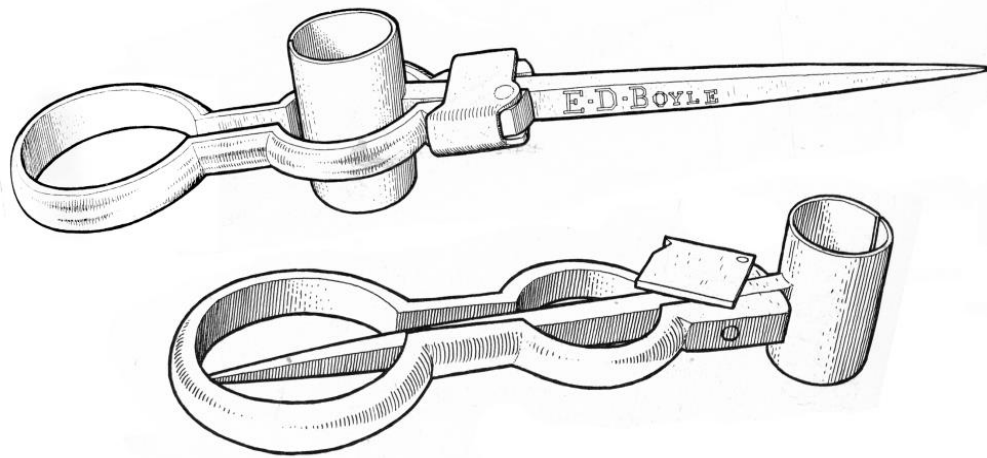


# *EUREKA!*

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Cover illustration: Boyle style candlesticks. See article below by Wendell Wilson, pages 36-39.

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# The Prince Crimper

Douglas K. Miller

The purpose of any cap crimper is to attach a blasting cap to a length of safety fuse. The Prince crimper is unique among cap crimpers, as the body of the crimper is made entirely of brass. This makes it attractive and highly desirable among collectors of mining artifacts and blasting equipment. The Prince Crimper was patented by Harry Prince of Cleveland, Ohio, on October 10, 1922, Patent No. 1,431,421.

Prince assigned his patent to the City Brass Foundry Company of Cleveland, Ohio,<sup>1</sup> which presumably manufactured the crimper. Prince described the purpose of his crimper as follows: “My invention is an implement wherein are combined all the necessary means to facilitate the connection of a fuse to a blasting charge. Heretofore the various operations of cutting a proper length of fuse, crimping a detonating cap on one end thereof, splitting the other end for priming or easier ignition, and finally forming a hole in the blasting charge to receive the detonating cap, have been performed with a number of implements or with a pocket knife and like improvised means. The object of my invention is to combine in a single hand-implement means for carrying out each of these operations in a practical scientific way so that each step may be properly performed and all danger of unexploded or delayed charges avoided.”

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**CITY BRASS FOUNDRY CO., Cleveland, O.**

A number of years ago, a member of the Eureka Forum asked how many varieties of Prince crimpers were known. I have *seven* in my collection, probably more than any other collector. As best I can tell, there are two *main categories* of the Prince crimper, but each of the seven crimpers in my collection has distinct differences from the other six, with improvements made in each subsequent iteration of Prince’s design. Thus, one could say there are as many as *seven* different versions of the Prince crimper, depending on how much weight you give to the sometimes-minor differences. I obtained four pairs of crimpers from Reg Pattee in early 2015. At the time, Reg felt that there were four versions of the Prince crimper. I became intensely interested in cap crimpers and visited Reg early on in my collecting career. Other members of the Forum had pointed me in Reg’s direction.



Reg disposed of his collection some years ago but contacted me in 2015 asking me if I might be interested in a few items he had held back for me. I was, and I visited Reg at his home in Flagstaff. I acquired everything you see in this photograph of Reg, including the four Prince Crimpers in Reg’s collection (shown on the left beneath the California Bench Crimper – a story for another day).

Left: Reg Pattee with the crimpers I purchased from him (January 2015).

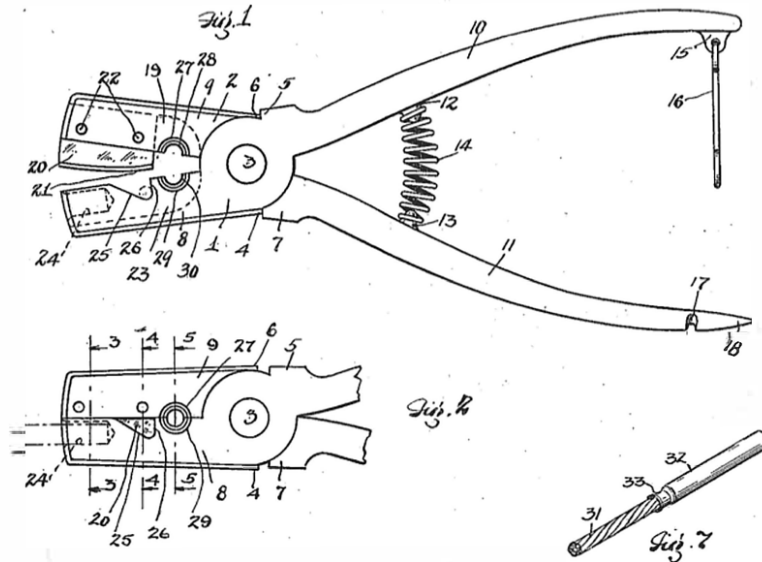
<sup>1</sup> The accompanying advertisement is from *The Automobile Trade Directory* (July 1910). Source: [https://mycompanies.fandom.com/wiki/City\\_Brass\\_Foundry\\_Company](https://mycompanies.fandom.com/wiki/City_Brass_Foundry_Company), accessed August 7, 2020.

Prince's patent shows the earliest variety of his crimper.

H. PRINCE.  
BLASTING FUSE IMPLEMENT.  
APPLICATION FILED DEC. 8, 1920.

1,431,421.

Patented Oct. 10, 1922.



One of the distinctive features of the earlier crimpers is the expansion spring (14), which is meant to hold the crimpers open when in use. Later, this was replaced by a fixed leaf spring riveted to the upper handle. I suspect this change was made because the expansion spring is easily dislodged from the studs on the inner portion of the handles (12 and 13). The upper handle of the crimper (10) is fitted with a latching loop (16) that can be slipped over the lower handle (11) into a groove (17) to hold the crimper closed when not in use. The lower handle tapers to a point that can be used as a dynamite punch. A curved blade (20) is fitted into the upper jaws of the crimper where it is held in place by steel pins (22). The fuse was inserted into the v-shaped groove in the lower jaws for cutting (25-26). The blasting cap was then inserted into the crimping groove from the side. Except for the very earliest version of the crimpers I own, the jaws do not open wide enough to be placed around the cap. This was perceived as a disadvantage by Arthur La Motte, the compiler of Du Pont's Blasters' Handbook.<sup>2</sup> The crimping grooves in the upper and lower jaws are two concentric half cylinders of decreasing size, a very unique design. As a result, when the cap is crimped to the fuse, it produces a crimp that has a narrower center section, a flat, sleeve-like crimp (Figure 7). A hole is machined into the front of and parallel to the lower jaw (24). The end of the fuse to be ignited may be inserted into the hole and the fuse split with the blade if desired. The earliest crimper in my collection has a less robust body and blade than subsequent designs and has been used heavily. It is pictured below along with another early version of the Prince crimper.

<sup>2</sup> Arthur La Motte, "The Cap Crimper Family," *The Du Pont Magazine*, Vol. 21, Nos., 10-11, pp. 20-21 (1927), [https://digital.hagley.org/1927\\_21\\_10-11](https://digital.hagley.org/1927_21_10-11), accessed August 7, 2020.



1

2

1

2

The chief identifying characteristics of these early versions of the Prince crimper are their less robust frames as compared to later versions, the coiled expansion springs, and the relatively straight cutting blades. Each of these versions also has a single pin securing the blade to the upper jaw of the crimper and a small steel pin below and slightly to the left of the pivot pin, which can be seen best in the second photograph. You can also see that crimper number 2 seems slightly “beefier.” Crimper number 1 weighs 6.40 ounces and is 6.69 inches in length. Crimper 2 weighs 6.52 ounces and is also 6.69 inches in length but is wider at the pivot pin (see Table 1). Both crimpers have smooth surfaces and appear to have been polished, I suspect during manufacture, but I can’t be certain. These early versions of the Prince crimper are very hard to find. In many years of collecting, I’ve only seen two pair, both in my collection.

The next two versions of the Prince crimper are quite different in appearance from the earliest versions, although they are very similar in design.



3

4

3

4



These crimpers are nicely cast of brass, then ground and machined to final shape but left unpolished. Both have the characteristic coiled expansion spring. Crimper number 3 has a single pin securing the cutting blade to the upper jaw, a characteristic it shares with the earlier crimpers. Crimper number 3 appears in some ways to be a transitional design. The cutting blades of crimpers 3 and 4 begin to exhibit the curved shape that Prince described as a key component of his design. Crimper number 3 weighs 6.75 ounces and is 6.69 inches in length. Crimper number 4 has two pins securing the blade to the upper jaw and is considerably heavier at 7.40 ounces. It is also 6.69 inches in length. The small steel pin that was placed below the pivot pin in crimpers 1 and 2 has been eliminated. Of all of the crimpers we've looked at so far, crimper number 4 comes closest to matching the drawing in Prince's original patent.

Crimpers 5 and 6 include a radical change in design. The coiled expansion spring is replaced by a leaf spring that is riveted to the upper handle.



5

6

5

6

Apart from small differences, the design of the Prince Crimper has become more or less standardized. Two pins secure the cutting blade to the upper jaw. The cutting blades exhibit a more pronounced curve. Crimpers 5 and 6 both weigh about 7.61 ounces and are 6.69 inches in length. However, crimper 6 is the first and only Prince Crimper to be marked with "PAT. APL'D FOR" above and to the right of the pivot pin, as shown below.



The last Prince Crimper in my collection is unique. It is the only crimper to bear the mark of an explosives manufacturer, "CXL."

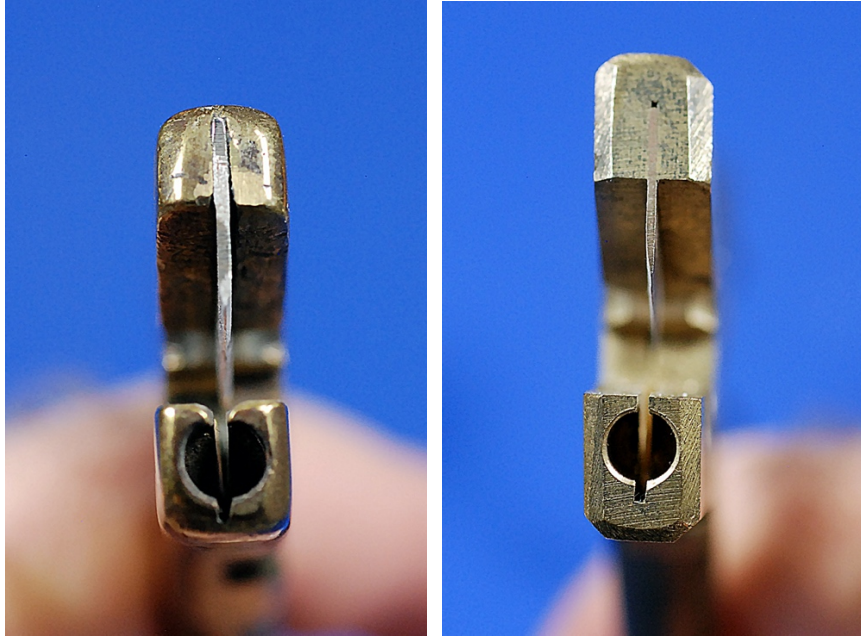


It is also the heaviest crimper in my collection. It weighs 7.88 ounces but is slightly shorter than the other crimpers at 6.63 inches in length. Another of its unique features is its much stouter leaf spring. Below are comparison photographs of the leaf springs of crimper number 6 (PAT APL'D FOR) on the left and crimper number 7 (CXL) on the right.





From the earliest to the latest crimpers, the Prince crimpers gradually became stouter and better made. This is illustrated most clearly by comparing the tip of the earliest crimper in my collection (crimper number 1) to the tip of one of the latest versions (crimper number 6).



The brass jaws are thicker and wider on the later version. These photos also illustrate the hole in the front of the lower jaw that could be used to slit the fuse if desired.

Below is a table that compares the crimpers by weight, size, and distinctive features. While these differences may seem small in some cases, they are invariably important to collectors. One puzzle is why one of the latest versions of the Prince crimper bears the notation PAT APL'D FOR, while the earlier versions do not. I believe that the manufacture of the Prince crimper probably began after the issuance of the patent. Prince's patent was issued in 1922. Arthur La Motte discusses the Prince crimper (though not by name) in his 1927 article on crimpers in the Du Pont Magazine. That article contains a picture that appears to be of one of the earliest versions of the crimper (crimper number 1 or 2). It's not surprising to find no patent number on a pair of cap crimpers, but I believe the "PAT APL'D FOR" notation on one of the most recent versions was meant to apply to the improvements to the crimper that were made subsequent to the original design, improvements for which a patent may have been sought, especially the use of the leaf spring.

Why are Prince crimpers relatively rare and hard to find? I think one reason could be that they were probably more difficult and expensive to manufacture than other makes of crimpers. Unfortunately, unlike many other mining artifacts, I've never found a contemporary (1920's-30's) advertisement for Prince crimpers, which would give us a much better idea of their original cost. Another might be that, as Reg Pattee believes, many were destroyed during World War II and the much-needed brass used for shell casings. Whatever the reason, they are highly desirable to collectors today because they are unique and beautifully made.

**Table 1**

## Similarities and Differences Among Various Versions of the Prince Crimper

| No. | Weight (Ounces) | Length (Inches) | Width at Pivot Pin (Inches) | Distinctive Features  |
|-----|-----------------|-----------------|-----------------------------|---|
| 1   | 6.40            | 6.69            | .878                        | Less robust, straight blade, single pin securing blade to upper jaw, small steel pin beneath pivot pin, polished  |
| 2   | 6.52            | 6.69            | .909                        | Less robust, straight blade, single pin securing blade to upper jaw, small steel pin beneath pivot pin, polished <sup>3</sup>   |
| 3   | 6.75            | 6.69            | .885                        | Slightly more robust, slightly curved blade, single pin securing blade to upper jaw, no small steel pin beneath pivot pin, coil expansion spring, nicely ground and machined, but unpolished                                      |
| 4   | 7.40            | 6.69            | 1.036                       | More robust, curved blade, two pins securing blade to upper jaw, no small steel pin beneath pivot pin, coil expansion spring, nicely ground and machined, but unpolished  |
| 5   | 7.61            | 6.69            | 1.036                       | More robust, curved blade, two pins securing blade to upper jaw, no small steel pin beneath pivot pin, leaf spring riveted to upper handle, nicely ground and machined, but unpolished  |
| 6   | 7.62            | 6.69            | 1.038                       | More robust, curved blade, two pins securing blade to upper jaw, no small steel pin beneath pivot pin, leaf spring riveted to upper handle, nicely ground and machined, but unpolished, marked PAT APL'D FOR                      |
| 7   | 7.92            | 6.63            | 1.047                       | More robust, curved blade, two pins securing blade to upper jaw, no small steel pin beneath pivot pin, wider and heavier leaf spring riveted to upper handle, nicely ground and machined, but unpolished, marked CXL <sup>4</sup> |

<sup>3</sup> Although there is a coil spring shown in the photo of crimper number 2, I doubt that it is original to the crimper. It is much weaker than the coil expansion spring on my other crimpers, and it is cylindrical, rather than tapering at each end.

<sup>4</sup> CXL stands for Canadian Explosives Company. It was formed in 1910 from the merger of Hamilton Powder Company and Dominion Cartridge Company with the Acadia Powder Company, Ontario Powder Company, Standard Explosives Company, Western Explosives Company, and Victoria Chemical Company. Source: Wikipedia, [https://en.wikipedia.org/wiki/Canadian\\_Industries\\_Limited](https://en.wikipedia.org/wiki/Canadian_Industries_Limited), accessed August 20, 2020.

# Arizona Presentation Candlestick

Al Winters

Found in the 1950-60's in Southern Arizona, this beautiful candlestick has a handle of copper, a thimble of brass and a hook and spike of steel. The handle and thimble are intricately engraved and the spike and hook are decorated with precise filings.



*Inscribed in the handle are the letters J G which are believed to be the initials of the recipient.*







The quality and metal makeup of this candlestick suggests it was presented to an important Arizona copper mine official. One possible recipient is John Greenway. Greenway was General Manager of the Calumet and Arizona

Mining Company with operating mines in Bisbee, Jerome and Ajo. Greenway was instrumental in the expansion of operations in Bisbee, the Ajo mine development and in the conclusion of the 1917 Bisbee labor strife. He was also recognized for his notorious military service in both the Spanish American and WW1. A second possible recipient is John Gleeson. Gleeson immigrated to the US in 1879 and began his mining interest in Colorado. He then moved to Arizona, prospected near Globe and Ray, worked at the Silver King Mine, operated the American Mine in Hachita, NM and in 1897 was one of the principle developers of the Copper Belle Mine in the Turquoise District. There he founded the town of Gleeson along with advancement of the mining district.

The handle is engraved with a mine scene and the thimble with a scroll. The twisted hook screws into the side of the handle and both hook and spike are decorated with multiple filings. While the true recipient may never be known the hunt continues.



Many thanks to Roger Becksted for his input into the identification of possible recipients. All suggestions as to the identification welcome. Al Winters

# Albert Van Buskirk: Homestake Blacksmith

Wendell E. Wilson

Albert M. Van Buskirk was an award-winning blacksmith making miners' candlesticks in Lead City, South Dakota, site of the famous Homestake mine. He was born in Grimsby, Canada on June 17, 1857, the son of Elizabeth and Lawrence M. Van Buskirk, a blacksmith; we might logically assume that he learned something of blacksmithing at his father's knee. He married Mary Elizabeth Smith (age 15) in 1876, and together they had at least four children: Dora Olive (1879), Laura (1881), Marcus (1882) and Georganna (1884).

In the 1889 Ontario Directory he is listed as dealing in sewing machines, and on the 1891 census for Tilsonburg, Ontario, he listed his occupation as "farmer," so it's clear that he did not immediately go into the blacksmithing trade. But he moved to Lead, South Dakota sometime between 1887 and 1890, and there found a demand for his blacksmithing skills. As of 1892 he was working (as a blacksmith?) for the Black Hills Quarry company. In 1894 he joined Robert Roney as a blacksmith, advertising as "Van Buskirk & Roney" in the *Daily Deadwood Pioneer-Times*, and together they took over the business on Pine Street previously run by blacksmith Charles Anderson.

Van Buskirk  
and Roney,  
-SUCCESSORS TO-  
CHARLES ANDERSON,  
Pine Street. All kinds of BLACKSMITH  
work done on short notice, also  
◀Wagon Repairers▶  
Prices reasonable. All work guaranteed  
satisfactory or no charges. Horseshoeing a  
specialty, also Miners candlesticks.  
LEAD, - SOUTH DAKOTA

Van Buskirk & Roney announced (above; August 13, 1894; the *Lead Daily Call*) that miners' candlesticks were a specialty, and business was soon booming, to the point where Lead City was taking civic pride in his candlestick-making skills. An article in the September 25, 1894 edition of the *Lead Daily Call* stated:

A. Van Buskirk, the Lead blacksmith, has a reputation for making miners' candlesticks second to none in the West. Yesterday he received an order for a sample of his work from Cripple Creek, Colorado, where he has already shipped a number of these candlesticks.

The fame of Lead is gradually spreading, and it will only be a few short years until our town will be known as the Chicago of the Northwest.

Apparently Van Buskirk's candlesticks were very popular with the Homestake miners. In 1896 the Deadwood newspaper wrote:

Van Buskirk & Roney the blacksmiths are doing a land office business in the candlestick line. Orders coming for 156 of the sharp pointed steels were left with them yesterday.

Gold was discovered in the Klondike in August of 1896, launching the Alaska Gold Rush. This was big and tempting news in every American mining community, and Van Buskirk heard the call. On November 10, 1897, he posted the following ad in the *Lead Daily Call*:

A. M. Van Buskirk is advertising his half interest in the Van Buskirk & Roney blacksmith business in this city, and intends leaving for the Klondike in the spring.

The November 27 edition states that he had sold his interest to a Mr. F. Reece (not on the 1900 census). The "Rooney & Reece" blacksmith business is mentioned only once, on June 29, 1898. So it is quite possible that Van Buskirk went to Alaska, but if he did go he didn't stay for long. On June 2, 1898 the Trans-Mississippi and International Exposition was held in Omaha, and Van Buskirk displayed "a dozen miners' candlesticks of unique design" as part of the Black Hills exhibit (*Lead Daily Call*, January 3, 1899). Unfortunately, the newspaper article did not say specifically what was so unique about the design, or if the dozen candlesticks were all identical or varied in some way, but Van Buskirk won an award for them. (At that time he was briefly in partnership with Angus McLeod at 22 South Bleeker Street, but the candlesticks were his own work.)

Whatever was special about the design, he made quite a few of them! Shortly after returning from the Exposition (*Lead Daily Call*, February 23-27, 1900), McLeod & Van Buskirk announced:

500 MINERS CANDLESTICKS. As we are going out of the Candlestick business, we will sell our entire stock at 50c each. Now is your time to get one of those celebrated candlesticks, the same as was awarded a Medal and Diploma at the Trans-Mississippi Exposition at Omaha in 1898. First come first served.

One can't help wondering what their reason was for the close-out sale. Perhaps it was becoming obvious by 1900 that carbide lights (introduced for home use in 1894 and for bicycle lamps in 1896) were going to be far superior for mining use. The offer was not repeated after February 27, so apparently all of the candlesticks were sold.

As of the 1900 census for Lead City, Van Buskirk had taken a new Irish-born wife named Joe Anna Gardner (1878-1963) and was still working as a blacksmith. In 1901, Van Buskirk ("the blacksmith who has made himself famous for his manufacture of the miners' candlesticks which took first premium at the Omaha exposition") dissolved his partnership with Angus McLeod.

On July 5 and 26, 1902, ads in the *Lead Daily-Pioneer Times* stated that he had been a blacksmith in Lead for 15 years, i.e. since 1887; that may have been an exaggeration, or it may be a more accurate date than the 1890 year of immigration he told the census taker in 1900. By 1901 he had become an active member of a local fraternity, the Improved Order of Redmen, Sitting Bull Tribe No. 3. His last ad as a blacksmith in Lead was published in 1902, and there is no sign of him in the city thereafter. Although there were certainly a few other blacksmiths in

Lead, none of them ever advertised miners' candlesticks, either before or after Van Buskirk's time there in 1887-1902. In fact, there was no further mention of the devices in local newspapers until 1911, when a local jeweler was commissioned to make a solid gold miner's candlestick for presentation to William Howard Taft during the President's visit.

Van Buskirk moved to Washington State where, as of the 1910 census, he was working as a "house carpenter." He and Joe Anna had a child in Lead in 1900 (it apparently did not survive) and a daughter named Alberta Mabel (1909-1961); but the marriage failed and both mother and daughter were gone by the time of the 1920 census, which found Albert living in Washington with his sister and working as a "factory engineer." He died in McCleary, Washington on March 9, 1929, at the age of 71. By that time he had married his third wife, Lillian.



No candlesticks definitively known to have been made by Van Buskirk have been identified. However, he is by far the best candidate for the maker of a unique folding candlestick pictured above (now in the author's collection). It was handed down through several generations of Homestake miners in the Fitzsimmons family, residents of Lead and Belle Fourche. Leo Stambaugh handled the sale of the family's collection of Homestake memorabilia of various kinds. The elder of the family, Thomas Fitzsimmons, was assumed by the family to have made the candlestick, but only a very skilled blacksmith (not a miner) could have executed the design. The candlestick is marked "PAT'D" but no patent for the mechanism has been found in U.S. or Canadian patent searches. Interestingly, the candlestick is numbered ("No. 144") as if it were part of a series.

The spike is reciprocating, clamped between the two bars extending from the handle. It snaps crisply into place in the open or closed position. The clever part of the design is the hook, mounted on a small steel cube pinned to the side bar so that it can both swivel (to face left or right) and rotate down into the handle. The hook is pinned through the cube slightly off-center, so that it can be tightened securely in the upright position, then loosened by a counter-clockwise twist to rotated it around the other way so it can be folded down into the handle.



**Hook in the reverse position for folding down into the handle.**

I have never seen this kind of locking mechanism before; it must be the basis of the patent that was applied for and perhaps granted. It *could* also be the "very unique design" that won the Medal in the Trans-Mississippi Exposition.



**Candlestick fully unfolded, with the hook twisted into the locked position**



SURPRISE NOTE: After the first draft of this article was posted on the Eureka website, Tony Moon recalled that years ago he had one of these folders – except that his was “No. 136.” He purchased it in the late 1980s from a retired antiques dealer in Sutter Creek, California. In 2006 he sold it on eBay, so it’s out there somewhere. Fortunately he still has the photos he used for the eBay posting. Here are two of them: *(Thank you, Tony!)*



# Du Pont Blasting Cap Containers

Douglas K. Miller



In August of 2007, I posted a question on the *Eureka Forum* asking about a blasting cap container that had come up on eBay. I thought at the time that the container was a cap tin with an odd lid. John Kynor, Sr., responded that the container was not a tin, but a container sold by Du Pont to carry caps in safety. Jack Purson responded that the height of these cap containers varies, with some as long as 2.50 inches in height and others 1.75 inches in height. Jack speculated that the shorter ones might have been intended for No. 6 caps, while the longer ones were perhaps intended for No. 8 caps. Jack noted that, regardless of height, they were all of the same diameter.

Not long thereafter, in September 2007, I purchased one of these containers on eBay. At the time, my container cost a little over \$180.00. My container is the shorter version.



No. 6 Cap Container

My container is a little over 1¾ inches tall and 1½ inches in diameter. Later, when I was visiting John Kynor at his home in New Mexico, I saw an example of one of the longer blasting cap containers in John's collection. John tells me that his container is 2⅝ inches tall and 1⅝ inches in diameter. Both containers appeared to be made of a hard, red rubber, with a copper or brass top. Each container holds ten blasting caps. They were clearly designed to serve as a means of safely carrying a small number of blasting caps and dispensing them one at a time as needed. The containers are labeled with the Du Pont logo on the front and full, written warnings on the back, as one would see on more modern versions of Du Pont's cap tins. The logo and warnings were

etched into the hard, rubber sides of the container, and were painted bright white, although the white paint is missing from the lettering in my container. John's container is in much better shape than mine, and its bright, white lettering is still intact. I wasn't sure why there was a difference in height between the two containers, except for Jack Purson's theory that the shorter version was intended to carry No. 6 caps and the longer version was intended for No. 8 caps. The photos shown below are taken from an eBay listing.<sup>5</sup>



No. 8 Cap Container

Except for the reference to these containers in John Kynor's *Blasting Cap Workbook*,<sup>6</sup> I had never seen anything written about them. However, I found a wonderful on-line resource and an article in a 1923 edition of *The Du Pont Magazine* that tells all about them.<sup>7</sup> The on-line resource is the digital archives of the Hagley Museum and Library in Wilmington, Delaware. The archives contain a wealth of information about Du Pont and other manufacturers of blasting powder, dynamite, detonators, and blasting equipment.<sup>8</sup> The article that I found about these blasting cap containers is reproduced in full below.

<sup>5</sup> <https://www.worthpoint.com/worthopedia/tall-dupont-blasting-cap-container-119062347>, accessed August 25, 2020.

<sup>6</sup> John C. Kynor, Sr., *Blasting Cap Workbook, Tins and Boxes – A Photo History of 30 Years of Collecting with Some Comments, Facts, Suggestions, Opinions* (Belen, NM: B.B.B. Ltd., 2008), 9 and Plate 5.

<sup>7</sup> E. I. du Pont de Nemours & Co. Inc., "A Practical Blasting Cap Container," *The Du Pont Magazine*, Vol. 17, No. 10 (October 1923), 11. Source: Hagley ID, DuPont Magazine (f HD9651.9 D94A15), Published Collections Department, Hagley Museum and Library, Wilmington, DE 19807, [https://digital.hagley.org/1923\\_17\\_10?solr\\_nav%5Bid%5D=d8f9a17e0c113d35f3a5&solr\\_nav%5Bpage%5D=0&solr\\_nav%5Boffset%5D=3#page/12/mode/2up](https://digital.hagley.org/1923_17_10?solr_nav%5Bid%5D=d8f9a17e0c113d35f3a5&solr_nav%5Bpage%5D=0&solr_nav%5Boffset%5D=3#page/12/mode/2up), accessed August 25, 2020.

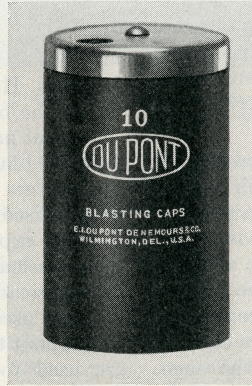
<sup>8</sup> The Home Page of the Hagley Digital Archives may be found at: <https://www.hagley.org/research>. The digital archives are fully searchable. The digital documents may be downloaded from the website, and high-resolution copies of the photographs in the archives may be purchased. Permission is required for publication.



## A Practical Blasting Cap Container

**B**UILT like the cartridge chamber of a six-shooter, the new du Pont blasting cap container, illustrated here, is the most recent blasting accessory offered for sale by the du Pont Company. It meets a real need of blasters who, for lack of a service container, have heretofore carried detonators loosely in their pockets or in the tin boxes in which they are sold. This practice has frequently resulted in serious and sometimes fatal injuries. By the use of this new device the likelihood of such accidents will be greatly minimized.

The body of the container is made of vulcanized rubber. Drilled at regular intervals into its thick side walls are ten holes, each large enough to accommodate a blasting cap. The polished brass top cannot be removed, but can be rotated around the rivet pin which firmly secures it, so that the vent exposes the ten compartments one at a time. You fill the container with blasting caps just as you would load a six-shooter with cartridges. After filling, the



top can be turned so that the vent is effectually closed over a blind hole. Incidentally, this top is designed to prevent accidental turning, which is only one of its several safety features.

The legend—"Blasting Caps—Dangerous—Handle Carefully"—is embossed in white letters on the back of the container along with the following safety rules:

- Do not remove caps with wire or nail.
- Don't tap or otherwise investigate them.
- Don't carry caps loose in pocket.
- Don't store in residence.
- Don't smoke near caps.
- Don't shoot into caps.
- Attach caps to fuse with cap crimper, not with knife or teeth.
- Keep in a dry place.
- Keep open lights away.

Containers are made for No. 6 caps and for No. 8 caps. The retail price of each is 50 cents. Address inquiries and orders to the Blasting Accessories Division of the du Pont Company, Wilmington, Delaware.

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The article confirms that the containers were intended to provide a safer means for the blaster to carry blasting caps than loose in his pocket or in a partially empty tin. The containers are made of hard rubber and have polished brass tops. The material from which the body of the containers is made is described as a vulcanized rubber, and other than a red rubber coating, appears to be black beneath the coating. The shorter version of the container is intended for No. 6 caps, and the longer version is for No. 8 caps. A 1922 edition of Du Pont's *Blasters' Handbook*<sup>9</sup> indicates that the length of a No. 6 cap was 1½ inches, which would be accommodated by the container that is 1¾ inches tall, as mine is (the depth of each hole in my container is a little over 1.6 inches). The length of a No. 8 cap was a little less than 2⅜ inches, hence the height of 2⅝ for the taller container. Thus, each container is ¼ inch taller than the cap itself.

In 1922, the diameter of each strength of cap was a bit less than ¼ inch (.234 inches in the case of the No. 6 cap and .240 inches in the case of the No. 8 cap). Each of the holes in my container is about .255 inches in diameter, but not uniformly so, and my guess is that the holes were drilled on a mechanized press or borer with a ¼ inch bit.

<sup>9</sup> E. I. du Pont de Nemours & Company, *Du Pont Blasters' Handbook*, compiled under the direction of Arthur La Motte (Wilmington, DE: E. I. du Pont de Nemours & Company, 1922), 24.



The containers have ten holes for the caps, plus one “filled” hole over which the rotating lid may be closed to prevent the caps from falling out of the container. The lid on my container has a detent in it to serve as a stop so as to prevent the lid from rotating until the blaster needs a cap. The article in the *Du Pont Magazine* states that the lid of these containers is secured by a rivet pin.<sup>10</sup> However, the lid on my container is secured to the body of the container by a brass screw that runs vertically through the the body of the container and permits the lid to be tightened if needed. Was this an innovation or repair by its owner or an improvement by Du Pont? Who knows? The blaster who owned my container appears to have used it regularly.

The article announcing the availability of these containers was published in *The Dupont Magazine* in October 1923. Hal Post’s website illustrates and describes one of the No. 6 containers. Hal

refers with thanks to John Kynor, Sr., for having provided the information that these containers were advertised in Du Pont’s *Blasters’ Handbook*, editions 8 (1934) through 10 (1939). This is an illustration of the No. 6 container from the 1938 edition of the *Handbook*, with the notation that “Safety containers of bakelite may be obtained from the factory on special order.” All of this suggests that the containers were produced at least between late 1923 and 1939, perhaps longer. *The Dupont Magazine* of 1923 indicates that they cost 50 cents apiece.

48                      BLASTERS’ HANDBOOK

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Safety Fuse

Blasting caps are small copper cylinders closed at one end, and loaded with a charge of a very sensitive and violent explosive that is exploded by the spit or sparks from safety fuse. They are manufactured in two strengths—Nos. 6 and 8, the No. 8 being the stronger. Data concerning the two strengths are as follows:

|                              |       |       |
|------------------------------|-------|-------|
|                              | No. 6 | No. 8 |
| Color of Box . . . . .       | Red   | Green |
| Length of Copper Shell . . . | 1½"   | 1⅞"   |
| Diameter of Copper Shell . . | .234" | .24"  |

Du Pont Blasting Caps are packed in tin boxes, 100 to the box, and these tin boxes in wooden cases containing from 500 to 5000 caps.

Safety containers of bakelite to hold ten blasting caps may be obtained from the factory on special order.




Fig. 23.—Safety Blasting Cap Container.

All in all, these containers are cool blasting artifacts, they probably served a very useful purpose for miners not needing to carry many caps, and while not rare, are nevertheless difficult to find.

<sup>10</sup> Hal Post’s website illustrates a No. 6 container with the rivet pin. Halslamppost.com, <http://www.halslamppost.com/Blasting%20Items/slides/Cap%20Carrier.html>, accessed August 29, 2020.



# Maumee Manufacturing Company

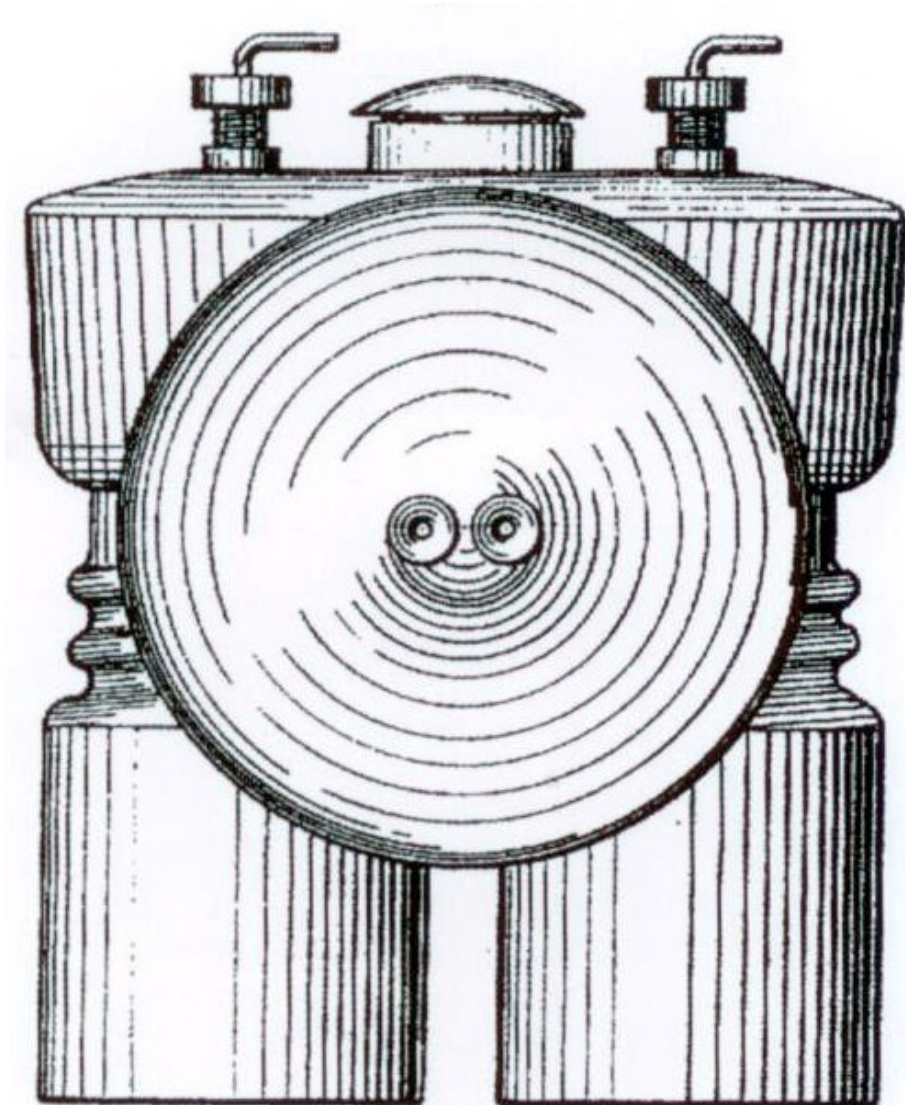
(Active 1914 and 1915)

Paul H. Damon, Sr.

## MAUMEE DUPLEX CARBIDE LAMP

This Carbide Lamp is unique, only two such designs were ever mass produced. This one received a Design Patent from the Patent Office in 1914, designed by a Wilksburg, PA, entrepreneur named Frank Law, the owner of the Law Burner Company. The offices were on Bennett Street, Pittsburgh, PA, East End. They only manufactured these lamps between 1914 and 1915.

It is believed that they were toll-produced by the Grier Brothers Company of Pittsburgh, due to design similarities with Grier Carbide Lamps, although several other companies owned by Mr. Law did manufacture other sheet metal products.



Ever been going through a tight squeeze in a cave passage, and the carbide lamp attached to your caving helmet starts to fizzle out? Can happen! What do you do?

If you were wearing a Maumee Duplex Carbide Lamp, made by the Maumee Manufacturing Company and located on Bennett Street in the East End of Pittsburgh, PA., all you will have to do is switch which side of the Duplex lamp is in operation. No more dumping out the spent carbide while in the squeeze, refilling it with new carbide stones, and making sure there is enough water in the top tank. Just turn the water-dripper valve on the top of the other side of the lamp, and using the built-in flint, fire the acetylene gas emitting from the tiny orifice tip, and go on your way! Problem solved!

I will admit that few cavers, if any, may have actually used a Maumee Duplex Carbide Lamp in a cave. They were only produced for a single year in the 1914/1915 period, and are extremely scarce. A few cavers have one in their collection, and that is where they should be.

Very little specific information has been published about the Maumee Mfg. Co., and the available information is limited and a bit confusing. Looking at the several people involved with the company, we can, however, piece together a fairly good picture of this brief-lived company. Their story also includes several other company names that existed between 1900 and 1920 or so. Penn Burner Company, Law Burner Company, Penn Burner and Plating Company were several of the names. All of these companies had at least one thing in common. Their facilities were mostly on Bennett Street in the East End section of Pittsburgh, and a single person seems to have been the driving force between all the companies, including the Maumee Company. Enter a Mr. Frank Law.

Sometime prior to 1900 both the Penn Burner and Plating Company, and the Law Burner Company, were in operation in Pittsburgh and adjacent Allegheny City. They had an ad in the 1900 Catalogue of the Annual Exhibition of the Pittsburgh Architectural Club for their gas-heating stoves. Both companies existed at least into the 1920s. Frank Law, he of the inventive mind, filed an application for a Design Patent for a Duplex Carbide lamp on February 25, 1914. Design Patent No. 45758, was accepted on May 12, 1914. The President of the company was a Dr. Frank L. Goehring, and Frank Law was the Secretary/Treasurer. Both men lived in the same general area, and this was possibly their initial involvement together. The primary connection between the men likely was as neighbors and friends. Dr. Goehring was an Osteopathic Physician, and census records show that he probably had the cash to make an investment in some new venture.

They formed the Maumee Manufacturing Company (Charter Name), although called the Maumee Specialties Company in the 1914 City directory. The Charter was dated March 4, 1914, Charter Book 48 Page 358, and the company was formed to “manufacture, buy, sell, and trade hardware supplies and novelties”. Interestingly, they seem to have called the lamp a novelty. The directors of the company were not only Dr. Goehring and Mr. Law, but as Vice President there was a Frank W. Tovey. Each of the three men owned 16 shares, with 50 shares at par \$100, for a \$5000 capitalization. Mr. Tovey was also a neighbor. Law was the acknowledged technical leader. Perhaps Dr. Goehring provided much of the cash to operate, so he became the leader, at least on paper.

This all seems like the result of some back-room smoker shared by the three men. Neighbors, investors, friends, and probably the same social clubs. Very convenient!

Then what happened? The lamps do exist in various lamp collections, so they were manufactured. But, by who? The only official listings of the Maumee Company are in 1914, no other years. The company likely only existed one or two years at the most. There is one possibility that the Law Burner Company did the manufacturing. They were listed at 7514 Bennett Street, and Maumee charter address was 7516 Bennett Street. In the 1914 City Directory the address is listed as 7527 Bennett street, several doors from the Charter address, probably before Mr. Law purchased his new headquarters.

Dr. Goehring is listed as solely a Physician in the census records, first in Wilkinsburg, PA, but by 1914 living at 7601 Kelly Street in the Pittsburgh East End. Frank Tovey is listed at 7602 Kelly Street, and Frank Law in earlier years lived at 7600 Kelly Street. Close neighbors indeed. However, by the 1914 Maumee charter date, Law is now listed as living at 7329 Bennett Street (later at 7611 Bennett, which would place him across the street from the Maumee Company).

There is a second, perhaps more likely, idea as to who actually manufactured the Maumee Duplex Lamps. There are several unusual similarities in the design of the Maumee lamp that were also unusual in the design of the Grier lamps which were originally made in downtown Pittsburgh before a change to an address on the North Side of Pittsburgh. They started manufacturing Carbide Lamps in the early 1900s, and had the experience and the equipment, and the employees, to toll- produce lamps for others. This was a somewhat common occurrence in the carbide lamp industry at the time. It seems quite plausible that they did indeed produce the Maumee Lamps for their brief period of operation. Perhaps there was only a single "run" to manufacture the lamps.

What happened? Originally manufactured for miners, but it would appear that they were not too successful in promoting the Duplex Lamp. Cavers were not a factor during these early years. These lamps were obviously heavier and larger than the normal single chamber lamps which were, in the 1914 period, being adopted by many of the miners. It would seem that these two reasons may be why the Maumee Duplex Carbide Lamps did not exist for very long. I could not find any newspaper references for Maumee Lamps.



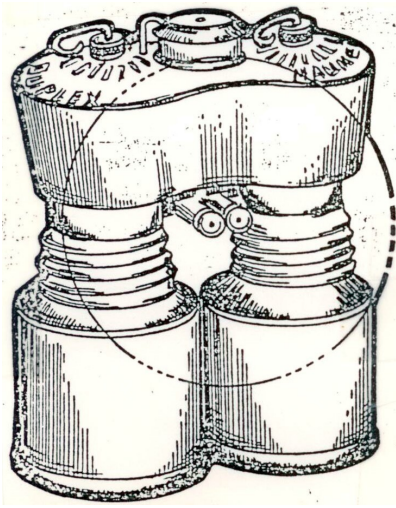


Photos show a ~1914 Grier lamp and a 1914 Maumee Duplex carbide lamp. One of the design features that raised the idea of Maumee being toll-produced by Grier is a similar raised lettering on top of both lamps. Photos courtesy of Dave Thorpe, of Arizona — the administrator of a Carbide Lamp group on Facebook and founder of Eureka Magazine in the early 1990s.

The raised lettering is remarkably similar. There are a few slight differences between the two designs, likely based on the Frank Law original design of the Duplex.








Siamese Twin design of the Maumee Duplex Carbide Lamp, with the reflector cut-away. It had a single water tank on the top, but two separate control valves, two separate acetylene gas tips, and two separate carbide chambers. The lamp is about 3" tall, 3" wide, and used a 3" diameter reflector. However, each carbide chamber is only 1.5" diameter, whereas most carbide lamps have a 2" or greater chamber, which restricts the amount of carbide in each, therefore each having a bit shorter run time of underground light.

Ad for an early Frank Law company in Pittsburgh. From the 1900 Catalogue of the Annual Exhibition of the Pittsburgh Architectural Club.

**Penn Burner and Plating Co. Ltd.**



Manufacturers of

**PENN, FOX, and  
BARKLEY Open Grate  
Gas Fires.**

Gas Heating Stoves.

**ELECTRO-  
PLATING.**

Phone Alleg. 398.

Penn Gas Heating Stove.

OFFICE AND WORKS:

**208 Isabella St., (Eagle Power Bldg.) ALLEGHENY CITY, PA.**



Front and the back views of a Maumee Duplex Carbide Lamp. Courtesy, Dave Thorpe

DESIGN.

F. W. LAW.

ACETYLENE LAMP.

APPLICATION FILED FEB. 26, 1914.

45,758.

Fig. 1.

Patented May 12, 1914.

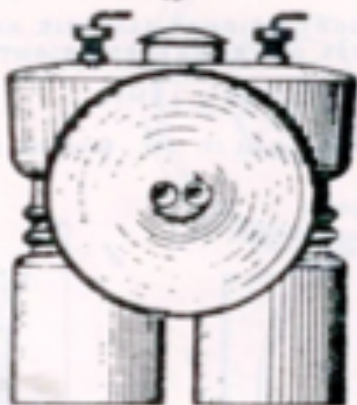
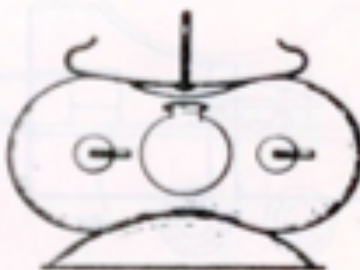


Fig. 2.



Fig. 3.



Witnesses  
W. C. Cook,  
O. S. Miller.

Inventor  
Frank W. Law,  
By J. A. Cook,  
Attorney

UNITED STATES PATENT OFFICE.

FRANK W. LAW, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO MAUMEE MANUFACTURING COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

DESIGN FOR AN ACETYLENE-LAMP.

45,758.

Specification for Design.

Patented May 12, 1914.

Application filed February 26, 1914. Serial No. 881,006. Term of patent 14 years.

To all whom it may concern:

Be it known that I, FRANK W. LAW, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new, original, and ornamental Design for Acetylene-Lamps, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof. In the drawing, Figure 1 is a face or front

view of an acetylene lamp showing my new design. Fig. 2 is a side view of the same. Fig. 3 is a top plan view thereof.

I claim:

The ornamental design for an acetylene lamp, as shown.

FRANK W. LAW.

Witnesses:

J. W. COOK,  
T. B. HUMPHREYS.

Design Patent by Frank Law. He received it less than three months after he applied for it. Frank Law is also listed in various ways as the owner of several other companies, in 1914 including the Maumee Specialties Company at 7514 Bennett Street. Nothing is known about this company, nor why Frank adopted the name Maumee for the two companies.



## FRANK W. LAW, THE FORCE BEHIND THE MAUMEE MANUFACTURING COMPANY

Frank Wallace Law was born in Mayotte New York in 1866, and passed away on June 30, 1936, due to falling off a ladder and crushing his skull. He is buried in Oil City, PA, his mother's hometown.

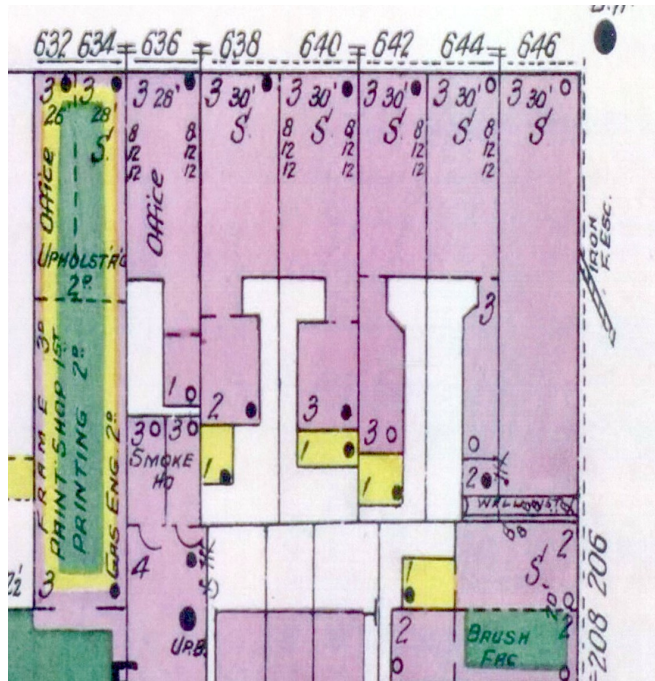
Frank and his family lived in Oil City, Venango County, PA, in the early 1880s. He married Ida Traax in Oil City In 1886, and about the same time he purchased his first company in his life-long employment in the sheet-metal business. In 1886 he moved to Tionesta, PA, where he operated the company for about 5 or 6 years, then selling it to others and moving back to Oil City about 1892. There, he formed a partnership with a Mr. Urquhart. Unfortunately, this folded before 1896, when he is listed as "unemployed" in a newspaper article. The family moved to the South Side Slopes area of Pittsburgh, PA, about 1895, for new opportunities.

At this point his life turned upside-down. His wife Ida had born two children while they were living in Tionesta. Unfortunately, she then gave birth to another son, Arthur, in 1896 while living at 104 Sumner Avenue. At age 3 months, she lost "control", and slit the child's throat, killing him. She never was the same again, but Frank still seems to have supported her for another 12 years. Another child, a daughter, was born in 1900, and at age one month, she killed the child by strangulation. This then led to a lengthy stay at the Dixmont insane asylum in Pittsburgh. She was released as "cured" about 1907, and moved back to her parents' home, but in 1908 she committed suicide using Franks' gun to "blow her brains out." Frank remarried in 1910, now having a completely sane life's partner that lasted until his death in 1936.

It is uncertain just when Frank again went into business, first forming a partnership with George A. Wallace to form the Penn Burner and Plating Company, Ltd. George was likely the controlling partner since this company never joined with the Law Burner Company in the Pittsburgh East End area.

The earliest newspaper reference noting a Law-owned company was an ad placed in the Forest Republican issue of December 3, 1899 actually for a sister company, Law Burner. Whether he purchased other businesses, or formed completely new ones, is uncertain, but the businesses would have been started between 1896 and 1899. In the meantime, by 1900, he moved his family to 7600 Kelly Avenue in Pittsburgh's East End, near Wilkinsburg.

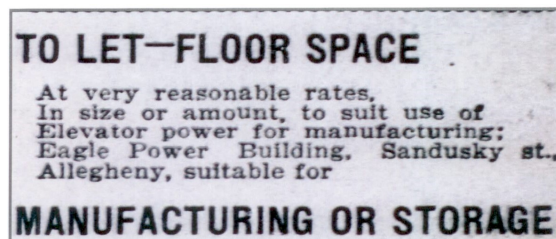
They moved the Penn Burner Company around a bit, primarily various locations on the North Side of Pittsburgh. First, however, it was located at 640 Penn Avenue in downtown Pittsburgh, currently a part of land now occupied by the Heinz Hall for the Performing Arts. The building and area is shown in the illustration to the right. Therefore, the initial manufacturing home of the Penn Burner Company was the purple building and its lot at street number 640. It was a three-story building about 30x150 feet size, on a lot 30x180 feet. At the same time, Law Burner was located about 500 feet away at 114 7th Ave.



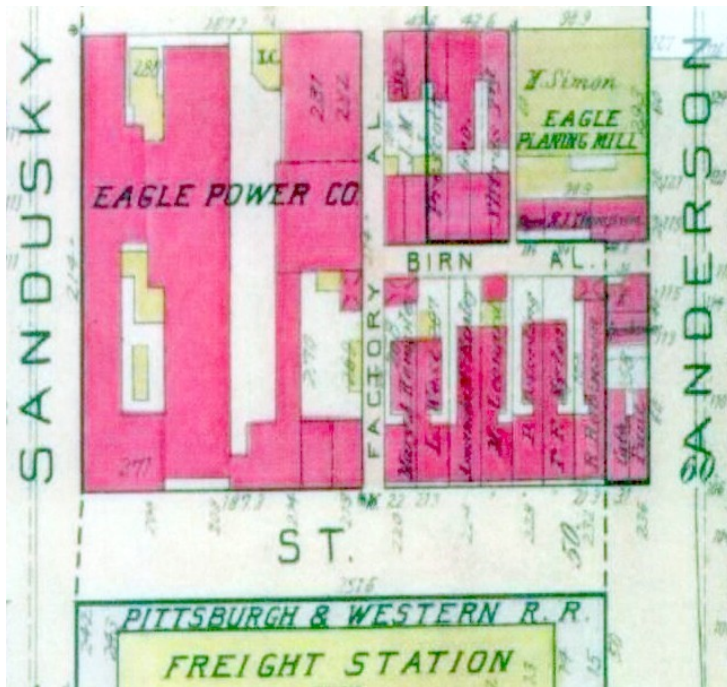
Except for two lots on Bennett Street in the Pittsburgh East End area, Frank never owned any business or personal real estate as well as can be determined. These leased addresses for each company were the first industrial rentals of several yet to come.

The Penn company was located at this address only in 1898 and 1899, although they obtained a 3-year lease.

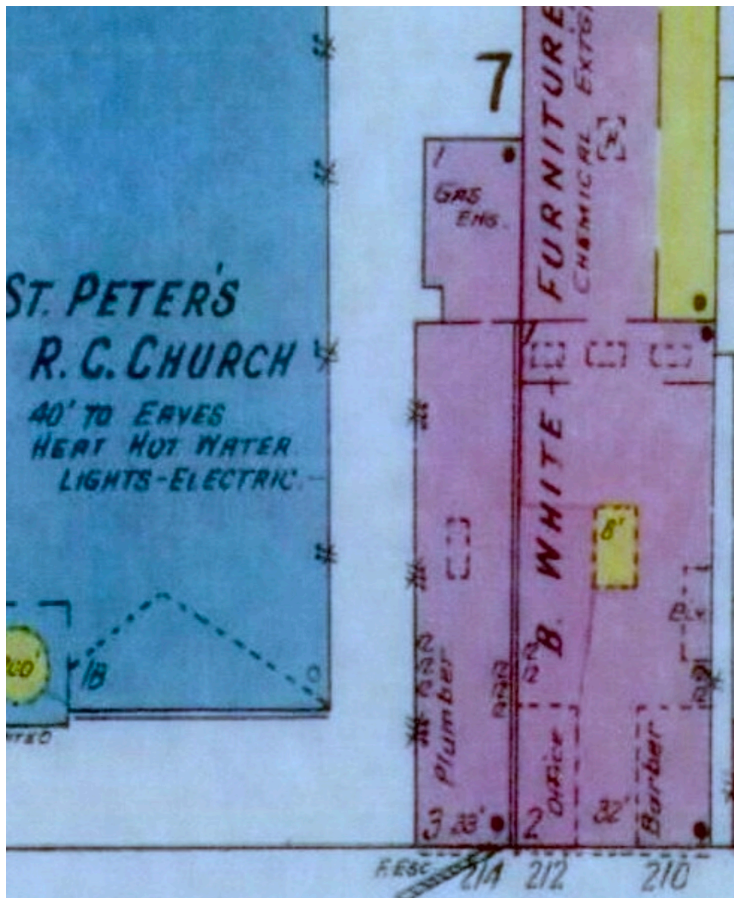
In 1900 through 1907, they are listed at a property on the North Side of Pittsburgh. This was a huge rental facility known as the Eagle Power Building, who rented parts of the building to a number of companies. On page 27 is a diagram of the building, and a rental add by the owners. Various newspaper ads during these years noted several addresses, but all were located within this building. This includes 208 Isabella Street, located below the property, but in the same building. Also, 122 Sandusky Street (left of the image) was also in this same building. Perhaps Mr. Law located several different places in the building. In 1908 to 1918, the Penn Burner address was 214 west Ohio Street, a bit west of the Eagle Power Building.



Newspaper ad from 1902.

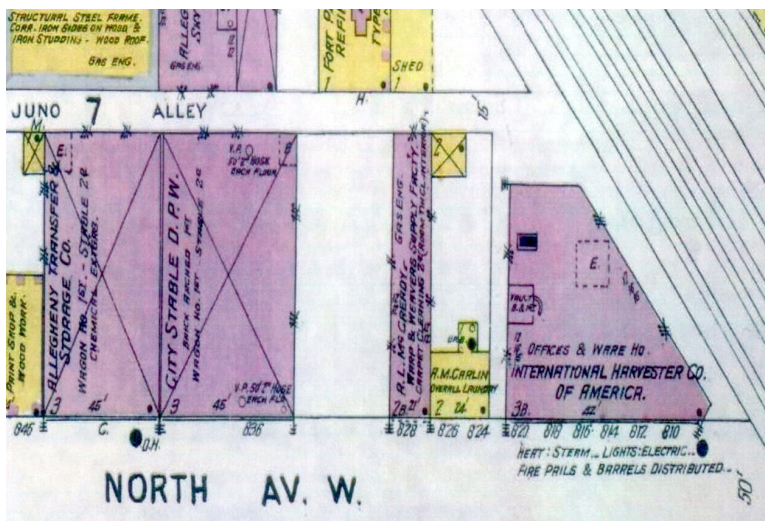


Left, the Eagle Power building originally housed the Eagle Cotton Mills, who moved to Indiana about 1890. The new owners chartered the Eagle Power Company, but only used a small part of the building, renting out most of the facility. The illustration to the right is at the corner of Sandusky and Isabella Streets, consists of two buildings. Penn Burner first moved into the lower right corner of the left building.

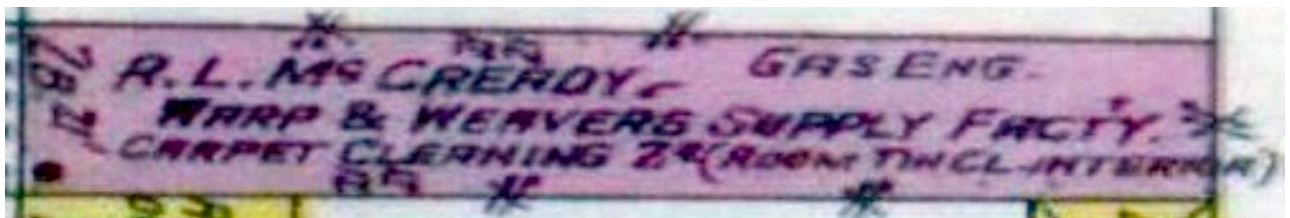


Evidently the Penn Burner move in 1907 was caused by the Eagle Power people selling the building to others. This next rental building shown right, is at 214 West Ohio Street (roadway on the left). Penn Burner only occupied the smaller purple building below the number "7." It was leased as the James Hay Building, owned by James Hay Plumbing Company. It was a three-story building, about 33x150 feet in size, tucked between ST. Peter's Church and the White Furniture Warehouse.





The final location of the Penn Burner and Plating Company at 828 West North Avenue. Located between North Avenue, Juno Alley, and the railroad tracks on the right. Penn Burner only had the thin purple building to the left of the International Harvester property. The previous lessee was the R. L. McCready Company, rug weavers and cleaners. Mr. Law evidently picked up the Carpet Cleaning business as an investment, not the weaving part of the business.



At some time during these moves from Penn Avenue to Eagle Power to West Ohio, to West North, Frank Law purchased two lots in the East End of Pittsburgh, very near to where he now lived on Kelly Street. This became the headquarters for the Law Burner Company, at 7614 and 7616 Bennett Street. No. 7616 was his offices, and perhaps the Penn Burner company also was supervised from this address, although a few miles away from its North Side addresses.

Now, we finally come to Frank and his connections with the Maumee Lamp company. As noted in the previous paragraph, Frank owned 7614 and 7616 Bennett Street properties. The Maumee Manufacturing Company is also listed at these addresses, so administered from the same office that Law Burner owned. Frank likely had his Duplex Lamps toll-produced by others, so just used the 7616 offices for Maumee, but probably not the 7614 factory building for this purpose.

According to various references, Frank was always a sheet metal entrepreneur, although his death certificate states he was a sheet and metal "contractor". He owned various companies including what was apparently his first one before 1900, the Penn Burner and Plating Company. He also was the principal in the Law Burner Company (possibly formed at the same time as the Penn Burner Company), the Maumee Manufacturing Company, the Maumee Specialties Company, the Pittsburgh Specialties Company, a Carpet Cleaning Company, and perhaps others businesses. Some appear quite short-lived, although with his inventive mind he at least tried.

Another important factor in assuming that he did not do the manufacturing of the Maumee Duplex Carbide Lamps is that most of his principal companies were very small. In 1916, the Penn Company had 13 employees, two of them in the office. Also in 1916, his Law Company had 4 employees. Neither were large enough to have actually manufactured much of anything. Grier Manufacturing had 80 or more employees, and the equipment to form carbide lamps.

**Frank W. Law**

Services for Frank W. Law of 6741 McPherson Blvd., who died Tuesday in the Pittsburgh Hospital, will be held today at 8 p. m. in the Fetzer Funeral Home, 1100 N. Homewood Ave. He was 70.

Starting in the sheet metal business in Tionesta, Pa., 50 years ago, Mr. Law later came to the Homewood district, where he had been in business the past 40 years. He was a member and elder of the Homewood Presbyterian Church during that time, and actively engaged in choir work.

Mr. Law is survived by his widow, Emma Logue Law; a daughter, Mrs. Evalyn Law Forse of Buffalo, N. Y., two sons, Raymond T. of Buffalo, N. Y., and Robert M. Law of Pittsburgh, and two grandchildren.

Burial will be Friday afternoon at Grove Hill Cemetery, Oil City, Pa.

The obituary at left was in the Pittsburgh Press, issue of July 2, 1936

Law Burner Company was located at 7614 Bennett Street in Pittsburgh's East End. The Penn Burner Company was located on the North Side of Pittsburgh (Allegheny City), near where Grier had moved their operations when street construction forced them to leave downtown Pittsburgh. Mssrs. Grier and Law knew each other, most likely close friends in similar businesses, that is, sheet metal forming and working, and Grier finally toll-producing the Maumee Duplex Lamps.

Since both Penn and Law were quite small, it is doubtful that either actually manufactured anything. On page 30 are early newspaper ads for both companies, from 1899 for both the Law Burner and the Penn Burner.

From all the ads found, it appears that Penn Burner was the principal business for the gas burners. Later, in the latter 1910s, Law Burner Company ads were usually just about pre-fabricated garages, apparently a re-seller of such garages as manufactured by others.

Frank, in his lifetime, had 6 children by two wives. At the time of his death, only three were still living, two murdered by his first wife, and the eldest, Clarence, unknown demise.



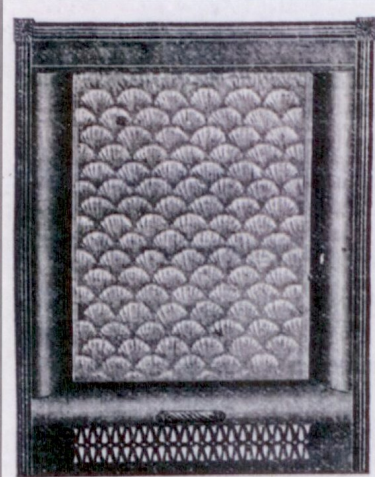
**Penn Burner and  
Plating Co., Ltd.**  
640 Penn Avenue,  
MANUFACTURERS OF  
Penn Open Grate Gas Burners,  
Penn Broiler and Toaster,  
Penn Heating Stove,  
Penn Furnace, Range and  
Sundry Burner,  
Latest Improved Gas Ranges.

**ELECTROPLATING**  
In Gold, Silver, Nickel, Brass and  
Copper.  
Oxidising, Lacquering and  
Polishing. Bicycle Plating.

Telephone 2314.

This ad is earliest for Penn Burner I could find. They advertised occasionally. Here they are promoting many of their intended products, and noting their Electroplating capabilities. This ad was in the March 16, 1899 issue of the Pittsburgh Press. Note this very early address on Penn Avenue. It is possible that this was the original address of an earlier company, if the Penn Burner business was purchased from some previous owner. Frank negotiated a three-year lease for this property from the building owner. It was located within a block of the Law Burner address from the same year, 1899. This ad was about 9 months earlier than the Law Burner ad below.

Shown right, is the earliest Law Burner ad I could find, and one of very few burner ads issued by the Law Burner Company. Later ads were always for the Penn Burner Company. This ad was in the December 13, 1899, issue of the Forest Republican of Tionesta, PA. Note the 114 7th Street address. This ad was the earliest one found for the several Law companies. As noted in the diagram on the next page, this address was a short block north of the first Penn Burner ad at 640 Penn Avenue.



**LAW : GAS : GRATES**  
FOR FIRE PLACES  
**ARE THE BEST.**  
WRITE FOR PRICES TO  
**LAW BURNER CO.,**  
114 SEVENTH STREET,  
**PITTSBURG, PENN.**  
Telephone 1652.

A note in the Forest Republican, dated April 21, 1886. He was 20 years old, likely had worked as an apprentice somewhere else.

—Frank Law of Oil City has purchased the tinning outfit of Ed. Heibel and set up shop in the Robinson & Bonner building, over the engine house. Mr. Law is a first class workman, deserving of success, and we hope our citizens will patronize him liberally.

—Frank Law was up from Oil City last week doing some tinning. He re-spouted the Central House, doing one of the nicest jobs yet seen in the town. He has formed a co-partnership with J. B. Urquhart in Oil City, and any one wishing their services in the line of roofing, spouting or sheet metal working can have his wants attended to promptly by dropping a line to the firm of Law & Urquhart, Oil City, Pa.

From the Forest Republican, October 5, 1892. He lived and married in Tionesta 1885 to 1892, opened his first business there, then moved back to Oil City, PA, and formed new partnership with Mr. Urquhart. He got his feet wet as a sheet metal worker during these years.

This text note was in the December 13, 1899 issue of the Forest Republican of Tionesta, PA. At this time, Frank lived in Pittsburgh, PA. His ad for Law Burners is on page 10, same newspaper issue as this note. People in the area evidently liked the work he did while living in Tionesta, and gave him a thumbs-up. After all these efforts, in 1914 he established the Maumee Duplex Carbide Lamp business in Pittsburgh.

—The Law Gas Burner, a good illustration of which is given in an ad. appearing in to-day's paper, is said to be one of the finest on the market in point of heating propensities, beauty and low price. When placed in a grate it sets off a room in fine style and lends cheer and comfort to all the surroundings. Our former townsman, Frank W. Law, is at the head of the firm which makes these burners, and we would advise those putting in mantels and grates to consult him before placing orders.



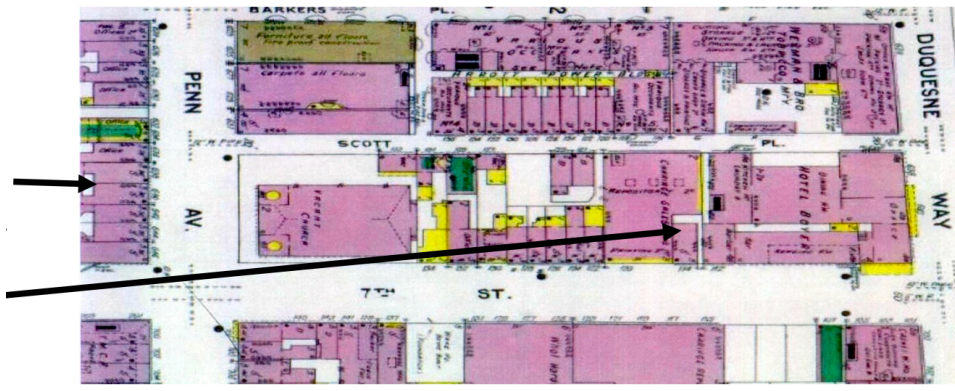
The ad at right was in the Pittsburgh Daily Post issue of October 31, 1915, promoting their line of Painted Steel Garages. I am sure they did not manufacture them. In 100s

| PAINTED STEEL GARAGES              |         |            |         |
|------------------------------------|---------|------------|---------|
| 10x14.....                         | \$43.00 | 12x14..... | \$45.00 |
| 10x16.....                         | 45.00   | 12x16..... | 48.00   |
| 10x18.....                         | 47.00   | 12x18..... | 52.00   |
| LAW BURNER CO.,                    |         |            |         |
| PHONE 690 HILAND. 7514 BENNETT ST. |         |            |         |

of other weekly ads they promoted their sales of Acme Garages, Ford Garages, etc. They were re-sellers of buildings manufactured by others. Strange product for a Burner company. However, initially, they had a few ads as actually selling stoves and/or burner systems. At some point, the Penn Burner Company apparently took over the entire line of burners.

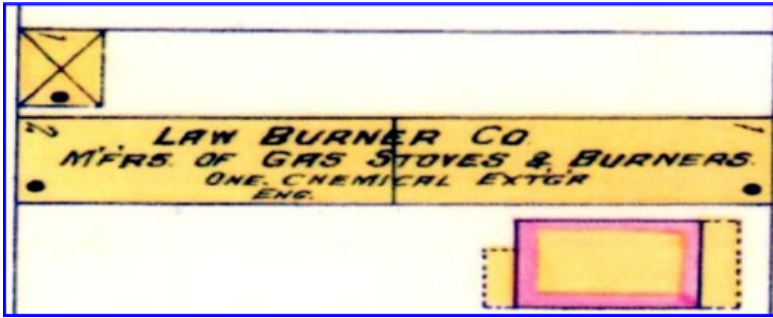
640 Penn Ave, ca. 1899, Penn Burner Company.

114 7th St., ca. 1899, Law Burner Company



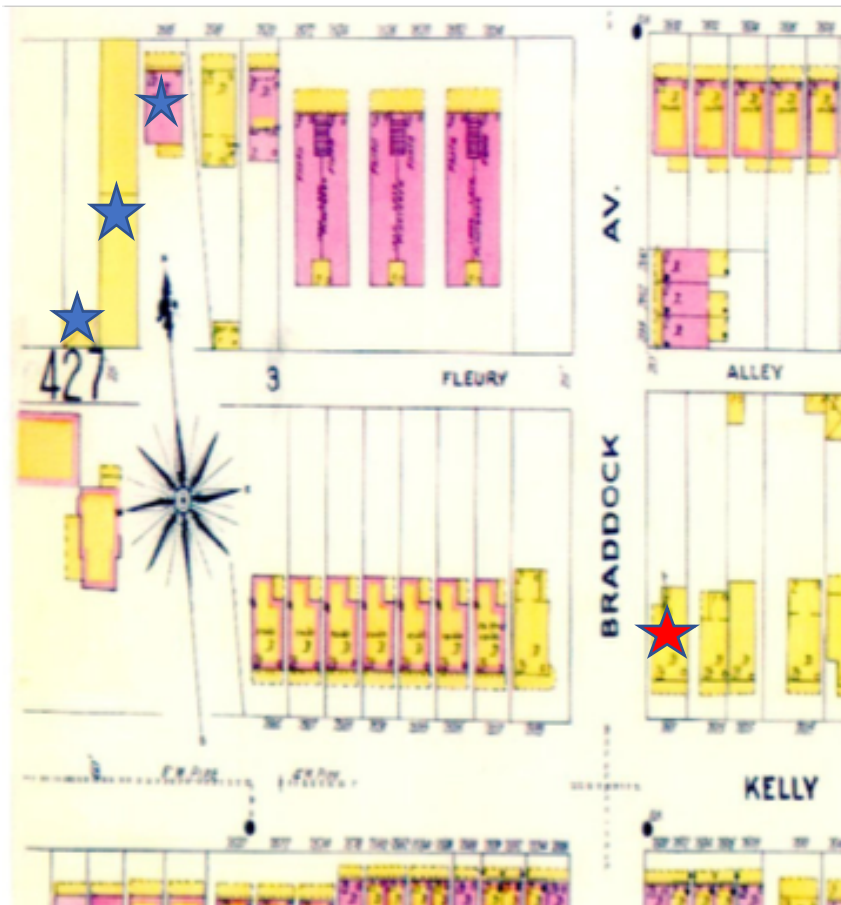


THE ONLY TWO PROPERTIES FRANK LAW OWNED THE PITTSBURGH, PA, AREA



Maumee and Law Burner headquarters 7614 and 7616 Bennett Street which runs along the right side of this illustration. The 7614 Bennett property included the small yellow square in the upper left (a 15 X 20 foot garage/stable) and the larger rectangle marked Law

Burner Co. (a two-story production facility, 25 X 140). Both were frame construction. At the lower right is the single story 7616 Bennett Street Office of brick construction with frame porches ( 25 x 35 plus porches). In 2020, it is now a vacant lot.



In a larger plot view, Bennett St. runs along the top. The Law Burner Company is represented by the three lots (blue stars). This illustration is from an insurance map, and they had a single chemical fire extinguisher in the factory.

The nearby corner of Kelly and Braddock (red star) is where officers for Maumee lived (7600 – 7603 Kelly Street).

APPROXIMATE LOCATIONS FOR THE VARIOUS  
FRANK LAW ENTERPRISES IN PITTSBURGH

7614, 7616  
Bennett St.,  
Maumees &  
Law Burner  
Headquarters

7600 to 7603 Kelly St.,  
where Maumees officers  
lived

Eagle Power  
Building,  
Sandusky and  
Isabella Street

4 Sumner Street

214 West  
Ohio Street

124 Second Avenue  
Grier Brothers Manufac-  
turing facility, toll producers o  
Maumees Duplex Lamps

818 West  
North Ave-  
nue

640 Penn Avenue



## A CAVERS' DELIGHT:

### THE IMA HOKES COLLECTION OF MAUMEE MULTIPLEX LAMPS

Wendell Wilson (paraphrased)

Originally issued in the Mining Artifact Collector Magazine

Every caver worth his carbide knows about the rare and famous Maumee Duplex lamp. Examples are known in collections around the country. Ms Hokes has the only complete collection as far as is known.

What has been generally unknown is that the duplex inventor Frank Law continued with a series of additional innovative designs along the same line. His Maumee Triplex patent application was refused, but a few examples were produced. He liked his triplex design so much, he then developed the Maumee Quadraplex, the Quintiplex, and the Hexiplex. Ultimately he created one of the most remarkable cavers' lamps ever developed, the Maumee Multiplex. It consisted of a continuous ring of 6 burners around the caving helmet, shining brilliantly in all directions to illuminate an entire cave room or survey station. Those around someone wearing the multiplex did not need their lamps at all.

Unfortunately, the Multiplex lamp idea did not prove economically feasible, largely due to its 12 pound weight, and the time it took to empty and refill the 12 lamps. The next great idea by Frank was the Polyflex lamp, but to my knowledge none were never produced.

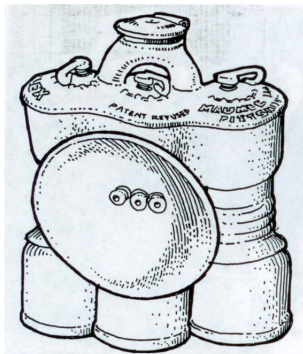


Figure 1. Maumee Triplex (all brass).

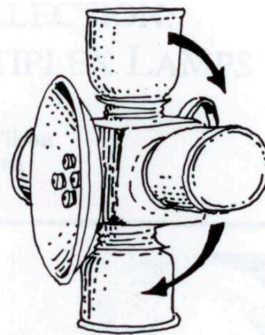


Figure 2. Maumee Quadraplex (all brass). Note that the lamp must be rotated 90° before lighting each successive burner, so that gravity-feed will operate.

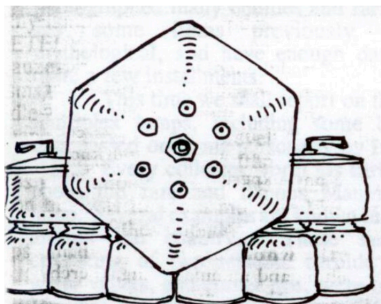


Figure 3. Maumee Hexiplex (japanned steel).

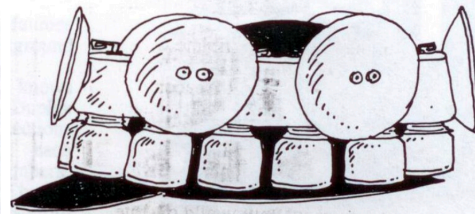


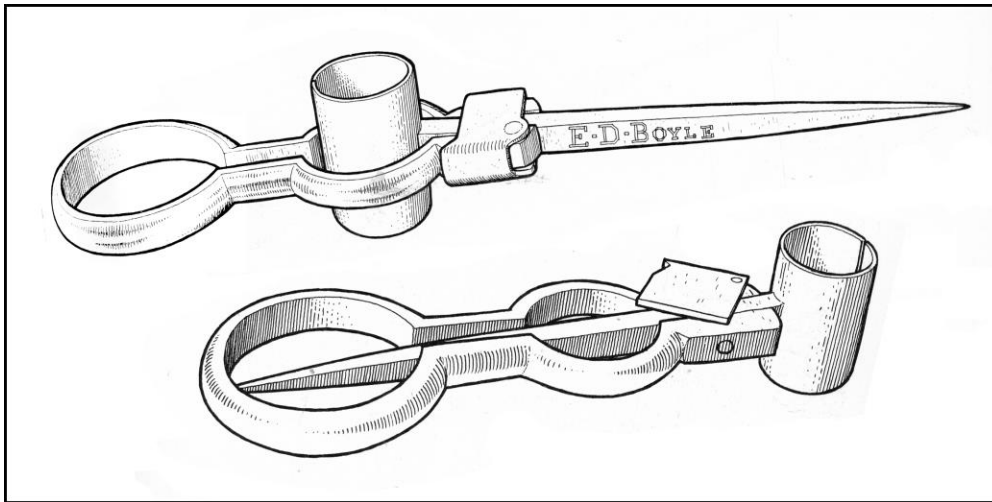
Figure 4. Maumee Multiplex (japanned steel).



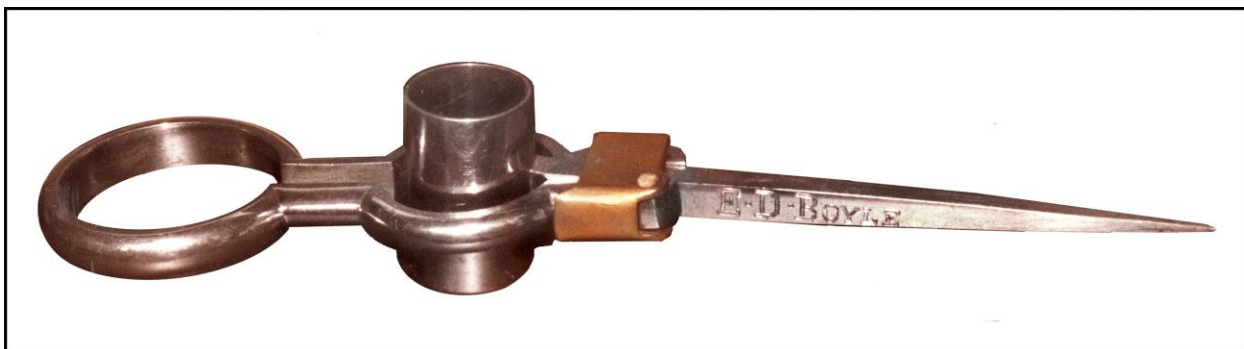
# The Boyle Candlesticks

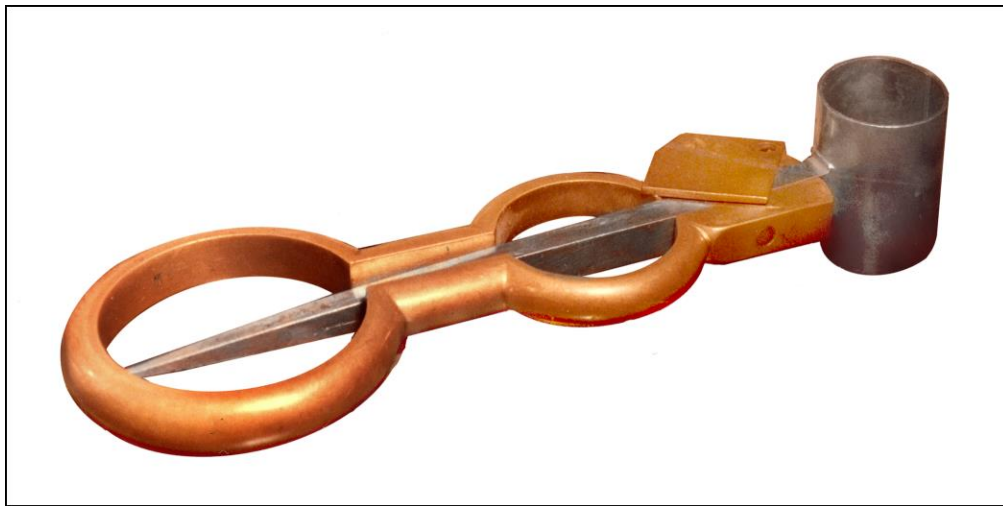
Wendell Wilson

One of my favorite miner's candlestick designs is referred to by collectors as the "Boyle" or "Comstock" candlestick. For artistic elegance as well as virtuoso craftsmanship it is hard to beat. The handle (which is brass on some and steel on others) is formed in the shape of two connected circles, and the reciprocating spike/thimble is held in place, open or closed, by a brass or steel clasp. Two of them are illustrated as drawings in my 1984 book on miner's candlesticks:



The "Boyle" name comes from the pristine, polished, steel-handled example shown above (and in the photo below) that is preserved in the McKay School of Mines collection, engraved "E. D. Boyle" (Emmett Derby Boyle, 1880-1926, Governor of Nevada from 1915 to 1923). It was given to him in 1899, the year of his graduation from the University of Nevada mining school, by the blacksmith at the Alta mine on the Comstock Lode in Virginia City, of which his father Edward M. Boyle was superintendent. Emmett Boyle's family donated it to the McKay School of Mines on June 1, 1926, following Emmett's death. Unfortunately the blacksmith's name is lost to history, so I prefer to name his creations after the only original recipient known by name.





At the time I published my candlestick book, only the two illustrated examples of the Boyle candlestick were known to me. The second one (shown above), was originally owned by Thomas Francis McCormick Sr. (1860-1929), superintendent of the C & C mine, the Consolidated Virginia mine and the Ophir mine in Virginia City, Nevada. It is in mint condition, has a steel spike-thimble and a brass handle and clasp. McCormick had a career spanning 51 years on the Comstock, and rose to one of the highest positions in Virginia City mining. He “was one of the last of the executives of the boom period on the Comstock” (obituary, *Reno Gazette-Journal*, July 25, 1929).

The McCormick stick was inherited by his son-in-law, William H. Marks and then his grandson, William Leslie Marks (1918-1994). In the 1980s it was on display in the historic Crystal Bar in Virginia City, which Marks owned and which had been in the family since 1916. Today the Crystal Bar is still there but has been taken over by the Virginia City Visitors Center. I recently spoke to the woman there and she was unaware of any such artifact, so it was probably reclaimed by the Marks family after William’s death in 1994.

In the late 1990s, Roger Peterson turned up evidence of a few more. He had been in New Hampshire on a business trip, and during his off hours paid a visit to a local antique mall in Keene. Lo and behold, there in a showcase in one of the unmanned booths resided a brass-handled Boyle candlestick (in a very dirty, corroded and frozen state). He was unable to speak to the owner, but he purchased it from the caretaker and subsequently had it authenticated at the MacKay School of Mines.

When business again took Roger to New Hampshire he went back to the same antique mall intent on making contact with the owner in order to find out more about the history of this important relic. Revisiting the same booth at the mall, he was shocked to find *another* brass Boyle stick in the showcase! It was in the same poor condition and frozen up but obviously old and authentic (and almost four times the price of the first find!). Of course Roger purchased that one, too. This time the caretaker was able to put him in touch with the owner, an antiques dealer from Antrim, New Hampshire.

The antiques dealer's story (Roger didn't make a note of his name) was as follows: After the close of WWII he had been discharged from the military at Long Beach, California, and started wandering back toward New Hampshire. But when he arrived in Big Bear Lake, California he liked it so much that he stayed there for many years, running an antiques shop. Sometime during that stay in Big Bear Lake he bought a collection of mining items (mostly carbide lamps) from someone (unnamed) in Arizona. Included were five miners' candlesticks, which, as he recalled, were all of the Boyle style: three of them brass-handled and two steel-handled. These he had carried with him back home to New Hampshire. Unfortunately, by the time Roger finally got to him the dealer had already parted with the other three, and would not reveal the buyer's name. But at least Roger had acquired a second one of the five, and he carefully cleaned and unfroze them both to get them functional again. —And the mysterious buyer of the other three examples *did* subsequently show up, apparently...

Shortly after Roger acquired the second of his two Boyle sticks from the Arizona hoard, Leo Stambaugh heard from Errol Christman that a drill-collector named Timothy Rath in Manchester, New Hampshire, was offering to trade two Boyle sticks—one brass-handled and one all steel—for rare drills that Leo owned. The steel one has a steel clasp, so it represents a third variety. They made the deal, drills for sticks; a fuzzy photo (below) from Leo's now-gone museum shows the two Boyle sticks, both apparently in pretty good condition.







Leo shared with Roger the information about the trade, but by the time Roger chased Rath down he had already resold the other Boyle candlestick, and had no records regarding whom he had sold it to. Apparently it went to some other collector in his area. It has not yet turned up again, so an all-steel Boyle stick is still out there in New Hampshire somewhere. But I am happy to say that back in 2014, Roger Peterson kindly sold me one of his two brass-handled Boyle candlesticks (pictured above), and told me the story behind it. Thank you, Roger! Now if I can just find a steel one...