
**Collection 3091**

# Frederic V. Hetzel (1870-1946)
## Papers

**1898-1967 (bulk 1915-1935)**
**2 boxes (13 folders), 1 flat file, 34 images, 0.7 lin. feet**

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## Abstract

Frederic Valerius Hetzel (1870-1946) served as a draftsman and engineer at the Link-Belt Company from 1890 to 1918. He was the chief engineer of the Philadelphia Plant in 1906 and of the Indianapolis plant from 1915 to 1918. Hetzel developed thirteen patents for Link-Belt Company, including the Hetzel Drive Wheel, which improved power transmission efficiency and interoperability for belt elevators and conveyors. Throughout the 1920s and 1930s Hetzel continued to develop patents, authored a book on drive wheel design, and maintained professional ties with the Link-Belt Company.

The Frederic V. Hetzel Papers comprise the professional correspondence, career patents, and hand-drawn specifications and blueprints for the development of the Hetzel Sprocket Wheels. Additionally, the collection contains several blueprints of Theodore B. Hetzel, who succeeded his father at Link-Belt and worked there as an engineer for several years, where he developed his own patent. The collection contains high-quality photographs of Link-Belt Company employees from 1898-1920 and various publications that document the history of the company. The collection also includes issues of the company newsletter, *The Link Belt News*, from 1935-1942.

## Background note

The Ewart Manufacturing Company was established in 1875 by William Dana Ewart, a purveyor of agricultural implements in Belle Plaine, Iowa. Ewart saw the need for replacing the leather and strap link chain drives used on self-binding machines with a belt that could be easily repaired in the field. Ewart invented the first detachable chain link, making leather belts and strap links obsolete and saving farmers hours in repairs. The versatility of Ewart's invention expanded the company into other areas of elevating and conveying machinery and launched the sprocket chain industry.

Ewart spent the majority of his first years in business securing his patent and repelling patent infringements. In 1880 the Ewart Manufacturing Company created two sister companies (Link-Belt Machinery Company and Link-Belt Engineering Company) and expanded its scope to "design, build, and supply accessory parts, and install elevating and conveying machinery employing Ewart chains."

Throughout the first and second decades of the twentieth century the company led the way in chain standardization among competitors and moved into other areas of industrial machinery.

By 1925, Link-Belt Company devices could be found in automobile assembly lines, coal mining and storage facilities, steam shovels, concrete mixers, urban sewage screens, and agricultural machinery. In addition, Link-Belt devices were used in sugar plantations in Cuba and Hawaii, and in Ford Motor Company plants.

Frederic V. Hetzel was born in Philadelphia in 1870. His father made a living fabricating optical instruments in Philadelphia. Hetzel's grandfather, a handloom weaver, emigrated from Chemnitz in Saxony to Philadelphia in 1837.

Frederic Hetzel began his career at the Nicetown office of the Link-Belt Company in 1890 while on summer vacation from the University of Pennsylvania. He started by tracing drawings in the drafting office. After completing his degree at Penn in 1891, Hetzel briefly broke away from Link-Belt to take a job as a steel inspector, but returned in 1892. The following year Hetzel was named chief draftsman.

Hetzel married Grace Keppele Brinton in 1899. She was educated as a nurse and graduated from one of the first classes at Chester County Hospital, where she worked for many years.

In 1906 Hetzel became the chief engineer of the Philadelphia plant and oversaw the consolidation of Ewart Manufacturing, Link-Belt Manufacturing, and Link-Belt Engineering Companies that same year. In 1914 Hetzel drew up plans for a coal conveyor, which at the time was the largest conveyor of that type in the world. In 1915 Hetzel was re-assigned to the Indianapolis plant where he worked until 1918.

After retiring from Link-Belt, Hetzel moved to West Chester, Pennsylvania. In his later years he wrote a book entitled *Belt Conveyors and Belt Elevators*, which went through three editions. He also contributed to *Kent's Mechanical Engineers Handbook*. Hetzel was a member of the Franklin Institute, Chester County Historical Society, and the Historical Society of Pennsylvania. Hetzel was an active member of the Society of Friends.

Frederic Hetzel's son, Theodore B. Hetzel, worked at the Link-Belt Company for several years and developed his own patent. Theodore Hetzel later taught engineering at Haverford College.

Hetzel's wife passed away in 1941 at the age of 69. Frederic Hetzel died in 1946 at the age of 76. Both were buried at the Birmingham Lafayette Cemetery in Chester County, Pennsylvania.

## Scope & content

This collection can be divided into materials that relate specifically to the engineering career of Frederic Hetzel (Box 1, Folders 1-6), and materials published by the Link-Belt

Company (Box 1, Folders 7-12, and Box 2). Mathematical computations, design specifications, drawings, and formal blueprints represent a rich resource for engineers and historians of science and technology. The Link-Belt Company publications in this collection will attract researchers interested in early 20th century business culture. The program from the 50th Anniversary includes speeches given by various high-ranking staff members as well as company songs, one of which has a stanza dedicated to Hetzel.

The correspondence contained in the collection mostly relates to professional matters, requests for consultation with the Moline Malleable Iron Company, and Hetzel's book contract with McGraw-Hill Book Company.

The only personal correspondence in the collection is from Harold Booth, a friend and former co-worker from Link-Belt. The letters, dating from 1913 to 1916, were written while Booth was employed as an engineer in Rhodesia (now Zimbabwe) for several gold mining operations. Seventeen photographs from Booth are included within the "Photographs" folder.

Box 1, Folder 1 contains correspondence from Harold Booth and professional requests to author a manuscript on belt conveying machinery. Folder 2 contains correspondence mostly relating to patent research and other miscellaneous communications dating from 1941-1943. Folder 3 includes specifications, drawings, and publications relating to Hetzel's patented Sprocket Drive Wheels. Folder 4 contains documents that show the development of the Hetzel Drive Wheel. The folder is subdivided into three sections: correspondence 1922-1926, publications, and drawings and specifications. Blueprints are located in the oversize folder. Folder 5 contains Hetzel's official patents from the United States Patent Office, dating from 1901-1922. Folder 6 includes obituary notices for Hetzel. Folder 7 contains publications from the Link-Belt Company regarding the company's 50th Anniversary. Folder 8 includes two issues of the *Weekly Letter*, the Link-Belt Company newsletter. Both issues recount the history of the Link-Belt Company. Folder 9 contains correspondence to the Link-Belt Company stockholders, dating from 1964-1967. Folder 10 includes materials relating to Theodore B. Hetzel, the son of Frederic V. Hetzel. Folder 11 contains photographs of Link-Belt Company employees, offices, and machinery. Folder 12 contains the official bulletin from the Link-Belt Company 50th Anniversary Dinner. The bulletin is a transcript of the speeches made at the dinner, which includes a speech by Frederic Hetzel.

Box 2 includes an oversize photograph of Link-Belt Company employees (n.d.). The remainder of the box contains issues of the *Link-Belt News* and the *Link-Belt Speeder*, dating from 1935-1942.

Flat File 1 includes seven blueprints, of which three can be attributed to Frederic Hetzel and four to Theodore Hetzel. See the Appendix on Page 7 for an itemized list of blueprints.

## Separation report

Not applicable.

## Related materials

None.

## Subjects

Ewart Manufacturing Company
Link-Belt Company
Link-Belt Engineering Company
Link-Belt Machinery Company

Cog-wheels
Conveyor belts
Engineering—Engineering systems
Engineering—Mechanical drawing
Industry—Philadelphia—1875-1943
Sprockets

Hetzel, Frederic V., 1870-1946

# Administrative Information

## Restrictions

The collection is open for research.

## Acquisition information

Accession: 2005.099
Gift of Atwater Kent Museum of Philadelphia, 2005.

## Preferred citation

Cite as: [Indicate cited item or series here], Frederic V. Hetzel Papers (Collection 3091), The Historical Society of Pennsylvania.

## Box and Folder List

| Folder title | Date | Extent | Box | Folder |
|---|---|---|---|---|
| Correspondence I | 1913-1936 | 47 items | 1 | 1 |
| Correspondence II | 1941-1943 | 22 items | 1 | 2 |
| Blueprints (see Appendix for list) | 1917-1934 | 7 items | n/a | FF 1 |
| F.V. Hetzel's Patent Sprocket Wheels—Specifications & Drawings | 1924 | 131 pages | 1 | 3 |
| Development of Hetzel Drive Wheels—Blueprints, Specs, Photographs, Correspondence | 1917-1926 | 61 items | 1 | 4 |
| F.V. Hetzel Patents | 1901-1924 | 18 items | 1 | 5 |
| Newspaper Clippings | 1931- 1946 | 9 items | 1 | 6 |
| Link-Belt Pamphlets & Misc. | 1925 | 7 items | 1 | 7 |
| Weekly Letter No. 647 & 741 | 1925, 1928 | 2 items | 1 | 8 |
| Link-Belt Correspondence to Stockholders | 1940, 1964-1967 | 5 items | 1 | 9 |
| Theodore B. Hetzel—Blueprints, Specs, Correspondence | 1933-1938 | 10 items | 1 | 10 |
| Photographs | 1898-1920 | 31 items | 1 | 11 |
| Link-Belt Pamphlet—"Our Fiftieth Anniversary, 1875-1925" | 1925 | 1 item | 1 | 12 |
| Photograph—Link-Belt Employees | n.d. | 1 item | 2 | 1 |
| Link Belt News | 1935-1942 | 61 items | 2 | n/a |
| Link Belt Speeder News | 1941 | 5 items | 2 | n/a |

# Appendix: Blueprints in Flat File 1

| Title | Date | Engineer |
|---|---|---|
| CO19368: Hetzel Transfer Station General Arrangement Handling Coal | 1917 | Frederic Hetzel |
| CS2826: Special SS-40 Sprockets with Hetzel Teeth and Flint Rims | 1922 | Frederic Hetzel |
| CS6275 Link-Belt Gondola Car Dumper Counterweight Applied Clamps | 1924 | Frederic Hetzel |
| PS110869: General Arrangement of I Beam Mounting | 1931 | Theodore Hetzel |
| PS110847: Details of Bearing Housing Cover and Dust Seal for Vibrating Screens | 1931 | Theodore Hetzel |
| PS1213: Details of Cantilever Spiral Spring | 1931 | Theodore Hetzel |
| n/a | 1934 | Theodore Hetzel |