

**NOMINATION OF HISTORIC BUILDING, STRUCTURE, SITE, OR OBJECT
PHILADELPHIA REGISTER OF HISTORIC PLACES
PHILADELPHIA HISTORICAL COMMISSION**

SUBMIT ALL ATTACHED MATERIALS ON PAPER AND IN ELECTRONIC FORM ON CD (MS WORD FORMAT)

1. ADDRESS OF HISTORIC RESOURCE (must comply with an Office of Property Assessment address)

Street address: 1105-09 Frankford Avenue

Postal code: 19125

Councilmanic District: 1

2. NAME OF HISTORIC RESOURCE

Historic Name: Morse Elevator Works/Otis Elevator Works

Common Name: 1105-09 Frankford Avenue

3. TYPE OF HISTORIC RESOURCE

Building

Structure

Site

Object

4. PROPERTY INFORMATION

Condition: excellent good fair poor ruins

Occupancy: occupied vacant under construction unknown

Current use: Bicycle shop

5. BOUNDARY DESCRIPTION

Please attach a plot plan and written description of the boundary.

6. DESCRIPTION

Please attach a description of the historic resource and supplement with current photographs.

7. SIGNIFICANCE

Please attach the Statement of Significance.

Period of Significance (from year to year): from 1899 to 1946

Date(s) of construction and/or alteration: Constructed: 1899

Architect, engineer, and/or designer: Unknown

Builder, contractor, and/or artisan: Unknown

Original owner: Stephen Ambrose Morse

CRITERIA FOR DESIGNATION:

The historic resource satisfies the following criteria for designation (check all that apply):

- (a) Has significant character, interest or value as part of the development, heritage or cultural characteristics of the City, Commonwealth or Nation or is associated with the life of a person significant in the past; or,
- (b) Is associated with an event of importance to the history of the City, Commonwealth or Nation; or,
- (c) Reflects the environment in an era characterized by a distinctive architectural style; or,
- (d) Embodies distinguishing characteristics of an architectural style or engineering specimen; or,
- (e) Is the work of a designer, architect, landscape architect or designer, or engineer whose work has significantly influenced the historical, architectural, economic, social, or cultural development of the City, Commonwealth or Nation; or,
- (f) Contains elements of design, detail, materials or craftsmanship which represent a significant innovation; or,
- (g) Is part of or related to a square, park or other distinctive area which should be preserved according to an historic, cultural or architectural motif; or,
- (h) Owing to its unique location or singular physical characteristic, represents an established and familiar visual feature of the neighborhood, community or City; or,
- (i) Has yielded, or may be likely to yield, information important in pre-history or history; or
- (j) Exemplifies the cultural, political, economic, social or historical heritage of the community.

8. MAJOR BIBLIOGRAPHICAL REFERENCES

Please attach a bibliography.

9. NOMINATOR

Name with Title: Oscar Beisert, Architectural Historian Email Oscar.Beisert@gmail.com

Organization: NA

Date: September 4, 2015

Street Address: 205 Rochelle Avenue

Telephone: 717.602.5002

City, State, and Postal Code: Philadelphia, Pennsylvania 19128

Nominator is is not the property owner.

PHC USE ONLY

Date of Receipt: _____

Correct-Complete Incorrect-Incomplete

Date: _____

Date of Notice Issuance: _____

Property Owner at Time of Notice

Name: _____

Address: _____

City: _____ State: _____ Postal Code: _____

Date(s) Reviewed by the Committee on Historic Designation: _____

Date(s) Reviewed by the Historical Commission: _____

Date of Final Action: _____

Designated Rejected

6. BOUNDARY DESCRIPTION



Boundary Map

The tax parcel at 1105-1109 Frankford Avenue is composed of two separate, attached buildings. The parcel begins at a point thirty-one feet, seven inches (31'7") from the northeast corner of Frankford Avenue and E Wildey Street, and extends north along Frankford Avenue for forty-seven feet, ten inches (47'10"). From there, it turns at a right angle and extends eastward for one hundred and fifty-nine feet, six inches (159'6") to a point from which it turns southward and runs parallel to Frankford Avenue for forty-four feet, two inches (44'2"). From there, the boundary turns westward and runs parallel to Wildey Street for seventy-four feet (74'), where it jogs south and runs parallel to Frankford Avenue for three feet, eight inches (3'8"), before turning west and extending parallel to Wildey Street for eighty-five feet, six inches (85'6") to the place of beginning.

The lot number, 017N11-0230, is associated with the Office of Property Assessment Account Number: 882971650.



1916 Sanborn Real Estate Atlas, Vol. 3
Courtesy the Pennsylvania State University Libraries

7. PHYSICAL DESCRIPTION

The buildings at 1105 and 1107-1109 Frankford Avenue are notable industrial buildings of a larger, extant complex that encompasses those buildings located along the corners of Frankford Avenue, Wildey, Sarah, and Shackamaxon Streets. Built between 1851 and c.1920, the Morse Elevator Works, consisting of eight brick buildings located at 1101–1103, 1105, 1107–1109, 1111–1117, and 1119–1127 Frankford Avenue, 1045–1049 Sarah Street, 1100–1110 Shackamaxon Street, and 121–131 Wildey Street, chronicles Philadelphia’s association with a series of elevator manufacturers who participated in a nationwide marketplace. Most of the buildings in the Morse complex, which includes one of the earlier Landenberger buildings, were erected between 1899 and circa 1910.

Two of four smaller scale buildings fronting on Frankford Avenue, were built between 1891 and 1899, and are part of a collection of buildings that form the most intact portion of the former elevator works constructed by Morse, Williams & Co.

1105 Frankford Avenue

Resembling a modest, but attractive Philadelphia row house, 1105 Frankford Avenue is a two-story-with-basement, three-bay-wide, flat-roofed brick office building with sandstone sills and water table. The handsome small building appears to have been on the site by 1890, at which time advertisements refer to the building as the “main office” of the Morse Elevator Works.

1107-09 Frankford Avenue

1107-1109 Frankford Avenue is a large-scale one-story production shed with monitored gables on their west elevations facing Frankford Avenue, and stone water tables and sills. The building at 1107-1109 Frankford has three bays across its main elevation; a central hoisting bay with double doors is flanked by windows on both the first story and the second.

With the use of brickwork to qualify the building’s façade for an aesthetic classification, 1107-1109 Frankford Avenue is a monotone Italianate style building, which uses its clearstory façade to capitalize on this effect.



Looking north.



Looking north.



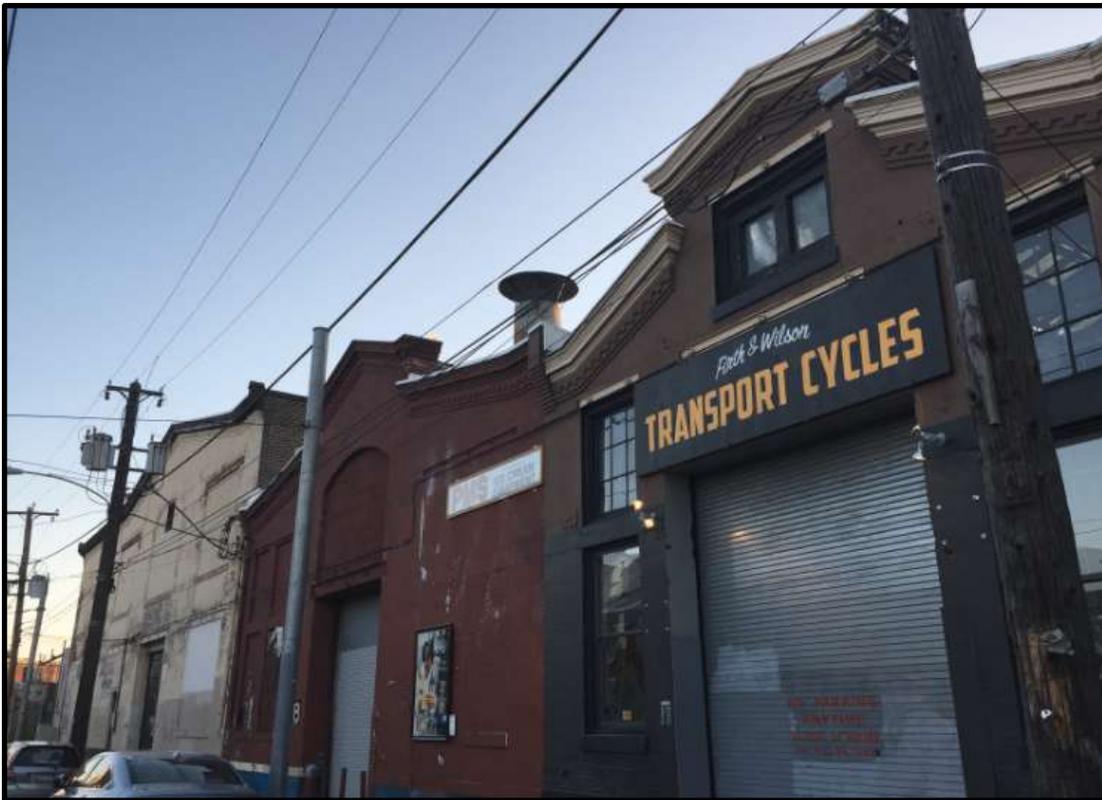
Looking north.



Looking north.



Looking northwest.



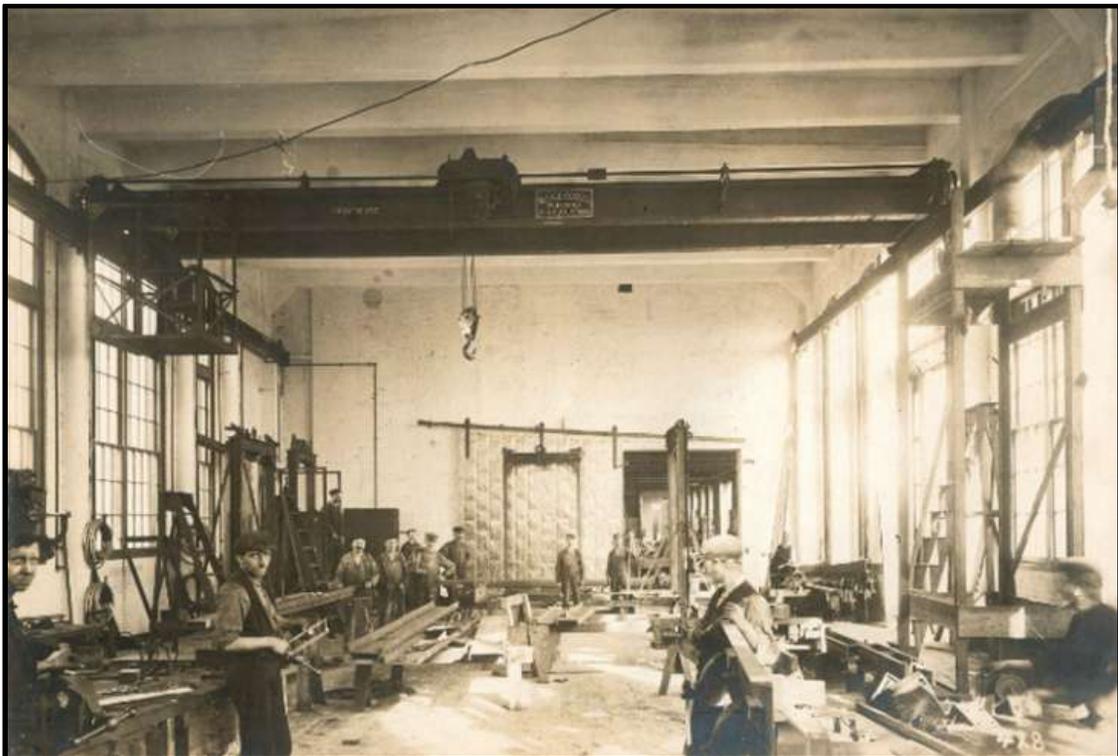
Looking northwest.

8. STATEMENT OF SIGNIFICANCE

PERIOD OF SIGNIFICANCE: 1892-1940

The buildings at 1105 and 1107–1109 Frankford Avenue is a primary component of a complex of buildings that represent an industrial site related to the following important enterprises: the Morse Elevator Works of Morse Williams & Co., operating on the site from 1886 to 1910; and the Otis Elevator Company, Philadelphia, of New York, New York, from 1910 to the 1940s. Two buildings within a larger complex, 1105 and 1107–1109 Frankford Avenue is a significant historic resource that merits designation by the Philadelphia Historical Commission and inclusion on the Philadelphia Register of Historic Places. The building satisfies Criteria for Designation a, h, and j of Section 14–1004 of the Philadelphia Code. 1105 and 1107–1109 Frankford Avenue:

- (a) Has significant character, interest or value as part of the development, heritage or cultural characteristics of the City, Commonwealth or Nation or is associated with the life of a person significant in the past;
- (c) Reflects the environment in an era characterized by a distinctive architectural style.
- (h) Owing to its unique location or singular physical characteristic, represents an established and familiar visual feature of the neighborhood, community or City; and
- (j) Exemplifies the cultural, political, economic, social or historical heritage of the community.



Interior View of the Morse Elevator Works. Courtesy the Philadelphia Athenaeum

(a) Has significant character, interest or value as part of the development, heritage or cultural characteristics of the City, Commonwealth or Nation or is associated with the life of a person significant in the past; and

(j) Exemplifies the cultural, political, economic, social or historical heritage of the community.

According to the Society for Industrial Archaeology, the industrial buildings located along the corners of Frankford Avenue, Wildey, Sarah, and Shackamaxon Streets form the, earliest, extant and coherent industrial complex in Fishtown, as well as the larger Kensington neighborhood. As important parts of that complex, 1105 and 1107–1109 Frankford Avenue have significant character, interest or value as part of the development, heritage and cultural characteristics of the City of Philadelphia, representing an early and important elevator manufacturer—the Morse Elevator Works and the associated Morse, Williams & Co., once the leading producer of freight elevators in the world; Steven A. Morse, an eminent inventor and manufacturer; and the Philadelphia branch of the most important elevator manufacturer in America—the Otis Elevator Company. The plain facts just stated relate to 1105 and 1107–1109 Frankford Avenue, individually, and within the said complex of buildings, which document Fishtown’s, as well as Kensington’s, rich and diverse industrial tradition. This documentation exemplifies the cultural, political, economic, social, and historic heritage of the community.

Fishtown Section of Philadelphia

1105 and 1107–1109 Frankford Avenue are buildings located in Fishtown, which is part of the larger Kensington neighborhood of Philadelphia. The following section is provided courtesy the author Rich Remer and provides a comprehensive historic context on the Kensington neighborhood and the section called Fishtown.

The old Shackamaxon Tract, surveyed early in the 17th Century, became during its earliest period of European settlement, the home to members of the Cox, Rambo and Nelson families of New Sweden. They had been granted these lands north of the Cohocksink Creek and marshlands, in the vicinity of the Great Elm near the Lenape settlement known as “Kachamensi.” The Unami clan of the Lenape considered these rich meadowlands their chief dwelling place and the traditional site for tribal conferences and congresses. From a European perspective at least, William Penn’s “treaty” with the Lenape was the most important conference that occurred there. It is immortalized in Benjamin West’s famous painting.

The British settlers of the new colony of Pennsylvania soon anglicized the tract’s name to “Shackamaxon,” which also became the name of one of its earliest streets. Penn’s assistant surveyor of the colony, Thomas Fairman, became the major landowner in the area and in 1702 built himself a fine brick and stone mansion on the bank of the Delaware, under what came to be called the “Treaty Elm.” In 1729 Anthony Palmer, a wealthy provincial

councilor moved into Fairman's mansion when he purchased the grounds. By 1730, Palmer named his new estate "Kensington." Palmer's Kensington was to be a transatlantic echo of England's Kensington Palace, regal and rustic, a retreat from urban life and its tumult. Palmer elaborated his regal conceit when he named the main streets of his lands after the ranks of the monarch: King (Beach), Queen (Richmond), Prince (Girard), Duke (Thompson), Bishop (Berks) and Crown (Crease). He even had streets named Hanover (Columbia) after the reigning House of Hanover, and Marlborough (after the Duke of Marlborough, England's military darling). The Delaware River formed Palmer's eastern boundary, and the Frankford Road bounded the west, with the northern boundary being the great Isaac Norris estate.

To attract residents Palmer subdivided his ground into smaller lots and leased them at very attractive rates. Two unique contingents took advantage of Palmer's offer, and their descendants would shape Kensington for the next century. Shipwrights of mainly English and Welsh descent made up the larger group. William Penn himself was a silent partner in the shipyard of one James West. West's son, Charles, jumped at the chance to move the family business from its cramped original quarters on Vine Street to Kensington's more advantageous geography. Shipbuilders had found little or no shoreline suitable to build on in the original center of colonial Philadelphia; the land dropped off in cliffs at the riverfront. The port of Philadelphia was also booming by the mid-eighteenth century, demanding more and more dock, wharf and warehouse space along what little accessible shoreline existed. Kensington by contrast had long, sloping beaches (today's Beach Street), ideal for hull construction and repair work, and extensive undeveloped space. A number of Quaker shipwrights moved south out of the city's congested trading district into Southwark, but Charles West, along with the Boytes, Norrises, Lynns, Wrights and newcomers like the Eyre brothers from Burlington headed north of the Cohocksink, to Kensington.

The importance of German immigration to Kensington is less well known than the stories of Germantown or Frankford, but evidence of a German presence is everywhere. In Anthony Palmer's will of 1749, he made provision for a community school to provide teaching "in English and German." Henry Muhlenberg's records of the local German Lutheran community list numerous baptisms, marriages and funeral services performed "in Kensington," while the parish registers of First Reformed Church of Philadelphia and St. Michael's and Zion Lutheran Church identify hundreds of German parishioners "of Kensington."

Kensington's German ethnic families concentrated in location and occupation, as fishermen along the mud flats by Gunner's Run (now Aramingo Avenue). For what could have been simpler for newcomers

with few skills and little money than to take up fishing in a place where every spring a miraculous flood of tasty Delaware River shad stormed upriver? So many shad filled the Delaware that early observers claimed it was possible to walk to New Jersey on their squirming, jostling backs. A family could rent a house and land after a few good fishing seasons, then supplement their income with seasonal work in the shipyards further down Beach Street, when the need for unskilled labor arose.

Gradually, the two communities began to blend, first through labor, then after a few generations, through love and marriage. But world events intervened in this quiet little river village of shipwrights and fishermen. When the American Revolution broke out and British troops occupied Philadelphia in September of 1777, Kensington acquired some strategic importance, since major routes to the northwest (Germantown Pike), north (Old York Road) and northeast (Frankford Road) all converged nearby. The British dammed the Cohocksink Creek and flooded the marshlands, creating a water barrier between the city and the northern approaches. The outlying plantations, orchards, woods and estates were torched to clear the vista for observation. In the fall and winter of 1777–78 Major John Simcoe and a regiment of loyalists called the Queen's Rangers occupied Kensington. Using the village as their camp, they made forays and raids in the area. The war dragged on for five more years after the departure of the Rangers; no boats were built until after hostilities ended in 1783.



Kensington Register No. 3. Courtesy the Historical Society of Pennsylvania.

In those few difficult and costly years, however, important changes had already begun to occur in the neighborhood, beyond what outside political and military affairs could inflict. John Hewson, an English textile printer, had arrived in Philadelphia on the eve of war, been chased out by the British, and returned to start Kensington's textile industry with America's first batch of calico, printed at Kensington's Governor's Mill. On the brink of the Revolution, a glass factory had opened briefly on Gunner's Run that would signal the birth of Kensington's glass industry. Glass and textile production were old crafts, but new means of production were being tried. Inventors were looking at the world in a different way, talking of mastering nature, making machines and machinery do their bidding. The energy of Britain's new Industrial Revolution, imported to North America, would find one of the epicenters of its development in Anthony Palmer's old rural retreat.

These changes had hardly begun to take effect, however, when European political and military affairs once more intervened in the everyday lives of Kensingtonians. The Napoleonic Wars, a twenty-five-year global power struggle between England and France, made the United States a leading neutral power and international carrier of goods. Orders for American ships burgeoned during this period and new shipyards, ropewalks and smithies opened in Kensington to meet the demand. Point Pleasant, the southernmost portion of the Kensington waterfront (where modern Canal Street now funnels out the remains of the creek into the Delaware River) was drained, filled-in and developed. Turner Camac arrived at Point Pleasant from England, determined to manage profitably the surrounding Masters estate owned by his wife, Sarah Masters, and her sister Mary, the wife of Richard Penn, grandson of the Proprietor. Camac quickly overcame years of local mismanagement and within a few years had restored profitability and created a boom in Point Pleasant. The Grice and Bower shipwrights opened shipyards at Point Pleasant, followed by Isaac Eyre and George Landell. In 1803, the creation of the Frankford and Bristol Turnpike, starting from Point Pleasant's public square, further stimulated business and settlement. Charles B. Parke opened a brass foundry in the neighborhood in 1809. Inns and taverns sprang up at major intersections approaching the terminus, while at the first toll gate, at what is now Frankford and Columbia, John Harrison established a manufactory and his residence, Priestley Lodge. A former student of Joseph Priestley, Harrison became America's first industrial chemist, discovering the formula for oil of vitriol (sulfuric acid) and beginning its production. The dangerously corrosive liquid, essential to finishing textiles, glass and metal products, could only be transported in fragile glass containers, so manufacturers tended to locate as close as possible to their sources (remember those bone-crunching roads!). Harrison's new facility in Kensington therefore became a magnet for new industrial growth and development.

By 1820, growth supported by the prosperous years of the Napoleonic Wars had stimulated the development of the waterfront, the beginnings of an industrial infrastructure, local churches, a market, the turnpike and hose and engine companies. Pennsylvania belatedly recognized that Kensington was no longer an isolated village but rapidly becoming the most enterprising part of the county. On March 6, 1820, the state legislature redefined Kensington and created a new corporation for it, called the "Commissioners and Inhabitants of the Kensington District of the Northern Liberties." Kensington's western boundaries now stretched as far west as Germantown Pike and Sixth Street and as far to the north as Lehigh Avenue, with the northern bank of the mouth of Gunner's Run (the future Dyottville and later Cramp's Norris Street shipyards) included as well.

Guide maps and city directories of the 1820s reveal an unofficial but critical feature of the newly created entity. Front Street had become the dividing line between old, original Kensington, now labeled “East Kensington,” and the additional territory, now called “West Kensington.” East Kensington, combining Kensington, Point Pleasant and the little fishermen’s hamlet known locally as “Fishtown,” was a maturing community, already divided into small land parcels, with residents of mostly British or German ancestry, overwhelmingly Protestant in faith and intricately interconnected by marriage. Sparsely-settled West Kensington, on the other hand, had large tracts of undeveloped land, rapidly filling in with rural migrants and the new immigrants of the 1830s and 1840s, many of whom were Catholic, Irish, or both. Front Street promised to be, and soon became, an ethnic fault line that would prove unstable under the pressures of nativism, rapid population growth and explosive industrialization.

The divide at Front Street would also help to create two Kensingtons, different in their social and industrial development. East Kensington flourished through the antebellum years, but then faced relative decay with the decline of the old craft-based shipwrights and the disappearance of the once-magnificent shad runs, while after the war the new factory-based system of production brought growth to the perimeters and to West Kensington. Open lands that became available in the 1840s and 1850s with the breakup of the Ball, Norris and Masters estates encouraged the growth of increasingly larger mills and factories to the north and west.

But in the 1830s, Old Kensington was in the “springtime” of its industrial development, a time when an astounding array of manufactured products, most requiring and rewarding a highly-skilled workforce, sustained families for generations. Textile and carpet manufacturing had a long and varied history on the east side of Front Street dating to John Hewson’s arrival in the 1770s. The textile industry operated on every conceivable scale, from individual outworkers and weavers in garrets or backyard sheds (some still standing today) to smaller versions of the enormous mills and factories that would appear in West Kensington in the late nineteenth and early twentieth centuries. East Kensington had the Landenberger complex at Frankford Avenue and Wildey Street (founded in 1851) and John Bromley’s first carpet mill (1860) at Front and York Streets. Though West Kensington became the heart of the textile mill and factory district, especially after the break-up of the Norris Estate beginning in 1844, East Kensington hosted smaller, specialized operations like the Henry H. Becker Knitting Mill (1857) on Moyer Street, or William Hunter and Sons Carpet Works (1857) on Columbia Avenue, or Ridpath Carpets (1844) on Day Street, small or mid-sized plants tucked mid-block among the houses of their workers and laborers.

Risking their luck in new business ventures after a century of shipbuilding, the Eyre family turned to operating a leadworks on Girard Avenue, but it failed within a few years. The Sutton family had more luck with their Franklin Iron Works, founded in 1841 at Front Street and Girard Avenue. Indeed, a regular “iron rush” exploded on Kensington, with iron works and rolling mills opening at former shipyards. With foundries now firing their blast furnaces with coal instead of wood and charcoal, Kensington ironmasters took advantage of coal terminals that the Philadelphia and Reading Railroad Company opened in nearby Port Richmond in 1842. Verree and Mitchell’s Philadelphia Iron and Steel Works opened at Beach and Poplar Streets in 1844, followed by Rowland’s Kensington Iron and Steel Works on an adjoining lot in 1845. The People’s Iron and Machine Works of Jacob Naylor opened at Girard and Leopard Streets in 1846. After a relative lull, the Marshall Brothers opened their Penn Treaty Rolling Mill at Beach and Marlborough Streets in 1856, followed by Stephen Robbins’s Philadelphia Furnace and Rolling Mill of 1857, at Beach and Montgomery Streets. Even Charles B. Parke’s former brass works succumbed to the trend and was transformed into the Point Pleasant Iron Foundry by 1869. Eventually, Kensington’s waterfront sported as many smokestacks as it once had ship masts.



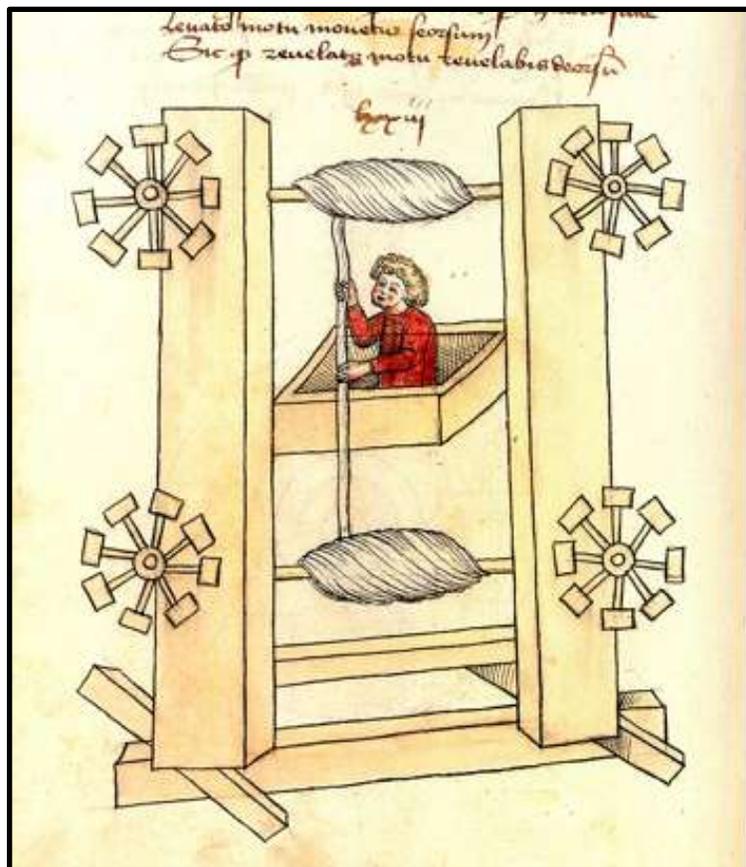
Lithograph of the Kensington Screw Dock. Courtesy the Historical Society of Pennsylvania.

Besides luxury goods like carriages, East Kensington industrialists made tools and machinery. Henry Disston, an enterprising artisan like many Kensingtonians before him, opened a saw works in 1846 at Front and Laurel Streets. When rapid growth exceeded available local space (always a neighborhood problem), Disston established his better-known factory in Tacony. William Sellers, who as a prominent engineer would later design innovative building techniques for the 1876 Centennial Exhibition, began his precision toolworks at Beach Street and Columbia Avenue in 1848.

He, like Disston, left the neighborhood after only a few years, having outgrown his original facility. Several years later, H. W. Butterworth began manufacturing textile machinery at Front and Haydock Streets. Though Butterworth stayed on, expanding his firm on East York Street, East Kensington was clearly running into limitations to its growth and development well before the Civil War.¹

The Elevator Industry in America: 1850–1950

Exemplifying the cultural political, economic, social and historical heritage of the Fishtown community within the larger Kensington neighborhood, the buildings at 1105 and 1107–1109 Frankford Avenue represent the early history of the elevator industry in America, representing a significant part of its development and heritage in Philadelphia, the Commonwealth of Pennsylvania and the United States.

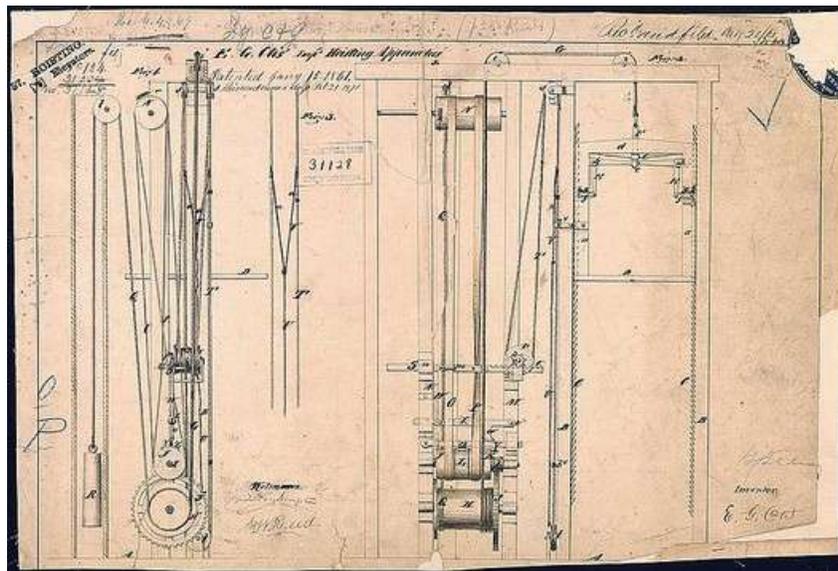


Elevator design by the German engineer Konrad Kyser (1405). Courtesy Google Books.

While Elisha Otis, founder of the Otis Elevator Company, was perhaps the most important character in the advent of the practical elevator in America, there were many other small firms around the world that specialized in the early years of manufacturing lifting devices. As part of the industrial revolution at-large, these companies hoped to produce useful devices that could accommodate both freight and passengers. However, it

¹ Remer, Rich and Ken Milano. "Old Kensington," *Pennsylvania Legacies* 2 (November 2002): 8-16.

wasn't until Otis' safety device was invented that the production of passenger elevators was practical. In the United States, the following companies proved formative to the early elevator industry: James Bates in Baltimore; Alonzo B. See (A.B. See Elevator Co.), Cooke & Beggs, Copeland & Bacon, Burdon & Henry H. Hill (later Flynn-Hill) in New York City; D. Frisbie in New Haven; Sprague, Stokes & Parrish, Morse-Williams & Albro-Clem in Philadelphia; H.B.Graves in Rochester, NY; Eli Thayer & Milton Prince Higgins in Worcester, MA; Sommerville in New York; Cushing in Hoboken, N.J.; E. M Fraser of San Francisco; Hale in Chicago; Salem in Virginia; Warsaw in New York; Kaestner & Hecht in Chicago; Lane & Bodley in Cincinnati (factory destroyed by fire on December 13, 1900); Elektron in Brooklyn; Lagerquist in Minneapolis; McCarvey in Philadelphia; Haughton in Toledo; Whittier in Boston and Marshall in Pittsburgh. These companies produced a range freight and passenger elevators by the 1880's that were powered by steam, water and electricity. There were even a number of companies in Europe that were highly active within the same range of time, featuring a similar diversity of technologies.



Elisha Otis' elevator patent drawing, 15 January 1861. Courtesy Wikimedia Commons.

In the last quarter of the nineteenth century the Otis Brothers became the leading producer of “safety elevators;” however, among the both the leading and pioneer companies, many were associated with specific innovations and, more importantly, patents, which were required as pieces of the larger innovation puzzle that led true origins of the efficient and safe elevator we know today. Starting in 1888, the Otis Brothers purchased at least thirteen other elevator companies, creating through incorporation the Otis Elevator Company in 1898.

A comprehensive and intensive history, *The History of the Elevator Industry in America, 1851–2001* was compiled by Patrick A. Carrajat, Chairman of the Certified Elevator and Escalator Products Corporation, from which is directly quoted to provide a context of the American Elevator Industry and its history:

The first manufacturer of moving platforms in the United States appears to have been Henry Waterman located at Duane and Centre Street in New York and it is known that one of his lifts was in use as early as 1850 in Hecker's Mill on Cherry Street in that city. His early elevators used a lever in the car to throw the driving machinery in or out of gear predating the use of the shipper rope. 1850 would see the first use of the worm and gear on an elevator by George H. Fox Company of Boston. These early elevators used hemp ropes until 1852 when the first wire ropes were introduced; the safety device was a rack and pinion device activated by the elevator operator. It would await the inventive genius of Otis Tufts to develop the first enclosed platform or elevator cab. In 1857 the Boston firm of William Adams and Co. installed sixteen freight elevators in the just built granite warehouse known as the State Street Block. It is of more than passing interest to note that they were suspended by hemp ropes and all were driven from a common shaft that ran the length of the building. Other inventors such as Elisha Otis of Yonkers and Cyrus W. Baldwin of Brooklyn would design and patent other components including Otis's major contribution, the car safety. It is interesting to note that Otis's safety did not resemble a modern safety, it was mounted near the crosshead and worked as a pawl against a rack, with the rack being the rail. Otis would later purchase the Cruickshank Safety and the Brown Electric Safety both mounted under the car. The Brown Safety was set with a large magnet coil. It was this writer's privilege to reset one of these safeties when the brake coil failed. The safety had to be reset by planking out under the car and removing the coil for rewind. These safeties were in use until late 1999 at 150 Nassau Street, New York. The Cruickshank Safety was connected to steel cables mounted in the shaftway. Advances were made in making these early steam machines safer, Cooke & Beggs in New York would introduce a drum limit, a slack cable device and brass bearings in 1879 following competitor Copeland & Bacon's use of worm gearing and an automatic stop motion device in 1876.

The subject of passenger safety was seldom addressed in the 19th century and accidents were frequent and fatalities common. It is hard for a modern elevator technician or engineer to conceive of elevators without interlocks, gate switches, pit buffers, governors, safeties or limit switches but all were unknown in most of the prior century. The cause of most accidents were falls into open shaftways and crushing injuries caused by cars moving without closed gates or doors. On February 2, 1861 *The New York World* would report that Paul Winsheimer was killed in an elevator accident at 66-68 Duane Street in the confectioner Struelens & Palmer, the first recorded death we have found. The 1860's saw strange developments as technology attempted to solve the vexing problems of elevators crashing into their pits. The most creative of these solutions was the Air Cushion Safety Device patented by Albert Betteley who tried to make the elevator shaft virtually air tight, added an air reservoir in the pit and shaped the

bottom of the cab like a parachute. It passed quickly, a footnote to elevator history only to be revived and popularized by the Ellitrope Company. It would not pass from use until after the close of the century despite its' miserable safety record and enormous cost. The installation of the Air Cushion Safety required digging a pit roughly 1/3 the rise of the elevator and making it virtually airtight. In its bid for market domination Otis would purchase a large stake in Ellitrope so it would profit from the sale of most available safety devices. The largest installation of the Ellitrope was at the Woolworth Building in New York City, the cost of installing them was \$150,000US a virtual fortune at the time. The inventor of the Ellitrope Air Cushion was killed in Baltimore while demonstrating the effectiveness of his device.

In 1859 the prolific Mr. Tufts patented his Vertical Screw Railway and saw its first installation at the Fifth Avenue Hotel in New York City and its second and last at the Continental Hotel in Philadelphia. The Vertical Screw Railway drew hundreds of visitors daily to the Fifth Avenue Hotel including the Prince of Wales and a host of domestic and foreign engineers and scientists who marveled at its safety. It incorporated advances such as a friction brake and automatically closing doors, items that would not come into common use for several more decades. The death of Mr. Tuft's great invention was due not to its viability but rather its extreme cost, at a time when steam elevators could be bought for \$5–7000.00 US his machine cost \$25,000 US. Sensing that his Vertical Screw Railway was doomed Mr. Tufts turned his talents to the conventional passenger elevator. His primary contribution was adding additional hoist cables, each capable of sustaining five times the weight of the cab, he completed his first installation at the American House, Hanover Street, Boston which was equipped with six steel cables. Least we think that the hydraulic telescoping piston is a new concept consider that twelve telescoping hydraulics were installed in the New York Post building on South Street, New York City in the 1860's. They were an abysmal failure and were removed some 10 years later.

In 1868 the Worcester Polytechnic Institute would build the Washburn shops on its campus. The purpose was to give hands on training to engineering students and produce products for sale at a profit. One of the inventions of the Washburn shops was the plunger hydraulic elevator in 1870 which met with much success in the local area. In 1882 the business was disbanded when Worcester Elevator Company questioned WPI's tax free status. Otis Brothers and Otis Tufts would discuss but never consummate a merger of their companies and the Panic of 1873 and the resultant depression would cause Tufts to become insolvent but Otis Brothers had learned a valuable lesson, merge with your competition or buy them out, it would be the cardinal principle fueling their growth in the

19th century. Tufts' famous Vertical Screw Railway at the Fifth Avenue Hotel would see service until its removal in 1875.

The late 1860's and the 1870's saw the dawn of a new era in elevator technology with the first roped hydraulic being installed in 1868 and the vertical hydraulic being patented by Whittier Machine Co. in 1871. Whittier would install Rhode Islands' first elevator at the Wheaton & Anthony building in Providence in 1872. Whittier would expand beyond its' Boston roots and open an office at 91 Liberty Street in New York City. In July, 1875 a feature article in, *The Manufacturer and Builder*, Vol.VII.—No 7., relates the story of the first telescopic hydraulic elevator designed by a Mr. Thursby and installed in 111 Broadway, New York City by Robert Weir. In 1878 Otis would install the first direct plunger hydraulic elevators in the Boreel Building in New York City. The last 30 years of the 19th century would be the golden age of the hydraulic with an infinite variety of designs of the vertical and horizontal hydraulic vying for dominance. At the beginning of my career (1961) it was still common to see operating vertical plunger hydraulics and I vividly recall surveying 13 such machines at the Traymore Hotel in Atlantic City prior to their replacement by Eastern Elevator of Philadelphia in 1965 and an 800 FPM bank of elevators on lower Broadway in New York City. I also inspected four high speed roped (12:1) horizontal hydraulics at 44 Court Street in Brooklyn, NY prior to their replacement. They were magnificent pieces of engineering and had given three-quarters of a century of service, a testimony to their endurance if not sophistication.

In 1886 Seth K. Humphrey designed and built his first wood framed Manlift and sold it to Charles Pillsbury. It was installed at Pillsbury's Minneapolis mill, the world's largest at the time. John H. Jallings of J.W. Reedy Elevator Company would solve one of the most vexing problems on early worm gear machines with his invention of the button thrust allowing limited movement of the worm and relieved the heating that destroyed lubricants and caused machines to seize.²

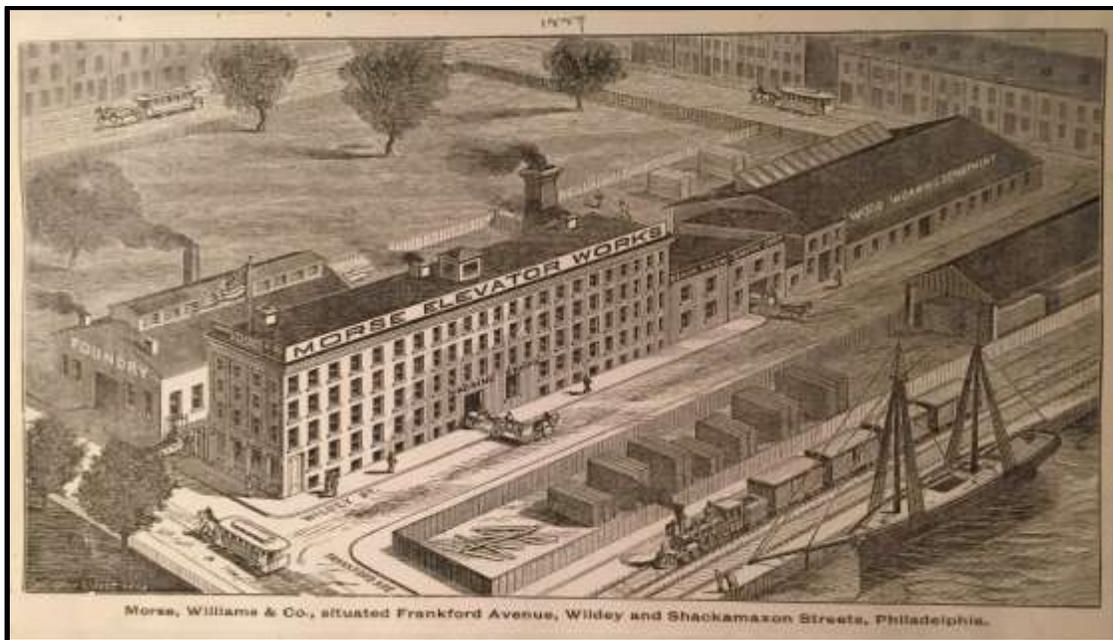
The Morse Elevator Works of Morse, Williams, & Company

Established as early as 1882, the Morse Elevator Works was a world-renowned Philadelphia firm that engaged in the manufacture of freight and passenger elevators. An important inventor and manufacturer, Stephen A. Morse (1826–1898) had made a small fortune inventing the screw driver and after a falling out with his board, he removed to Philadelphia to pursue other inventions, innovations, and the opportunity of the age—manufacture, that was for the taking in the Quaker City. Patenting several improvements to the mechanical elements used in manufacture, as well as, specific improvements to the elevator and/or lifting devices, Stephen A. Morse incorporated Clem & Morse, which established the Morse Elevator Works—a company operated by Morse, himself, W. C.

² Patrick A. Carrajut, *The Past is Prologue: The History of the Elevator Industry in America, 1852 –2001* (2001).

Williams, and Edwin T. Morse, Morse's son, from the start. Clem's precise role is not quite clear.

Stephen A. Morse, Carlton M. Williams, and, Edwin T. Morse, purchased 1101–1103 Frankford Avenue, along with much of what formed the final said complex, from Henry and Pauline Berger, and William and Emma Berger, dyers, on November 28, 1884 for the impressive sum of \$40,000.³ Stephen A. Morse would go on to lead the company from that time until 1891, a tenure that began with the dissolution of Clem & Morse and the profitable creation of Morse, Williams & Co. Obviously, this reorganization incorporated the partnership of Carlton M. Williams. Morse, Williams & Co. would survive into the twentieth century. At the time of his father's forced retirement in 1891, Edwin T. Morse took over the management of the Morse Elevator Works, as well as the combined interests of Morse, Williams & Co.



The Morse Elevator Works of Morse, Williams & Co., Circa 1889. This view shows the building at 1101-1103 and a fantastical 1107-1109 Frankford Avenue; however, the advertisement completely eliminates the blocks between the company's manufactory and the Delaware River. Courtesy the Jane Campbell Collocation, the Historical Society of Pennsylvania.

Under the leadership of Edwin T. Morse, the company added buildings to the complex, as their business required an enlarged physical capacity. The company's success was noted in numerous publications:

The manufacture of safety elevators has already reached very large proportions and the establishment of Messrs. Morse, Williams & Co., more generally known as the Morse Elevator Works, is without question one of the largest in that line in the world.⁴

³ Deed: Henry Berger, dyer, and Pauline, his wife, and William Berger, dyer, and Emma, his wife, to Stephen A. Morse, Charlton M. Williams, and Edwin T. Morse, trading as Clem and Morris, elevator builders, 26 November 1884, Philadelphia Deed Book J.O'D., No. 234, p. 281, CAP.

⁴ "The Morse Williams Company." *The Scranton Republican*, (Scranton, Pennsylvania, 29 July 1893), pg. 11.

Immediately adjacent to the north of 1101-1103 Frankford Avenue, Edwin T. Morse replaced a nineteenth century row house at 1105 Frankford Avenue with a one-story “modern” office building, which soon became a two-story building. Prior to this time the house at 1105 Frankford Avenue was used for the following: the first floor was used for lumber storage; and the second floor and attic story were vacant. A one-story frame ell appended the rear of the house was used as a store room. In 1886, the office was at the center of the building at 1101-1103 Frankford Avenue within a small two-story brick addition to the west of the main block of the building. The new office provided a street entrance on Frankford Avenue, and, in advertisements of the 1890s, 1105 Frankford Avenue was used as the “main office.”⁵

1107 Frankford Avenue, part of what would become 1107-1109 Frankford Avenue, was acquired by Morse, Williams & Co. on October 31, 1893 from Peter A. Glazier, a brick maker.⁶ 1109 Frankford Avenue, part of what became 1107-1109 Frankford Avenue, was acquired by Morse, Williams, & Co. from a Sheriff’s Sale on May 25, 1894.⁷ After this time it appears that the one-story brick production shed was constructed on the site around this time. 1107-1109 Frankford Avenue went on to be used as a machine shop, as the older building proved to be out of date for certain modern practices and the new building adhered to those requirements. 1111 Frankford Avenue, part of what would become 1111-1119 [1115] Frankford Avenue, was acquired by Morse, Williams & Co. on December 9, 1897 from Elizabeth Norris.⁸ That same year both 1113 and 1115 Frankford Avenue, part of what would become 1111-1119 [1115] Frankford Avenue, was purchased by Morse, Williams & Co. from Daniel B. Shepp for \$5,500 on November 23, 1897.⁹ Plans for a second and larger production shed were underway by early 1898 and the building that now comprises 1111-1119 [1115] Frankford Avenue was completed in 1899, as indicated at the center of the parapet within the façade. This production shed was again a response to the method of manufacture that had evolved at the Morse Elevator Works and operated as a machine shop for the duration of the company’s occupation of the site.

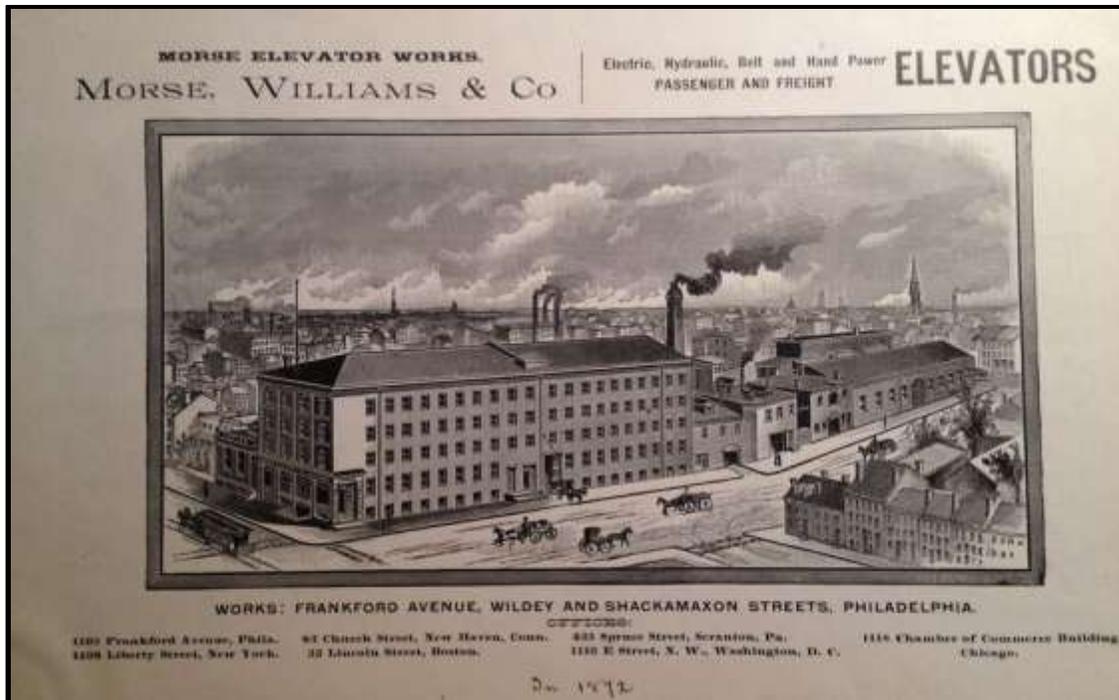
⁵ Hexamer, Earnest. *Hexamer General Surveys*. Philadelphia: 1886.

⁶ Deed: Peter A. Glazier, brickmaker, to Morse, Williams & Company, 31 October 1893, Philadelphia Deed Book T.G., No. 337, p. 483, CAP.

⁷ Deed: Sheriff to Morse Williams and Company, 25 May 1894, Common Pleas Sheriff Book No. 151, p. 578, CAP.

⁸ Deed: Elizabeth Norris to Morse, Williams, & Company, 9 December 1897, Philadelphia Deed Book W.M.G., No. 230, p. 411, CAP.

⁹ Deed: Daniel B. Shepp to Morse Williams & Company, 23 November 1897, Philadelphia Deed Book W.M.G. No. 216, p. 486, CAP.



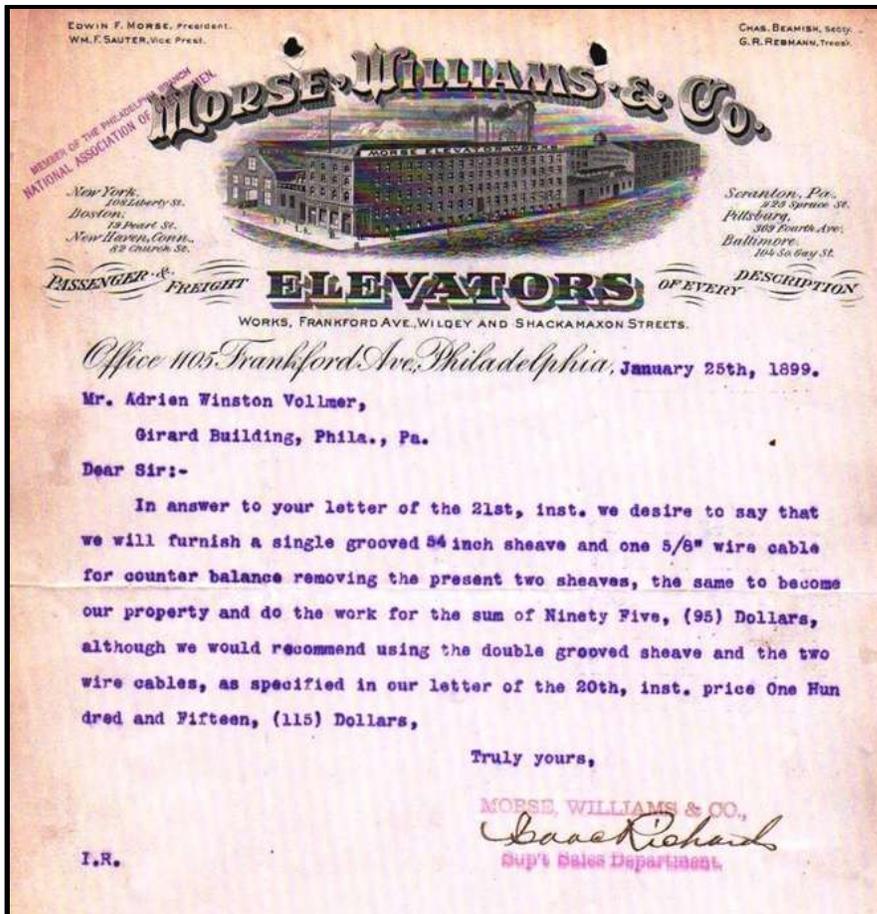
The Morse Elevator Works, Circa 1892. Note: the one-story office is present at 1105 Frankford Avenue to the left of the main building. Courtesy the Historical Society of Pennsylvania.

Only a few years transpired and an additional, larger, and even more advanced machine shop was required by the Morse Elevator Works. 1117 and 1121 Frankford Avenue, parts of what would become 1121-1129 [1117] Frankford Avenue, was purchased by Morse, Williams & Company from Walter Isaac Cooper on May 21, 1902.¹⁰ Following this procurement was Morse, Williams, and Company's purchase of 1125 Frankford Avenue, part of what would become 1121-1129 [1117] Frankford Avenue, on August 18, 1902 from David A. and Annie Agnes Fridley.¹¹ Morse, Williams & Company made a third purchase on August 22, 1902, acquiring 1127 Frankford Avenue, part of what would become 1121-1129 [1117] Frankford Avenue, from Henry and Medora Clevenger.¹² Designs for the building that would be constructed at 1121-1129 [1117] Frankford Avenue were underway during the procurement process of the lots, as Hales & Ballinger had been engaged to revise plans for the machine shop building as of July 27, 1902.

¹⁰ Deed: Walter Isaac Cooper to Morse Williams and Company, 21 May 1902, Philadelphia Deed Book W.S.V., No. 52, p. 206, CAP.

¹¹ Deed: David A. Fridley and Annie Agnes, his wife, to Morse, Williams & Company, 18 August 1902, Philadelphia Deed Book W.S.V., No. 73, p. 422, CAP.

¹² Deed: Henry Clevenger and Medora, his wife, to Morse, Williams, and Company, 22 August 1902, Philadelphia Deed Book W.S.V., No. 97, p. 287, CAP.



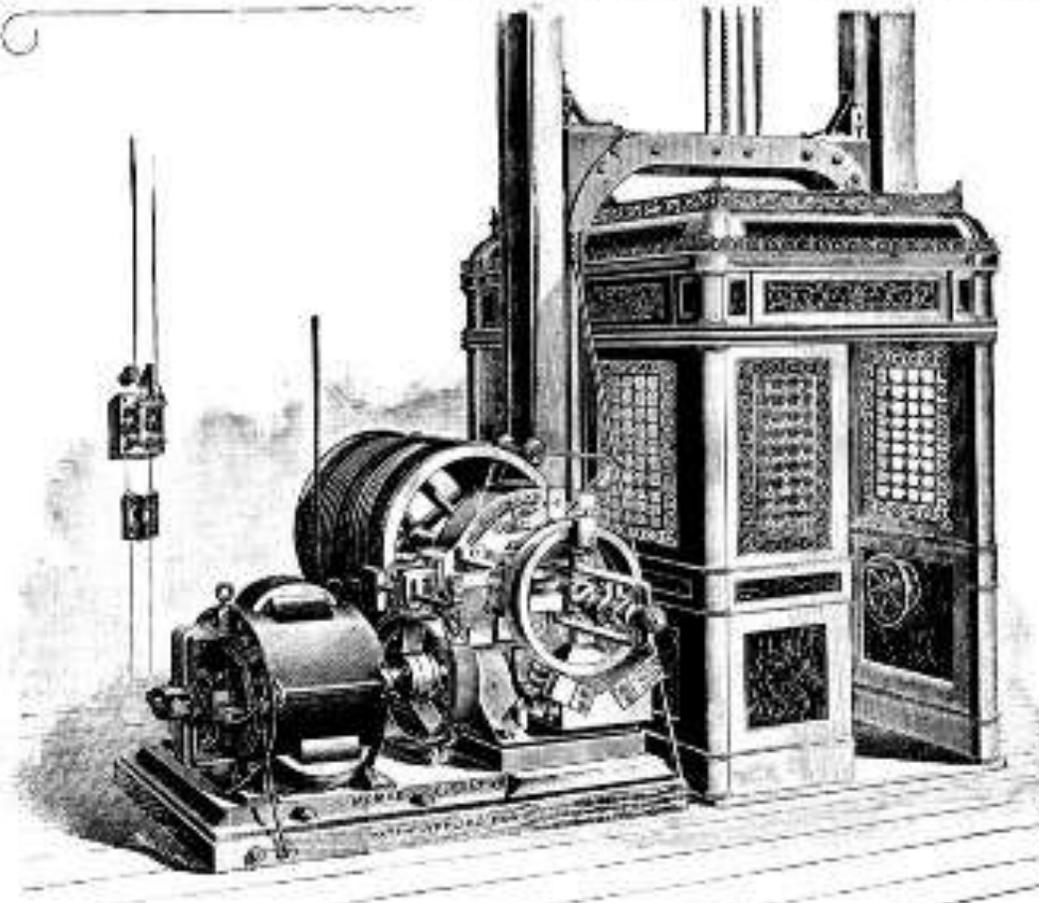
Stationary from Morse, William & Co. Note: the one story office at 1105 Frankford Avenue and the first production shed at 1107-1109 Frankford Avenue are both on the stationary by 1899. Courtesy Ebay.

A comprehensive and well-documented history of the company and its physical evolution was published in *Workshop of the Work* by the Oliver Evans Chapter of the Society for Industrial Archaeology:

In 1884, Stephen Morse, Carlton Williams, and Edwin Morse, partners in the Clem & Morse Co., purchased the former Landenberger buildings that stretched between Frankford Avenue and Shackamaxon Street along Wildey Street. These buildings included the former hosiery mill at 1101–1103 Frankford Avenue. The three men then formed the Morse, Williams & Co. in 1886, and began producing passenger and freight elevators. Using six of the eight floors in the former hosiery mill buildings, the Morse Elevator Works constructed steam, belt, and hand powered elevators with automatic hatch doors and gates. One 23 h.p. steam engine and one 15 h.p. steam engine powered woodworking machinery, including a planer, a joiner, a mortising machine, a circular saw, and a lathe. Fifty-eight men and twelve boys fashioned white pine and metal castings into the various models of elevators. Tenants in the building at this time

included A. J. Reach & Co., manufacturer of baseballs and sporting goods, and the Standard Gas Light Company, which produced gas fixtures.

Morse, Williams & Co.,
BUILDERS OF
PASSENGER AND FREIGHT ELEVATORS.



ELECTRIC ELEVATOR.
Write us for Circulars and Prices.

Main Office and Works, 1105 Frankford Avenue,
PHILADELPHIA.

New York Office, New Haven Buffalo	104 Liberty Street 82 Elmhurst Street 415 Fourth Avenue	BOSTON OFFICE BALTIMORE Scranton	19 Pearl Street Bridges' Row 455 Spruce Street.
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Advertisement for the Morse Elevator Works. Courtesy the Historical Society of Pennsylvania.

According to an 1891 album, *Philadelphia and Popular Philadelphians*, Morse became the world's leading producer of freight elevators, "their

specialties in the way of automatic hatch doors, excellent safety devices and the Albro-hindley screw having made an unusually high demand for their freight elevators in all classes of buildings.” The Morse Elevator Works, “favorably situated for shipping by both rail and water routes together with their unsurpassed facilities for turning out work, added to the general advantages of Philadelphia as a manufacturing city, has enabled them to build up their widely extended trade notwithstanding the strong competition met from local manufacturers throughout the country.”¹³

In spite of a court ruling in 1892 declaring senior partner Stephen Morse a lunatic, Morse, Williams & Co. continued to expand during the 1890s. Its exhibit at the Chicago Columbian Exposition in 1893 won a prize medal. The company employed approximately 175 men and divided its buildings into space for offices, and machinery, blacksmithing, and woodworking departments. It opened branch offices in Boston, Allegheny City, Scranton, Chicago, New York, Cincinnati, and Baltimore. A special feature of a Morse-built elevator included the “improved Hindley worm gearing [manufactured on site], which obviates, by increasing the bearing surface of the gear, the danger of breakage.” Morse [the company] embarked on an ambitious building program in the late 1890s to meet the increasing demand for its electric and hydraulic high-speed passenger elevators. The buildings at 1105, 1107–1109, 1111–1119, and 1121–1127 Frankford Avenue, 1100–1106 Shackamaxon Street, and 121–131 Wildey Street stand as evidence of this building expansion. By 1901 the firm had moved its main office to the West End Trust Building in center city Philadelphia and had opened new branches in New Haven, Pittsburgh, and Atlanta. Over fifteen thousand Morse elevators were in service at that time.¹⁴

Stephen Ambrose Morse (1826–1898)

An important inventor, innovator, and manufacturer, in his own right, Stephen Ambrose Morse was born in 1826 a birthright Quaker of Holderness, (later Ashland), New Hampshire, receiving his education in nearby New Hampton at the Franklin Academy. After a short-lived apprenticeship with a jeweler, Morse was tempted by his brother to relocate to Massachusetts, where he went to learn the machinists’ trade at the Lowell Manufacturing Company. Working for various enterprising young firms until the eve of the Civil War, Morse learned the trade, constructing all sorts of machinery for various entities and seriously “tinkering” with his own products—or perhaps components is a better word.¹⁵

About 1860, Morse went to Boston where he joined forces with Peleg Coffin to start Coffin & Morse, which led to numerous machine-related contracts for the United States

¹³ *Philadelphia and Popular Philadelphians* (Philadelphia: The North American, 1891), 120.

¹⁴ Oliver Evans Chapter, *Workshop of the World*.

¹⁵ “Stephen A. Morse,” *Iron Age* 63 (1899): 20.

Government during the war. In the process of this work, Morse produced and patented his “twist drill” in 1861, which had a profound and permanent effect the machine shop world of the period and its evolution to-date. In fact, the invention completely revolutionized shop practice, which led to the establishment of the Morse Twist Drill & Machine Company in New Bedford, Massachusetts by 1864.¹⁶ Recognizing the need for a driving force for his drill, Morse also invented the “taper shank” series. Two sets of the gages were created, which was accepted by the U.S. Bureau of Standards as a national standard. However, in 1868, Morse resigned his own company due to “differences” with the board.¹⁷

Between 1868 and 1870, Morse appears to have permanently relocated to Philadelphia. By 1878, Morse was a participant in a patent for a machine tool to produce a globoidal worm thread.

The worm thread may be formed into a cutter to finish the wheel. The outline of the pitch surface of the worm is an arc of the wheel’s pitch circle. It was alleged at the time, later disproved, that the advantage lay in the fact that the whole side of every thread in the meridian plan is always in contact with the adjacent tooth.¹⁸

This clearly led to another innovative and productive period for Morse. Between 1878 and 1882, Morse developed a profound interest in the improvement of the elevator, which led to the establishment of Clem & Morse by 1882. The company built a machine for cutting the globoidal worm thread and gear, which was related to Morse’ patent. Another patent soon followed related to the improvement of “Hoisting Machine,” which would prove to dominant the rest of his life.

Early advertisements for the company show that they were “manufacturers and builders” of passenger and freight elevators, using hydraulic, steam, and belt and hand-power. The company also produced dumb-waiters and automatic hatch-doors. With an early partner Charles Tyson, also of Philadelphia, Morse filed an application for “Hoisting Machine” on October 11, 1883, which led to the issuance of Patent No. 291,217 on January 1, 1884.¹⁹ This was an improvement upon Morse’s earlier patent for “Hoisting Machines,” which included driving belts and brake mechanism devices that allowed the machine to be operated by someone right or left handed, among other improvements.

¹⁶ “Stephen A. Morse,” *Iron Age*; and “Morse Cutting Tools History,” Morse Cutting Tools, 2011, accessed August 27, 2015, <http://www.morsecuttingtools.com> (accessed through “About Us” link).

¹⁷ “Morse Cutting Tools History,” Morse Cutting Tools, 2011.

¹⁸ William P. Crosher, *A Gear Chronology: Significant Events and Dates Affecting Gear Development* (2014), 196.

¹⁹ Stephen A. Morse and Charles Tyson, Hoisting Machine, US Patent 291,217, issued 1 January 1884.



STEPHEN A. MORSE, C. M. WILLIAMS, EDWIN F. MORSE
Clem & Morse,
 Manufacturers and Builders of
HYDRAULIC, STEAM, BELT & HAND-POWER ELEVATORS PASSENGER and FREIGHT.
 Dumb-Waiters, Automatic Hatch-Doors, &c.
 Sole Owners of the right to apply the *HEERNER PATENT GOVERNOR* to Elevators and Hoisting Machinery.
 Our *PATENT PNEUMATIC SAFETY CLUTCH* does not depend on springs, and arrests fall of car should cable, belts or any part of the machinery break.
 SEND FOR ILLUSTRATED CIRCULARS.
 :O:
 411 & 413 CHERRY ST., PHILADELPHIA, PA.
 Branch Office, 108 Liberty Street, New York.

Advertisement for Clem & Morse from the *Harrisburg Daily Independent*, October 6, 1883.²⁰

Between 1884 and 1891, the building at 1101–1103 Frankford Avenue and the said complex served as the principal manufactory and center of Morse’s operations. However, the inventor continued to improve his products. For example, Morse filed an application for a “Dumb Waiter” with the U.S. Patent Office in October 1884, which was finally granted in January 1885 as Patent No. 311,253. His invention was an improvement to the cords of earlier such devices.²¹



STEPHEN A. MORSE.

Courtesy the Historical Society of Pennsylvania.

While a hugely successful inventor, innovator, and manufacturer, Morse’s personal life was less fortunate, which is an explanation that will require some back tracking.

²⁰ Advertisement for Clem & Morse, *Harrisburg Daily Independent*, 6 October 1883, 2.

²¹ Stephen A. Morse, Dumb Waiter, Patent No. 311,253, issued 27 January 1885.

According to the U.S. Population Census of 1860, Morse was working as an agent for a tin company and living in East Bridgewater, Plymouth County, Massachusetts. He was married to Adline Plasisted, a native of Massachusetts, who would be dead within just a few years of the 1860 Census. Prior to her death, the Morse's had four surviving children: Francella A., Edwin F., George A., and Isabella.²² After his separation from his first company and the death of his wife, Morse permanently relocated to the Quaker City. According to the Census of 1870, Morse was a "Merchant," living with his daughter Francella; his George, then a "paper hanger;" a daughter Isabella; and a domestic servant Letia Stewart from Scotland.²³ Edwin T. Morse was working for his father in his own right and lived out. Interestingly enough, records of the Philadelphia Annual Meeting show that Morse was a Hicksite Quaker and a member of the Green Street Monthly Meeting.²⁴ In 1880, the Census found Morse on the north side of Master Street, No. 2025, again with Francella, George—by then a dry goods salesman, and Isabella. Although, by this time, his mother-in-law, Harriet Tusk Plaisted had followed the Morses to Philadelphia, where she was "keeping house"—of course with the help of one live-in servant, Hannah Rossiter.²⁵ During the 1880s, Morse purchased a house at 1707 Montgomery Avenue, and in 1887, Morse married again, and the lady of his choice was widowed like himself—Mrs. Edith S. Cowgill of Philadelphia.²⁶

Between 1890 and 1891, Morse was subject to an attack of grip, which led permanent blindness and forced him to retire from his business. The untimely chain of events continued to unfold in that by 1893 he had been committed to the Insane Department of the Pennsylvania Hospital.²⁷ Carrie B. Kilgore, the first woman graduate of the University of Pennsylvania Law School, was engaged by Morse to restore him to society, which did, in fact, occur by 1895. Upon his return, Morse rejoined his second wife, and promptly reduced the inheritance of his children from their multi-thousand dollar shares of his estate to twenty-five dollars per. Morse died at his home at 1707 Montgomery Avenue, in Philadelphia, on December 22, 1898. Leaving a rather broken home after his "insanity" debacle, the Morse children contested the will.

The Otis Elevator Company

Founded in 1853 by Elisha Otis in Yonkers, New York, the Otis Elevator Company developed and manufactured the "safety elevator," as previously invented by Otis in 1852. The special feature of the Otis's elevator was a mechanism that allowed the elevator to be locked in place in case the hoisting ropes should fail. In 1902, the eminent firm purchased the Morse Elevator Works and established a Philadelphia branch of their business.²⁸ A comprehensive and well-documented history of the company and its

²² S.A. Morse; p. 213, line 33, East Bridgewater, Plymouth County, Massachusetts Census of Population; *Eighth Census of the United States, 1860* (National Archives Microfilm Publication M653, roll 518); Records of the Bureau of the Census, Record Group 29, NARA.

²³ Stephen Morse; p. 186, line 30, 68th District, 20th Ward, City of Philadelphia (first enumeration), Pennsylvania Census of Population; *Ninth Census of the United States, 1870* (National Archives Microfilm Publication M593, roll 1407); Records of the Bureau of the Census, Record Group 29, NARA.

²⁴ *Swarthmore, Quaker Meeting Records*. Friends Historical Library, Swarthmore College, Swarthmore, Pennsylvania.

²⁵ Stephen Morse; p. 16, line 16, Enumeration District 625, City of Philadelphia, Pennsylvania Census of Population; *Tenth Census of the United States, 1880* (National Archives Microfilm Publication M593, roll 1188); Records of the Bureau of the Census, Record Group 29, NARA.

²⁶ *The Times*, 30 December 1887, 3.

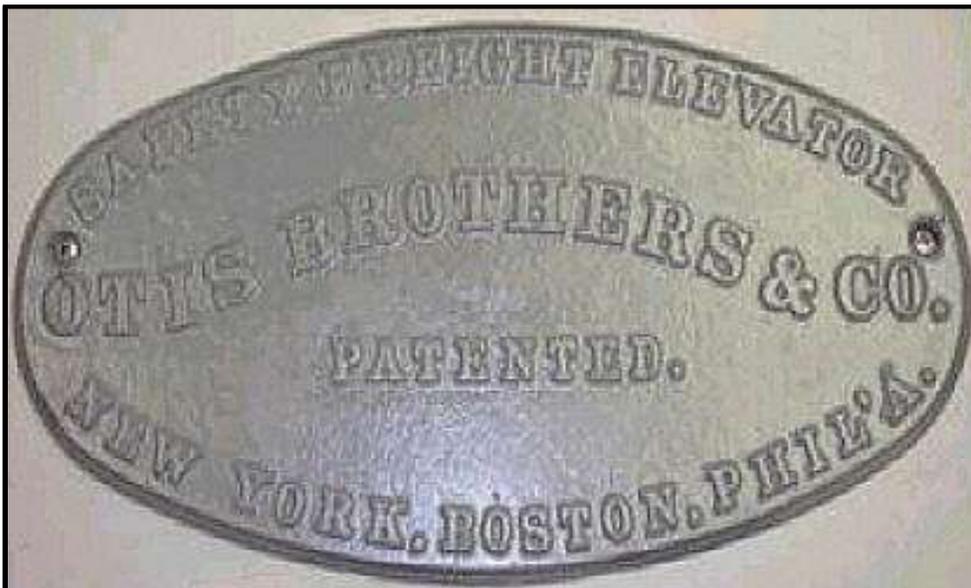
²⁷ "News of the Day," *Chicago Daily Tribune*, 4 January 1893, 4.

²⁸ Goodwin, Jason. "Otis: Giving Rise to the Modern City." (Chicago, 2001).

physical evolution was published in *Workshop of the Work* by the Oliver Evans Chapter of the Society for Industrial Archaeology:

The Otis Elevator Company, after purchasing Morse, Williams & Co. in 1902, proceeded to purchase property on the corner of Wildey and Sarah Streets.²⁹ On this land Otis erected the two metalworking shops at 1045–1049 Sarah Street. A three-bay wing attached to the north side of the building at 1100–1106 Shackamaxon Street gave the building at 1100–1110 Shackamaxon its present appearance. A 1916 industrial census describes the Otis Elevator Company as employing ninety men and women in the production of elevators and hoists at 1105 Frankford Avenue. At the same address, the Hindley Gear Co. fabricated machinery and parts; it employed four men and one woman. Otis sold the properties in 1943.³⁰

Guilbert, Inc., acquired most of the former Morse buildings in 1949 and produced elevators and dumbwaiters. Guilbert's successor, the American Sterilizer Company, sold the buildings to the Montgomery Elevator Company in 1976. Montgomery continued Fishtown's association with the manufacture of elevators until 1987. Today, the former Morse Elevator Works houses a machine works, a warehouse for ice cream equipment, another warehouse for construction equipment, and a sanitary-clothing manufacturer.



Otis Brothers & Co., Circa 1880.
Courtesy Patrick A. Carrajat.

²⁹ *Nominator's Note*: The title to 1101–1103 Frankford Avenue passed to Otis in 1906 (Deed: Morse Williams & Co. to the Otis Elevator Company, 1 August 1906, Philadelphia Deed Book W.S.V., No. 669, p. 513, CAP).

³⁰ *Nominator's Note*: Deed: Otis Elevator Company to Carl Miller, 28 September 1943, Philadelphia Deed Book C.J.P., No. 337, p. 477, CAP.

For example, according to *Philadelphia and Popular Philadelphians*, the Morse Elevator Works had by then become the world's leading producer of freight elevators. The company designed and perfected the automatic hatch doors, various safety devices, and the Albrohindley screw. These innovations made the Morse Elevator Works an attractive proposition to the Otis Brothers, who hoped to grow their firm into the American elevator corporation.

(c) Reflects the environment in an era characterized by a distinctive architectural style.

1105 and 1107-1109 Frankford Avenue are important components of the architectural fabric that comprises the Morse Elevator Works and its built environment. The brick office building and production shed, respectively, at 1105 and 1107-1109 Frankford Avenue represent architectural forms that were popularized by large industrial enterprises in the late nineteenth and early twentieth centuries. Only a hugely successful enterprise would demolish an earlier house for a new office building, as was completed almost immediately upon Edwin T. Morse taking over his father's business. The production shed represents the type of production used for a specific manufacturing purpose—in this case, “modern” forms of elevator manufacture.

The buildings reflect the environment in an era characterized by the Italianate style of architecture. These buildings were designed to stand on their own, but, more importantly, to also compliment the original industrial building at 1101-1103 Frankford Avenue. The office building at 1105 Frankford Avenue represents the modernization of a company in its second generation of ownership and adheres to the need to present a modern professional appearance—its business office being separated from its industrial building. The production shed at 1107-1109 Frankford Avenue presents an important Italianate façade. Mimicking far grander designs of Italian origins, the design and construction of the building employs and capitalizes on the intrinsic characteristics of the brickwork to create an appropriate utilitarian appearance, but with a strong adherence to the Italianate style, as evolved from 1101-1103 Frankford Avenue. However, it is important to note that this building features a full length clerestory, which is dressed at the façade with coping upon its parapet and gable that is broken into steps with curves, forming an ornamental silhouette, resulting a fractable roofline. Perhaps stronger architecturally due to the period of construction, the Italianate stylistic treatment of the building and its attached row facing onto Frankford Avenue comprise an industrial Escorial of sorts, compiling to form an impressive architectural expression that was completed with the distinct purpose of the utility of its individual buildings, but with an emphasis on semblance and cohesion.

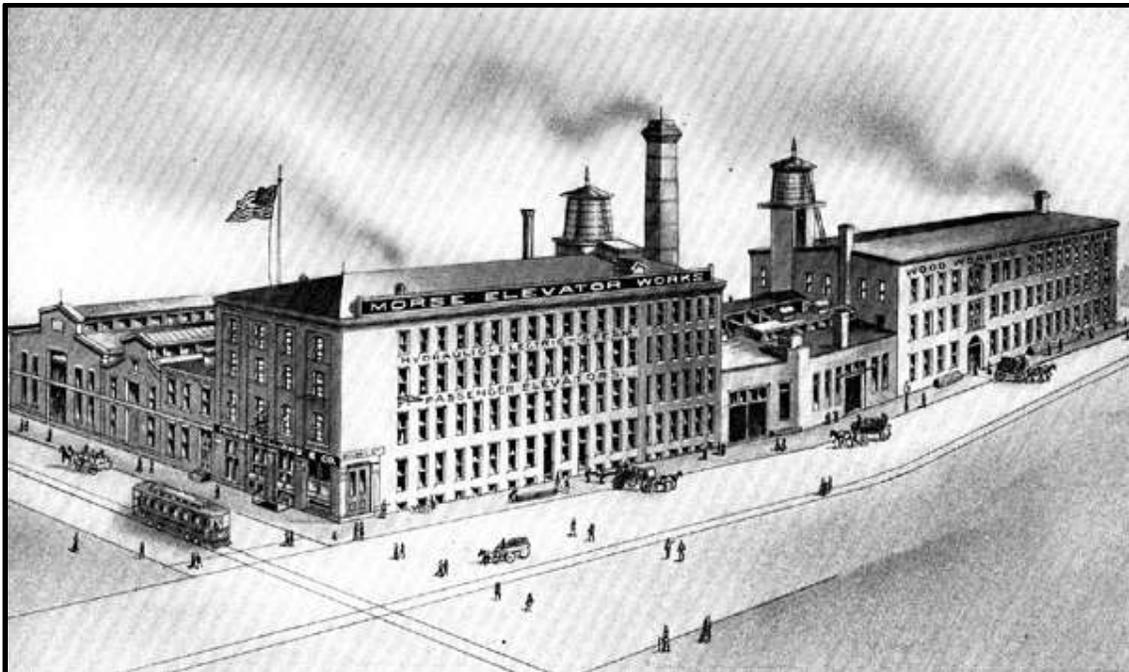
(h) Owing to its unique location or singular physical characteristic, represents an established and familiar visual feature of the neighborhood, community or City; and

As stated earlier under criteria a and j, according to the Oliver Evans Chapter of the Society for Industrial Archaeology, the industrial buildings located along the corners of Frankford Avenue, Wildey, Sarah, and Shackamaxon Streets form the earliest, extant, coherent industrial complex in Fishtown. 1105 and 1107-1109 Frankford Avenue are components of this complex, forming a singular physical entity, which represents an established and familiar visual feature in Fishtown, the first blocks of Frankford Avenue in the larger Kensington community, and in the City of Philadelphia. As the first purpose-built office building and production shed, 1105 and 1107-1109 Frankford Avenue have

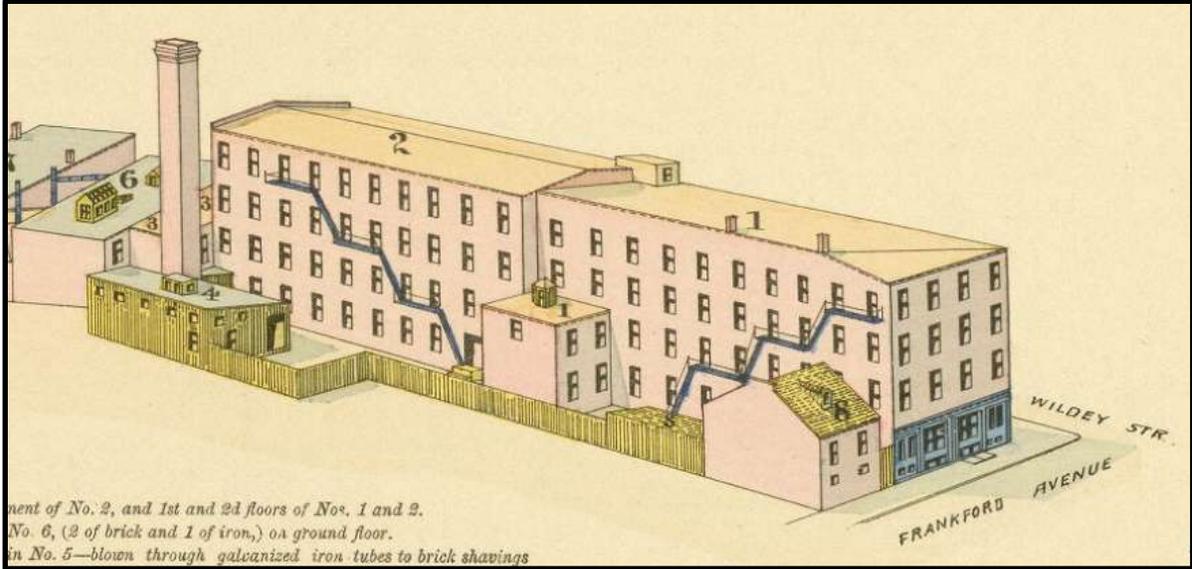
the special distinction of representing the second period of the company's success, which are important in forming the said visual feature. The Oliver Evans Chapter of the Society for Industrial Archaeology specifically noted that 1105 and 1107-1109 Frankford Avenue comprise one of four buildings fronting on Frankford Avenue that form the most intact portion of the former Morse Elevator Works, and that this group, in its own right, form an important visual feature.

Conclusion

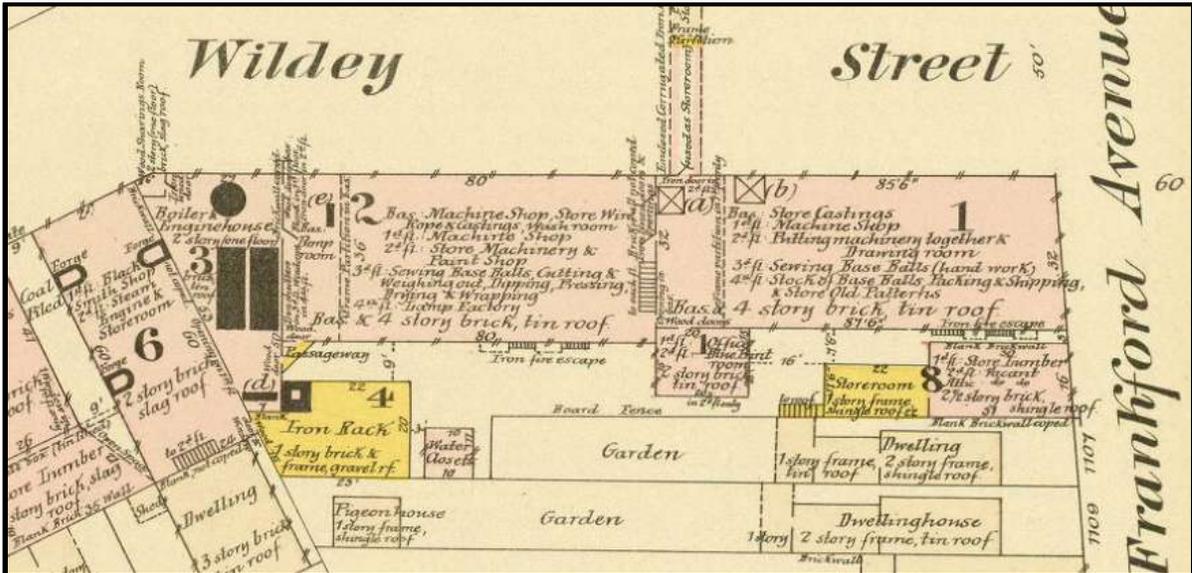
The buildings at 1105 and 1107-1109 Frankford Avenue are an integral component of a complex of buildings that represent an industrial site related to the following important enterprises: the Morse Elevator Works of Morse, Williams & Co., operating on the site from 1886 to 1910; and the Otis Elevator Company at its Philadelphia facility, from 1906 to roughly 1946. The industrial buildings located along the corners of Frankford Avenue, Wildey, Sarah, and Shackamaxon Streets form the, earliest, extant, coherent industrial complex in Fishtown—and one of the oldest in Kensington. As important components of that complex, 1105 and 1107–1109 Frankford Avenue have significant character, interest or value as part of the development, heritage and cultural characteristics of the City of Philadelphia, representing the work of an early and significant elevator manufacturer—the Morse Elevator Works, once the leading producer of freight elevators in the world; Stephen A. Morse, an eminent inventor, innovator and manufacturer; and the Philadelphia branch of the most recognized elevator manufacturer in America—the Otis Elevator Company.



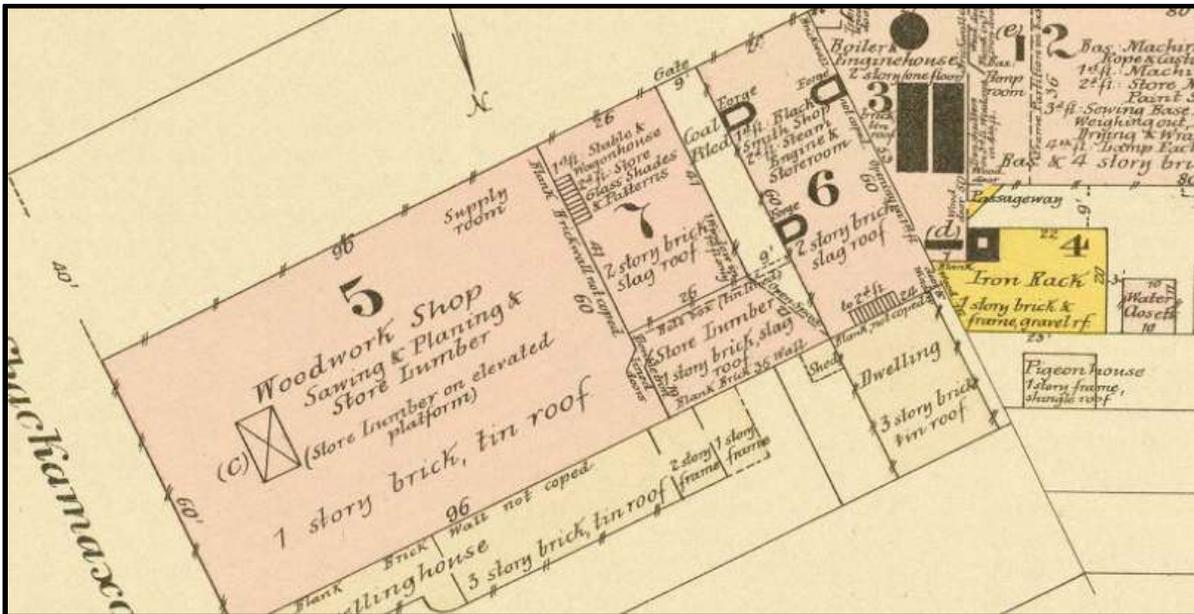
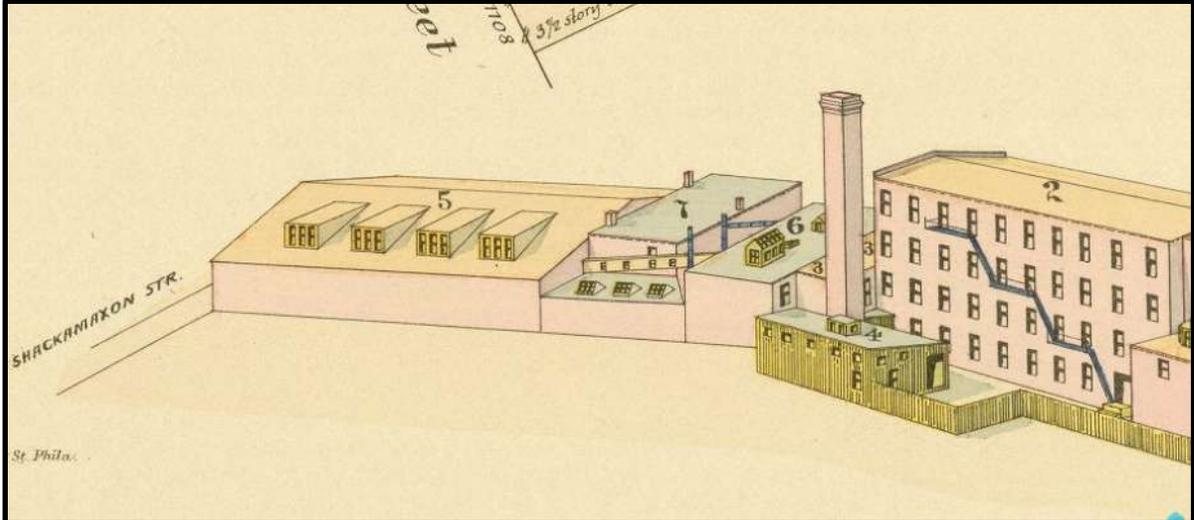
The Morse Elevator Works, Circa 1899. Courtesy Ken Milano.



ment of No. 2, and 1st and 2d floors of Nos. 1 and 2.
 No. 6, (2 of brick and 1 of iron,) on ground floor.
 in No. 5—blown through galvanized iron tubes to brick shavings



Morse Elevator Works
 Morse, Williams & Co.
 Hexamer General Surveys, Volume 21, Plate 216.
 Courtesy the Free Library of Philadelphia



Morse Elevator Works
 Morse, Williams & Co.
 Hexamer General Surveys, Volume 21, Plate 2016.
 Courtesy the Free Library of Philadelphia

OWNERS :—Morse, Williams & Co.
SUPERINTENDED :—By the owners and tenants.
NAME :—Morse Elevator Works.
AGE :—Building erected since 1855—No. 2 built 1855.
LOCATION :—Situated Frankford Road and Wilkes Street, south of Girard Avenue, 10th Ward Philadelphia, Pa.
CONSTRUCTION :—Good.
POWER :—Steam.
HEIGHT :—No. 1, 7'-10"-0"-0"-0"—No. 2, 8'-0"-0"-0"-0"—No. 3, 12'—No. 4, 10'-10"—No. 5, 14' and 24'—No. 7, 12'-0".
LENGTH :—See plan.
WALLS :—No. 1, 2 1/2"-2 1/2"-1 1/2"-1 1/2"—No. 2, 2 1/2"-1 1/2"-1 1/2"-0"—No. 3, 1 1/2"—No. 4, 1 1/2"—1 1/2"—No. 5, 1 1/2"—No. 7, 1 1/2"—1 1/2".
COMMUNICATIONS :—Buildings adjoining and communicating as per plan.
ROOFS :—As per plan.
COLUMNS :—Of No. 1 and 2 of iron, others of wood.
CUTTERS :—Of metal.
CORNICE :—Of No. 2, wood, band.—No. 3 and 4, of brick.—Nos. 5, 6 and 7, of brick with wooden moulding.
SCUTTLE :—In roof and stairs to it.
PORCH :—None.
LADDERS :—A permanent iron fire escape outside of No. 1 and 2.
TOWER :—None.
LIGHTNING ROD :—With numerous points on buildings.
FLOORS :—Of 1 1/2" yellow pine flooring boards, not creosoted for flooring.—Floor of boiler house of brick.—Ground floor in blacksmith shop, 1st floor of No. 6.
WINDOWS :—As per plan and view.
STAIRWAYS :—Located as per plan, of wood, partly oiled and partly not oiled.
ELEVATOR :—Open elevator (a) in No. 1, from basement to 4th floor, with automatic trap doors. Open elevator (b) in No. 1, from basement to 1st floor only.—Open elevator (c) in No. 1, from 1st floor to elevated platform.
HATCHWAY :—None.
CEILINGS :—In office and blue print room, attraction of No. 1, and in No. 7, boarded.—Collage of No. 1, plastered.—Collage of 1st, 2d and 3d floors of No. 2, plastered.—Others not finished.

MACHINE SHOP :—In basement of No. 2, and 1st and 2d floors of Nos. 1 and 2.
FORGES :—2, in 1st floor of No. 6, (2 of brick and 1 of iron), on ground floor.
WOOD SHAVINGS :—Made in No. 5—blown through galvanized iron tubes to brick shavings room in No. 3.—About 12 hands employed in wood-work shop.
SHAVINGS ROOM :—In No. 3, of brick, with iron-lined door and ground floor.
HEAT :—By 5" cast and 1 1/4" wrought iron steam pipes, radiating on iron.
STOVES :—None.
LIGHT :—Rooms lighted by city gas.
WATCHMAN :—Night watchman on the premises.
WATCH CLOCK :—Dunbar's watch clock, with 3 keys, drives hourly.
DIPPING :—Done in 2d floor of No. 2.—Balls are dipped into a solution of rubber cement and benzine.
DRYING :—Done in 2d floor of No. 2.—Dryer enclosed by frame partitions and heated by steam pipes, resting on iron.—Balls to be dried laid on wire screens.—No lumber dry room on the premises.
SOLDERING :—Done in 4th floor of No. 2.—Heat soldering iron by gas.
BOILERS :—Located as per plan, enclosed by brick work, in proper distance from wood work.—Upright boiler not in use.
SNOKE STACK :—Of brick, plastered inside, rising 15' above the peak of the roof of No. 2.
STEAM ENGINE :—Two, 2d and 3d floor power.
WASTE :—Only water gathered up daily and burnt.—No metal waste cans.
OILS :—1 1/2 gal. cylinder oil and 1 1/2 gal. lard oil, in tin oil tubs in basement of No. 2.—Small quantities of machinery oil in tin cans in 2d and 4th floor of No. 2.
PAINTING AND VARNISHING :—Is done in 2d and 4th floors of No. 2.—Keep only small quantities of paint and varnish.
BENZINE :—Is kept in 2 gallon tin cans outside of building, and is used to mix with rubber cement, in small quantities.
OCCUPANCY :—As per plan.
PROVISIONS FOR EXTINGUISHING FIRE :
PUMPS :—Centrifugal pump, and rotary engine attached, at (A) in No. 2, expressly for fire defense, with two 2 1/2" hose connections.—Pump supplied by 4" city water.—Davidson steam piston force pump (e) in basement of No. 2, for supplying the steam boiler only.—Tilt pump at (f) in No. 3, for supplying the iron water tank in 2d story of No. 2.—No hose connect, tin on force pumps (c and f).

HOSE :—100 feet 2 1/2" linen hose, attached to force pump (d).—Will have 400' of 2 1/2" hose.
FIRE BUCKETS :—6 to 8 dozen patent fire buckets, distributed over the premises, always filled.
CASKS :—9 wooden water casks, distributed and kept filled.
FIRE EXTINGUISHER :—2 Babcock fire extinguishers, (1 in No. 1 and 1 in No. 5,) always charged.
HAND GRENADES :—72 Harden's hand grenades, distributed.
CITY STEAM FIRE ENGINE :—Within 2 squares.
STREET FIRE PLUGS :—Within 100 feet.
FIRE ALARM BOX :—As per plan.—Key in office.
CHARACTER :—Fair.—3d story of No. 2 and part of 4th floor of No. 1 very much crowded and not as clean as desirable—other rooms fairly clean.
EXTERNAL EXPOSURES :—As per plan.
Premises occupied by three different parties, viz.

- MORSE, WILLIAMS & CO.**, occupying basement, 1st, 2d and part of 4th floor of No. 1; basement, 1st and 2d floor of No. 2, Nos. 3, 4, 5, 6 and 8, and 1st floor and part of 2d floor of No. 7.—Manufacture: passenger and freight elevators and automatic hatch doors.—Raw stock: castings and lumber, (principally yellow pine.)—Employ: about 70 hands; 58 men, 12 boys.—Wood working machinery, in No 6, 1 large Daniel planer, 1 jointer, 1 mortising machine, 1 sticking machine, 1 band, 1 jig and circular saw, 1 wood turning lathe.
- A. J. REACH & CO.**, occupying the 3d floors of Nos. 1 and 2, and part of 4th floor of No. 1.—Manufacture: base balls.—Raw stock: rubber balls, woolen yarns, 3 bales of shoddy generally, leather shavings and kid leather for covers.—Employ: about 70 hands in the building, 40 men, 20 boys, 10 girls.—Machinery: 3 wrapping machines, 1 power ball pressing machine and 4 hand presses.
- STANDARD GAS LAMP CO.**, occupying the 4th floor of No. 2 and part of 2d floor of No. 7.—Manufacture: gas lamps and brackets.—Raw stock: castings, tin and glass shades.—Employ: 4 men.

Morse Elevator Works
Morse, Williams & Co.
Hexamer General Surveys, Volume 21, Plate 16.
Courtesy the Free Library of Philadelphia

EDWIN F. MORSE,
President.

W. F. SAUTER,
Vice-President.

C. BEAMISH,
Secretary.

G. R. REBMANN,
Treasurer.

MORSE, WILLIAMS & CO.

BUILDERS OF

Passenger and Freight Elevators

OF EVERY DESCRIPTION.

1105 Frankford Avenue, PHILADELPHIA.

108 Liberty Street, NEW YORK.

82 Church Street, NEW HAVEN.

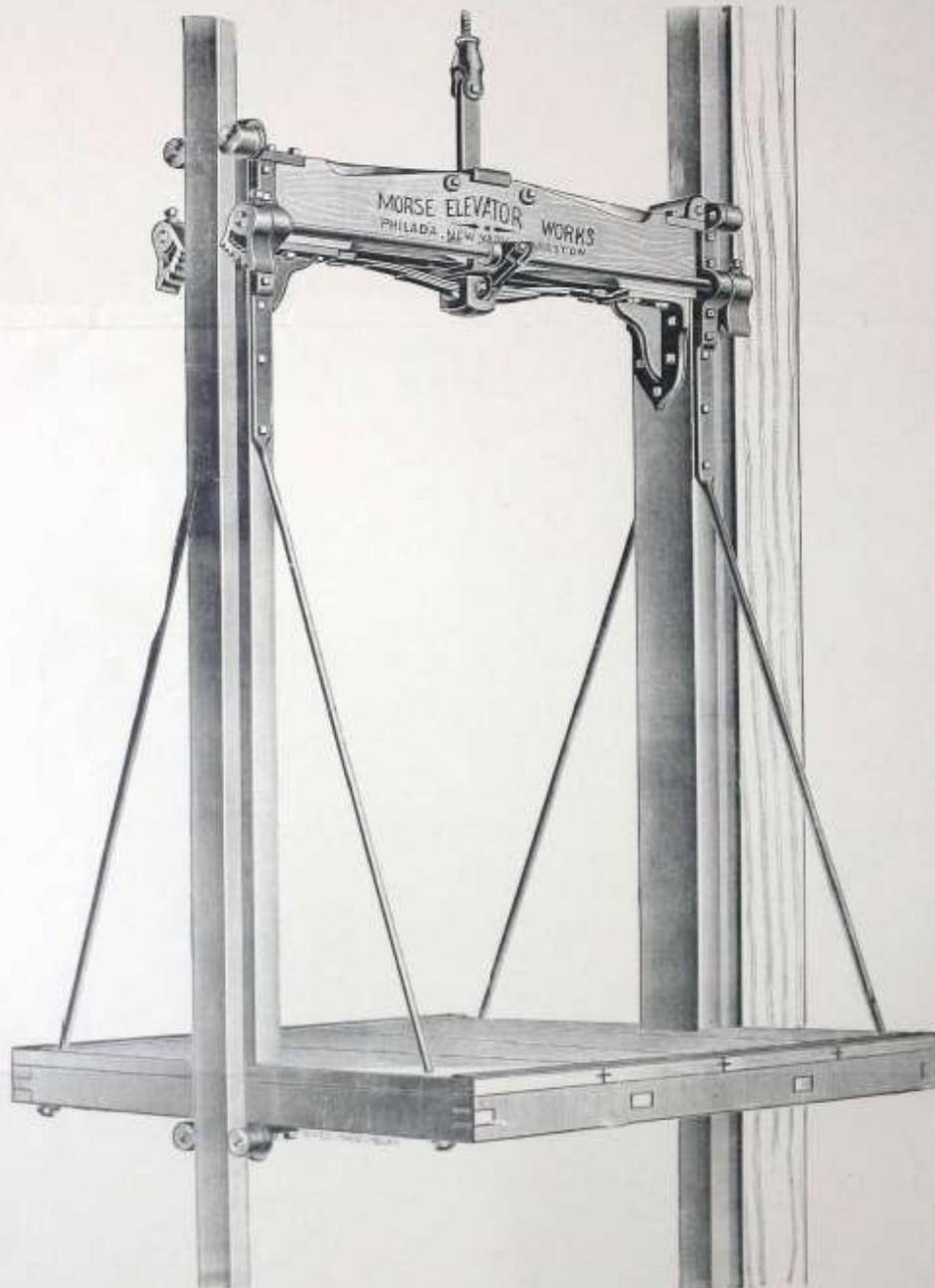
19 Pearl Street, BOSTON.

425 Spruce Street, SCRANTON.

413 Fourth Avenue, PITTSBURG.

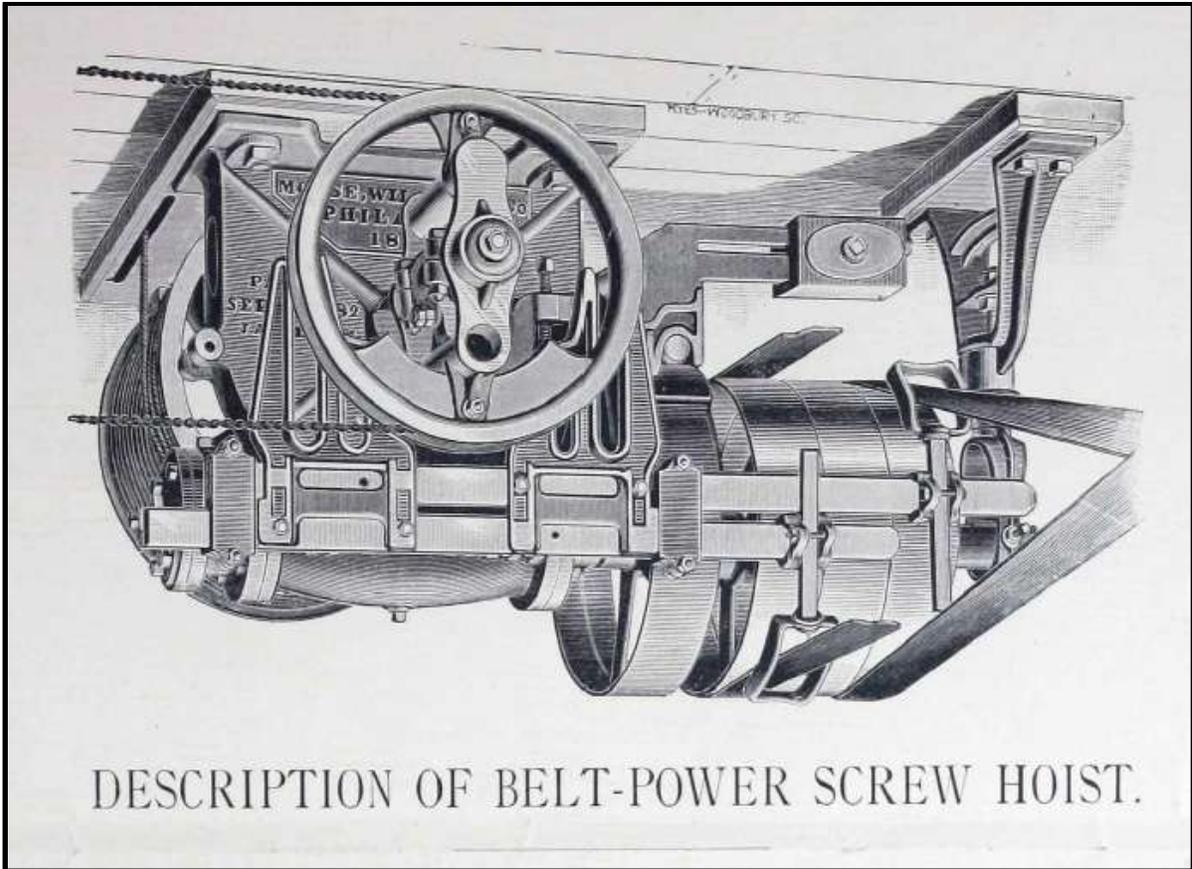
Builders' Exchange, BALTIMORE.

Morse, Williams & Co., Builders of Passenger and Freight Elevators of Every Description.



SIDE-POST FREIGHT ELEVATOR PLATFORM,
WITH IMPROVED SPRING GRIP SAFETY CLUTCH.

Morse, Williams & Co., Builders of Passenger and Freight Elevators of Every Description.



DESCRIPTION OF BELT-POWER SCREW HOIST.

THIS Machine has several new improvements, to which we would call attention.

FIRST.—To our Belt Shifter—which is a principal feature in a Power-Hoist. It is simple and not liable to get out of order, as it has no rack, gearing or link motion; and is so arranged that, while either of the belts are being shifted to the fast pulley, the other remains undisturbed. We also have an attachment which prevents the belts from shifting too far or reversing the machine; as it will stop central and leave the belts free from the fast pulley. As all parts are made interchangeable the machine can readily be changed from left to right hand, or *vice versa*. It also has a Slack Cable-Shifter—a very valuable device, which shifts the belt and applies the brake; stopping the machinery as soon as suspension-cable slacks up, when caused by the car being in any way obstructed in its descent.

SECOND.—The Automatic Stop (which can be set to stop the machine at any point—either hoisting or lowering) is so positive, that we can rely upon it, without depending upon the stops generally used on the shifting rod or cable.

THIRD.—The Brake is new in arrangement, is very powerful, and does not touch the pulley until it is brought into use; and, by means of a compound lever and weight, the wear is taken up automatically—thus obviating the necessity of frequent adjustment, as in other elevators.

FOURTH.—The Drum, on which the cable winds, is grooved; which prevents the cable from touching while winding—thus making it wear much longer.

FIFTH.—The Driving Worm (which runs at a high speed) is cut perfectly true, and is enclosed with a gear-wheel (which is also cut) in an oil-tight case or housing, and runs in oil.

SIXTH.—The Pulleys are made with large hubs, have a chamber for Albany grease or a similar lubricator, and are bushed with deoxidized bronze.

The Machine is fitted up in a mechanical and substantial manner.

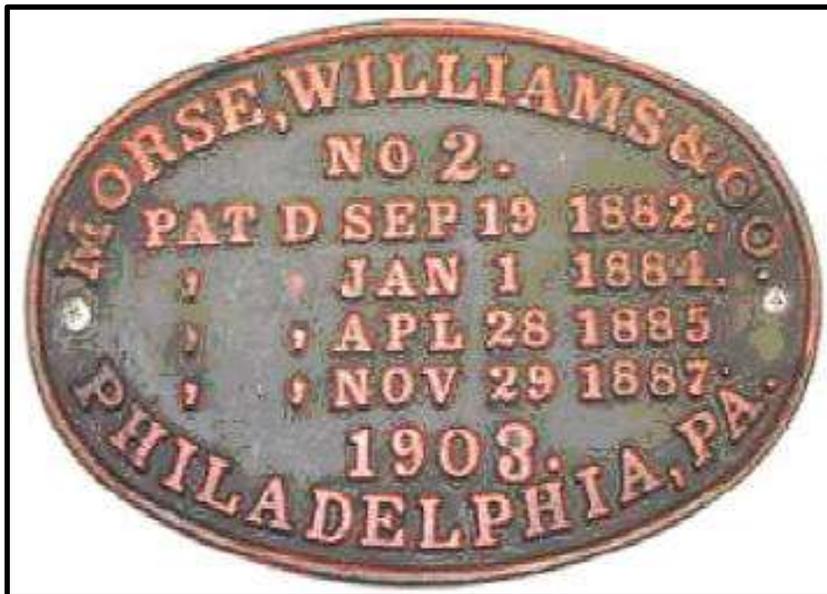
Morse, Williams & Co., Builders of Passenger and Freight Elevators of Every Description.

THE IMPROVED HINDLEY WORM is cut from a blank, which is curved to correspond with the arc of the wheel. By making the worm or screw of this peculiar shape, it will readily be seen that there is a variation of pitch from point to root of tooth; this variation of distance from centre to centre of teeth in the worm exactly corresponds to the two diameters of teeth in the wheel; thus giving a perfect-bearing surface the whole length of the worm, and causing the two surfaces to travel at proper speed and with great steadiness of motion. The diameter of the worm is constantly changing as it revolves, and one tooth or thread does not follow exactly in the track of the one preceding it; which makes it impossible (if properly lubricated) to cut or unduly wear the teeth either of worm or wheel. The strain being distributed over so much bearing-surface, the motion is steadier, the speed can be increased fifty per cent. without risk, and friction is much less than in old-style machines; thereby consuming much less power.

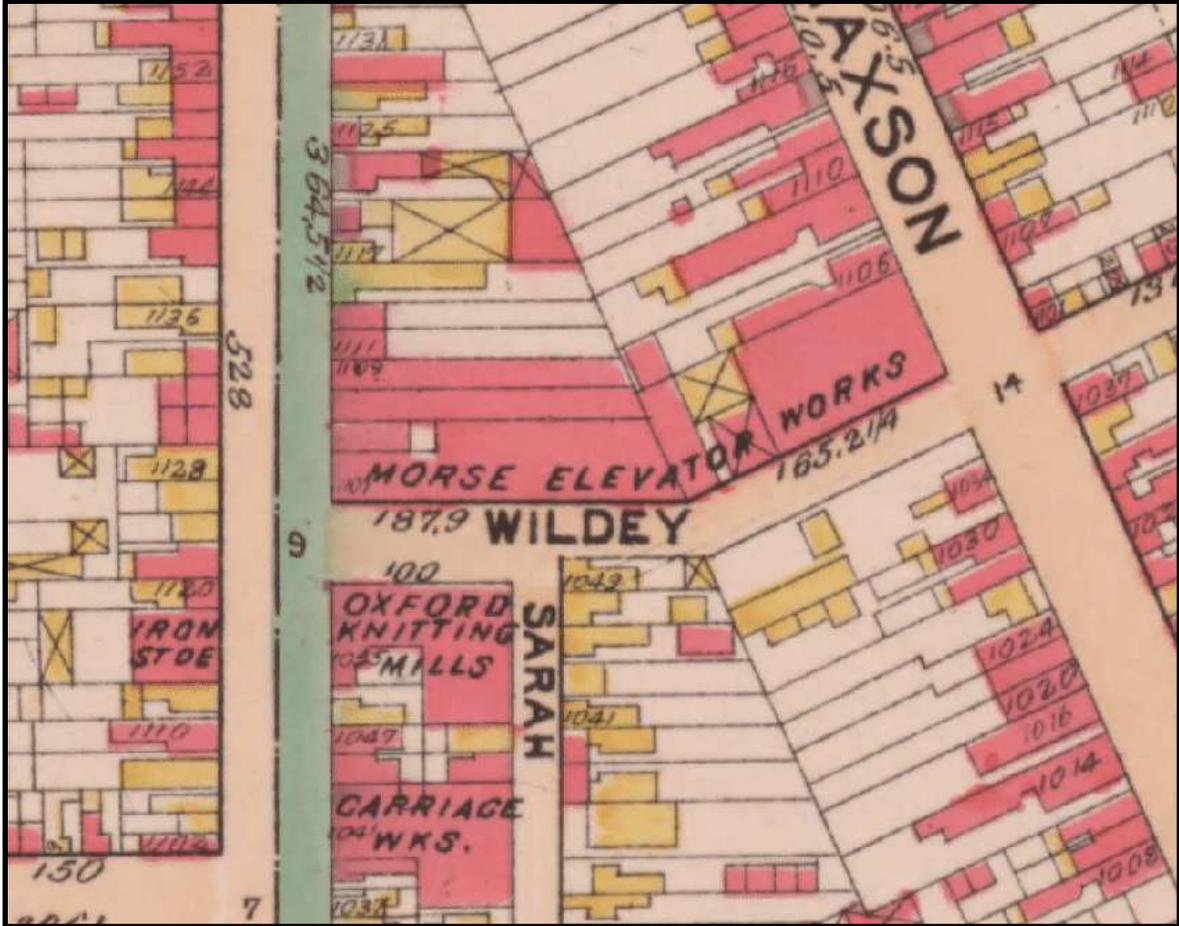
THE SPRING GRIP SAFETY CLUTCH consists of two steel shafts on either side of the platform beam, on the ends of which are toothed eccentrics. The two shafts are carried in solid bearings, bolted through the stiles of car, and are connected to the pull-bar (to which the cable is attached) by links and collars. Should the cable break, the heavy coach spring underneath the beam throws the pull-bar down, turns the shafts over, and causes the eccentrics to grip the guides instantly; and the heavier the load the tighter the grip.

OUR AUTOMATIC HATCH DOORS are the most perfect covers in the market, and are endorsed by underwriters generally, on account of lessening the risk of spreading of fire. The crank levers (which open the door as the car descends) are adjustable; so that, in case of a settling of the floors, shrinkage of wood-work, or wear in the joints, the levers can be quickly adjusted to open each door to its proper place, recessed in post. The patent joint between the door and post closes the opening perfectly.

Morse, Williams & Co., Builders of Passenger and Freight Elevators of Every Description.



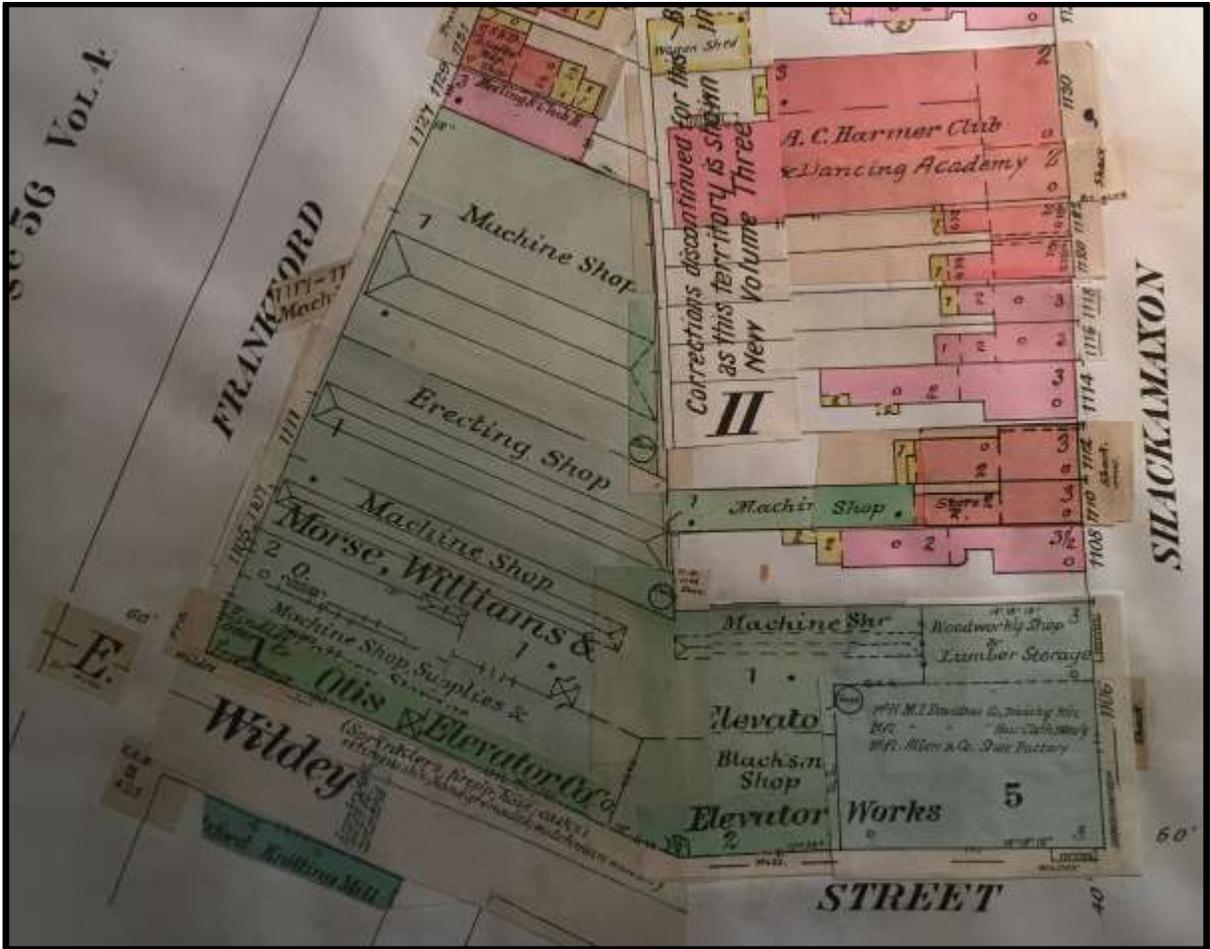
Morse, Williams & Co.
Courtesy Patrick A. Carrajat.



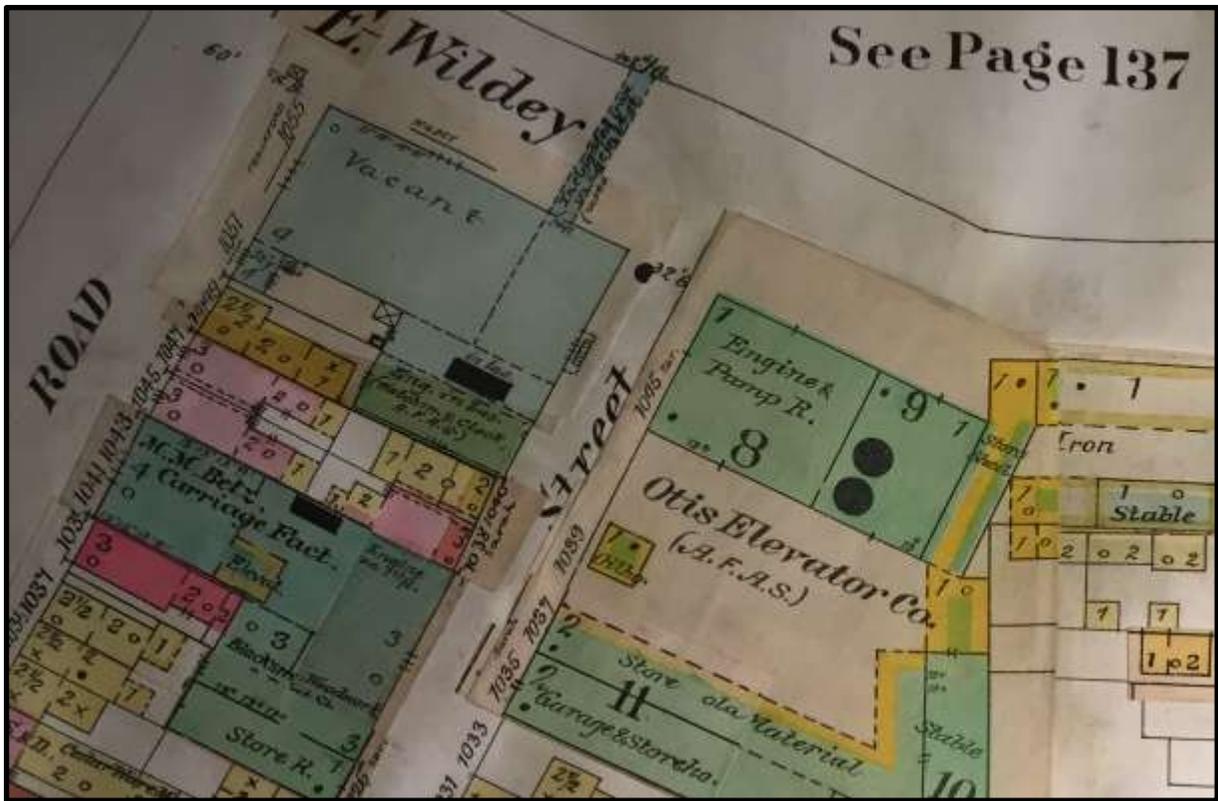
1895 Philadelphia Atlas

G.W. Bromley

Courtesy the Greater Philadelphia GeoHistory Network

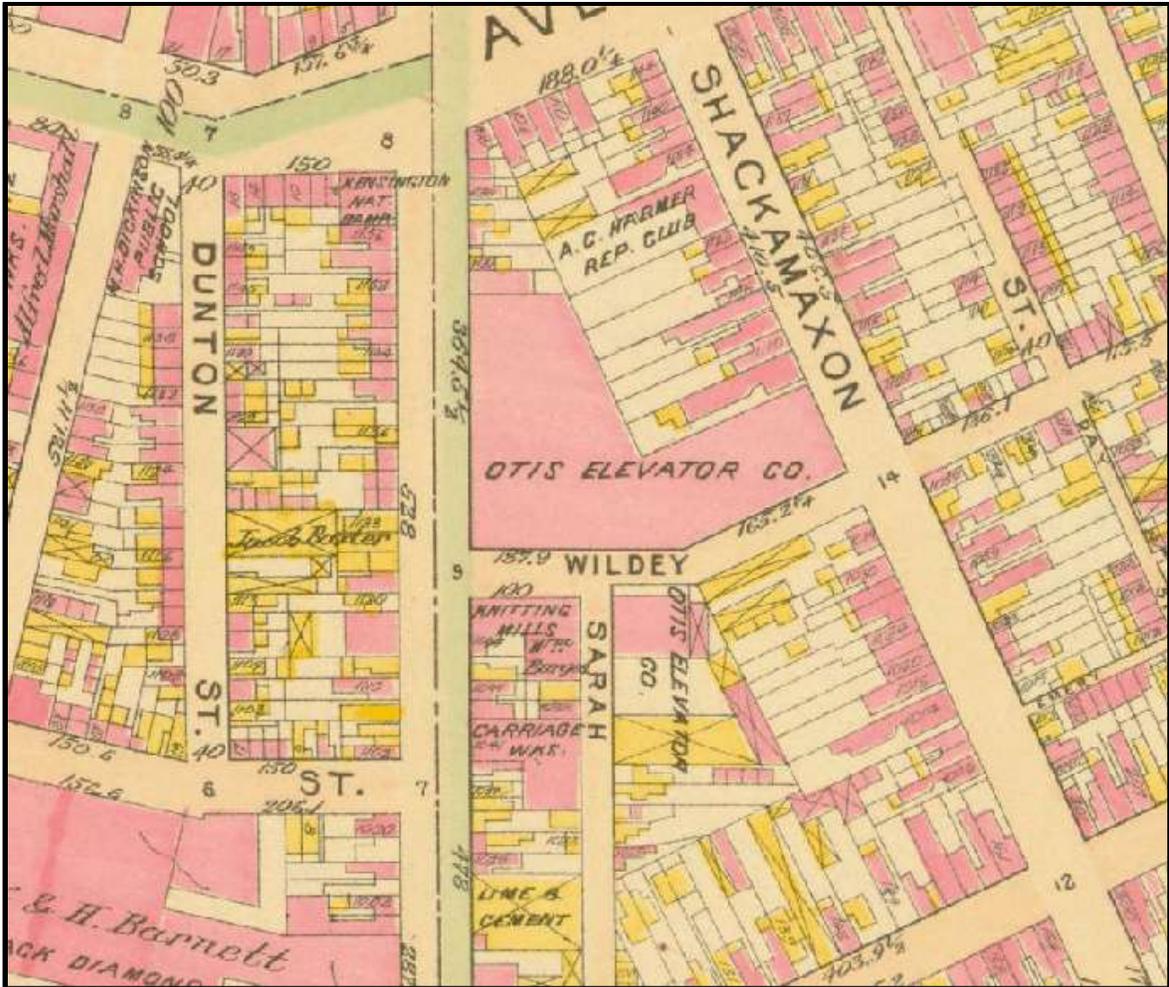


1884 Hexamer Insurance Maps of the City of Philadelphia (updated to 1915), Vol. 9
 Courtesy the Historical Society of Pennsylvania

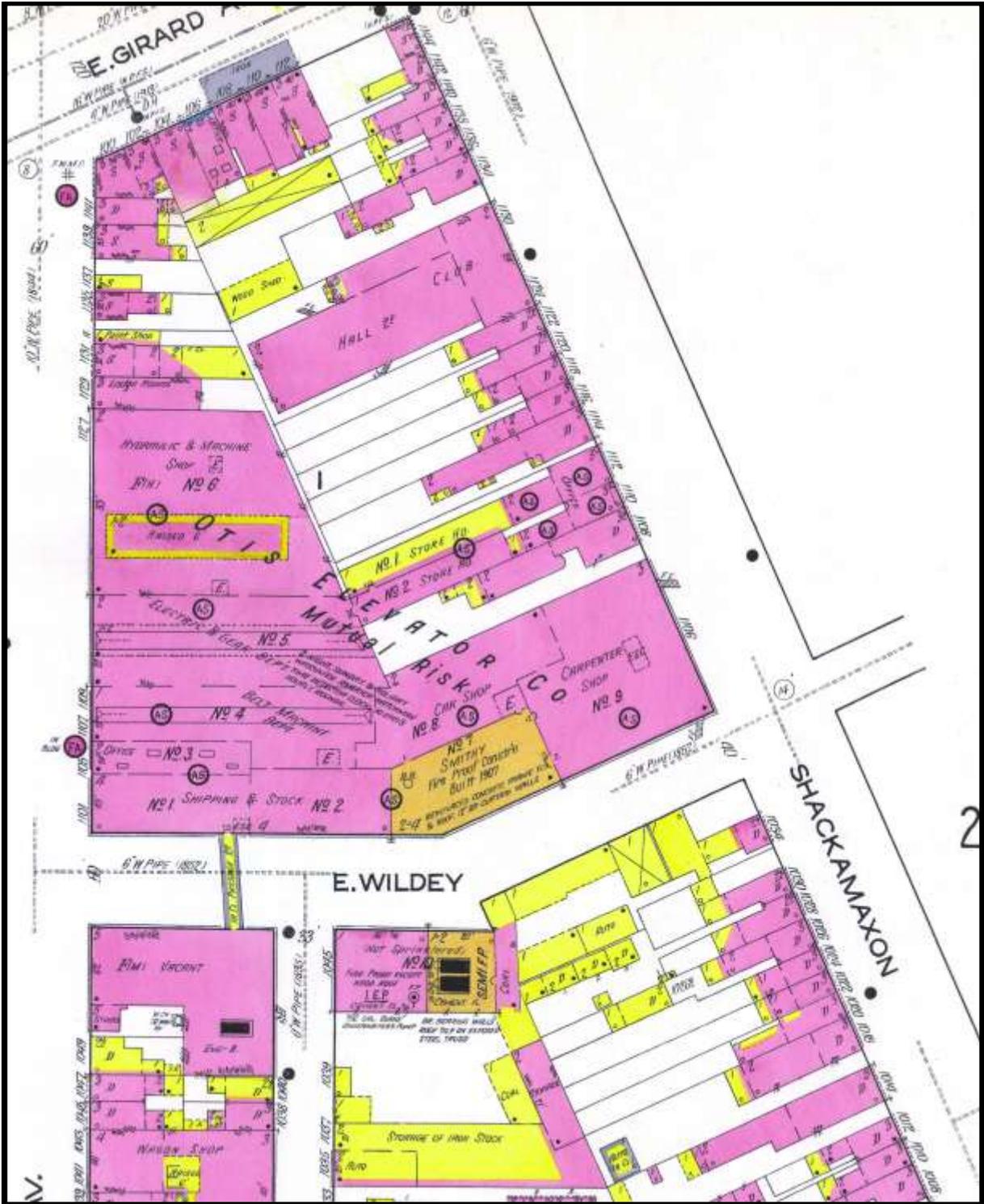


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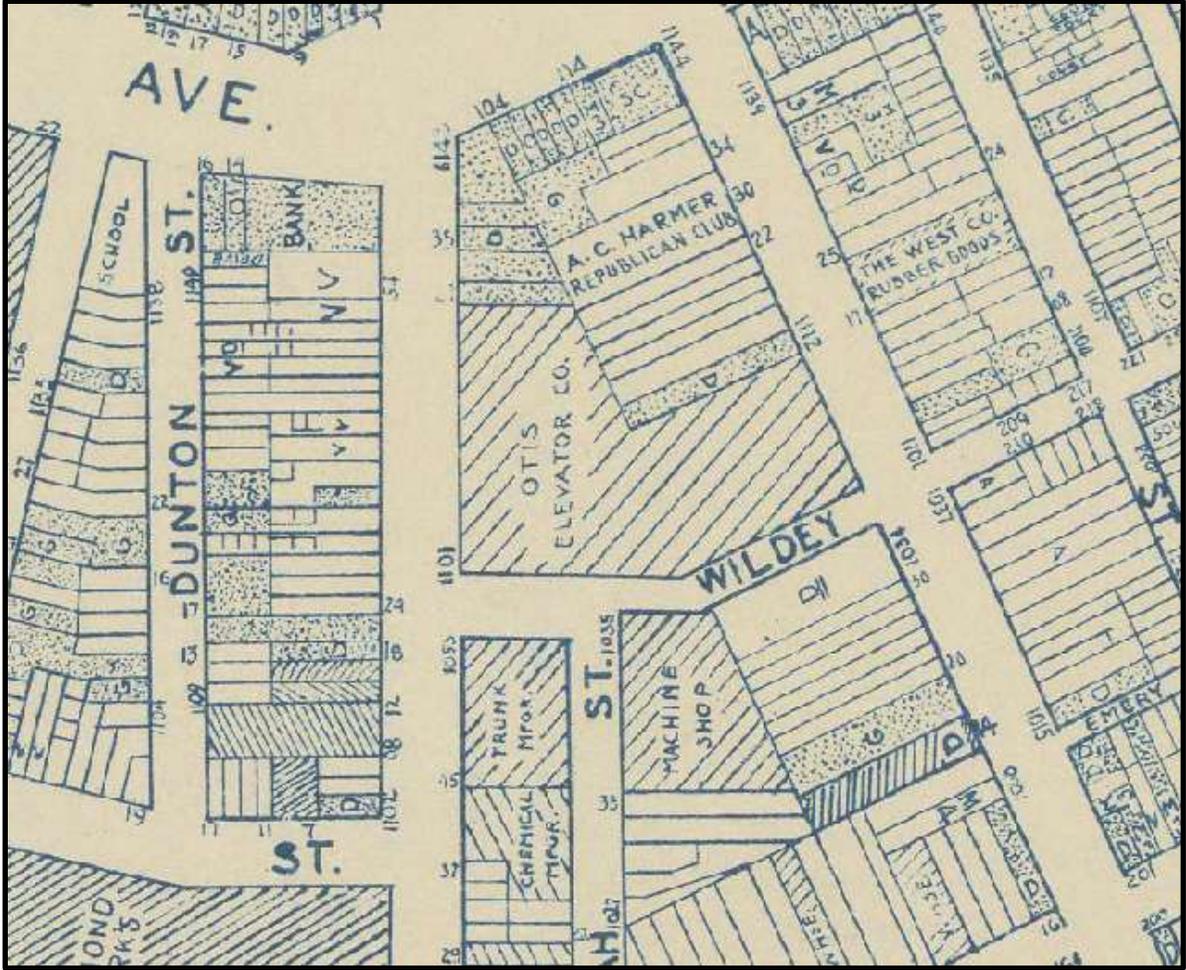
1884 Hexamer Insurance Maps of the City of Philadelphia (updated to 1915), Vol. 9
Courtesy the Historical Society of Pennsylvania



1910 Philadelphia Atlas
G.W. Bromley
Courtesy the Greater Philadelphia GeoHistory Network



1916 Sanborn Real Estate Atlas, Vol. 3
Courtesy Pennsylvania State University Libraries



1942 Land Use Map
Works Progress Administration
Courtesy the Greater Philadelphia GeoHistory Network

8. Bibliography

Contributors

The Society for Industrial Archaeology identified the subject site as being the most cohesive industrial site in Fishtown and the larger Kensington neighborhood. As a result, upon gaining intelligence of plans that include the demolition of the warehouses on the site, Oscar Beisert, Architectural Historian and Historic Preservationist worked with members of the community to submit this nomination on September 1, 2015. The following individuals provided substantial assistance required for the completion of this nomination, with special gratitude to Kenneth Milano, Fishtown native and Historian and J.M. Duffin, Archivist and Historian.

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