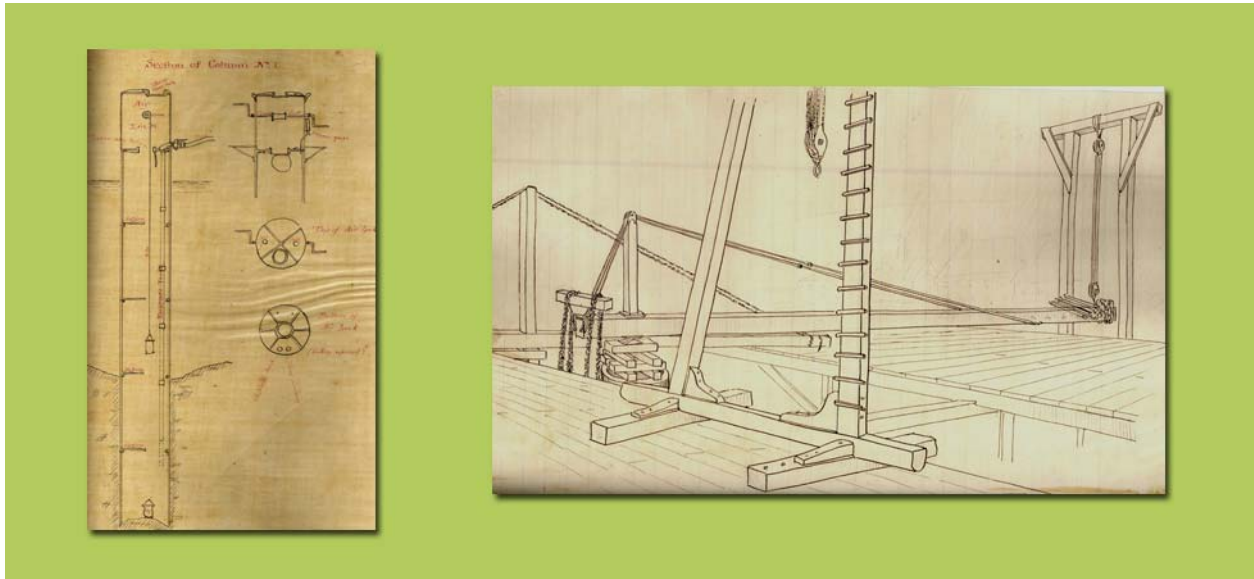


***Copy of Engineers Private Journal [on] Harlem Bridge
1857 – 1861***

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Contact Information:

Special Collections
Linderman Library
Lehigh University
Bethlehem, Pennsylvania 18015 U.S.A.
Phone: 610-758 4506
Fax: 610-758 6091
<http://www.lehigh.edu/library/speccoll/index.html>
inspc@lehigh.edu

Abstract:

This journal appears to be a unique record of daily on site observations and construction processes of the building of a second Harlem River bridge at the site of Third Avenue, County of New York (Manhattan). It contains copied documents such as the New York State Legislature's document Chapter 774 dated April 17, 1857 authorizing the building of a new bridge at the site, as well as the design requirements for the new bridge, removal of the previous bridge and the official appointment and acceptance letters of the chief engineer, William J. McAlpine and assistant engineer, Frederick Hubbard. This information is copied into the first numbered pages

of the bound journal. The journal appears to be written for the purpose of having a record of all various loose documents relating to the project. There appears to be at least two different styles of handwriting: the earlier entries are written in a elegant careful style possibly by the assistant engineer; the last few weeks of entries are in a hurried, abbreviated scrawl with pages left blank seemingly left open to be filled in when the loose documents became available to be transcribed into the daily working account. Evidence of this manner of copying documents and notes into the bound journal consist of a few pages written on loose sheets laid in the area of blank pages bearing the same dates. The Journal not only has written text but contains many detailed construction drawings (on different paper) fastened into the bound pages, as well as lists and tables of materials, costs, working hours and weather conditions. Detailed accounts are given relating to the building and sinking of cast-iron cylinders into saturated river bottom gravel with a compressed air method to build the bridge columns, apparently a new method at the time. This second bridge at the site was designed to be an iron drawbridge.

Creator:

Hubbard, Frederick

Title:

Copy of Engineers Private Journal [on] Harlem Bridge

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Historical Sketch:

The expansion of the population of the County of New York (Manhattan) northward into the neighboring Borough of the Bronx, Westchester County and the shipping dangers on the Harlem River, the northern boundary for Manhattan, and a vital connection for the East River to the Hudson River, encouraged the physical connection of Manhattan Island to the Bronx. Several bridges had been built, one being the High Bridge (also known as Harlem River Bridge) built by John B. Jervis to carry the Croton Aqueduct (1836-46) water from upstate New York across the Harlem River into Manhattan (also served as a pedestrian walkway). In the vicinity of Third Avenue, Manhattan, a previous bridge had been built by John B. Coles and Lewis Morris by a franchise conferred by the N.Y. State Legislature Acts of March 31, 1790, March 30, 1797, and

April 3, 1798. This bridge was a stone dam type bridge across the Harlem River with a navigation lock in it to allow ship passage. It became known as the Coles Bridge and its lucrative tolls made it be incorporated in 1808 by Coles and Morris as the Harlem Bridge Company with a charter of 60 years. The well-maintained span was the principal artery of travel to Connecticut and Boston and the area prospered. The owners tried to extend the charter but the State Legislature, noting that the bridge was not strong enough to carry the heavy railroad traffic, empowered the counties of New York and Westchester to build a new capacious bridge. This next Third Avenue bridge was the first iron bridge built in New York. It is the building of this bridge that the *Copy of Engineers Private Journal Harlem Bridge* journal describes.

The Journal begins with a transcription of the New York Legislature Chapter 774 which authorized a new bridge at the site, as well as transcriptions of the letters of appointment and acceptance of the chief engineer and assistant engineer to the task of building this Harlem River bridge, and the advisement of demolition of the earlier bridge. Attention is paid to many aspects of the beauty of the newly proposed bridge and keeping the river passable for navigation. It was determined that iron would provide a more graceful superstructure and a draw bridge design would facilitate navigability of the river.

The account begins its daily working record in early April 3, 1860. Great detail is paid in determining secure foundations in the river bed by a relatively new method using compressed air to sink cast iron cylinders into the river bed, which served as forms for the concrete columns to support the bridge. The journal describes the care taken to examine each column as it is prepared to be sunk into the river bed by the chief engineer, William J. McAlpine. He also made the decision to demolish the previous Coles Bridge in order to align the new bridge for the railroad connections. The newly devised method of using compressed air for sinking foundations in bridge building is described in detail regarding conditions and materials. Interesting observations occur frequently regarding the weather conditions under which this bridge is built, as well as reporting the delay in delivery of materials, costs incurred, health of the workers, hours worked, machinery breakdown, discovery and removal of a sunken boat at site of one of the columns, and missing documents. The Journal abruptly ends August 2, 1861 with a notation of the dismissal of the chief engineer and the assistant engineer by the Secretary of the Board of Commissioners.

The original estimate for the new bridge made by the chief engineer, William J. McAlpine, in 1860 was about \$200,000, but when the bridge was finally finished in 1865 the cost was \$2,000,000. This second Harlem River bridge (also known as the Third Avenue Bridge) was planned and built during a New York state-wide era of corruption. It also affected the administration of the City of New York under Mayor Lorenzo Wood, whose name appears in this journal as president of the Board of Commissioners Harlem Bridge.

In 1865, William J. McAlpine, the original chief engineer of this Harlem Bridge serving as chairman of the Commission of Engineers, examined the bridge for its opening. This bridge was demolished in the 1890s to accommodate the building of another Harlem River bridge on the Third Avenue, Manhattan site.

Physical Description:

One Volume. 35 cm, 224p., inside front cover upper left corner is a light blue label: Charles W. Bleecker, Stationer & Account Book Manufacturer.

224 pages numbered in pencil, 36 pages of additional text unnumbered; 14 tables occurring on pages 72, 91, 93, 94, 95, 140, 172, 194, 208, 224, 237, 254, 255, 267; 25 drawings occurring on

pages 86, insert bet. 95 and 96, 99, insert bet. 167 and 168, 171, 206, 216, 225, 236, 244, 245, 249, 253, 256, 257, 268, insert bet 277 and 278; on page 261 only the date of “July 18th Thursday” is recorded and at this page is a loose insert of text written on legal tablet paper also dated “July 18th Thursday”; pages 262 to 266 blank and on p. 267 writing resumes but a different handwriting (scrawling and abbreviated) with a notation of July 15, Monday with description of the placing of a column and a drawing of the column on p. 268, text again resumes with July 22 Monday on p. 269; writing ends on page 276 Aug 2 (1861) Friday with note regarding the discharge of Mr. C. L. McAlpine and also the discharge of the Chief and Assistant Engineers as well as a problem with an engine. The remaining half of the journal pages are blank.

Personal and corporate subjects:

Wm (William) J. McAlpine, Chief Engineer

Frederick Hubbard, Assistant Engineer

Fernando Wood, Mayor of New York City & President of Board of Commissions

Charles S. McAlpine, pioneer in sinking columns by pneumatic compressed air

Harlem Bridge Commission

Geographical subjects:

Third Avenue Bridge

Harlem River Bridge

Topical subjects:

Pneumatic foundations

Compressed air foundations

Names Mentioned:

James McDonald, worker on sinking the bridge columns who becomes ill on the job

William McDonald, worker on sinking the bridge columns

Capt. S.W. West, captain of boat delivering sand

Gustavus W. Smith, Street Commissioner, Harlem Bridge Commission

W.H. Robertson, Westchester County judge, Harlem Bridge Commission

A.H. Lockwood, Chairman, Board of Supervisors Westchester County & Bridge Commission

I.B. Auld, Secretary of the Bridge Board of Commissioners

I.S. Mott, owner of land in the Bronx

Mott Haven, a district in the Bronx

J. M. Nevin, secretary who dismisses Wm J. McAlpine, Charles S. McAlpine, Frederick Hubbard

W. Van Cleve, contractor of superstructure

Fairchild & Co., supplier of sand

_B. Morrill, supplier of sand

Morris & Cummings, dredge contractors