.S. Mint. They also cast small ingots to use as gifts to stockholders (or VIP's) and sometimes to use for trade or exchange. These three ingots are small

enough in size and denomination to have been used as a substitute for money. Remember, there was a shortage of U.S. coins in the 'Old West' and a general distrust of U.S. paper money. Records exist of U.S. paper dollars being exchanged for as little as 50 percent of face value in exchange for food and materials. Although technically illegal, 'trade' coins and paper certificates of odd denominations (so as not to be confused with official U.S. money) were commonly used for money substitutes in the early mining camps. In fact, people living in the western silver camps were isolated from their eastern government and probably had a stronger economic allegiance to the mining company that supported them. Although I have no specific reference to three ounce silver ingots being used for trade and currency, it does not appear unlikely." I also told her I had no idea what value a collector might put on her ingots but certainly, much more than the current spot price for silver. I went on to suggest that she contact the Carson City Chamber of Commerce or the old Carson City Mint/Museum for possible confirmation of my theory as to the origin/use of the ingots. Her contact with the Carson City authorities did not result in any information (or even speculation) about her unique silver ingots.

If you have any factual data or plausible theories about origin, use or value of these small silver bars (or even authenticity), please let me know.

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Spokane, WA 99208
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ROOTS OF THE CALUMET AND ARIZONA

A Short History of the Calumet and Arizona Company

by H. Mason Coggin, PE & LS

INTRODUCTION

*Me Pard was a fellow called Tony-
A likeable chap all-around,
A good one for drillin', hand-blastin'-
A fair one, at catchin' hup ground.*

*'E' 'ated those chaps they called Texans,
'E' 'adn't no use for a Finn,
The Swedes, the Bohunks and Mexicans
'E' 'ated them creatures like sin.*

*'E said it was God made the Dagoes-
The Devil, e' said, made the Dutch,
But oo' ever hit was made the Cousin Jack
'E reckinned, 'e didn't make much.*

(Ned White)¹

Of all of the ethnic groups that poured into Bisbee, Arizona at the turn of the century it was the Cornish Miner or Cousin Jack who brought the technology that allowed the camp to become a large industrial complex during the first half of this century.



Figure 1. Bisbee Downtown, 1899

This is approximately how Bisbee looked at the time the directors of the Lake Superior & Western Exploration Company entered the district. The Copper Queen smelter can be seen making smoke in the bottom of Tombstone Canyon. Beyond the smelter stacks and just to the right the Copper Queen's Czar and Spray shafts can be seen. The C&A's initial location in the district was just beyond this property.²⁸

Bisbee is at once both quaint and beautiful. Its reason for being is the rich deposits of copper, gold and silver that once underlay its rugged limestone surface. Over a century of copper production from this camp produced enough copper to build a belt for the world sixteen inches wide and one inch thick.² Since discovery in the 1870's the history of the camp has been well documented. The tradition of mineral production was the result of the great economic genius of several people and the persistence of many hard rock miners.

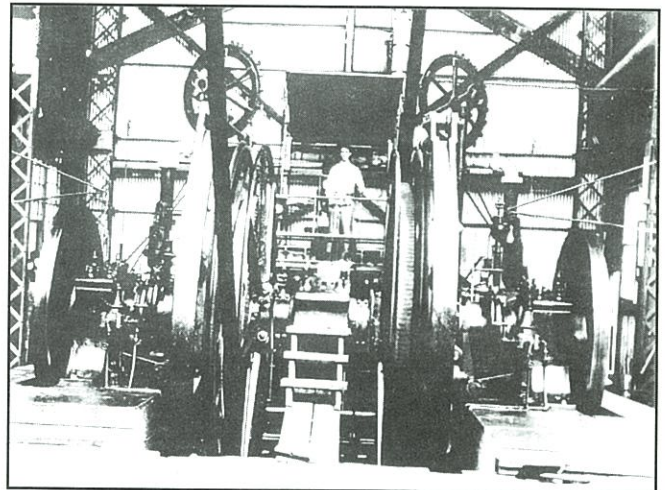


Figure 2. Spray Shaft Hoist, 1902

This hoist allowed the Spray Shaft to be sunk to a depth of 1060 feet. It was started about 1889 by the Holbrook and Cave Mining Company and turned over to the Copper Queen in 1892. At that time no ore had been found in the mine. By 1894 it had become a major producer and impressive orebodies had been developed to the east of the shaft. It was these deposits that inspired the Hoatson's to take Graham's advice to purchase the Irish Mag. The ore reserves of the Spray were essentially depleted by 1913. The shaft site was covered by the waste from the Lavender pit dumps in 1968.

A question often asked by historians is, "Did James Douglas make Bisbee or was it

Bisbee that made James Douglas?" Certainly, it was the success of James Douglas at Bisbee that brought the Copper Queen Consolidated Mining Company and Phelps Dodge Corporation into a position of leadership in the copper mining industry. There is no doubt that it was Douglas' metallurgical proficiency that made the production of anode copper profitable in this waterless, fuelless land. It was others, however, that brought in the necessary sophistication in geological and mining technology needed to find the scattered ore deposits of the Warren Mining District.

Douglas himself brought in some of this talent, but a major contribution was made by the Calumet and Arizona Company. The initial staffing and direction of this company was provided by a group of "Scots" and "Cousin Jacks" from Michigan's Calumet copper country. The Cousins, regardless of the passing generations that were born on American soil, referred to England as "the omeland" and "ome" was the "Old Country."³ From the tin mines in Cornwall to the copper mines of Michigan, to the western copper camps these professional miners brought skills and discipline to underground mining. Their skills in hand-drilling, blasting, timbering, pumping and stopping were a point of tradition and outright snobbish pride; after all, they had mined tin for the Romans.⁴ This pride and tradition can be recognized in the Cornish toast "To fish, tin and copper."⁵

The forerunner of the Calumet & Arizona Mining Company, the Lake Superior & Western Development Company, was formed in a room over a bar in Red Jacket, Michigan in 1899. It would be used as a development company to find and develop copper deposits. A new company would be formed and financed to mine the deposit after an asset had been identified. This would allow the formation of capital necessary for a large copper mining company with several shafts and a smelter.

The Scots and Cousins who formed this original company brought their technology to Bisbee, Arizona at all levels of management. It was this technology applied at the top levels that allowed the company to find and mine Bisbee's hidden mineral deposits. This company, later became the Calumet & Arizona Mining Company (C&A), and became an extremely profitable copper company in just a few years.



Figure 3. Main Street, 1904

Activity in Bisbee's main street had grown feverishly by 1904. There were three major copper producing companies in the district working around the clock and more than a dozen exploration and development companies acquiring positions in the district and developing their properties. Main Street and Brewery Gulch were at the heart of the business district.

During the darkest days of the great depression in the 1930's the C&A merged into the Phelps Dodge Corporation. After this marriage of necessity Phelps Dodge quickly adopted the C&A technology and absorbed it into its own operations. Building on this base Phelps Dodge became one of America's greatest copper companies. In this advanced technical position Phelps Dodge was able to survive the 1970's and 80's without being adsorbed by oil companies or foreign interests.

CAP'N HOATSON AND THE LEGEND

The legend of the C&A's entrance into Bisbee according to Joralemon,⁶ brings two vacationing Michigan mine captains to Bisbee in 1898. The father and son combination of Cap'n Tom and Jim Hoatson had worked their way up to prominent positions in Michigan's copper country. They had come to Arizona to escape the long winter in the Upper Peninsula and to see for themselves the "red elephant"⁷ that was rampaging in the deserts of the Arizona Territory. It was a rude awakening for the Upper Peninsularians to find that there were other copper deposits in North America. The high-grade deposits in Bisbee and Butte had already won a wide reputation, and Arizona's Warren Mining District had an enthusiastic following in the industry journals. For an image of Bisbee in 1898 see Figure 1.

In turn-of-the-century Bisbee, the Hoatson's found cousins and friends who had journeyed westward at an earlier time. In the grand tradition of miners, they gathered at local bars at shift change. Ten hours of hard physical labor in dark and dirty conditions creates a terrible thirst. Miners who knew of the excellent management provided by the Hoatson's were probably anxious to demonstrate their knowledge by criticism of the Copper Queen's short management experience.⁸

Under these close working conditions, the information that a drift in fine ore from the Spray Shaft toward the side line of the Irish Mag Claim would have been a poorly kept secret. Miners would have been proud of this knowledge, and some may have known and disclosed that these claims were not controlled by the Copper Queen. In a similar manner the Hoatson's would determine that the Copper Queen had offered the owner \$50,000 for the property, that this offer had been refused and the owner was asking \$500,000.

Father and son climbed the steep

limestone precipice that comprised Mag Hill. The older Hoatson had completed over 35 years of underground mining, and as he sat on a rock to catch his breath and enjoy the warm February sun, he soon fell asleep. Legend has it that once asleep, he dreamed of the well prepared mine maps that were so familiar to him from the Michigan copper country.



Figure 4. Mule Haulage, 1907

Mule Haulage was extensively used in early western mines for tramping trains of ore cars from the stopes. The ore was extracted to the shaft where it could be hoisted to the surface. This photo, which was taken in the Czar, shows a happy and contented mule pulling a string of four empty cars back to the stopes for another load of ore or waste.²⁹ Mules were prized by both the company and the teamsters as labor saving devices and were treated with great care and respect. Both the C&A and Copper Queen had established mule barns in all their workings where the mules were fed and rested between shifts. Even during strikes the mule tenders were allowed to cross picket lines to care for the stock.

Note the electric light suspended from the timbers and the candle stick carried by the shift boss standing by the train.

These maps were laid out like floor plans for a tall building. In rich colors of red, green, blue, yellow, brown and black ink on large sheets of starched linen, they showed the workings and geology on each level. The boundaries of the mine workings and various geological formations were shown as they crossed the plane of each plan. The maps in his dream, however, were not of any mine that

he had ever worked; instead, they were maps of the ground under his sleeping body. They showed a shaft nine hundred feet deep and the location of a massive copper ore body. On 100 foot levels, drifts ran horizontally in several directions to the boundaries of the claims. Stopes mined the rich ore between these levels.

The visions were still vivid when he awoke, and he was immediately convinced that this was to be the single most important discovery in the district. He convinced the younger Hoatson of his vision, and they immediately left for Calumet, Michigan, to raise money for the project. They needed \$50,000 to option the property and another \$200,000 for equipment, supplies and labor. They also would need money for a second property payment of \$100,000. If the mine was worthwhile they would be able to pay off the balance of the \$500,000 from operating proceeds.

THE REALITY

Very early in the history of the Bisbee camp, Dr. Douglas had decided that the iron-stained outcrop of the volcanic neck that made up Sacramento Hill was the limit of the ore in Bisbee. He was so sure of his position that he never bothered to acquire the other claims in that area although they were offered and could have been bought cheaply. He had been quoted as saying, "The Copper Queen had all the ground it needed. If someone could find ore under those barren lime hills, he was welcome to it."⁹

Douglas had entered Bisbee 18 years earlier at the age of 43.¹⁰ He must have been quite an anomaly in the early days of Bisbee. It was said that Bisbee had accumulated all of the bad element that left Tombstone to avoid law and order. Douglas personified the educated, highly cultured gentlemen of the eastern rich. He was well educated in Canada and abroad where he had studied medicine and the ministry. He had managed an insane

asylum, taught chemistry and had a series of financial failures in copper smelting. The populous of Bisbee was uncouth at its very best. Yet Douglas was instantly respected and admired. Perhaps it was his experience in dealing with the mentally ill that prepared him for the crowd at Bisbee. In fact, his principal asset was that he was well liked and trusted.

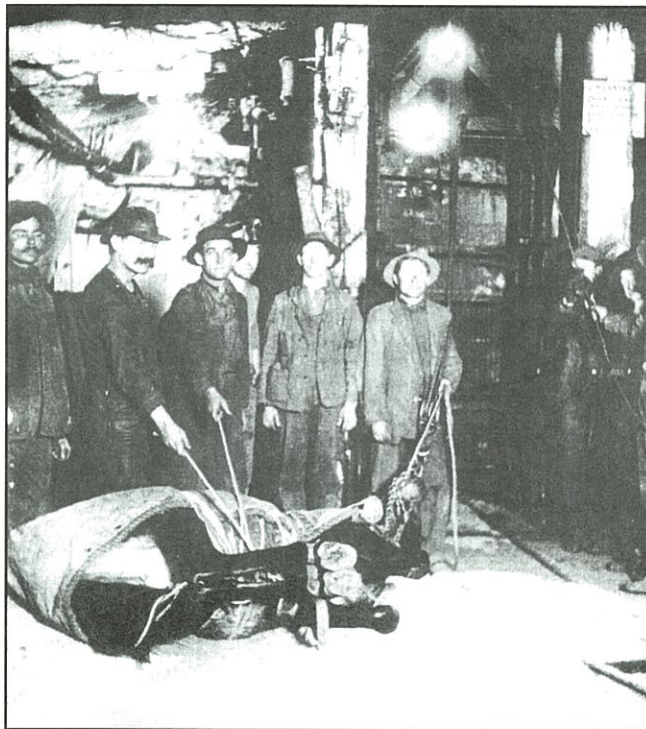


Figure 5. Loading Mules, 1907

Getting mules into the mine was a major undertaking. To keep the animals from hurting themselves during transport in the small shaft and cage compartments they were securely wrapped in this canvas sweater, bound and hoisted into the cage shown in the background. Once underground, where this picture was taken, the wraps were removed and the mule released into his new environment. As indicated by the attendees present, moving the mules was a labor intensive effort.

Note that in this photo one of the miners is wearing a carbide lamp. However, the shaft and station area are being illuminated by electric lights.

In 1881 he had been hired by Phelps Dodge & Company, a metal trading firm, to examine the United Verde Mine at Jerome in the Arizona Territory. Here a deposit of copper-rich bornite outcropped on the

surface. It was 300 feet thick and could be traced on the surface for a half mile along strike. He wrote back that the prospect was a promising one, but, "Its remoteness would make it impossible to operate successfully until there was a railroad in Northern Arizona's Verde Valley."¹¹

On a later examination trip to Bisbee, he found a mineralized outcrop that was less than 50 feet in diameter and was surrounded by what appeared to be some of the most barren limestone in North America. Bisbee at that time was somewhat further from a railroad than Jerome but an interest in the property could be acquired for only \$40,000.¹² The property was immediately acquired and Douglas asked to take a percentage in the property instead of his usual fee.

Success at Bisbee did not come easy. The ore had a bad habit of terminating, and new ore leads were not easily found. The ore bodies were high grade, but they were small and elusive. Douglas had run out of ore several times and was about to fold up operations when luck bequeathed the Copper Queen and through either a new discovery or through skillful negotiations Douglas arranged a purchase or a merger with a neighbor. Through phenomenal good luck and the application of business acumen the camp was succeeding and Douglas was acquiring a reputation from its success.

Over the years, Douglas and the Copper Queen managers had developed a policy of paying only modestly when acquiring properties. With the Copper Queen smelter and their capture of the water source for the district, they became overly confident of being the ultimate buyers of any worthwhile mining claim in the district. Mineral exploration is a process of eliminating doubt, and the Copper Queen may have felt that they could eliminate some of this doubt by buying or merging only with those properties that had a blocked-out ore reserve. This is still a popular philosophy with large mining companies.

THE IRISH MAG CLAIM

About 1890, a drunken Irish miner and prospector named Jim Daly or Daley¹³ located claims on a limestone ridge south of the Copper Queen and west of Sacramento Hill. He called these claims the Irish Mag group in honor of his favorite lady of Brewery Gulch's tenderloin. He approached Douglas and tried to sell him the claims but was refused.¹⁴ The rebuke to Daly started a right-of-way feud with the Copper Queen. In a heated dispute, Daly beat up a Copper Queen watchman. Bill Lowther, the local constable, tried to arrest Daly over the incident but was shot and killed in the attempt. Daly avoided prosecution by fleeing into Mexico where he died from excessive Mexican alcohol.

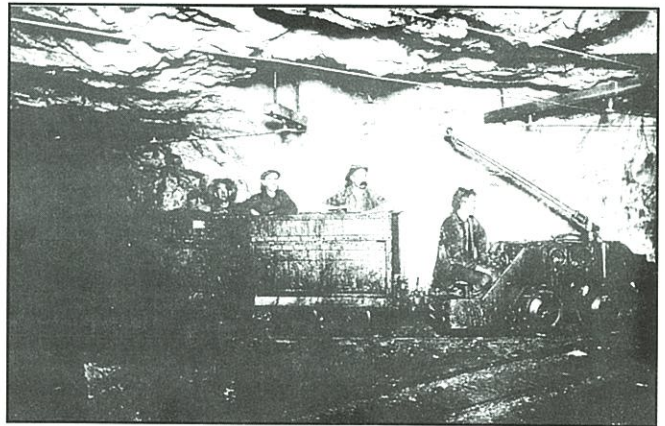


Figure 6. Trolley Locomotive, 1909

Following close on the heels of the electric lights were the electric trolley locomotive and other conveniences. Although electric lights, trolley locomotives and machine drilling were commonplace on Michigan's Keweenaw Peninsula it was apparently not until the C&A showed up in Bisbee that they were adopted by the Copper Queen.³⁰

Several parties tried to claim Daly's estate. Angela Diaz, a woman who had been living with him in Bisbee, claimed to be his wife and said that she had advanced him money to secure title to the claims. She, in turn, sold whatever interest she might accrue to Martin Costello, a Tombstone barkeeper.¹⁵ A second Mrs. Daly rode the train into Bisbee from Leadville, Colorado and laid her claim to the Daly estate. Andy Mehan, a saloon keeper

from Brewery Gulch¹⁶, produced a bill of sale and claimed that he had bought the property from Daly in Mexico just before he had gone on his last man-killing drunk. Two storekeepers from Tombstone named Cohen¹⁷ foreclosed a mortgage on Mehan and assumed his rights to the Daly property. Ownership was fought out in the courts, at the delight of the local lawyers. The judge finally awarded the estate to Martin Costello, who got title to the Irish Mag and four other claims.

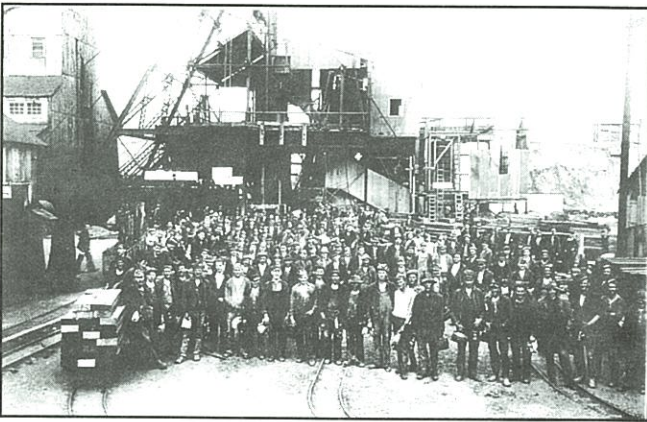


Figure 7. Junction Shaft, 1909

The day shift at the Junction Shaft gathered for this image before going underground. It is easy to see that this group is going on shift rather than coming up because their faces are clean.

The Junction Shaft was sunk on the Wander claim to a final depth of 2,727 feet. It was started in 1903 by the Junction Development Company. This company was one of many created by the original directors of the Calumet & Arizona on capital that was acquired for exploration purposes. If the venture was successful at finding copper the company was sold or merged into the C&A.³¹

The Junction, as it turned out, was one of the most productive mines in the Warren Mining District. From a combination of oxide and sulfides it produced vast amounts of copper, lead and zinc. It was also one of the major sources of gold that made Bisbee Arizona's largest gold producer.

Because of its technologically advanced hoisting system and its fast hoists it was the central hoisting shaft in the district until the mid-1960's.³²

The Copper Queen, in the meantime, continued to prospect and find ore closer and closer to the Mag sideline. Douglas was trying to acquire the Mag from Costello, but Costello

was asking the unheard of price of \$500,000. At that time, this would have been the most expensive mineral prospect in Arizona.¹⁸ There were a few shallow prospects on the Mag property but no showing of ore. Douglas offered \$50,000 and was refused. It was apparent that he was backing off from his earlier position that there was no ore south of Sacramento Hill.

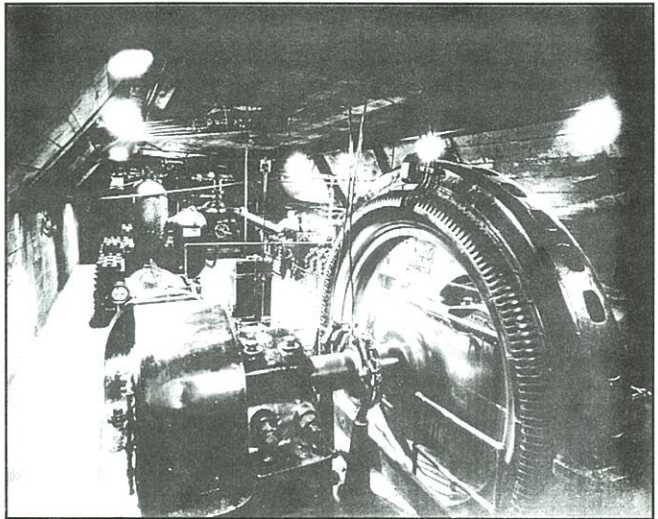


Figure 8. Junction Pump Station, 1910

The Junction Shaft was also the major pumping facility for the district. It was served with pumping stations on the 2700 and 2200 levels for fresh waters and had an acid pumping station on the 1800 level. In this capacity it served both the C&A and Copper Queen until the merger of 1931 and then the Phelps Dodge Corporation until 1990's.³³

TRUTH ACCORDING TO THE C&A

According to a testimonial made to Charles Briggs¹⁹, president of the C&A, the initial directors and officers of the corporation were Charles Briggs, President; James Hoatson and James Milligan, Vice Presidents; Norman MacDonald, Treasurer. John H. Holman, Joseph L. Lathrop, John Graham, Gordon R. Campbell and W. Arthur Phipps were directors. The company was registered under the Laws of West Virginia with a capital stock of \$200,000 represented by 20,000 shares, each having a par value of \$10.00.

The mission of the company²⁰ was, "To acquire and develop mining claims believed to contain commercial copper-bearing ore bodies." When (and if) the exploration of these claims were successful, the properties would be sold to a mining company to be organized at a later date. With a developed mine and a blocked out ore reserve, this new company would be able to raise sufficient capital to purchase, equip, and operate the mine on a commercial scale.

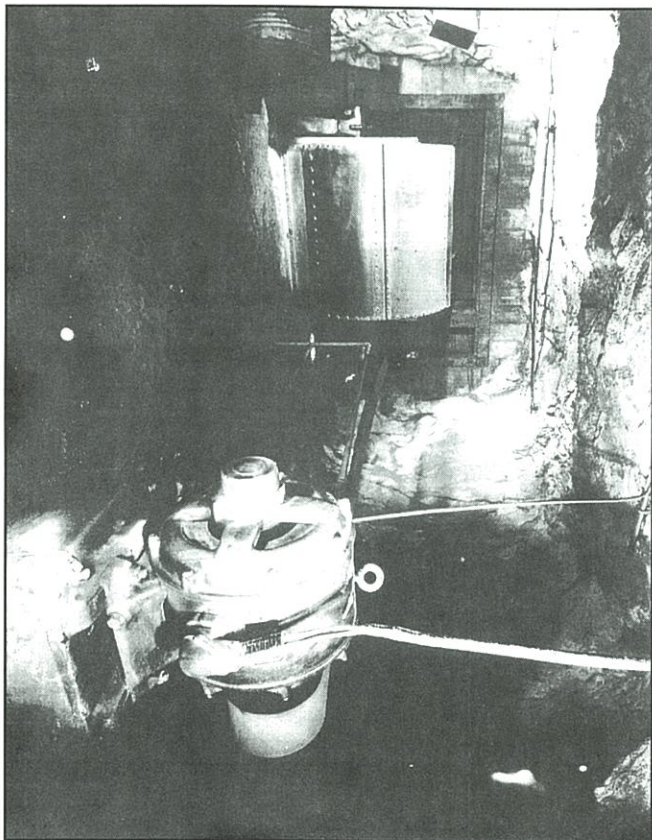


Figure 9. Campbell Fan, 1920

Michigan copper and iron mines were deep requiring large ventilation fans to circulate fresh air into the workings. This fan was installed on the 1600 level of the Campbell Shaft by the C&A to insure adequate ventilation.

The promoters were to manage the operations of the company and take down stock as compensation. The one exception, Graham, was sent as a scout to Arizona to contact property owners and make the preliminary arrangements. For this work, he would be paid a small salary and expenses.

John Graham, had worked as a miner for the Copper Queen Consolidated Mining Company at Bisbee and had provided information and shown samples of ore from the Irish Mag to his old boss, Captain Tom Hoatson. At the time the company was formed, he was an employee of the Tamarack Copper Mine in Calumet, Michigan. James Hoatson was selected to make an examination of the property. He had been associated with copper mining in Butte, Montana, as well as the Michigan copper country. His judgment would be based on his personal experiences.

After visiting the property, James Hoatson corroborated Graham's report and added that the claims would prove very valuable and recommended their purchase. The litigation on the Irish Mag claims was still in progress, and Hoatson had to wait six months for the title to be cleared. At that time, Costello set the asking price at \$500,000. It was indeed a high price, but Graham was able to talk Costello into taking \$50,000 down. The balance was to be paid over the next five years.²¹

RAISING THE CAPITAL

Up to this time, the C&A stock had not been offered to the public, and the development company had limited funds. Gordon R. Campbell²² an attorney and a director of the C&A, was sent to Arizona to examine the titles. Campbell's favorable title opinion brought about the public offering of the company's stock. The promise was made to the investors that if the project proved to be successful, they would receive several times their costs of the original stock. On the other hand, if no ore were found the total investment would be lost.

Because of the sterling character of the original officers and directors of the company, the stock was quickly sold among a small group of close associates. Many of these original stockholders were miners and

merchants in the Calumet area. As soon as the funds were available Briggs and Milligan returned to Arizona to make the first payment of \$50,000 and to start preparations for shaft sinking. Ground-breaking took place on November 1, 1899.

Shortly after this event, faith in the company started to decay when unfounded rumors began to circulate: certain influential men in the area were reported to have gained information that the claims were worthless. The directors and promoters of the company stuck to their original statement that if successful the shareholders would receive several times their original investment, but if no ore was found, the total sum invested would be lost. They also added that they did not want unwilling stockholders and that any investor who wanted out would have his original investment returned. Some of the investors took the later option, and the company had to take the initial offering outside of the Michigan copper country so that sufficient funding was available to continue shaft sinking.

Among the new investors solicited was Thomas F. Cole, a miner, business man and president and general manager of the Oliver Iron Mining Company, a rich subsidiary of the United Steel Corporation. The principal display was Campbell's map of the Warren Mining District showing the properties controlled by the Copper Queen Consolidated Mining Company and the properties optioned by the Lake Superior & Western Development Company in contrasting colors. What was known of the workings of the Copper Queen and the nearest ore bodies also were shown on the map. It was explained that the Copper Queen was the only operating company in the district, that it had entered the district in 1881, and that it had earned \$676,252.78 in the first year of its activity. Hoatson explained that the equipment and technology being used by this inexperienced company were crude, but that the ores

averaged a phenomenal 16.29% copper and carried important values in gold and silver.²³

Cole was obviously impressed. He immediately bought several of the original subscriptions and encouraged George E. Tener of Pittsburgh to visit the property and invest if he thought it was worthwhile. With the support of these two important gentlemen, the recently depleted funds were replaced and development of the Irish Mag shaft continued.

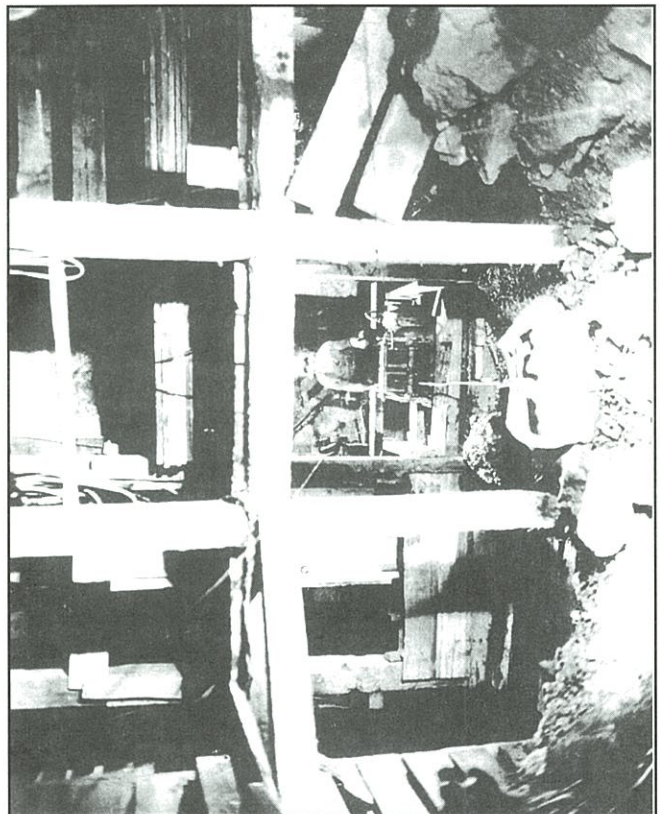


Figure 10. Square Set Mining, 1950

The forests of Michigan's Upper Peninsula provided the timber for square set mining. Extensive timber use was required in Bisbee due to the "heavy" nature of the ground. The adaption of square set mining by the Cousin Jack was a natural outcome from his experience in Cornwall.^{34,35}

THE GRAND GAMBLE BEGINS

By the fall of 1900 the shaft had been sunk to 750 feet, but no ore had been found. The company, in the meantime, had all but run out of money. Several times additional

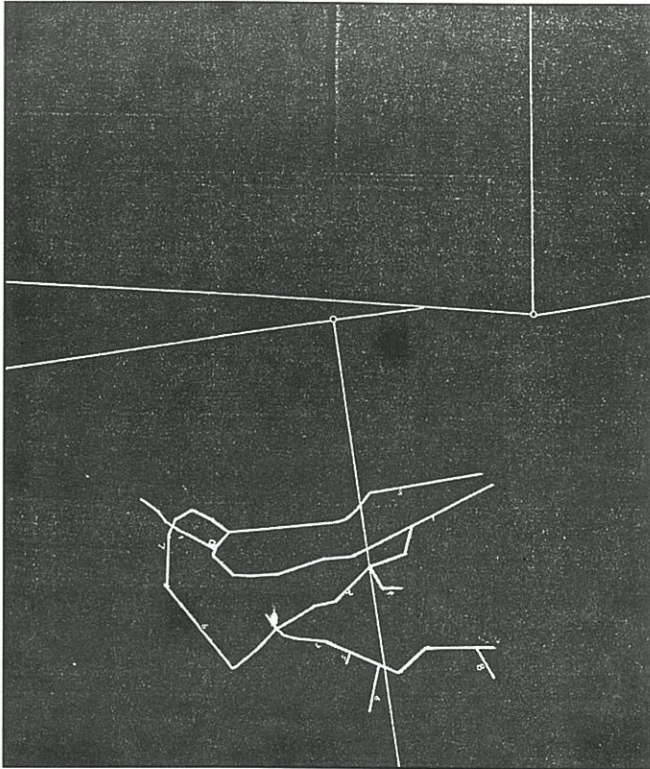


Figure 11. Copper Queen 6th Int, 1916³⁶

This is a portion of the map filed with the Arizona State Tax office in 1917 showing the 6th Interior Level of the Southwest Mine of the Copper Queen Consolidated Mining Company. It shows the location of the underground drifts and crosscuts on a scale of one inch equals two hundred feet. The solid straight lines terminated in a small circle, are the boundaries of various mining claims projected onto level maps. This form of mapping was typical of the technical work done by the Copper Queen at the turn of the century. This map was simply updated and submitted in 1917.

subscriptions had to be obtained. With no ore showing in the shaft and little money left from the last fund raising, Captain Hoatson gave instructions to drift northeastward from the shaft on the 650 and 750 foot levels. Fate, in the Warren Mining District, has usually rewarded those with faith and perseverance: consequently, these drifts ran into high grade ore in February 1901. Initial reserves were estimated at over 500,000 tons averaging in excess of 7% copper.²⁴

Next Month...

The conclusion of *Roots of the C & A*, including the listing of all reference material and bibliography.



612 6th Street
Georgetown, CO 80444
(303) 569-2848
Leo Stambaugh

POWDER CACHE ANTIQUES

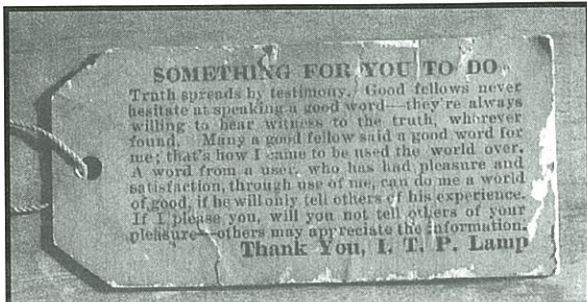
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THE MINING SUMMARY

WHAT'S NEW IN COLLECTING



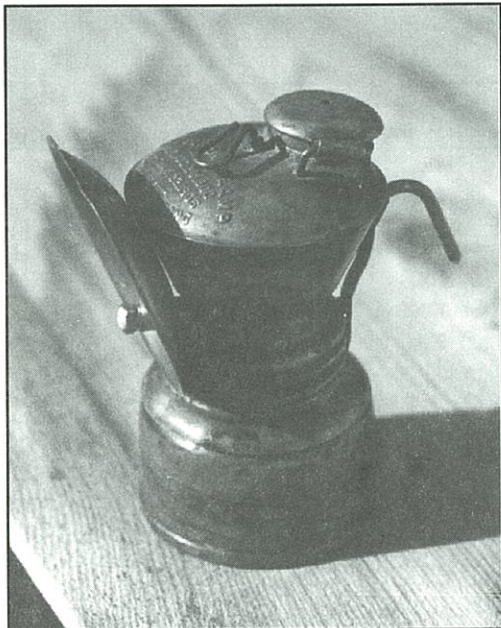
I.T.P. (It's Trouble Proof) Lamp Tag - 1.25" x 2.75"



I.T.P. — It's Trouble Proof

Found in the Calico Mining District of Southern California.

Advertising message comes straight from the carbide lamp.

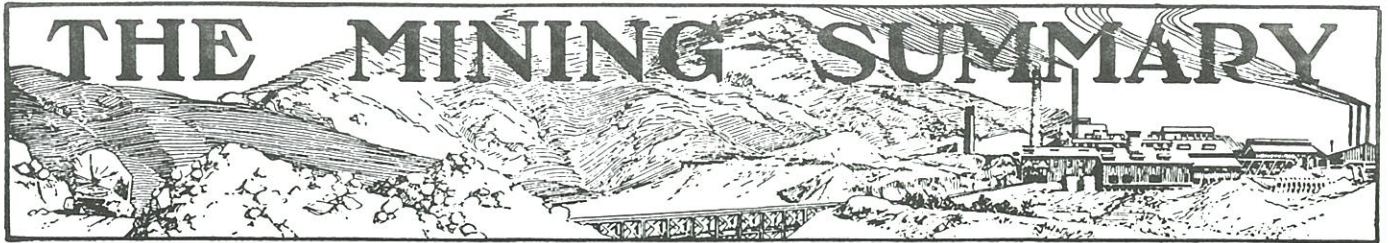


Baldwin Lamp with tilt reflector. Submitted by Deric English.

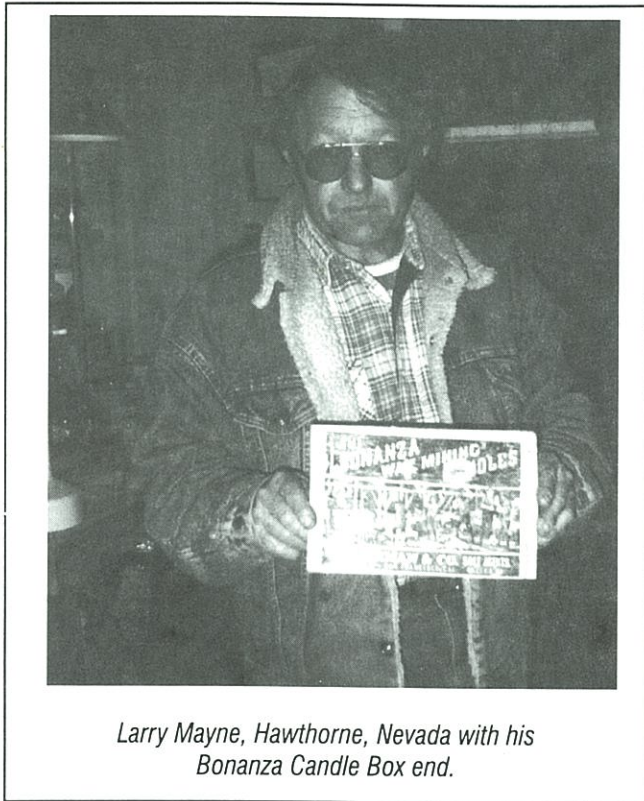


This January Errol Christman displayed his latest lamp collection of structurally challenged cap lamps. It seems that a fellow collector decided to reduce the amount of lamps by crushing as many as possible thus increasing the uniqueness and value remaining lamps.

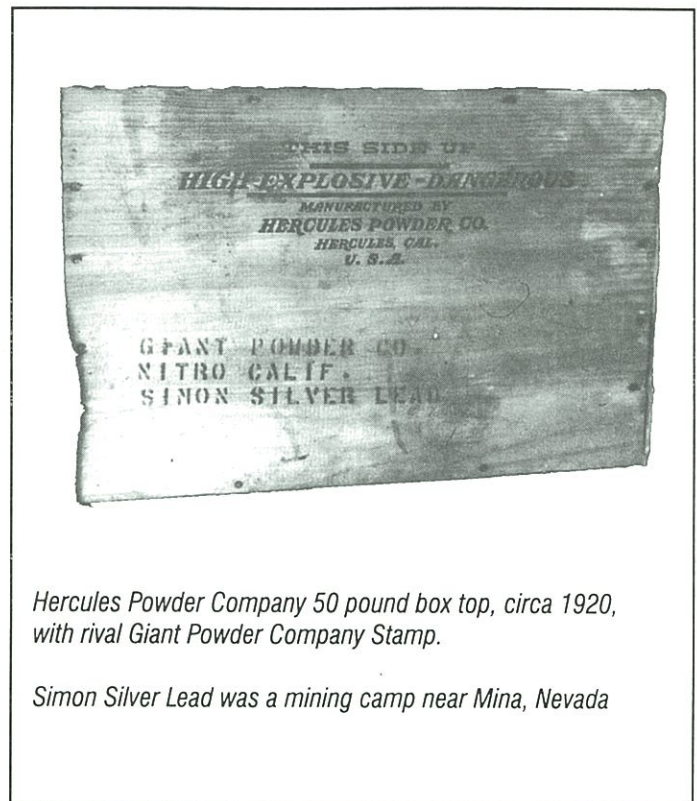
THE MINING SUMMARY



WHAT'S NEW IN COLLECTING

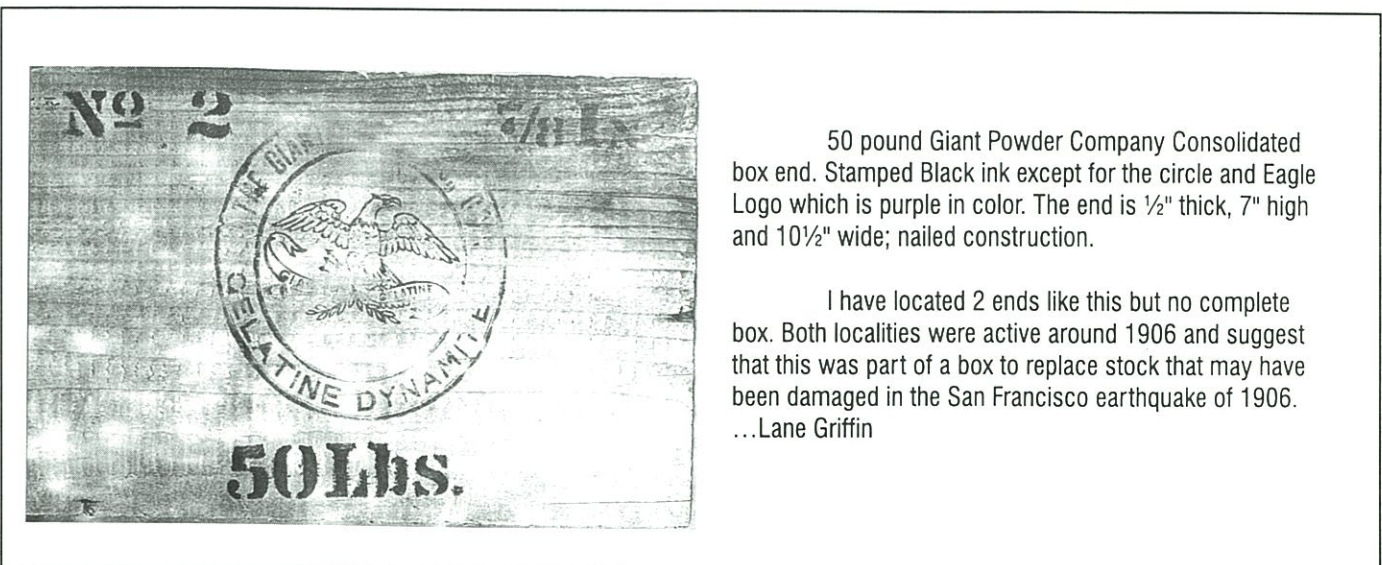


Larry Mayne, Hawthorne, Nevada with his Bonanza Candle Box end.



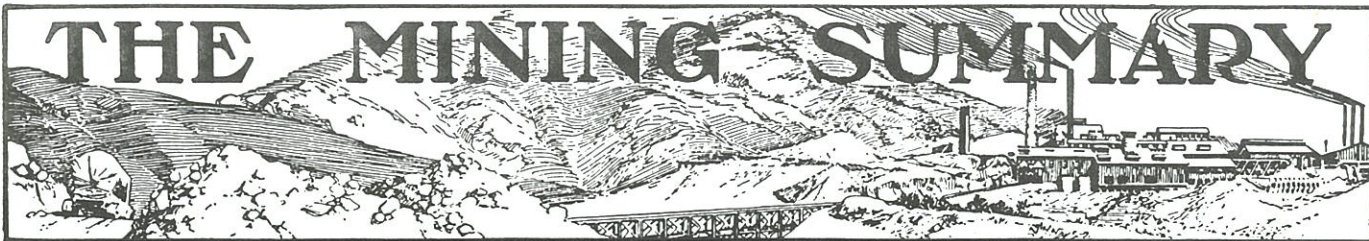
Hercules Powder Company 50 pound box top, circa 1920, with rival Giant Powder Company Stamp.

Simon Silver Lead was a mining camp near Mina, Nevada



50 pound Giant Powder Company Consolidated box end. Stamped Black ink except for the circle and Eagle Logo which is purple in color. The end is 1/2" thick, 7" high and 10 1/2" wide; nailed construction.

I have located 2 ends like this but no complete box. Both localities were active around 1906 and suggest that this was part of a box to replace stock that may have been damaged in the San Francisco earthquake of 1906.
...Lane Griffin



WHAT'S NEW IN COLLECTING

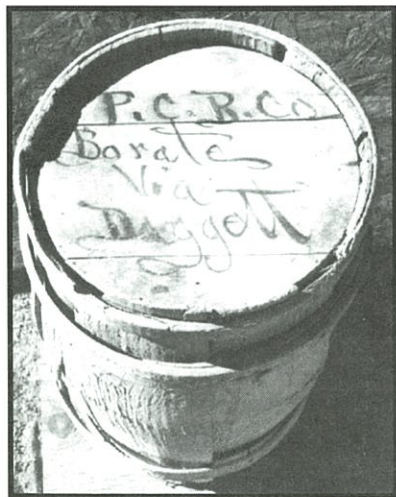
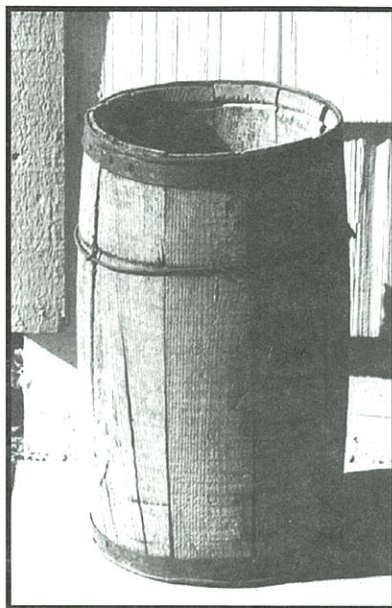
Nail Barrels

Although non-descript and often ignored, nail barrels are of value as more than trash cans. Mine names, dates and rail destinations are often found on one or both ends. The barrels shown here contained spikes or nails for construction purposes. If you see a barrel like these, always check the ends — you may be in for a pleasant surprise. Their approximate dimensions are: 10" in diameter and 18" high.



Nail Keg

*Summit King Mines, Churchill County,
Fallon, Nevada 1950.*



P.C.B. Co. (Pacific Coast Borax Company).

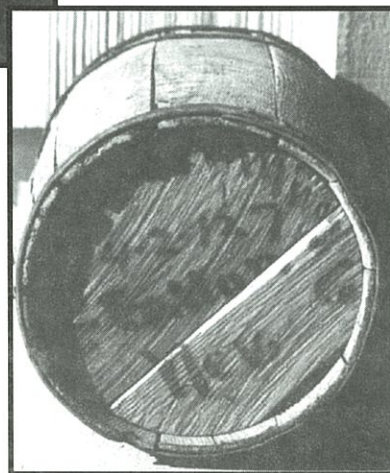
*Borate – mining town in Calico Mining District.
Dagget – railroad town which supplied the
Calico Mining District.*

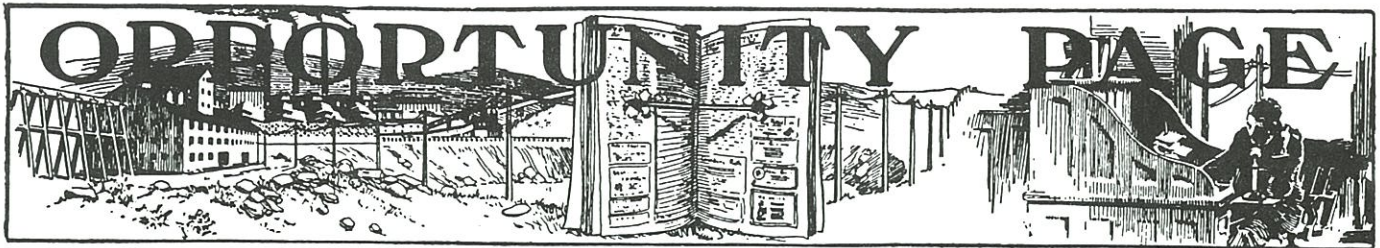
Circa 1890... D.E.



*Inyo Eagle Mining Company
Kersarge, California
Bishop, California*

*Nevada Wonder Mining
Company.
Wonder, Nevada
Churchill County, Fallon,
Nevada, 1912.*





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¼ page (business card size) .. \$90
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FOR TRADE: I have varneys stamped "Russel" & "Imperial" to trade for names I don't have. Also have "Improved Ideal", will trade for "Ideal" or other. Looking for "Ladies Leg" stick. Please call if you have duplicate candle sticks. Thank you.

Danny Melhorn
 (541) 935-3031
 P.O. Box 291
 Veneta, OR 97487

Images From The Past Photos and Handcrafted Reproductions

January 1997 Price List
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 Hawthorne, NV 89415
 (702) 426-8047

Photos

All photos are custom printed and mounted on ¼ foam core by a professional photo lab.

	16 x 20	16 x 24	20 x 30
1200 Level - Northern Belle	\$60	\$75	\$125
Ghosts of Miners Past	\$60	\$75	\$125

Dynamite Boxes \$30 ea.

Dynamite Box Ends \$7.50 ea. /3 for \$20

12" x 18" x 9" h. – Finger-jointed edges. Includes lid.

*Safety Nitro Powder Co. Giant Gelatin
 Giant Powder (1892) Giant Eagle
 Candelaria*

Blasting Machines \$ 75 ea.

7" x 9" x 15" h. Box edges are finger-jointed.

Victor Electric Blasting Machine

Hats & T Shirts

All hats and shirts printed black on ash gray.

Safety Nitro Powder Co. –Hats - \$12.50 Shirts - \$16.00 ea.
 (M, L, XL only)

Shipping Charges

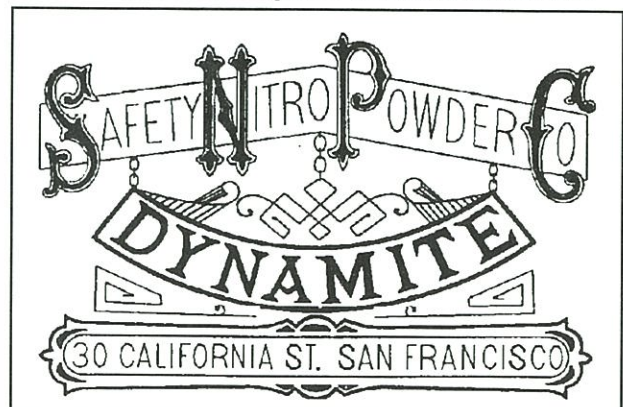
Photos: 16 x 20 & 16 x 24 \$10 ea.

20 x 30 - \$15 ea

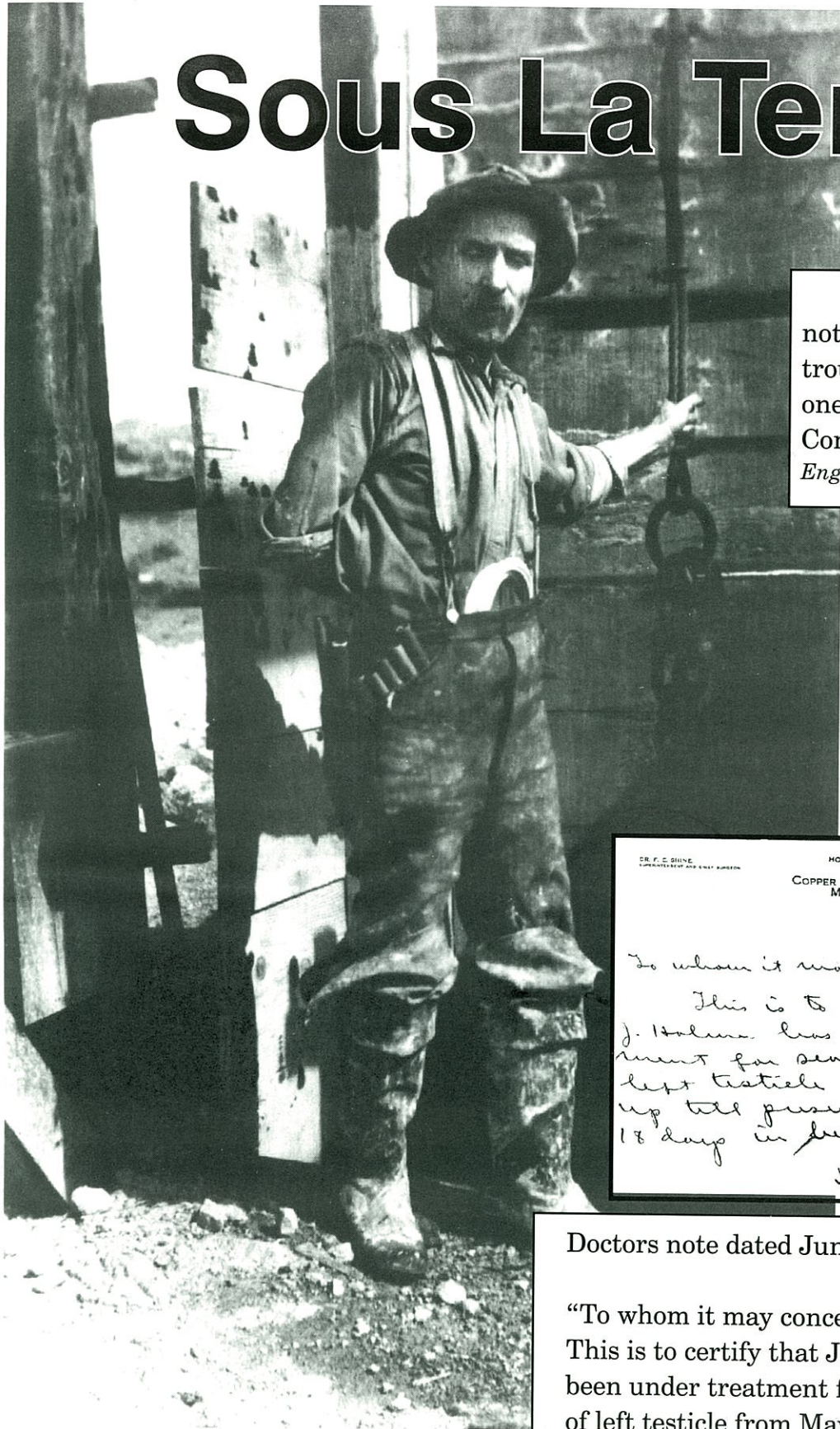
Dynamite Boxes/Blasting Machines: \$7.50 ea

Hats, Shirts & Box Ends:

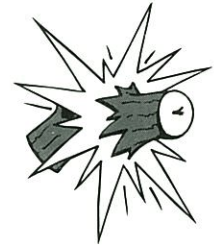
Free shipping for orders that include dynamite boxes - provided all items will fit in the boxes(es). Otherwise please include 10% of total charges for hats, shirts & box ends.



Sous La Terre



“I guess ‘Thou shalt not carry explosives in thy trousers’ should have been one of the miners’ Ten Commandments” ... *Deric English*



DR. F. S. SHINE
SUPERVISOR OF THE STATE MINES

HOSPITAL DEPARTMENT
COPPER QUEEN CONSOLIDATED
MINING COMPANY
P. O. BOX 1122

HOSPITAL ASSTES.
G. A. BRADY, M. D.
A. T. BRADY, M. D.
J. BRADY, M. D.
G. D. JEFFRIES, M. D.
CONSULTING SURGEON
DR. J. J. HOLTEN

BIGBEE ARIZONA. 6-28-06

To whom it may concern:

This is to certify that Jacob J. Holmes has been under treatment for severe contusion of left testicle since May 31st up till present date, spending 18 days in bed.

Dr. C. D. Jeffries.

Doctors note dated June 28, 1906 reads:

“To whom it may concern:
This is to certify that Jacob J. Holmes has been under treatment for severe contusion of left testicle from May 31st till present date, spending 18 days in bed.

Dr. C.D. Jeffries”

Send humorous or interesting mining related photos for this page c/o editor.

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