

# Frederic Baldwin's Adventures in Scranton

Dave Thorpe

Frederic Baldwin is aptly credited with introducing acetylene lamps to the mining industry. The inventor lived on Staten Island, NY with his mother and most Baldwin lamps seen today were manufactured by the John Simmons Co. of Manhattan. His lamps were first used one hundred miles east in Scranton's anthracite mines and for a short period of time Baldwin established manufacturing in that area. Few of these lamps survive today.

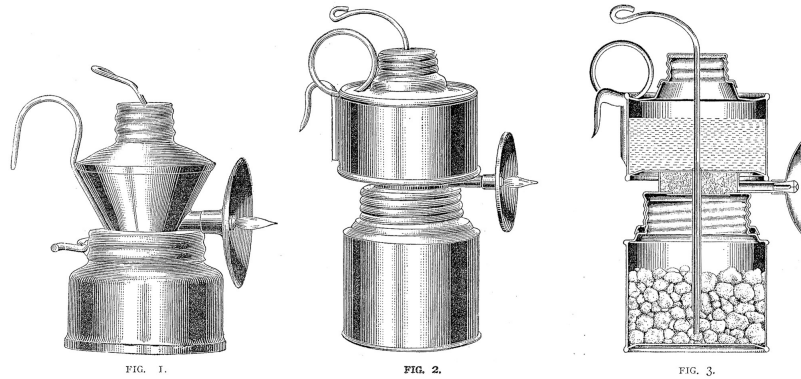


Baldwin lamps made in Scranton, ca. 1908.

Born into a wealthy family of jewelers,<sup>1</sup> it was unlikely that Baldwin would become an inventor of mine lamps and the path was convoluted. He spent teenage years at the Cheltenham College in England<sup>2</sup> and after returning to the United States, obtained his first patent in 1894 for a desk top oil lamp.<sup>3</sup> Following this, he submitted patents for various improvements on bicycles. He developed a working relationship with Albert H. Funke, whose family operated a large hardware business, and who was also fascinated with bicycles. Baldwin then patented an acetylene bicycle lamp that Funke produced, advertised and sold. Unlike other bicycle lamps of the day, the lamp had no side jewels or glass lens. In June, 1900, *Scientific American* published an article touting the new lightweight open-flame lamp that was claimed not to blow out in wind.<sup>4</sup> It did not fare well with bicyclists. Three months later Baldwin's Full Moon lamp "adapted for use in mines" appeared in *Engineering and Mining Journal*.<sup>5</sup>

The mining lamp soon gained attention. In 1901, a number of Baldwin lamps were installed in New York's subway and E. G. Spillsbury, a respected mining engineer, placed an order for

Baldwin “hand lamps” to be tested in nearby zinc mines.<sup>6</sup> From this point on, Baldwin’s open flame lamps were marketed only to the mining industry. Coal miners of the day used small hat-mounted oil lamps, and Baldwin addressed their custom by creating a small acetylene cap lamp. In 1906, *Engineering & Mining Journal* published an article based on interviews with Baldwin that included a depiction of his new small lamp.<sup>7</sup> Several are kept in the National Museum of American History - Smithsonian Institution.



Baldwin’s first cap lamp is shown at left along with the galvanized steel “Full Shift” lamp. *Engineering and Mining Journal*, July 21, 1906.



Left: Early Baldwin cap lamp from the National Museum of American History - Smithsonian Institution  
 Right: Early Baldwin cap lamp. Dave Des Marais collection.

### A Practical Acetylene Mine Lamp

The acetylene mine lamp herewith illustrated embodies all the features of a practical mining lamp. It is safe, economical, and clean and gives about five times as much light as an ordinary oil mine lamp, and the light can be thrown in any direction. It is primarily intended to be worn on the hat or cap and is but little larger and no heavier than the ordinary oil lamp. It creates no smoke nor sparks, generates little or no heat, and furnishes a strong white light. Its cost of operation is less than the maintenance of an oil lamp. For ore mines where candles are used, it is as much superior to a candle

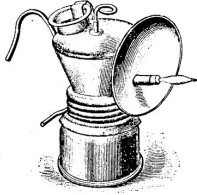


FIG. 1. ACETYLENE MINE LAMP

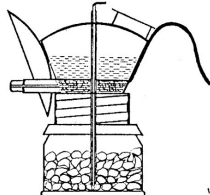


FIG. 2

as it is to the ordinary lamp used in coal mines. It is very simple in construction and is of less trouble than an oil lamp. There is no wick to replenish nor to become tangled. The ingredients that make the gas are calcium carbide and water, and the carbide used in a day costs less than oil. Fig. 1 is a general view of the lamp, showing its shape, and Fig. 2 is a sectional view. The calcium carbide is shown in small lumps in the bottom of Fig. 2. By referring to Fig. 2, the following description will show very clearly the construction of the lamp.

This lamp, which is known as the Baldwin lamp, consists of a water tank which is screwed on the top of the carbide container. A pipe projects from the bottom of the water tank into the container, and a wire which permits just the required amount of water to drip through the pipe on to the carbide, passes through this pipe, projecting above the top of the lamp as shown in the sectional cut, Fig. 2. Should the water not drip fast enough, turning this wire will clear the water tube, and give the required results. Outside of this wire, the lamp has absolutely no regulating device to get out of order.

The lamp consumes 5 to 6 ounces of the calcium carbide in 8 hours at an average cost of 3 to 4 cents. An extra bottom is furnished with each lamp, which can be carried in the pocket filled with carbide, so that when the lamp is exhausted, it is only necessary to fill the water tank, screw the loaded bottom on, and put the cap over the exhausted charge.

The lamp weighs when charged about 6 ounces, is 4 inches high and burns 2 hours on a charge of 1½ ounces of carbide.

The Baldwin lamp can be procured from A. L. Derry & Co., sales agents, Connell Building, Scranton, Pa., and Messrs. Derry & Co. will be pleased to answer all inquiries and quote prices on the lamps and carbide, in any quantity from one lamp and 2 pounds of carbide, up to any number of lamps and any quantity of carbide.

In June, 1907, with much fanfare in the press, Baldwin traveled to Scranton to meet with A. F. Law, the president of Cross Engineering Co., a sheet metal fabricator. They established a formal contract to manufacture his patented lamp.<sup>8</sup> Two months later, The Baldwin Lamp Company was incorporated in Pennsylvania with a capital of \$5,000.<sup>9</sup> Its five partners included A. F. Law as well as Llewellyn M. Evans, a local mine inspector who would later go on to create his own "Scranton" and "Scranto" mine lamps.<sup>10</sup> Evans was president of the firm and Baldwin (not a partner) would take patent royalties. In October, Pennsylvania State Representative D. F. Dempsey, a popular coal miner turned politician, called upon local newspapers where he promoted Baldwin's new lamp.<sup>11</sup> His praise was profuse, and one may surmise that he had been compensated for these efforts. In 1908, the lamp appeared in mining journals with A. L. Derry as sales agent. It was different from earlier Baldwins. While of the similar hour glass shape, the water door was now moved to the rear of the lamp, separate from the central water feed. They also used a forward tilted reflector — a hallmark of Scranton area lamps. Few survive today.

Above: *Mines and Minerals*, Vol. XXVIII, No. 8, March, 1908, 384. The article introduces A. L. Derry of Scranton as sales agent for the Baldwin cap lamp.

## The Baldwin Mine Lamp



Is an Acetylene Gas Lamp

It can be worn in the cap like an ordinary miner's lamp, but

**It Gives Five Times as Much Light**

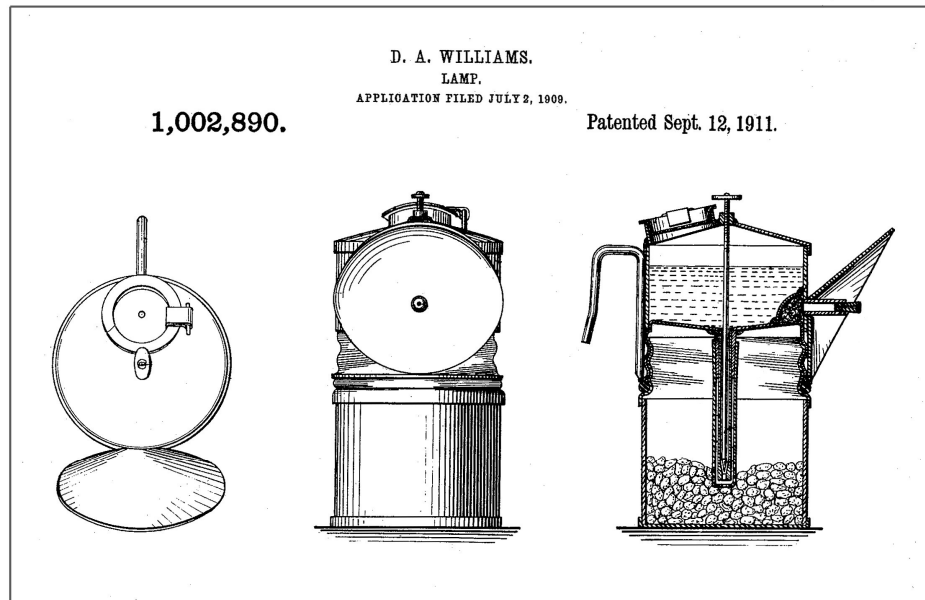
The gas is made from carbide and water and costs less than oil.

Write for free circular.

**A. L. Derry & Co., Sales Agts., Connell Building SCRANTON, PA.**

A. L. Derry advertisement from *Mines and Minerals*, August, 1908, 76.

Trouble soon began for Baldwin. He had previously contracted with John Simmons Co. (Manhattan), giving them exclusive rights to manufacture the lamp.<sup>12</sup> Whether related or not, Evans decided to completely disassociate from Baldwin. He began in late 1908 by hiring tinsmith David A. Williams (a relative), to fabricate and patent a new lamp.<sup>13</sup> The patent was filed on July 2, 1909 and four days later the company changed its name to The Scranton Acetylene Lamp Co.<sup>14</sup> Partners were now solely Evans, his wife, and his brother. The departure of partner A. F. Law, who had been in charge of manufacturing Baldwin's lamp, may indicate that production of lamps at Cross Mfg. Co. ceased or never began. Sales agent A. L. Derry was replaced with Francis Coffin. A new lamp emerged based on Williams' patent and was advertised as "The Scranton." Baldwin's hourglass-shape was gone as was his patented raking-wire water feed.



Above: Williams patent for The Scranton Acetylene Lamp Company. Evans later sued Williams who had assigned half interest to his nephew, David R. James instead of following his previous agreement to assign all patent rights to the Scranton Acetylene Lamp Company. Article below is from *The Scranton Republican*, November 11, 1911.

**SUIT OVER LAMP.**

**Case that Involves Patent Rights Started by Local Company.**

David A. Williams and David R. James were made defendants yesterday in a suit instituted in United States court by the Scranton Acetylene Lamp Company, in which the patent rights for the lamp manufactured by that company are involved.

Williams is a tinsmith and was employed. It is contended to make a lamp under the direction of a member of the company. He was to turn the patent rights over as soon as the lamp was patented, the plaintiff company alleges. Later Williams refused to live up to his agreement. It is alleged, and he assigned a half interest in the patent to his nephew, Mr. James.



Advertisement from *Engineering and Mining Journal*, December 31, 1910. Note the top seam on water tank matching the Williams patent. The seam is no longer present on ads beginning in mid-1911 and is not present on most Scranton lamps found today.

### Squiggly Hook Attachments

Lamps from this transition period are characterized by a peculiar hook. The portion soldered to the lamp body had a squiggly S-shaped conformation, a feature that has been found on Baldwin hourglass shaped lamps as well as the very early Williams patent lamps.



Left: Rear view of Scranton-made Baldwin hourglass cap lamp seen on first page of this article. Author's collection.

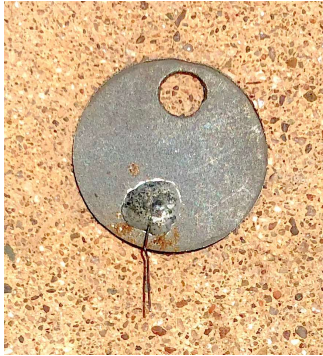
Center: Early Scranton style lamp. PAT. APPLIED FOR stamp mark and top seam matches earliest "Scranton" advertisements. This lamp has no visible evidence of having had a tilted reflector. Note early bar on top of water-feed screw pre-dating the knurled wheel and the top seam on water chamber matching the earliest ads and the Williams patent. Dave Bunk collection.

Right: Early Scranton style lamp, identical in design to lamp in center. Author's collection.

Hughes Bros. who had been making similar appearing Victor lamps, is likely to have become the Scranton Lamp manufacturer. Detailed measurements have shown an orderly transition of Hughes' Victor lamps to the Scranton Lamp,<sup>17</sup> which in actual production looked more like the Victor than the Williams patent. Were the squiggly hook lamps a product of Cross Engineering's

brief stint with lamp-making? The general time frame is consistent with this, but it is also possible that Cross never produced the lamp at all and that Hughes Bros. manufactured the lamp from the beginning. It is certain however that the squiggly hook identifies a lamp as having been made in Scranton.

## Disc Tip Cleaners



Unfired Victor lamps made by Hughes Bros. are found with small disc shaped tip cleaners stowed in their bases. They are identical to those found on early Baldwin lamps (ca. 1906) and have never been found with other lamps. In fact, when state representative Dempsey campaigned for the Baldwin lamp in 1907, he stated that 10,000 of the lamps were already in use locally and were being made in Scranton's Hyde Park — the Welsh district where Hughes Bros. was located.<sup>16</sup> Cross Engineering was in nearby Carbondale. All of this raises the probability that Hughes Bros. was a manufacturer of Baldwin lamps prior to Cross Engineering's brief involvement.



Left: Early Baldwin hand lamp with disc tip cleaner hanging from wire hook on water tank. Right Victor cap lamp with disc tip cleaner hanging from cap hook. Author's collection.

Baldwin responded to his abandonment by Evans in October, 1910 by bringing a patent infringement suit against The Scranton Acetylene Lamp Co. as well as their new sales agent Francis Coffin. After December, 1910, no further reports of the suit were published.<sup>17</sup> The Scranton Lamp was in fact so different from the Baldwin, it is doubtful that the suit was successful.

Baldwin withdrew from Scranton business interests and in 1911 renewed his contract with John Simmons Co. (Manhattan), reaffirming them as the sole manufacturer of his patented lamp, but also giving Simmons exclusive rights to sales.<sup>18</sup> Baldwin was not satisfied and began side ventures in New York, independent of Simmons. He put to market new lamps that did not follow his original patents including the Balco, Zar, and Black Diamond. These ventures were brief and Baldwin eventually sold all lamp patents to Simmons and left lamp designing entirely.<sup>19</sup>

## End Notes

1. Baldwin Family, 1847–1892, Manuscript Group No. 1061, New Jersey Historical Society; Moses Bigelow, “The Manufacture of Jewelry in Newark,” *Proceedings of the New Jersey Historical Society* 62 (1944): 207–9
2. Frederic and Herbert Baldwin were enrolled at Cheltenham College in September 1877, Andrew Alexander Hunter, ed., *Cheltenham College Register 1841–1889* (London: George Bell and Sons, 1890), 331; “School History and Archives,” *Cheltenham College*, <https://www.cheltenhamcollege.org/about-us/school-history-archives>
3. U. S. Patent No. 520,200. Frederic E. Baldwin. Application filed November 15, 1893, patented May 22, 1894.
4. The Baldwin Acetylene Bicycle-lamp, *Scientific American*, June 23, 1900, 394.
5. The Baldwin Acetylene Lamp for Mines, *Engineering and Mining Journal*, September 15, 1900, 312-3.
6. This and That, *The Scranton Tribune*, June 27, 1901, 8.
7. Acetylene Lamps for Mines, *Engineering and Mining Journal*, July 21, 1906, 111.
8. Baldwin et al. v. Grier Bros. Co., District Court, W. D. Pennsylvania, *215 Federal Reporter*, No. 26, July 7, 1914, 736.
9. List of Charters of Corporations from June 1, 1907 to May 1, 1909. Pennsylvania Secretary of the Commonwealth, 1909, p. 14.
10. Records of the Commonwealth of Pennsylvania, Executive Department, show that the Baldwin Lamp Company was incorporated August 28, 1907, in Pennsylvania. Its members included L. M. Evans, Scranton, Pa. (President), W. L. Allen, Peckville, Pa., A. F. Law, Scranton, Pa., J. Von Bergen, Scranton, Pa., W. J. Frees, Scranton, Pa. (research by Bill Spence)
11. Novel Mining Lamp, *The Wilkes-Barre Times Leader*, October 23, 1907, 3. *The Wilkes-Barre News*, October 24, 1907, 4. Town Topics, *The Wilkes-Barre News*, October 24, 1907, 4.
12. Baldwin et al. v. Grier Bros. Co., District Court, W. D. Pennsylvania, *215 Federal Reporter*, No. 26, July 7, 1914, 736.
13. Suit Over a Patent Lamp in U.S. Court, *The Times-Tribune*, November 10, 1911, 20.
14. *Baldwin Lamp Company Change of Name to The Scranton Acetylene Lamp Company*, Commonwealth of Pennsylvania, Office of the Secretary of the Commonwealth. A Certificate, July 6, 1909 (research by Bill Spence)
15. Dave Des Marais, “Scranton and Scranto Cap Lamps,” *Eureka! The Journal of Mining Collectibles*, Issue 9, January 1994, 19.
16. Novel Mining Lamp, *The Wilkes-Barre Times Leader*, October 23, 1907, 3. *The Wilkes-Barre News*, October 24, 1907, 4.
17. Lamp Companies at Law Over Patents, *The Tribune-Republican*, December 22, 1910, 3.
18. Baldwin (John Simmons Co., Intervener) v. Abercrombie & Fitch Co. (Justrite Mfg. Co., Intervener), Circuit Court of Appeals, Second Circuit, *228 Federal Reporter*, November 9, 1915, 896.
19. Gregg Clemmer, *American Miner’s Carbide Lamps*, (Westernlore Press, 1987), 65. Clemmer cites Digest of Assignments, U. S. Patent and Trademark Office, October 11, 1918 - Vol. B., and lists all patents by number.