

# Quincy History



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## The Granite Railway

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Quincy's Granite Railway was the first *commercial* railway in this country. It has never been claimed that it was the first railway in the United States. There had been a number of earlier railways built and operated to move heavy loads in connection with specific projects. When such a railway's single purpose had been accomplished, its days were over, in many cases not even making the pages of history.

The Granite Railway was the first commercial railway because it was the first railway to be incorporated and operated as a transportation business, the first railway common carrier. In that new function, many new problems had to be resolved and commercial railway practices pioneered. There were questions of right-of-way, safety and liability to be resolved. To provide a flexibility of operation that was not required in a single-purpose railway, engineering features were developed that continue as standard railroad practices today.

The enterprise and genius of two men brought the Granite Railway into being. Thomas Handasyd Perkins was the businessman responsible for its establishment. Gridley Bryant, the inventive engineer made it work. Col. Perkins' contributions to the railroad industry have been overshadowed by the many other enterprises in which he engaged, and his many philanthropies of which the Perkins School for the Blind is the best known today.

The title of a recent biography of Col. Perkins, *Merchant Prince of Boston*, well describes his stature in Boston's business and financial community. He was a highly successful shipping merchant especially in the China trade, but actively engaged in other business ventures in which he saw commercial

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Reference 2

**Thomas Handasyd Perkins**  
1764-1854

potential. He was very public-minded and was actively associated with many institutions and projects that benefited the people of Massachusetts, including the Bunker Hill Monument Association. He served eighteen years in the State House as representative and senator, and was a Lieutenant Colonel in a Massachusetts military corps.

Gridley Bryant was a self-educated master mason and engineer. He was born in Scituate and returned there in his later years. He worked on the fortifications of Boston in 1814, and constructed the Mill Dam across the Back Bay, a great engineering achievement at the time. He was the contractor for a number of important buildings in Boston. In 1823 he invented a portable derrick.

### The Railway Company

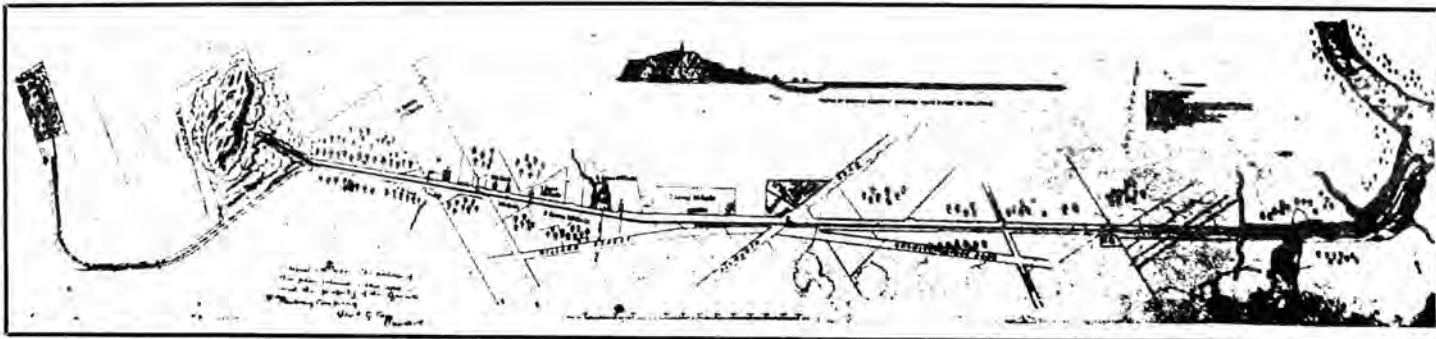
In August of 1824, Solomon Willard submitted a design for a monumental column to the Bunker Hill Monument Association, of which Col. Perkins was



**Gridley Bryant**  
1789-1867

then on the board of directors. When asked for a cost estimate, Mr. Willard enlisted the aid of Gridley Bryant who had been his partner in constructing a bank building in Boston. Col. Perkins knew both men since he was on the committee of the bank that supervised the construction project. After Willard's design for an obelisk had been accepted, Col. Perkins wrote a letter to the Monument Association recommending Willard to handle the construction. He also put in a good word for "Bryant, the mason". Solomon Willard was selected for the job of architect and superintendent for the Bunker Hill Monument Association project.

Mr. Willard convinced the Association that much money could be saved by quarrying the stone rather than purchasing it from a contractor, due to the large quantity that would be involved. In June of 1825 the Association acquired the rights to take stone from a lot in West Quincy, now



Map showing original route of the Granite Railway.

Reference 4

known as Bunker Hill Quarry. The granite was of fine quality but remote from means of transportation. The possibility was considered of quarrying the stone and then waiting for snow to move the large blocks on sledges the four miles to the Neponset River. This would have been difficult and expensive, and so a better method was sought. Gridley Bryant, who had been following experimentation with railways in England, proposed transportation by rail to the Bunker Hill Monument Association. They declined it because they considered it too ambitious for their limited means. Had this proposal been accepted, the result would have been another single-purpose railway, and not a commercial railway.

Gridley Bryant still believed that a railway was the solution to Mr. Willard's transportation problem. He therefore took his proposal to T.H. Perkins and other businessmen. Col. Perkins saw the commercial potential in the scheme that would also benefit the Bunker Hill Monument Association by providing economical transportation for its project. His rough calculations, based on the Monument Association as the initial customer, have survived in his pocket notebook. They indicate a profit that would get a railway started in business. He and his associates who had seen Bryant's proposal decided to undertake the venture.

On January 5, 1826, Thomas H. Perkins, William Sullivan, Amos Lawrence, Solomon Willard, David Moody and Gridley Bryant petitioned the State legislature for incorporation of the Granite Railway Company. The petition for such an untried enterprise met with much opposition. Legal and organizational problems never faced before had to be resolved before the legislature would be convinced that a commercial railway would be in the public interest. Right-of-way and abutting property rights, safety, and liability were the principal concerns. It is

doubtful if anyone of less stature and business vision than Thomas Handasyd Perkins could have put the new venture through. Finally on March 4, 1826 by a bare majority, the charter of the Granite Railway Company was granted for a period of forty years, with various terms and restrictions.

The new company then organized with Thomas H. Perkins, President; William Sullivan, Vice President; James Sullivan, Secretary and Treasurer; and Directors Barney Smith, Isaac P. Davis, Amos Lawrence and David Moody. Gridley Bryant was named Superintendent. The stock shares were taken up with Col. Perkins holding twenty-eight out of fifty, and the other twenty-two going to six individuals. The first step was to obtain from the town of Milton permission for the right-of-way to pass through that town. They also purchased their own quarry so that the company's existence would not be dependent entirely on the Bunker Hill Monument Association. That is the Granite Railway Quarry today. On June 8th, Gridley Bryant was named Agent of the Granite Railway Company for all its operations at a salary of \$5.00 a day and the use of one of the company houses. He held the position until 1836 to be followed by Samuel R. Johnson and then George Penniman.

Thomas H. Perkins served as President through 1833, to be followed by his son-in law, Thomas G. Cary who served for twenty years. Col. Perkins was very much the driving force behind the enterprise but was also in close touch with the details of the railway construction and operation. When the activities were in progress under Gridley Bryant's superintendence, Col. Perkins left for England to handle matters relating to some serious financial losses that his European operations had sustained. While in England he went to visit two railways that used wooden rails of the type that Bryant planned to use. He brought

back detailed notes for Gridley Bryant. Another of Col. Perkins activities was the unenviable task of handling the Railway's relations with Solomon Willard who was complaining over delays and other matters even before the railway was built. It was over Mr. Willard's opposition that the Bunker Hill Monument Association signed a contract on March 27, 1827 for the transportation of stone from Bunker Hill Quarry to the Neponset River by rail, and by water to Charlestown, for a period of one year. It was the first contract in the United States for the carriage of freight by rail.

Construction work on the railway had started on April 1, 1826. On October 7th, Col. Perkins and the other stockholders were at the Bunker Hill Quarry terminus to witness the first test run. It was a success. In the spring of 1827 when quarry operations could resume, the commercial operation of the railway began. Among the many visitors who came to see the novel means of transportation were a delegation from the legislature, a committee from the nascent Baltimore & Ohio Railroad, President John Quincy Adams and Josiah Quincy, Mayor of Boston. The contract with the Bunker Hill Monument Association did not prove satisfactory and was not renewed. Other contracts, however, proved profitable and the Granite Railway Company prospered. For a time in the early 1830s business was poor and cessation of operations was considered. The difficulties, however, were ironed out and Col. Perkins investment was safe. His faith in railroads was such that he shortly after subscribed for shares in the new Boston & Lowell and Boston & Worcester railroads. It is interesting to note that years later the railroads that opened up the West were financed largely by East Coast shipping money. Here too, the Granite Railway company was a forerunner.

The Granite Railway Company continued in the transportation business until 1870 when its franchise and right-of-way were sold to the Old Colony and Newport Railroad Company. The corporation continued its granite interests until 1945 when it was dissolved.

### The Railway

Gridley Bryant was the man who conceived the idea of transporting the granite for the Bunker Hill Monument by railway. He had followed developments in England where there had been experimentation with rails to carry tram-cars from coal mines. Using this experience as a guide, he designed a roadbed and rails to meet two conditions with which the English did not have to contend—a three-foot frost line, and heavy, more-concentrated loads. His proposed design and presentation convinced the Bunker Hill Monument Association that it was too ambitious for them, and a group of leading Boston investors that it was a viable commercial venture.

After considering several routes, one going through the center of Quincy to a wharf on Town River Bay, they decided on a route through East Milton to the mouth of Gulliver's Creek on the Neponset River, a distance of some three miles. The right-of-way was surveyed by Loammi Baldwin, Jr., the prominent civil engineer. The eighty-five foot drop from Bunker Hill Quarry to the River provided a grade for the heavily-loaded cars to move down by gravity, with horses drawing the empty or lightly-loaded cars up the easy slope.

The roadbed was essentially a dry stone wall three feet deep with crushed



**Bunker Hill Quarry end of the Granite Railway. This excavated 125 feet is complete except for the wooden rails. This portion of the railway was abandoned before wooden rails were replaced by granite.**

stone on top between the rails. The "wall" supported massive granite sleepers spaced eight feet apart. These supported standard gauge rails. The rails were pine timbers six inches wide by twelve inches high. On top of this was an oak timber four inches wide by twelve inches high. On top of this was a quarter-inch thick iron strip on which the flanged car wheels rolled. At street crossings, the rails were of granite with the iron strip and a groove for

the wheel flange. Iron rods from the sleepers kept the wooden rails upright and aligned.

A wooden trestle carried the railway across a swampy area near the Bunker Hill Quarry end of the line. At the street crossings, there were four posts between which chains closed off the railway when the road was open to traffic, and closed off the road when the railway was operating. The tidewater terminus was Bunker Hill Wharf at the Neponset River. Here the stone was loaded on sloops and schooners. The Railway Company did not own these vessels but used the steamboat ROBIN HOOD owned by T.H. Perkins to tow them in and out of the river, and to move barges and lighters. In 1831, the steamboat NEPONSET was built for the Granite Railway Company by Nathan Josselyn at Quincy Point, the first steam vessel to be built in Massachusetts south of Boston.

An idea of the loads on the wooden rails is shown by the test run in October 1826, when three cars which together weighed five tons carried a load of sixteen tons of stone, a total load of twenty-one tons. On August 9, 1830, Agent Bryant wrote a lengthy letter to President Perkins reporting on various aspects of the company operation. Among the matters addressed, he stated that due to the concentrated



**Bunker Hill Wharf, the northern terminus of the Granite Railway.**

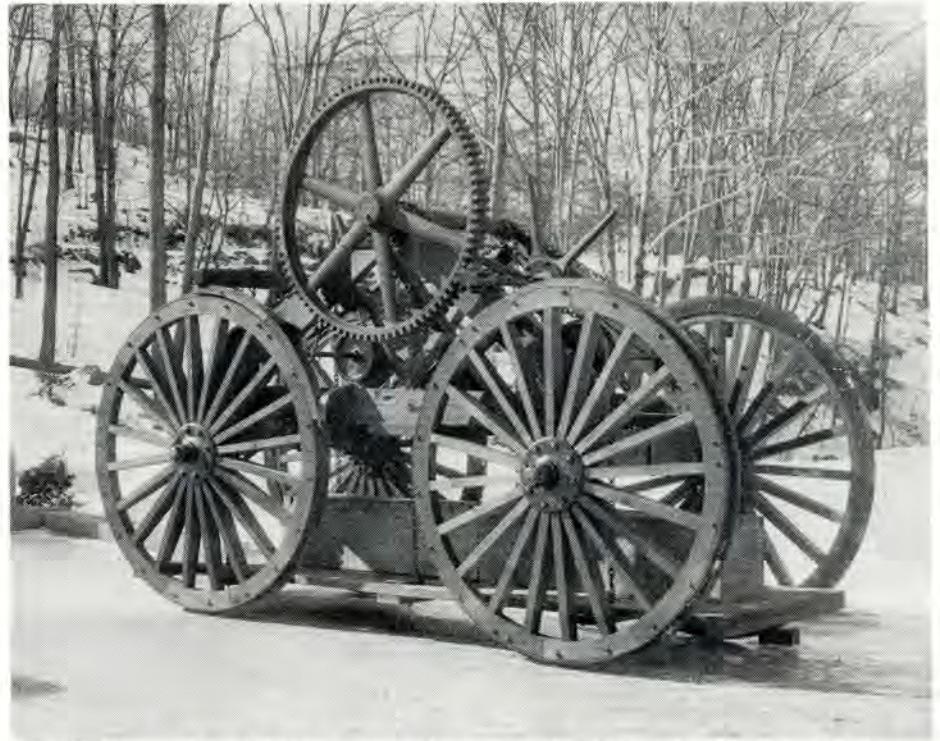
heavy loads, the pine rails were not standing up, and he doubted that oak rails would solve the problem. He recommended that the wooden rails be replaced with granite rails to be installed during the winter so as not to interrupt service that was then running fourteen to sixteen trips a day.\* The massive granite rails remained in service until the sale of the line in 1870. They were then replaced by modern T rails on wooden ties, this to be eventually removed by the Expressway construction. Sidings and branches came and went to suit customers' needs.

To provide the flexibility of operation required of a common carrier, Gridley Bryant developed the switch, the frog and the turntable, railroad features still in use today. He never patented his inventions, feeling that they should be for the benefit of all.

After the Granite Railway Company purchased its own quarry, Bryant built the Incline to bring stone down eighty-four feet on an inclined plane to the railway level. Mr. Bryant was very proud of this ingenious mechanical device. The cars that carried stone from the quarry were attached at the head of the Incline to an endless chain which lowered the loaded cars and raised the empty ones. Mr. Bryant left us a detailed description of the Incline but omitted some important details such as how the cars were attached to the chain, and the braking provisions that would have had to be very powerful. Many mechanical engineers have tried unsuccessfully to figure out just how it worked. In July of 1832, a failure on the Incline resulted in what was probably the first fatal railroad accident. Two gentlemen from Boston, one from New York and one from Cuba on an inspection visit were in an ascending car when the failure occurred. The visitor from Cuba was killed and two others badly hurt. In the early twentieth century, and after the sale of the railway line, metal channels were laid over the old granite rails of the Incline and motor trucks hauled up and down on a cable.

There is evidence that a number of different type cars were used to suit various types of freight. Small stone

\* Each section of granite rail was eight feet long and about one foot wide. Where supported at the ends, the rail was one foot deep to the sleeper. Between the sleepers, the rail was about two feet deep. Each section weighed over one ton. For each mile of the railway, there were close to fifteen hundred tons of granite in the rails alone.



**Full-size replica of the first railway car, built by the Granite Railway Company in 1926. Property of Quincy Historical Society.**

could not have been handled by cars designed for large blocks. The first car designed and built by Gridley Bryant was designed for large blocks and operated like a present-day straddle truck. It was a massive piece of machinery fourteen feet long and eleven feet high. The four wheels were six feet in diameter. A platform would be laid down between the rails and the stone loaded onto it. The car would then be rolled over it, four chains attached, and the platform raised off the roadbed by a powerful arrangement of gears. Strong brakes were manned on the loaded down-grade run to control the car and keep it from overrunning the horse.

As load demands changed, Mr. Bryant developed a number of new car designs and probably had some built. This development culminated in the two-truck, eight-wheel car that is still standard in railroad practice today. Again he did not patent his invention. Years later another man took out a patent on such a car. Gridley Bryant challenged this claim and spent all his physical and financial resources on the case. He won and was declared the inventor of this revolutionary railroad car — invented here on Quincy's Granite Railway. For this and the other pioneering engineering achievements here by Gridley Bryant, the Granite Railway has been designated a National Historic Civil Engineering Landmark.

The Granite Railway was of national significance. It was also highly important to Quincy for its contribution to the granite industry that brought fame and fortune to "The Granite City". It economically transported stone to tidewater by which it was carried on sloops and schooners to destinations all up and down the coast. It was this cheap saltwater transportation that permitted Quincy to compete successfully with other sources of granite.

#### **Principal References.**

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2. *Merchant Prince of Boston - Colonel T.H. Perkins 1764-1854* by Carl Seaburg and Stanley Paterson, Cambridge, Mass., 1971.
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4. *The First Railroad in America*, privately printed by the Granite Railway Company, 1926.

## **Quincy History**

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