



IRON & STEEL

ENTREPRENEURS
on the
DELAWARE

by Clifford Zink

Today we get excited about iPhones, iPads, and the like, but 160 years ago, when the key innovations were happening in railroads, iron, and steel, many people actually got excited about . . . I-beams! And among the centers of such excitement was Trenton, New Jersey.



Figure 1: Petty's Run Steel Site, Trenton, 2013. In the 1990s Hunter Research, Inc. uncovered the foundation of Benjamin Yard's 1740s steel furnace, one of the earliest steel making sites in the colonies. The site lies between the N.J. State House and the Old Barracks, background, and the State and Mercer County have preserved and interpreted it. *C.W. Zink*

Trenton became a center of these iron and steel innovations in the 19th century for the same reasons that spur innovation today—location, infrastructure, skilled workers, and entrepreneurs. The city's resources attracted three of the more brilliant and visionary entrepreneurs of the 1840s—Peter Cooper, Abram S. Hewitt, and John A. Roebling. They established iron and steel enterprises in Trenton that lasted for more than 140 years and helped shape modern life with innovations in transportation, construction, and communications. Their legacy in New Jersey continues today with landmark suspension bridges, one of the State's finest historic parks, repurposed industrial buildings, one of the best company towns in America, and in a new museum.

Abram Hewitt, Peter Cooper's partner and future son-in-law, highlighted Trenton's assets in 1853: "The great advantage of Trenton is that it lies on the great route between New York and Philadelphia" which were the two largest markets in the country. "It is a kind of suburb of both. It is the cheapest place for coal on tidewater" thanks to the nexus of the Delaware River, the Delaware & Raritan Canal, and the Camden and Amboy Railroad. "It is so happily placed, that it is as cheap to use bituminous coal as anthracite . . . It is healthy, and has the choice of hands" which were hands skilled in metalworking.

Metalworking in Trenton dates back to at least the 1720s, when

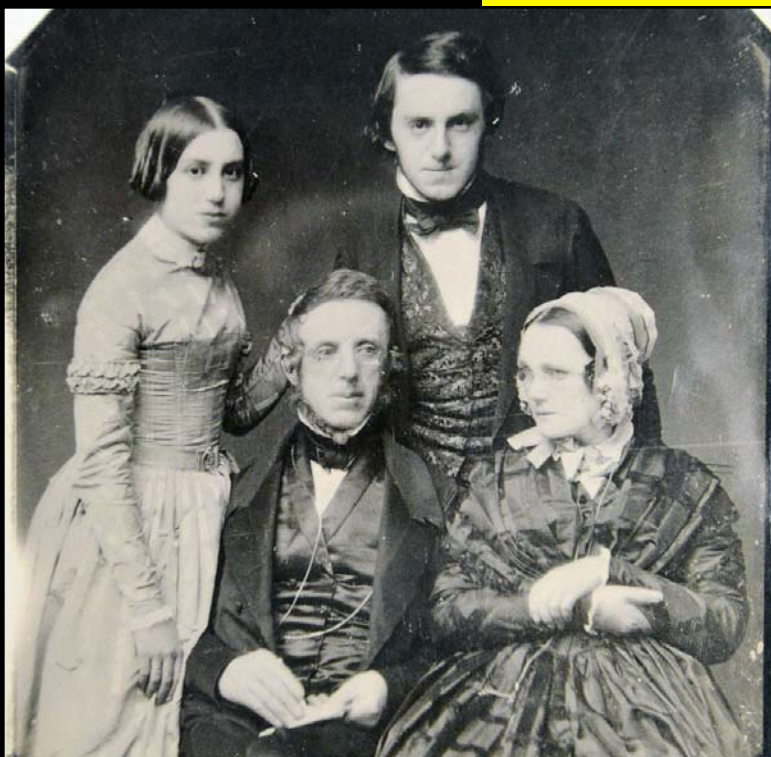


Figure 2: Peter Cooper and his wife, Sarah Bedell Cooper, bottom; Amelia Cooper and Edward Cooper, top, c1845. Born in New York in 1791, Cooper was one of America's most successful entrepreneurs in the 19th Century. Amelia Cooper later married Abram Hewitt. *Cooper Union*



Figure 3: Abram S. Hewitt, c1860. A classmate of Edward Cooper's at Columbia College, Hewitt became his brother-in-law and Peter

Cooper's son-in-law when he married Amelia Cooper, in 1855. Hewitt and Peter and Edward Cooper were partners in the Trenton Iron Company and many other ventures. *Cooper Union*

William Trent and two partners established an "iron works" on the Assunpink Creek. In the 1730s, an English blacksmith named Isaac Harrow erected an iron plating mill on nearby Petty's Run to make tools, utensils, and plate iron. Benjamin Yard expanded Harrow's works in the 1740s with the first steel furnace in New Jersey, and one of only five in the colonies. **(Fig. 1)**

When Peter Cooper was searching for a new iron works site in the 1840s, the New York inventor and serial entrepreneur was already famous and rich **(Fig. 2)**. Cooper was born in 1791, attended school for only one year, and started his career as a coach maker's apprentice. His mechanical genius found an early outlet in manufacturing cloth shearing machines, and with its profits he bought a glue factory where he developed "the best glue in the market" and made

his first fortune.

Attracted by the startup Baltimore & Ohio Railroad, Cooper invested in land in Baltimore in 1828 and built a small furnace and rolling mill there. When the prospects for the B&O sagged because British-built locomotives wouldn't be able to manage the tight turns along its route, Cooper built the Tom Thumb, the first American-made locomotive, and famously demonstrated its capability in a race with a horse-drawn rail carriage. Cooper planned to sell rails to the B&O, but competition from English rail makers forced him to find a manufacturing location closer to sources of pig iron and coal.

Cooper built a foundry and rolling mill in New York, but the cost of shipping pig iron and coal to the city limited its potential. After considering sites along the Delaware River, in 1845 he bought land at the foot of Warren Street in South Trenton for a new iron works and planned to put his 21-year-old son, Edward **(Fig. 2)**, in charge of it. Edward convinced him to include as a partner his friend and classmate at Columbia College, 23-year-old Abram Hewitt **(Fig. 3)**. Hewitt was born in Haverstraw, N.Y., in 1822, the son of a mechanic, and won a scholarship to Columbia College, where he graduated first in his class.

The Cooper and Hewitt families had known each other for many years, and the two classmates had traveled to Europe after graduating from Columbia. Edward had fine mechanical abilities like his father, while the brilliant Hewitt had tutored students at Columbia and studied law. Peter Cooper financed the new South Trenton Iron Company with Edward Cooper in charge of production and Abram Hewitt in charge of the business.



Figure 4: T-Rail Section, Nassau Hall, 1855. The South Trenton Iron Company rolled the first American T-rails with this 3 ½ in.-tall profile, sometimes called a "pear" rail, in 1846. After a fire destroyed much of Nassau Hall at Princeton University in 1855, architect John Notman used Trenton Iron Company T-rails as floor beams in the reconstruction. *Seeley Mudd Library, Princeton University. C.W. Zink, 2013*

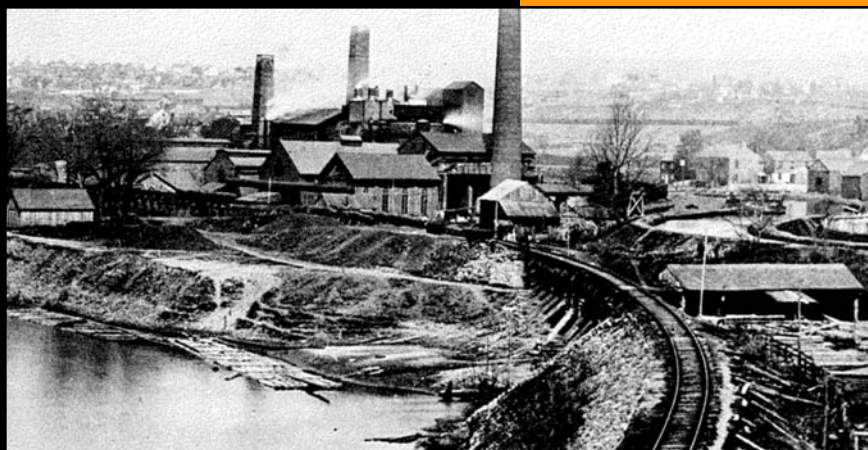


Figure 5: Cooper Furnace, Phillipsburg, N.J., c1870. The Cooper & Hewitt partners built the furnace in 1847 between the Delaware River, left, and the Morris Canal, right, to smelt Andover iron for the Trenton Iron Company. Within a few years the Belvidere Delaware Railroad, center, provided rail access to Trenton. *James Lee, The Morris Canal: A Photographic History, 1979.*

Before the new mill opened in 1846, Robert L. Stevens and Edwin A. Stevens, president and treasurer of the joint Camden & Amboy Railroad and Delaware & Raritan Canal companies, ordered 2,000 tons of rails at the same price that they were paying for English rails. The Stevens brothers knew the Coopers and the Hewitts well. John Hewitt, Abram's father, had worked as a steam mechanic for their father, Colonel John Stevens, the famous Hoboken engineer and inventor who in 1815 obtained the first American railroad charter, which the Stevens family used to establish the Camden & Amboy.

Robert Stevens invented a T-rail in 1830, whittling its prototype out of wood while sailing on a ship to England. Since no American iron works could roll T-rails, however, the Camden & Amboy had to buy them from English iron manufacturers. The Stevens brothers wanted to support Cooper's South Trenton venture as a new *American* source of rails, but they also figured that the new mill would become a big customer of their joint transportation companies.

Skilled workers at the South Trenton mill rolled the first American T-rails for the Camden & Amboy in 1846 (**Fig. 4**), and by the end of the year nearly 500 English, Irish, German, and Yankee "hands" at the mill were producing 40 tons of iron a day. With prospects bright, Cooper reorganized the mill in 1847 as the Trenton Iron Company, and formed Cooper & Hewitt as a separate company to be its agent.

To secure quality iron ore for the mill, Hewitt bought the Andover Mine in Sussex County, New Jersey in 1847 for the Cooper & Hewitt partnership. The mine dated to the 1760s and had produced iron ore for the Continental Army. To smelt the ore Hewitt bought land in Phillipsburg on the Delaware River adjacent to the Morris Canal. On this site the partners built the "Cooper Furnace," the largest blast furnace in the country at that time (**Fig. 5**).

That year the partners also bought the Delaware Manufacturing Company in Trenton at the intersection of Sandtown Road (today's Hamilton Avenue), the Delaware & Raritan Canal (now Routes 1 and 129), and the Philadelphia and Trenton Railroad (today's Northeast Corridor). Delaware Manufacturing produced spikes, nails, and wire, and the partners soon merged it into the Trenton Iron Company to concentrate their wire production there.

Aware of Peter Cooper's success in Trenton, John A. Roebling (**Fig. 6**) wrote him in 1847 seeking "five or ten acres of dry level ground . . . near the railway and canal" to build a wire rope factory. Roebling was born in Mühlhausen in Prussia in 1806, and in contrast to Cooper's brief

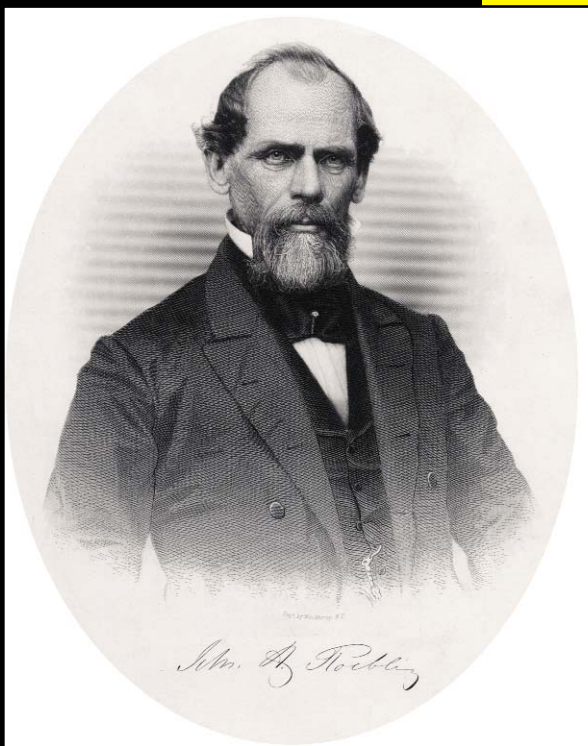


Figure 6: John A. Roebling, 1867. Born in Prussia in 1806, Roebling immigrated to the United States in 1831 with superb engineering training and skills.

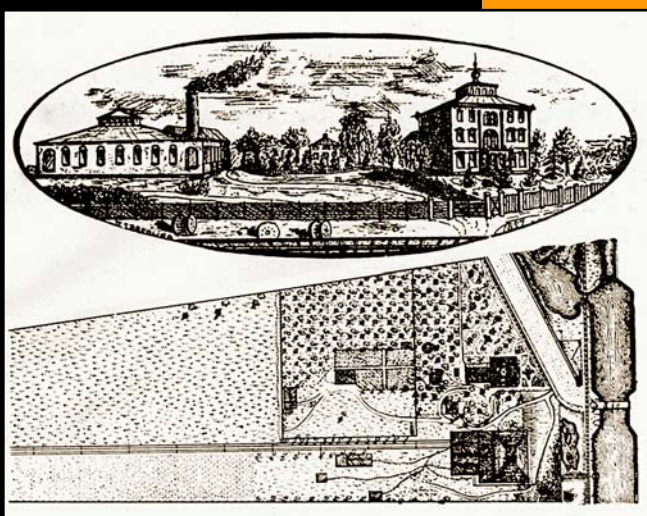


Figure 7: John A. Roebling factory and house, by Washington A. Roebling, 1857. Starting in 1848, Roebling built his wire rope factory, left, and his house, right, along the D&R Canal across from the Trenton Iron Company. Portions of the house are extant in the Mercer County Administration Building.

schooling, Roebling had a superb education. Prussia had free public schools and Roebling benefited from educational reforms that followed Napoleon's defeat of the Prussian Army in the same year he was born. Roebling attended the Mühlhausen Gymnasium, boarded at a private mathematics institute, and studied engineering and architecture at the Royal Building Academy in Berlin, where he became fascinated by suspension bridges. He immigrated to America in 1831 with a rare engineering education at a time when canals and railroads were rapidly developing.

Thinking that Roebling would be a customer for Trenton Iron wire, Cooper recommended a parcel of land across the D&R Canal from his wire mill. Roebling purchased the parcel in 1848, moved his family, and started manufacturing wire rope there in 1849 (**Fig. 7**). Roebling bought many miles of Trenton Iron wire over the next several years and developed cordial relationships with the Coopers and Hewitt.

The Trenton Iron Co.'s early success also attracted the attention of the Industrial Commissioner of Great Britain, John Wilson, who visited the United States for the Great Exhibition of the Industries of All Nations in 1851. "The Trenton Iron Company," Wilson reported to Parliament, "may be looked upon as the leading establishment of the United States, not only in regard to its production, but also in regard to its working arrangements. About 20,000 tons of iron are consumed annually in the production of rails, chains, and wire." (**Fig. 8**) Hewitt sent Trenton Iron samples to the Exhibition and the Company won a prize there.

To secure more iron ore for the Trenton Iron Company, Abram Hewitt bought the 11,000-acre Ringwood Estate in Passaic County in 1853. Rich in magnetite ore, the Ringwood area in the Ramapo Mountains attracted ironmasters by at least the 1740s, when the Welsh miner Cornelius Board built a small forge and Josiah Ogden and David Ogden of Newark built a furnace. The German Peter Hasenclever significantly expanded the Ringwood ironworks in the 1760s, and Robert Erskine—who became General Washington's cartographer—made ordnance and ironware at Ringwood for the Continental Army.

Martin Ryerson, a third generation ironmaster in Pompton Lakes, revitalized iron production at Ringwood in the early 19th century and built a new house there. Hewitt characterized "Ringwood ore" in 1854 as "more uniformly pure and rich than any other ores in the state." The Hewitts expanded Ryerson's house into Ringwood Manor for their summer home (**Fig. 9**).

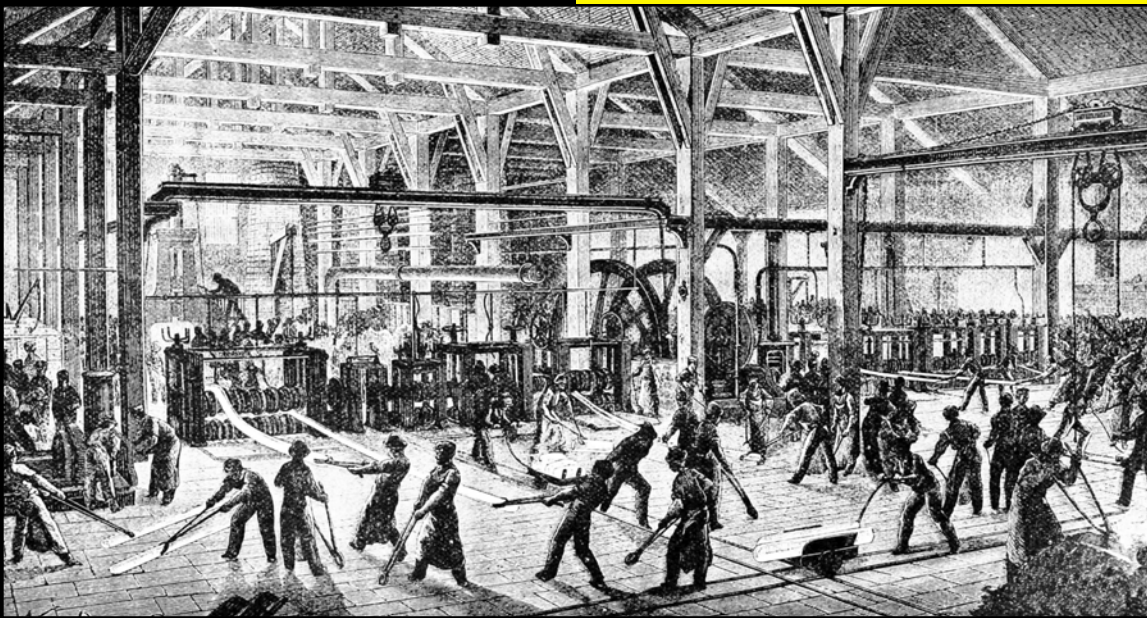


Figure 8: Interior of an Iron Rolling Mill, c1855.
Popular Science Monthly, 1891

In 1852, Peter Cooper at the age of 61 decided to start the educational institution he had saved and planned for over many years—the Cooper Union for the Advancement of Science and Art (**Fig. 10**). Besides the Union’s innovative mission—“open and free to all” regardless of religion, ethnicity or gender—Cooper also saw the building as an opportunity to introduce

structural wrought iron in America.

European ironmasters had been producing wrought iron for prominent structures, like the Palm House at London’s Kew Gardens, since the 1840s. In America, however, innovators like James Bogardus were building with weaker cast iron. The Trenton Iron Company had developed 7-inch-high “bulb T” wrought iron rails for the Camden & Amboy Railroad in 1848, but the tall profile proved too rigid for track

Figure 9: Abram Hewitt at Ringwood Manor, 1876. Peter Cooper and Abram Hewitt bought the Ringwood Estate in 1853. Abram and Amelia Cooper Hewitt used the house built by Martin Ryerson c1820 as a summer home and significantly expanded it in the 1860s and 70s. Their son, Erskine Hewitt, donated Ringwood Manor with 136 acres to the State in 1936. Today Ringwood State Park contains more than 4,400 acres and is one of the finest historical and natural parks in New Jersey.



use. Cooper used the “bulb T” rails for the floors of Cooper Union in 1854 (Fig. 11), and these “rail beams” quickly attracted attention for other big projects in New York. Captain Alexander Bowman of the Army Corps of Engineers tested and ordered the rail beams for the U.S. Treasury’s new Assay Office building. James Harper, the publisher of *Harper’s New Monthly Magazine*, ordered the rail beams for rebuilding the Harper & Brothers Building that had recently burned down.

While the rail beams proved successful, Cooper & Hewitt were also working on a bigger innovation. English and French ironmasters had been rolling beams with an I-configuration, with flat flanges on the top and bottom, and Cooper & Hewitt invested a substantial sum to roll this new type of beam for the American market. An Irish

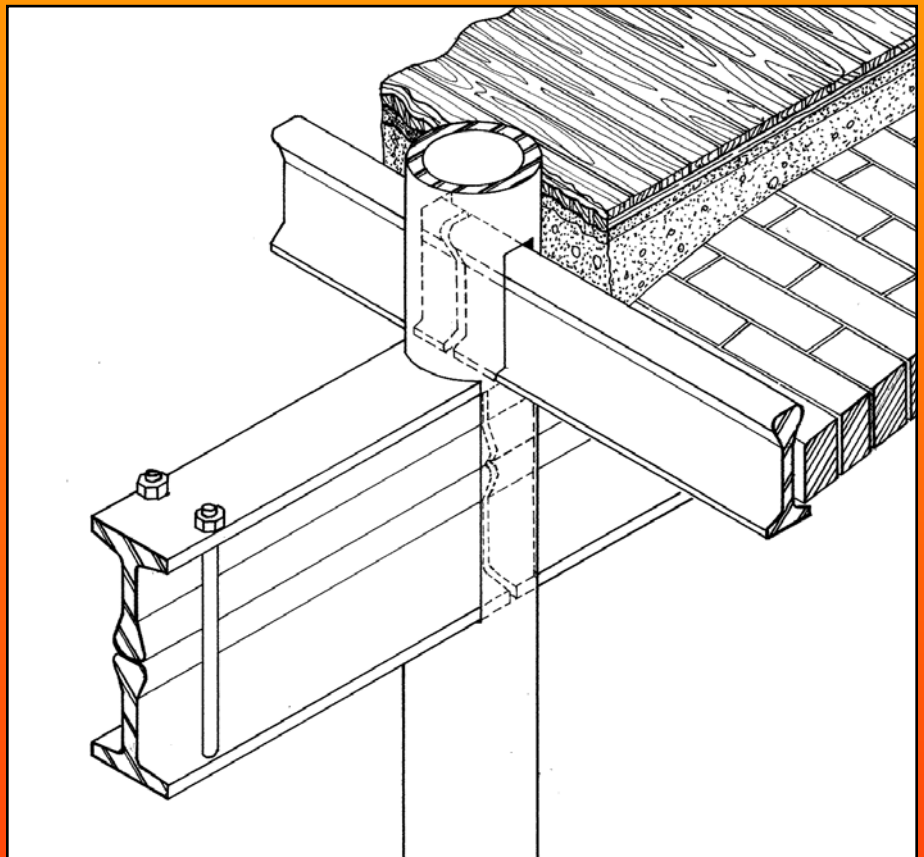
“iron smith” named William Borrow built a mill (Fig. 12) at the Trenton Iron works in 1854 that rolled 8–3/16-inch I-beams with a wide bottom flange and a narrower top flange.

With further improvements the Trenton Iron workers finally rolled the first true American I-beams—9 in. tall with equal flanges—in 1856 (Fig 13). Soon the workers were rolling I-beams up to 20-inches high and 30-feet long. Cooper & Hewitt’s investment and marketing paid off



Figure 10: Cooper Union for the Advancement of Science and Art, c1860. Peter Cooper established Cooper Union with an innovative educational mission and built it with innovative Trenton Iron Company beams to demonstrate their strength and economy. *Historic American Engineering Record*, 1971.

Figure 11: Cooper Union Interior Structure. Cooper's use of Trenton Iron Company's 7-in. "bulb T" rails as floor beams in 1854 attracted considerable attention, and they were quickly adopted for many prominent buildings. *Historic American Engineering Record*, 1971. *Historic American Engineering Record*, 1971.



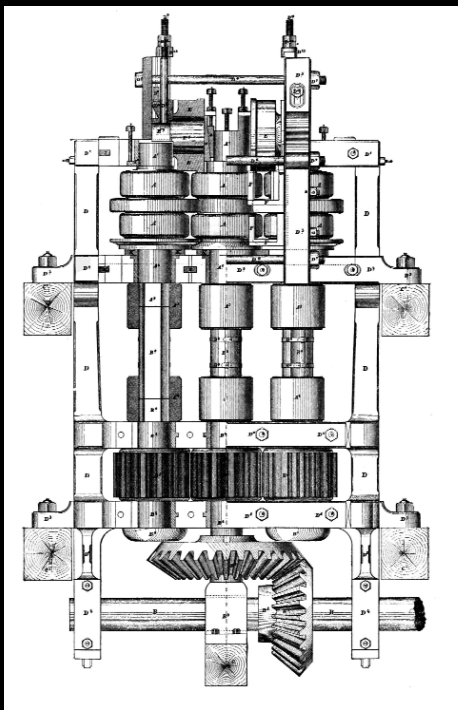


Figure 12: Patent Mill, Trenton Iron Company, 1858. Built by an Irish "iron smith" at the Trenton Iron Company in 1854, this mill enabled iron workers to roll the first I-Beams in America. *Popular Science Monthly*, 1891.

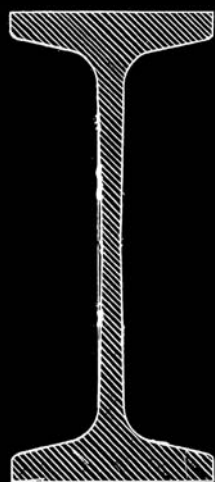


Figure 13: Trenton Iron Company I-beam profile, 1856. Trenton Iron workers rolled the first true American I-beams with equal flanges in 1856. The Army Corps of Engineers submitted this sketch that year for using the I-beams in the floors of barracks at Fort Sumter in Charleston, S.C. Peterson, 1993.

as Captain Bowman and other engineers and builders ordered Trenton Iron beams for more than one hundred Federal, State, and private, buildings, including the General Post Office and extensions to the Capitol in Washington, the Philadelphia Mint and Federal Buildings in many other states, and Nassau Hall at Princeton University.

As Cooper & Hewitt were developing the American I-beam, John Roebling used Trenton Iron Company wire in building an 800-foot span railroad suspension bridge over the Niagara River. When he completed the remarkable bridge to world acclaim in 1855, Roebling set his sights on building a bridge twice as long over the East River to connect Manhattan and Brooklyn. Skeptics panned the idea, but Roebling wrote to Hewitt in early 1857 that his proposed bridge "is not only perfectly practicable, but will also become absolutely necessary." Hewitt had Roebling's letter published in the *Journal of Commerce*, and noted that Roebling was "the greatest living authority on the subject of Suspension Bridges." Thus began Roebling's 12-year quest to build the Brooklyn Bridge.

When the Civil War started at Fort Sumter in 1861, John's eldest son, Washington Roebling (**Fig. 14**)—a graduate of Rensselaer Polytechnic Institute in Troy, New York—enlisted in the Union Army and soon wrote a book on the transportation and erection of military wire suspension bridges. He built two of these for the Army with wire rope that his father produced in Trenton. General Gouverneur Warren, Washington's commanding officer, introduced him to his sister, Emily Warren (**Fig. 15**) in 1864, and they were married in 1865.

During the war Abram Hewitt traveled to England to procure the trade secret for making "gun-metal," a hardened form of wrought iron. When the Trenton Iron Company mastered the process, the Army ordered over 5,000 tons of gun metal, enough to make gun barrels for more than one-million rifles and muskets, including what came to be known as the Trenton-Springfield Rifle. Trenton Iron also produced critically-needed gun carriages, rails, wire, and other iron products. After the war, Hewitt made railroad wheels with gun-metal, but he was most interested in developing the capacity to make steel.

Iron works in Germany, England, and France were using a variety of methods to produce steel in increasing quantities. Hewitt had experimented at Phillipsburg in the late 1850s with the Bessemer process of making steel in a blast furnace, but he abandoned it because the ores from Andover and Ringwood were unsuitable. In Trenton, Hewitt used a "puddling" process to make steel for capping rails, and their success, along with the developments in Europe, convinced him in 1866 to reorganize Trenton Iron's rolling mill as the New Jersey Steel & Iron Company (**Fig. 16**). The Trenton Iron Company retained the wire mill on Hamilton Avenue (**Fig. 17**), and the mines and iron ore furnace in north Jersey.



Figure 14: Lt. Washington A. Roebling, c1864. The oldest son of John A. Roebling, Washington graduated from Rensselaer Polytechnic Institute in 1857, and during the Civil War he built military suspension bridges for the Union Army. *Rensselaer Polytechnic Institute.*



Figure 15: Emily Warren Roebling, c1865. Emily's brother, General Gouverneur Warren, was Lt. Washington Roebling's commanding officer, and he introduced them in 1864. A decade later Emily would famously help Washington finish the Brooklyn Bridge. *Rensselaer Polytechnic Institute.*

To understand steel making, Hewitt traveled to Europe again and while there he licensed Siemens and Martin processes of melting pig iron and scrap steel in an open hearth furnace to make steel. Hewitt built the first open hearth furnace in America at the New Jersey Steel & Iron Company in 1868, noting “We have a demand for all the steel that the furnace will produce.” His business instincts were again prescient, as the open hearth furnace became the dominant method for making steel in America in the 20th century. New Jersey Steel & Iron produced steel rails for numerous railroads and gun-metal for U.S. armories, and it continued to dominate the production of structural wrought-iron. The benefits of its Trenton location were waning, however, as new sources of iron ore and coal fostered iron and steel production in Bethlehem, Pittsburgh, and on the Great Lakes.

In 1868, John Roebling finally received permission from the New York and Brooklyn Bridge Company to build his suspension over the East River. Roebling designed the massive towers of the 1,600 ft. span with Gothic arches to relate them to the great medieval structures of Europe, and noted that the towers “will be entitled to rank as national monuments.” But he wouldn’t live to build his bridge, as he died from an injury while surveying for the Brooklyn Tower in 1869. His son, Washington Roebling, assumed his role of chief engineer.

Washington and his brothers, Ferdinand and Charles, inherited their father’s wire rope business in Trenton, and in the early 1870s they built a rolling mill there so that they could produce their own wire. On the other side of the canal, the Trenton Iron Company, which had supplied much wire to Roebling, began making wire rope in the 1880s. The two factories competitively but cordially produced wire and wire rope on opposite sides of the canal for nearly 90 years.

Peter Cooper died in 1883 at the age of 92, and Washington Roebling famously completed the Brooklyn Bridge that year with help from his wife, Emily Warren Roebling. After Washington became partially disabled from the “bends” after spending too much time below sea level in the caissons used to build the tower foundations, Emily became his liaison with the assistant engineers. At the bridge’s opening ceremony, Abram Hewitt, who had known the Roeblings for decades, paid homage to John, “who conceived the project,” to Washington, “who directed this great work from inception to completion,” and to Emily, “by whose brain and by whose facile fingers, communication was maintained between the directing power of its construction and the obedient agencies of its execution.” Hewitt had become prominent in New York politics and he was elected mayor in 1887.

In addition to manufacturing structural steel, the New Jersey Steel & Iron Company expanded into erecting steel, including the frame it erected for the Broad Street Bank Building, Trenton’s first skyscraper, in

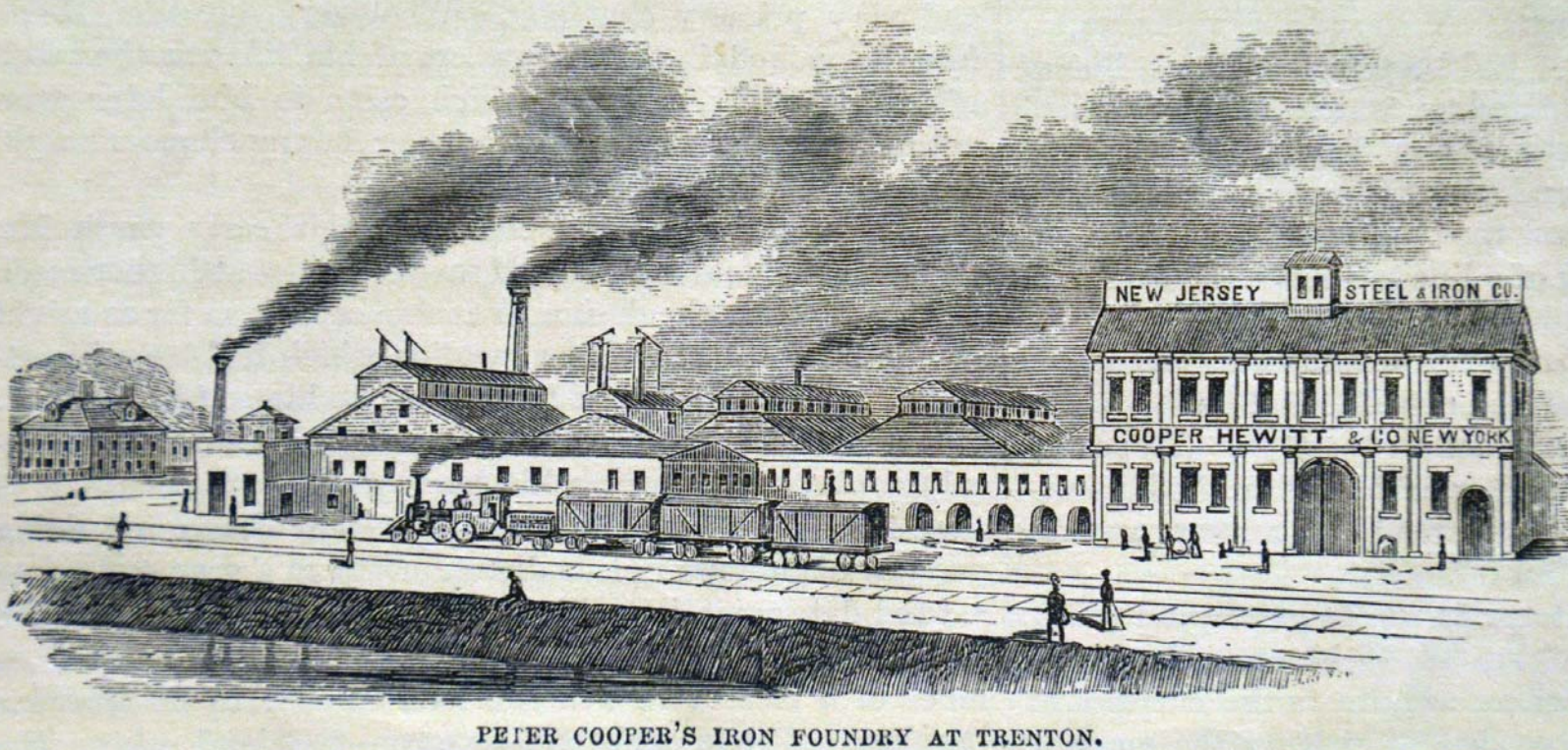


Figure 16: New Jersey Steel & Iron Company, 1877. To move into steel production, Abram Hewitt reorganized the Trenton Iron Company's iron works on the Delaware River in 1866 as the New Jersey Steel & Iron Company. Cooper & Hewitt continued as the agent for the reorganized Company.

*Frank Leslie's Popular Monthly, 1877.
Cooper Union*

1899 (**Fig. 18**). By the turn of the 20th century, steel production had surpassed railroads as the growth industry of the age. As part of their plan to consolidate steel companies, J.P. Morgan and fellow investors organized the American Steel and Wire Company of New Jersey in 1899 and the American Bridge Company of New Jersey in 1900. Seeing the future of steel production in consolidation, Abram Hewitt sold New Jersey Steel & Iron to American Bridge in 1900.

Morgan organized the U.S. Steel Corporation in 1901 and secured Hewitt as one of its first directors because of his standing and prestige in iron and steel industry and in finance. That same year Morgan merged American Steel & Wire and American Bridge into U.S. Steel as divisions. Hewitt died in 1903 at the age of 80, and the following year the American

Figure 17: Trenton Iron Company, c1876. By this time, Trenton Iron had expanded along the D&R Canal, bottom, to the south side of Hamilton Avenue, center. Cooper & Hewitt concentrated their wire and wire rope production in this plant.

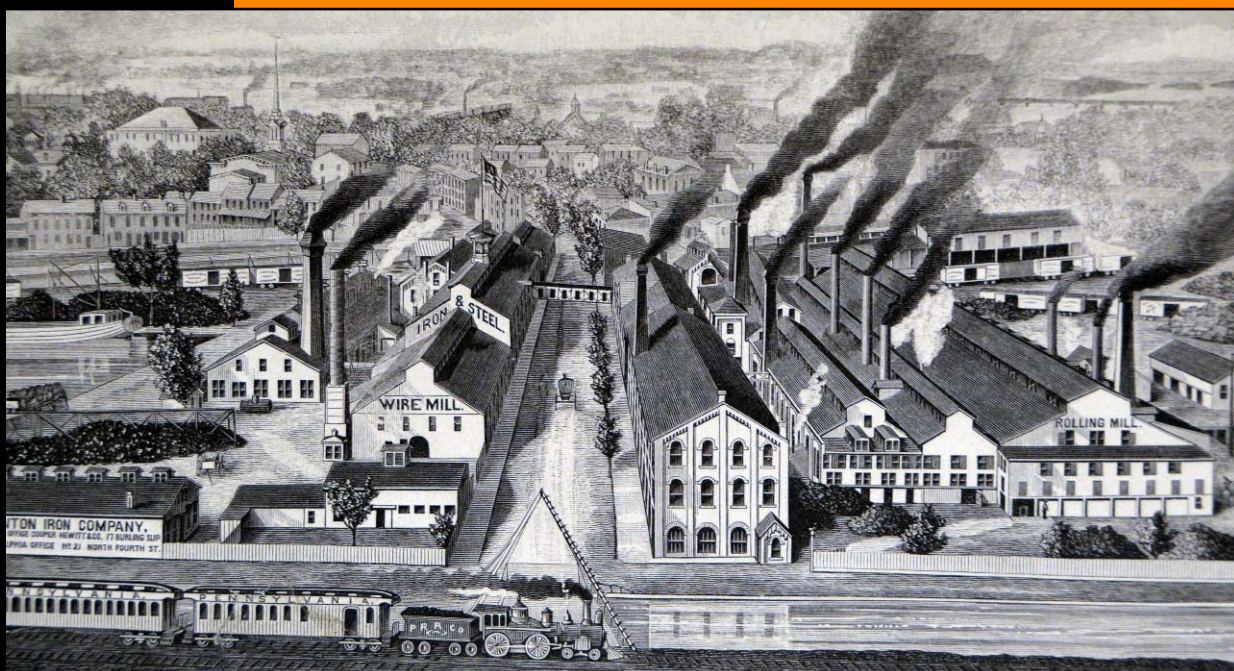




Figure 18: Broad Street Bank Building, 1899. The New Jersey Steel & Iron Company erected the steel frames of many prominent buildings, including Trenton's first skyscraper. *Trenton Public Library.*

Figure 19: Works of John A. Roebling's Sons Company, Trenton, 1898. For many years the Roebling Works in Trenton was the world's largest wire rope factory. *State Museum*

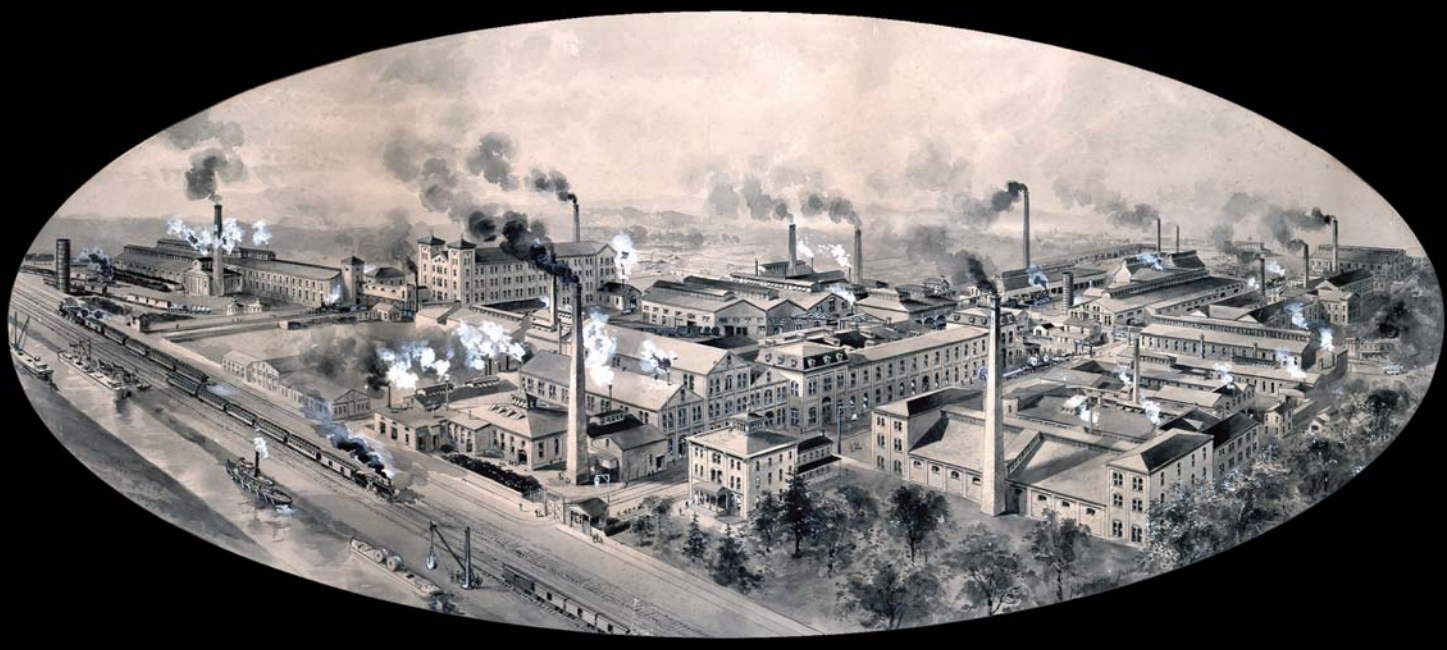
Steel and Wire division acquired the Trenton Iron Company. Fifty-eight years after Peter Cooper began making iron in Trenton, the Cooper & Hewitt iron and steel plants in Trenton were now small parts of the largest corporation in the world.

Morgan and his associates tried to buy John A. Roebling's Sons Company (**Fig. 19**), but the Roebling brothers refused to sell. The creation of the U.S. Steel behemoth, however, threatened the Roebling Company's prospects, as U.S. Steel could afford to sell steel cheaply to its American Steel & Wire division and would gradually be able to put the Roebling Company out of business with cheaper prices. The Roebling brothers responded to this challenge by building a steel mill ten miles south of Trenton with nine open hearth furnaces for making their own steel for the first time. The brothers opened the steel mill in 1906 and built the adjacent town of Roebling to house its workers and their families (**Fig. 20**).

In Trenton, the Roebling and American Steel & Wire plants manufactured wire and wire rope on opposite sides of the D&R Canal through most of the 20th Century for cable cars, elevators, shipping, mining, construction, and many other uses. The Roebling Company specialized in wire rope for cable cars and airplanes, and it erected the cables on the Bear Mountain, George Washington (**Fig. 21**), Golden Gate, and Second Tacoma Narrows Bridges.

The American Steel & Wire plant, where Abram Hewitt expanded the Trenton Iron Company in 1847, specialized in wire rope for aerial tramways and it erected the cables on the Ben Franklin, San Francisco-Oakland Bay, Bronx Whitestone, Throggs Neck, Mackinac, Chesapeake Bay, Delaware Memorial, and Verrazano Narrows Bridges.

The American Bridge plant on the Delaware River, which Peter



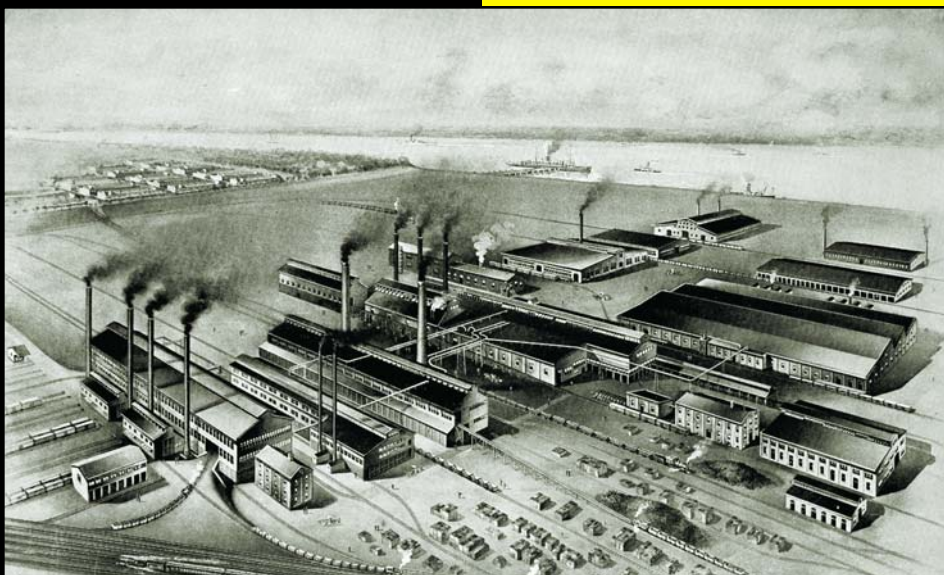


Figure 20: John A. Roebling's Sons Company, Kinkora Works, Roebling, N.J., c1911. Faced with competition from the new U.S. Steel Corporation, the Roebling brothers built a steel mill ten miles south of Trenton so that they could make their own steel for the first time. To house their workers they built the town of Roebling with more than 750 houses (top left). *Rutgers University*

Figure 21: George Washington Bridge, 1930. "Roebling Cables" atop the tower proudly proclaimed the New Jersey source of the unprecedented 36 in. cables on this record-breaking span.

Roebling family sold it in 1953 to Colorado Fuel & Iron Corporation, the seventh largest steel manufacture in the U.S. Roebling engineers continued to innovate with wire rope for prestressed concrete and

Cooper started as the South Trenton Iron Company in 1845, fabricated structural steel for many prominent buildings and bridges, including the Chrysler Building, Rockefeller Center, the United Nations Headquarters, and the Ben Franklin, Chesapeake Bay, Tacony-Palmyra, Delaware Memorial, Walt Whitman and Tappan Zee Bridges.

After the Second World War, the Roebling Company could no longer compete successfully against the steel conglomerates, and the

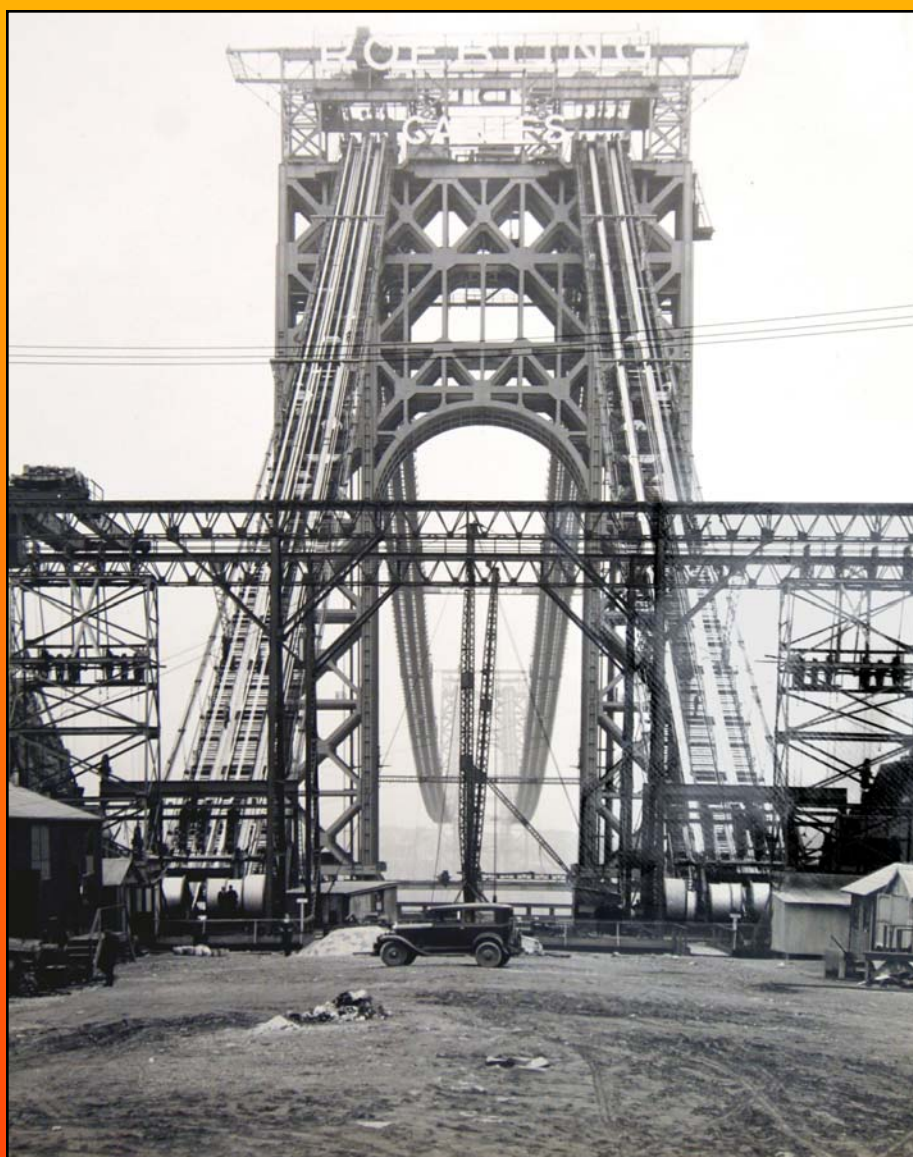




Figure 22: Roebling Machine Shop, 2012. Thanks to a non-profit, the City, and the State, this 1890-1901 "cathedral of industry" has been partially rehabilitated. Artworks' Art All Night 2013 attracted nearly 30,000 people. *C.W. Zink*

suspended roofs. CF&I operated the Roebling plant in Trenton until 1973 and the plant in Roebing until 1974. Thanks to a non-profit community plan, City and State support, and private investment, old Roebling buildings in Trenton now house N.J. Housing Mortgage Finance Agency and Mercer County offices, the Roebing Market, senior housing, and Trenton Artworks' annual Art All Night (**Fig. 22**).

U.S. Steel closed the American Bridge Trenton plant in 1975, and the site was redeveloped for State and private offices and for Mercer County Waterfront Park. As part of the redevelopment,

Mercer County preserved the N.J. Steel & Iron Company's 1870s Machine Shop (on the right in Fig. 16), and it is now a riverside restaurant (**Fig. 23**).

The Bridon American Corporation acquired American Steel & Wire's old Trenton Iron wire and wire rope plant on Hamilton Avenue in 1984. Bridon closed the plant in 1987, thus ending the storied era of iron and steel manufacturing in Trenton. Mercer County preserved Trenton Iron's 1875 wire mill and it now houses the offices of the Mercer County Improvement Authority (**Fig. 24**).

The Roebling Company's old steel and wire mill in Roebing became a Superfund site in the 1980s. As part of the site's cleanup, the U.S. Environmental Protection Agency rehabilitated the plant's 1907-1919 Main Gate building for the Roebing Museum (**Fig. 25**), which highlights the contributions of the Roebings and the John A. Roebing's Sons Company. The town the Roebings

built was recognized as a National Register district, and it continues to provide attractive housing and shops in a pedestrian-friendly environment.

Today, the three-century long tradition of metalworking continues in and around Trenton with many small shops fabricating iron and steel products ranging from fire escapes, to structural and architectural steel, to art objects. And thanks to public, private, and non-profit preservation efforts, many notable Cooper & Hewitt and Roebing buildings still represent the golden era of iron and steel entrepreneurship and innovation on the Delaware.



Figure 23: N.J. Steel & Iron Company Machine Shop, 2013. The 1870s building now houses a waterfront restaurant on the Delaware River. *C.W. Zink*



Figure 24: Trenton Iron Company Wire Mill, 2013. Preserved by Mercer County, the c1875 wire mill houses offices on the second floor and retail space on the first floor. *C.W. Zink*



Figure 25: Roebling Museum, Roebling, N.J., 2009. Preserved by the U.S. EPA, the Main Gate building at the former Roebling steel and wire mill now houses a museum dedicated to the legacy of the family and company. In 2009, the Museum hosted a reunion of Mercer cars, like the 1921 Mercer Touring Car driven by a Roebling descendent, for the 100th anniversary of the Mercer Automobile Company, founded by members of the Roebling and Kuser families in 1909. *C.W. Zink*

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