

# Moving Experiences

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The local engineering past has offered occasional colorful instances of ponderous objects shifted from place to place, for reasons more or less practical. Here are a few.

At times, a whole massive building has moved. Around 1921, Second Avenue downtown was being widened into the Boulevard of the Allies, and among other things the eight-story building of the Joseph Woodwell Company had to yield its place at Second and Wood. Rather than being demolished, it was moved forty feet. The John Eichleay, Jr. Company, which claimed that between 1875 and 1925 it had moved 10,000 buildings, undertook the Woodwell move in a day and a half, surrounding sidewalks included. Eichleay publicity said that “Throughout the operation, sewer, water, gas, light, and telephone services were maintained. The elevators ran, and steam warmed the building’s radiators.” Outside, crowds stood in awe as the building visibly moved, but inside, the Woodwell staff went serenely about its business.



The Joseph Woodwell Company Building

The Allegheny County Morgue now stands on Fourth Avenue just east of Ross, but when it was completed in 1902 it stood a hundred yards uphill on Diamond Street (now Forbes Avenue) and Gala Way. People know it as a Richardson Romanesque building faced in massive, vigorously-textured stones, designed to go visually with the Jail and Courthouse across Diamond. The City-County Building had been added to the group in 1917, and in 1929 the County Office Building was planned for the corner land that the

**“...the brittle Morgue had to be lifted, every inch of it to the same height at the same moment,...”**

Morgue shared with the 1840-period South School. What to do with this public building due to be ousted, still useful albeit lugubrious in style and function? It was decided to move it to its present site: a ponderous operation involving massive timberwork and steel rails; a 32-foot move along Diamond, and then the ticklish 265-foot downhill move to the new foundation. At times the brittle Morgue had to be lifted, every inch of it to the same height at the same moment, and this part of the operation approached the fantastic: for a hundred men from a Balkan tribe — specialists in the Old Country, apparently, in moving buildings — manned a hundred screw jacks that



The Allegheny County Morgue

they gave quarter-turns every time a whistle sounded until the Morgue was twenty feet in the air. The whole operation took about three months, but the sad business within went on without interruption.

There was once a sort of distinc-

and a deliberate act of visual rivalry might seem unlikely. And yet: in 1937, a colonnade of 62 unfluted Ionic columns, with 36-foot monolithic shafts of limestone, was erected — purely for swank, with no practical purpose. These shafts were quarried in Indiana; turned there on giant lathes; shipped by rail to East Liberty; hauled to the construction site over streets that had to be specially reinforced in places; raised in slings; and lowered, bottom first, onto preset bases where precisely-set blocks of ice melted under the increasing pressure as the positions of the shafts were adjusted. Afterwards, the capitals and the entablature were lowered to complete the Ionic order.



The Mellon Institute of Industrial Research

1892: Carnegie Steel Works locks out employees in labor dispute at Homestead

1892: Alfred E. Hunt, co-founder of Alcoa, elected ESWP President. ESWP Chemical Section founded

1893: Chicago's Worlds Fair, introduction of Ferris Wheel created by ESWP member George Ferris

1893: Member Dues increased to \$7.

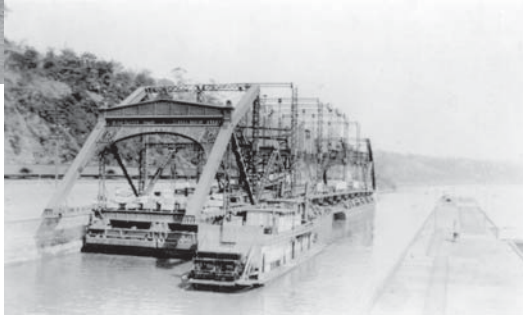
1895: Andrew Carnegie endows his first free public library

1892-1895

## Moving Experiences Continued



The former St. Clair Street Bridge...



Became the new Neville Island Bridge

A bridge has crossed the Allegheny River at St. Clair Street—which we call Sixth Street—since 1819. The first was a wooden covered bridge, the second a suspension bridge by John Roebling of Brooklyn Bridge fame, The third came in 1892: a work by Theodore Cooper, built to withstand the loads imposed by electric trolleys. This last involved two camel-back spans of 440 feet each.

The time for yet another Sixth Street Bridge came in the mid-1920s, when navigational clearance requirements led to the replacement of existing Sixth, Seventh, and Ninth Street Bridges by the handsome trio we now have. In 1927, Cooper's trusses came down, to begin a new existence on the back channel between Neville Island and Coraopolis. *The Bridges of Pittsburgh*, White and Bernewitz' 1928 classic, says that the 12-mile river journey of the bridge's two spans, each 1600 tons, and their re-erection at Neville Island resulted in an economy of \$300,000. To slip under the bridges crossing downriver,

the trusses' upper chords were temporarily reduced. The masonry central pier and abutments were demolished while the spans rested on temporary steel frames. The spans were lowered 18 feet onto four lashed-together coal barges per span, using a complicated assembly of pairs of steel suspension straps and hydraulic jacks that lowered the straps as water bled from their cylinders. The lowering process took 14 hours. The trusses passed the Emsworth lock "easily," and at Neville Island the temporary steel frames, straps, and jacks were used to raise the trusses 32 feet. The whole process took 140 days. The reconstructed bridge stood until 1994, when its steel was deemed too brittle for safety.

Now, here is an example of something *meant* to move, but that moved almost in spite of itself. Around 1890, Pittsburgh had three cable-car companies, the best-known of them the Pittsburgh Traction Company, which connected the Triangle with East Liberty via Fifth and Highland Avenues. In the



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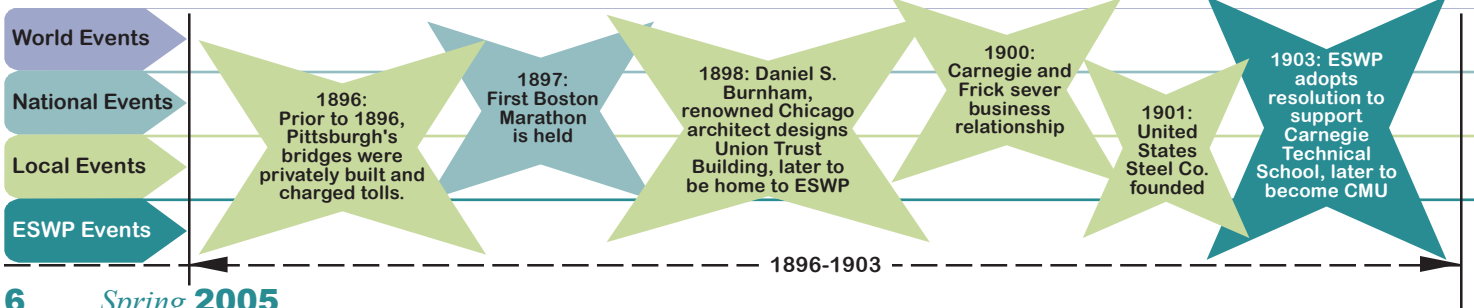
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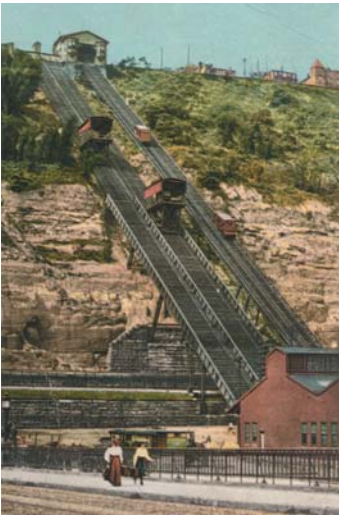
horsecar days before 1888, this trip took nearly two hours in good weather. The cable car accomplished the trip in forty minutes, hauled along by three cables in successive eastbound-westbound loops, the westernmost cable going eight miles an hour, the others twelve. There were drawbacks, though, to this obvious improvement. The cables themselves were

the major part of the total load; more than half the energy from the powerhouses was spent on simply moving them. They could wear or fray, and had to be repaired or replaced at times, shutting down the system. The capital investment in underground construction was high. And changes of gradient and tight curves were real challenges. The ascent of Soho Curve, shown



The Fifth Avenue Trolley - Soho Curve





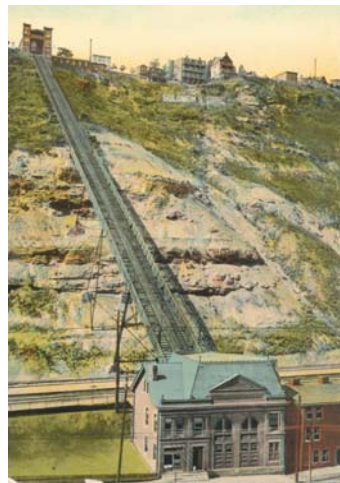
The Monongahela Incline

here, involved a four-percent gradient over a half-mile, with one curve of 350-foot radius, one of 250 feet, and another of 350 feet. Easing the cable around this tight, complicated curve required 290 subterranean pulleys, closely spaced. The picture shows the cover plates in the pavement, not much more than a yard apart. (For the orientation of modern Pittsburghers: St. Agnes' Church stands about where the upper part of the curve winds out of sight, and Carlow University is at the top of the rise these days, where the castle-like Ursuline Convent stands in the photograph).

To Pittsburghers, inclines—funiculars, as others call them—may seem less bizarre, affairs of a few hundred feet rather than miles, but it is remarkable to reflect, even so, that we once had about twenty of them for the transport of pedestrians and vehicles, and others to lower coal from mines near the top of Mount Washington. The coal inclines appear on a map of 1852 and probably started operations long before, powered by gravity. It was not until 1870, though, that the Monongahela Incline initiated a passenger service up Coal Hill

(Mount Washington) to the eastern end of High Street (Grandview Avenue), sparing pedestrians at last a winding road climb of nearly 400 feet. This picture shows the Incline after 1883, when a broad-gauge vehicular incline was built just to its east. This added incline was demolished in 1935, when electric power replaced steam. As we see it today, the Mon Incline has a lower station of the 1900s, a much-altered and enlarged upper station of the 1870s, and track structure and cars of recent years.

Our other surviving incline, a mile westward, is the Duquesne (or Duquesne Heights) Incline, begun in 1877. This is notable, in its upper station, for displaying the drive machinery, with its wooden-toothed gear wheels. Here, the cars are genuine antiques, with bodies of 1889 by the Philadelphia street-car builder Brill.



The Duquesne Incline

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