

The Wedge Building, at center. *Courtesy of the Hagley Museum and Library, and the Tredyffrin Easttown Historical Society.*

The Upper Main Line has long been the home of many gifted people. Utlely Wedge was an inventor who lived on North Valley Road in the Great Valley, Tredyffrin Township, during the period 1930-1948. Using a record of his patents on inventions, scientific papers about his work, and recordings of personal interviews with people familiar with the man and his work, this author will briefly summarize that impressive record.

Mr. Wedge was a chemist who obtained many patents relating to the refining of metallurgical ore.¹ Early in his career, Mr. Wedge was the president of Tennessee Copper Company, a leading producer of sulfuric acid, a fundamental ingredient in munitions used during the First World War. Early in 1916, an article in the *New York Times* cites Wedge's decision to close the Tennessee Copper plant. Later that year, Wedge was replaced as president of Tennessee Copper, leading to a controversy about his decision which some said deprived the military of a source of munitions just a year prior to America's entry into World War I.²

Utlely Wedge was also the inventor of the Wedge Furnace, originally designed for industrial smelting but later adopted for use in residential heating. He invented the Wedge Stoker, as well as an acid-proof brick widely used in the chemical industry for storing acid. In the early 1900s he was superintendent of several chemical plants and refineries, including a refinery for the Standard Oil Company. He wrote extensively on scientific matters.³

In the late 1920s, Mr. Wedge established a summer residence on North Valley Road, near its intersection with Yellow Springs Road in the Great Valley, and after a few seasons this became his year-round residence. On this property he operated a dairy farm where he raised Jersey cattle. He was very active in the Chester County Agricultural Society, and was one of the founders of the Great Valley Civic Association.⁴ Mr. Wedge was also an active member of the Tredyffrin Country Club in Paoli.⁵

A tangible artifact of this interesting man was the Wedge Building in Paoli. Located on the northwest corner of Lancaster Pike and North Valley Road, Mr. Wedge erected this building for his enterprises, among which was the headquarters of the Electro-Chemical Supply and Engineering Company of which Mr. Wedge was President.



In this photo taken in 1926, the Wedge Building, shown in the foreground, sits on the northwest corner of Lancaster Pike and Valley Road, just south of the Paoli PRR station. Behind it is a three-story building with Dutch-style roof, which at one time was used by the Pennsylvania Railroad to change-over its steam engine crews. In the 1920s it was owned by the Great Valley Mill. Directly across Valley Road was one of the oldest landmarks in Paoli, the Canal Collector's Office of the Main Line of Public Works, which dated to the late 1830s. *Courtesy of Hagley Museum and Library, and Tredyffrin Easttown Historical Society.*

Wedge purchased the land for his building from either John Dingee or Henry Biddle, who both owned substantial portions of the land in Paoli extending from south of Lancaster Pike north across the Pennsylvania Railroad tracks.⁶

One of Mr. Wedge's neighbors in the Great Valley, John Alleva, described Wedge as:

"...an inventor. He had big tall poles [installed] on his property that went up into the sky, with a line across. [During World War I] people [laughingly] said he [Wedge] was communicating with the Kaiser when the war was on, but he was only inventing new code."⁷



The home and farm of Utley Wedge, located on North Valley Road in the Great Valley, just south of its intersection with Yellow Springs Road. This image, taken by the Dallin Aerial Survey Company in 1941, shows what still remains of at least one tall radio mast. *Courtesy of Hagley Museum and Library, and Tredyffrin Easttown Historical Society.*

As a schoolboy in the 1940s, I had a personal experience with the Wedge family: Mr. Wedge's granddaughter, Mary Wedge, attended Paoli Elementary School with me in 1938-1944. Some of Mary's classmates were invited to a Halloween Party at the Wedge home on North Valley Road in about 1944. I have a vivid recollection of descending the cellar steps into a pitch dark room filled with Halloween paraphernalia. At one time, I was asked to plunge my hand into a pot full of animal entrails, and to identify the parts. As I later found out, the pot was filled with soap which had been turned into a gooey liquid mess. The experience did not particularly affect the brave 12-year old boys at that party. However, if I had known of Mr. Wedge's work with sulfuric acid, I might have been a little more concerned.

During and immediately after World War II, rumors abounded in the community of "secret government work" being carried out in Paoli, some of it involving the Wedge Building. Having grown up in Paoli during the war, this author had heard these rumors and always wondered whether they were true. The work at nearby Foote Mineral Company on nuclear projects involving lithium and zirconium proved to be quite true [see the accompanying article on the Foote Mineral Company in this issue of the *Quarterly*]. However, this author's investigation of "secret work" in our area has yet to uncover a relationship between Utley Wedge, the Wedge Building, and the Foote Mineral Company.

There is an intriguing coincidental connection between Utley Wedge and the processing of exotic metals such as lithium and zirconium. Early in his career, Mr. Wedge worked on the production of sulfuric acid, an important component in the production of munitions. The processing of lithium and zirconium rely heavily on the processing of metallic ores. The smelting furnaces which Mr. Wedge invented are of the type required in the separation of zirconium and lithium from the ore in which they are contained. However, I have concluded that Mr. Wedge did not participate in such secret government work in the 1940s.

Mr. Wedge's son-in-law, Alexander Dingee, [married to Eleanor Wedge] established the improbability of his father-in-law working on the atomic program in a telling personal anecdote. Utley Wedge's wizardry at chess was legendary. Dingee remembers his father-in-law trouncing him, and most others, at chess consistently. Finally, however, Dingee well remembers that in the 1940s he finally beat Utley Wedge in a chess game for the first time ever. According to Alexander Dingee, this led him to the conclusion that by the 1940s Mr. Wedge was winding down intellectually, and would not have been up to the rigors of nuclear research. Utley Wedge was 85 years old when he died, after a short illness, in Bryn Mawr Hospital on September 3, 1948.

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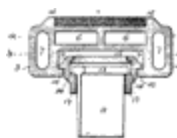
Looking north toward the PRR Main Line in Paoli, PA, 1926. Taken by the Dallin Aerial Survey Company, the image visualizes the old Dingee Farm which stretched east and west through Paoli on either side of the railroad. The Wedge Building is at lower left. *Courtesy of Hagley Museum and Library, and Tredyffrin Easttown Historical Society.*

Notes

1. Many of the patents are assigned to the Furnace Patent Company in Philadelphia. Mr. Wedge is listed on the patents as living in Ardmore, Pennsylvania.
2. *New York Times*, Jan. 8, 1916, p. 13 and *New York Times*, Dec. 1, 1916, p. 14.
3. Utley Wedge participated in technical symposia sponsored by the American Electrochemical Society. He was an acknowledged expert in the field of electrochemistry. For example, the Transactions of the American Electrochemical Society for 1916 referred to "the advice of Utley Wedge upon the manufacture of sulfuric acid direct from calcining furnace gases."
4. *Upper Main Line News*, Sept. 9, 1948.
5. Fry, Herb, Volume 39, No. 4 pg. 142. *Tredyffrin Easttown History Quarterly*. References to Utley Wedge gleaned from newspaper clippings about the Tredyffrin Country Club.
6. Vol. 27, No. 3, *Tredyffrin Easttown History Quarterly*, p. 102 "The Changing Face of Paoli."
7. *Tredyffrin Easttown History Quarterly*, Vol. 38, No. 2. Notes from an interview on August 22, 1997 with John Alleva, conducted by Bill and Sue Andrews and Herb and Barbara Fry, transcribed from an audio tape by Nancy W. Pusey.

An Utley Wedge Patent

1,086,955. RABBLE-ARM FOR ROASTING-FURNACES. UTLEY WEDGE, Ardmore, Pa., assignor to The Furnace Patent Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 8, 1910. Serial No. 548,024. Id. 75—143.



1. A rabble arm having in the under side of the same a recess closed at the sides and open at the bottom, and a rabble-carrying bar contained in said recess and having rabbles which extend downwardly through the opening in the bottom of the same.

2. A rabble arm having in the under side of the same a recess closed at the sides and open at the bottom and having cooling passages above and at the sides of said recess, and a rabble-carrying bar contained in said recess and having rabbles which project downwardly through the opening in the bottom of the same.

3. A rabble arm having a rabble-carrying bar thereon with open-bottomed pockets therein, a series of rabbles having heads contained in said pockets, the rabbles projecting downwardly through the openings of the pockets, and a movable plate for confining the heads of the rabbles in said pockets.

4. A rabble arm having a recess therein, and a rabble-carrying bar vertically movable in said recess.

5. A rabble arm having a recess therein, a rabble-carrying bar vertically movable in said recess, rabbles independently mounted upon and independently removable from said bar, and means for locking them to the bar when in use.

[Claim 6 not printed in the Gazette.]

Official Gazette of the United States Patent Office Vol. 192—No. 1 Tuesday, July 1, 1913, p.1189 digitized by Google

The Canal Collector's House

When the Main Line of Public Works was authorized for construction in the 1830s to provide a transportation link between Philadelphia and Pittsburgh, the railroad was a new, relatively untested technology. A good portion of the journey was intended to use the well-tested concept of interlocking canals, augmented by railroads, as well as pulleys over the mountains. Collection of freight tariffs to help pay for this enormous project was the responsibility of what were called Canal Collectors, of which there were many along the route. While there

was never actually a canal through Paoli, the Canal Collector's Office, one of the oldest landmarks in Paoli, sat on that spot from the late 1830s until it was finally demolished around 1952 to make way for a parking lot just south of the new Paoli PRR station.

About a century ago, local historian Julius Sachse provided further detail on the collector's office:¹

Although the building of the railroad eventually had a disastrous effect upon the turnpike hostelries, it was different with the Paoli [Tavern]; the tact and influence of General [Joshua] Evans was exerted to so great an extent, as to make the inn one of the most important stopping places on the new highway; as well as having the office of the first toll collector west of Philadelphia located here. This building, still standing, is the house just east of the railroad bridge, directly back of the present Paoli station. Consequently at the meeting of the Canal Commissioners held at Harrisburg, March 12, 1834, "Enoch Davis was unanimously appointed collector upon the Columbia railway at the Paoli"; further ordered that he shall be allowed fifty dollars per month as a full compensation for his services, and that as soon as weigh scales are completed at his office, he perform the duties of weigh master, and weigh all burden cars using said railway. A postscript on his commission from the Governor reads: "Present me kindly to my friend General Evans when you see him." . . . Davis remained in office until March, 1836, during which time the tolls and fines collected by him at Paoli amounted to \$16,454.73; fines and treble tolls constitute quite an item in the above amount. . . . John Williams, John Rowan and Isaac Powell were successively appointed as "Collectors of tolls and fines" for the State at this point.

1. Julius Friederich Sachse, *The Wayside Inns on the Lancaster Roadside, between Philadelphia and Lancaster*. The Pennsylvania-German Society Proceedings and Addresses at Harrisburg, Pa., October 20, 1911, Vol XXII, published 1913.



The Canal Collector's House is shown at center along North Valley Rd. in this 1926 photograph. *Courtesy of Roger D. Thorne.*