NPS Form 10-900-b
(June 1991)

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United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in *How to Complete the Multiple Property Documentation Form* (National Register Bulletin 16B.) Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

X New Submission ____ Amended Submission

A. Name of Multiple Property Listing

The Louden Machinery Company, Fairfield, Iowa

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

I. Louden Family
II. Business and Industrial History
III. Patents and Products
IV. Architectural Department

C. Form Prepared By

name/title William C. Page, Principal Investigator; Joanne R. Walroth, Project Associate

organization Jefferson County Historic Preservation Commission date January 31, 1998

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city or town Des Moines state IA zip code 50313-5017

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. (See continuation sheet for additional comments.)

Patricia Cunningham DSHPO 12-30-98

Signature and title of certifying official Date

STATE HISTORICAL SOCIETY OF IOWA

State or Federal agency and bureau

I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Linda McClelland 2/22/99

Signature of the Keeper Date of Action

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

E. Statement of Historic Contexts

(If more than one historic context is documented, present them in sequential order.)

The history of the Louden Machinery Company, Fairfield, Iowa, can be understood within the following four contexts:

- Louden Family
- Business and Industrial History
- Patents and Products
- Architectural Department

Each of these is discussed in one chapter below. "The Louden Family" provides thumbnail biographies of the two most important members in this family business. "Business and Industrial History" discusses the corporate history of the company. "Patents and Products" analyzes William Louden's patents and their effects on the company's line of products. Finally, the chapter on the "Architectural Department" takes a look at the firm's barn planning service and its ramifications.

I. LOUDEN FAMILY

FAMILY ANTECEDENTS

The scion of the Louden family in Jefferson County, Andrew Louden, Sr. (1811-1884), was born near Belfast, Ireland. In 1840 he married Jane Speer (1813-1878). The next year the couple immigrated to America, following the death of their first son, John. (Welty:344) The Loudens lived their first year in the New World in Huntingdon County, Pennsylvania, where Jane's brother operated a general store.

Soon thereafter, Andrew, Jane, and their children traveled by stage to Pittsburgh, where they transferred to a river boat, which transported them, via the Ohio and Mississippi Rivers, to Keokuk, Iowa. After taking a stage to Burlington, the men in the party walked to Fairfield, Jefferson County, Iowa, arriving there May 1, 1842. (*Ledger* 1931c:1) The family settled in an area southeast of Fairfield in the vicinity of Glasgow. The name of this village indicates the Scottish and Scotch-Irish character of many of its settlers. Andrew Louden engaged in farming.

Andrew's obituary noted that "The cause of Mr. Louden's death was smokers' cancer." (*Fairfield Ledger*, 1884) He was survived by seven children: William, John (second by that name), Andrew, James, Robert, Thomas, and Agnes. (Ibid.) Jane Louden, his wife, preceded him in death. Two of

the couple's children, John and Mary, did not survive infancy. A photograph of the Louden family is included at the end of this chapter.

WILLIAM LOUDEN

In 1925 E. T. Meredith said of William Louden:

> Agriculture generally is under a debt of gratitude to William Louden for his developments during the last 58 years, in labor-saving barn equipment. He is one of the outstanding figures among those who have done most for the betterment of farm life and farm working conditions. (Quoted in Louden Machinery Company 1925)

This recognition from Meredith signifies because he was the publisher of *Successful Farming*, a U. S. Secretary of Agriculture, and a man who knew much about American agriculture.

The contributions of William Louden to dairy farming have been compared to those of John Deere and Cyrus McCormick to grain farming. Louden's contributions included the introduction of hay carrier equipment into American barns, steel stanchions and stalls for dairy cattle and other livestock, and automatic watering bowls, among others. The company he and brother R. B. Louden developed has also been credited with the establishment of a free barn planning service in the United States. Over the course of his life, William was awarded 118 patents. (*Annals*:313-314)

In the years since his death in 1931, William Louden has received the lion's share of credit for the Louden Machinery Company's success. This is due in part to the firm's advertising. This report contends that the contributions of R. B. Louden were of equal importance to the success of the company.

William Louden (1841-1931) was born in Pennsylvania and was still in his infancy when his parents moved to Iowa. As a boy, William suffered from frequent illnesses. He attended a country school during the school term and helped on the farm, although unable to do heavy chores. At age 21, he almost died from rheumatism. This illness incapacitated him from further farm work, but it started his exploration of new ideas to streamline and reduce the amount of physical labor farmers performed. Although illness and lack of physical strength can be said to have led William to inventing, there were other stimulants as well. As one historic preservationist has commented:

> His desire to conserve natural as well as physical resources induced William Louden to invent labor saving devices and to strongly support educational programs for the farmer, especially in the area of conservation. (Flinspach:1)

Following graduation from the country school, William attended Axline University, a private academy in Fairfield, which taught high school subjects. Upon his graduation, William taught school for three terms. In 1867, he received his first patent--for a hay carrier. In 1868 he and Mary Jane Pattison, a native of Cedar Township, Jefferson County, joined in matrimony.

Also in 1868, William established his first shop on the Pattison farm, the home property of his father- and mother-in-law. In 1869, William and Mary Jane moved to Fairfield, and in the next year William built a shop on the present site of the Fairfield Glove and Mitten Company plant. The Panic of 1873 hit America hard, causing economic distress across the nation. Louden also suffered from this setback and in 1877 declared bankruptcy. As a Fairfield newspaper later put it:

> But the hard times came on and the hour did not seem ripe for an industry of that character so it was discontinued, he finding himself penniless. (*Ledger* 1931c:1)

In spite of adversity, Louden began the business again in a wooden structure still being used by the firm as late as 1946. With little more than grit and determination, the physically slight Louden continued to manufacture hay carrier equipment. He would install this equipment for local farmers, who could pay him only when their harvests came in. Louden later referred to this seven-year period of his life as "up in the cobweb region developing the Hay Carrier industry," because of the many carriers he installed in the hay mows of barns. (*Looking back fifty-seven years*) Louden's business began to prosper under this arrangement, but managing its expansion diverted him from further inventing. (Flinspach:2) Business affairs also do not seem to have interested Louden, and he cast around seeking a solution to these problems.

In 1887 William and Mary Jane formed a partnership under the name of the Louden Machinery Company. Mary Jane played only a token role in this partnership. Two years later, William's younger brother, R. B. Louden, joined them, assuming the business side of affairs. In 1892, they incorporated with R. B. as president and William as vice-president. C. J. Fulton, a local businessman, served for a time as secretary/treasurer. This arrangement left William free to concentrate on inventing and engineering new products and improvements to them. The division of labor between the two brothers proved profitable and long-standing and continued until William's death in 1931. During these years, William kept patenting new inventions. (See Chapter II of this report.)

William and Mary Jane Louden had four children. Helen Craig Louden died unmarried in 1901. Agnes Mary married A. A. Fry, manager of the St. Paul branch of the Louden Machinery Company. Arthur C. Louden later became president of the company upon the death of R. B. Louden, his uncle. Robert Bruce Louden later became president of the company, when Arthur died in 1955, and he served as the last family member in that position.

From time to time, William Louden published articles on various subjects, discussing his views on contemporary life in America. In 1920, for example, he wrote "The Equipment of Dairy Barns," a three-page pamphlet, which appeared in the Louden Machinery Company's catalog of that year. This monograph was interspersed with a double page photograph of the new Hershey Company barn in Pennsylvania. (Louden 1920:77-83)

A man of retiring nature, Louden confined his public activities largely to the Fairfield community. Here he participated in many business, fraternal, and social organizations. For example, he was president of the Iowa Malleable Iron Company (which he helped found), president of the Tribune Printing Company, and vice president of Thomas and Son, Inc., all of Fairfield. Louden was also active in the Fairfield Chautauqua Association. (National Cyclopaedia:211) In politics, the Loudens had been Democrats since before the Civil War, and William conformed to this political tradition. He and Mary Jane Louden were active in the First Presbyterian Church of Fairfield.

William generally shunned involvement at the state and national levels. An important exception occurred in 1908, when Governor Cummins of Iowa appointed him to serve on a three member delegation to the White House Conference on Natural Resources. During this conference, Louden presented a paper before the conference, later reprinted. A copy of this document has recently been discovered. In it, Louden advocates the conservation of natural resources from an economic, as well as from a patriotic point of view, and recommends education to achieve that goal.

Biographical Methodology

There is little known about William Louden's life. It appears that most of the Louden Machinery Company's papers have been lost. Another difficulty is the fact that already by the 1910s, the firm had elevated the person of William Louden into a corporate icon. The firm inevitably included a photograph of his fatherly face in its advertising and incorporated some statement about his 1867 invention of the hay carrier. The biographer must separate this corporate image from the reality.

Informant interviews of family members helped provide details about William's life. Roberta Louden McCoid of Mount Pleasant, Iowa, his niece and R.B.'s daughter, and Thomas A. Louden of Fairfield, Iowa, his great nephew, were gracious in submitting to oral history interviews. During two separate interviews, each was asked if it were true that William Louden publicly supported an 1891 bond issue to build a new Jefferson County courthouse. Each interviewee responded that they believed this was not true. The candid reason given by the informants, in each case, was that the advice of a bankrupt probably would have carried little weight in Jefferson County at the time. Yet, in 1926 William Louden himself wrote an article entitled "William Louden Discusses Epochs in the Progress of The County." In this newspaper publication, Louden stated that:

> Nevertheless, as the proposition had been three times voted down, it was realized that if Jefferson County was ever to have a much needed Court House where its records would be safe and its business could be properly transacted, great care had to be exercised in again submitting the question. . .
>
> I know whereof I am writing because I was one of a committee of three (the others being J. S. McKemey and C. M. McElroy, both passed away), who were appointed to prepare printed matter and do what we could to get votes for the Court House. . . (*Ledger* 1926a)

William's significance as an inventor is well known. His role in the business is less clear. Further research and oral informant interviews could shed more light on this aspect of his career. Louden's recently discovered speech at the White House opens more avenues for investigation. What connections, if any, did Louden have with Congressman William Lacey of Oskaloosa, with President Storm of Iowa State College, and with other Iowans in the American conservation movement?

ROBERT B. LOUDEN

Robert B. Louden (1857-1939), known as "R. B.," was born on the family farm, later named "Loudendale," near Cedar Creek in Jefferson County, Iowa. The youngest of Andrew and Jane Speer Loudens' nine children, and the seventh son, R. B. attended a small country school. When Parsons College was established in Fairfield, he became the first paying student. At some point he transferred to Missouri State Teachers College in Kirksville, Missouri, from which he graduated in 1881. Another student at the time, John J. Pershing, later corresponded with R. B. It was Pershing who later led the U. S. Expeditionary Force in France during World War I.

R. B. taught school for a few years like his brother William. He then read law in two different firms. R. B. passed the bar examination in Iowa, but then established a practice for a few years in Kansas, moved briefly to California, and then returned to Kansas. According to family tradition, R. B. engaged in real estate business while in Long Beach, California, selling what later became the vast Signal Hill oil fields for a song.

Finally, after these wander years, R. B. determined upon a new career and found his niche. In 1889, he returned home to Fairfield, Iowa, to join his eldest brother William, who had already weathered bankruptcy and founded the Louden Machinery Company. At that time, William's firm operated from a small shop.

In the early years, the two brothers divided all the work between them. As business increased, they began to specialize, with R. B. assuming the sales and financial side. William continued to invent and improve new products, and he also supervised production. The business was incorporated on February 22, 1892.

On October 26, 1892, R. B. married Lizzie L. Carson (1859-1934) of Livingston, Iowa. They met when both were students in Kirksville and had been engaged for 11 years. Now, with the incorporation of the Louden firm, R. B. believed he had found his right place and could support a family. R. B. became president of the company upon its incorporation, a title he held until his death. From then on he would manage the business (*Fairfield Ledger* 1940).

The growth and expansion of the Louden Machinery Company demonstrates R. B. Louden's executive ability. With branch offices in Albany, New York, St. Paul, Minnesota, and other sites in the United States and another factory in Guelph, Ontario, Canada, R. B. traveled more and more. He represented the firm at trade shows, agricultural fairs, and international events like the St. Louis Exposition. This public exposure was critical for the company's success. The firm continued to participate in such venues throughout its family ownership. In 1939, for example, the Louden Machinery Company displayed at the World's Fair in New York City. While R. B. traveled and managed the firm's business, William became the corporate icon for the company's public relations and continued to contribute inventions for the firm to manufacture.

R. B. and Lizzie Louden had one child, a daughter Roberta, who has been interviewed several times during the production of this report. Lizzie credited Christian Science with her ability to conceive this child, having become a "practitioner" after unsuccessful attempts to have children. The Loudens also raised their niece Effie from the age of two or three. She was the daughter of R. B.'s brother Thomas and his wife Jennie (who died in 1898). (Thomas A. Louden personal communication) (Other people associated with the Louden Machinery Company also had associations with the First Church of Christ Scientist, Fairfield. When its new building was planned, Edward C. Peterke, head of the Architectural Department of the Louden Machinery Company and a Christian Scientist himself, prepared its design.)

R. B. participated actively in the Fairfield community, where he served for about twenty years on the local school board. He was a member of the Church of Christ Scientist, as well as many fraternal and social organizations (*Fairfield Ledger* 1940)

Lizzie Carson Louden (1859-1934) was a woman of independent mind. Like many Progressive women of her age, Louden actively sought to improve the quality of life in her community and to reform government in the nation by advocating women's suffrage. This included fostering religious endeavors, promoting library services, and advocating civic improvements.

Louden was particularly concerned with Fairfield's West Addition, located near the Louden Machinery Company factory. She perceived that children living in this section of Fairfield did not patronize the city's public library. To encouraged reading among these children, in 1931 Louden sponsored the establishment of the Community Library. (Welty:90-91) For many years, she served as librarian at this facility. (Roberta Louden McCoid personal communication)

OTHER FAMILY MEMBERS

The Louden family was large and extended, and members often participated in the business. A family tree is attached at the end of this chapter. Although many family members held important positions within the Louden Machinery Company, at this time too little is known about any of them to assess their contributions to the firm. Confusion was frequent, even within the family, because the Loudens often chose the name "Robert" for its sons. "Bruce," another Gaelic name, was also popular as a second name. Consequently, combinations of "Robert Bruce" and initials such "R. B." are rife. These names also call attention to the Loudens' pride in their Scotch-Irish descent, Robert the Bruce being a national hero in Scotland. This report concentrated on William and R. B, the two leading and founding members of the Louden Machinery Company. It is recommended that future research flesh out the story of family participation in the business.

Included here is a list of family members known to have made significant contributions to the company.

- Albert Allen Fry ("Al")
  Manager of the St. Paul, Minnesota branch.
  Husband of William's daughter Agnes.

- R. Bruce Louden ("Bruce")
  President of LMC 1940-1951.
  Younger son of William.

- Arthur Clare Louden ("Art")
  President of LMC 1952-1953.
  Elder son of William.

- William L. Fry ("Bill")
  Executive president & general manager of the firm (1956-1963)
  after its was purchased by Mechanical Handling Systems, Inc.
  Grandson of William.

Thomas A. Louden ("Tom")
Secretary/Treasurer and General Counsel of the firm
Son of Roy and great nephew of William and R.B.

- R. R. Louden ("Roy")
  Head of Advertising Department in 1920s.
  Head of Industrial Conveying Division in 1940s.
  Son of William & R. B.'s brother Thomas.

- W. A. Louden
  In charge of factory time study in 1940s.

- R. W. Louden
  Manager of Farm Line Division in 1930s and 1940s.
  Grandson of William.

- J. P. Louden
  In charge of farm line sales statistics in 1930s and 1940s.

The Louden family was proud of this service to the firm, a fact well illustrated in the company's 75th anniversary catalog. (See Page E-11.)

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LOUDEN FAMILY ABOUT 1900

Sitting (left to right): Andrew, John, Agnes, William. Standing: Robert Bruce, Thomas, James.

Source: Courtesy of Thomas A. Louden.

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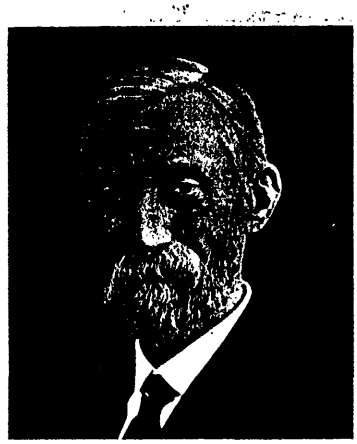
WILLIAM LOUDEN
THE CORPORATE ICON



Millions of barns in this and in other countries have been fitted with Louden Equipments, not as a result of special advertising nor a superior selling organization, but because of the Sterling quality of the Louden goods.

For more than fifty years it has always been our determination to maintain this Sterling quality and to make our products fulfill every claim we make—and more.

A strict adherence to this determination is our guarantee of continued success. Our customers can rely on this assurance to the fullest extent. William Louden.

Source: *Louden Machinery Company General Catalog No. 49*, 1919.

LOUDEN MANAGEMENT IN 1942

R. B. LOUDEN, President
[illegible] William Louden, has been with the company since 1903.

[illegible] Louden, another son of our founder [illegible] Production Manager. With company since 1904.

R. R. Louden heads the Industrial Conveying Division. With the company since 1913.

75 Years Later

THE LOUDEN FAMILY CONTINUES TO SERVE THE FARMERS OF THE WORLD

Continuing where William Louden left off are his sons, grandsons and nephews shown on this page.

The solid foundation which he laid is responsible for the continued success of The Louden Machinery Company—for this Diamond Jubilee—and for the company remaining in the hands of the Louden family.

The spirit of progressiveness which impelled William Louden to his great inventions still permeates the Louden organization today. Numerous inventions and improvements are being constantly introduced—inventions and improvements which like those of William Louden make farming more pleasant and more profitable.

Just to mention a few of the more recent—the "Iron Claw" Hay Fork—"Bonded V Rail" Door Track—"Bullet End" Stall Partitions—the "Stan-Chain" Stall—two new stanchions, the "Dairyland" and "Champion"—the "No-Spra" Nose Plate for water bowls—the "Silent-Glide" Feed Truck—the "Util-I-Truck"—and the "MasterMade Window".

So, when you deal with Louden you are assured of the most modern designs. And you know you are dealing with people who have spent their entire lives in this business—people who are interested in seeing that your Louden equipment gives more service per dollar than any you can buy—and people who plan on serving you for at least another seventy-five years.

[illegible] Wm. Louden's grandson [illegible] barn planning and [illegible] 1940.

R. W. Louden, another grandson of Wm. Louden. Handles sales and advertising. 1932.

W. A. Louden started with the company in 1910 and is in charge of factory time study.

J. P. Louden in charge of farm line sales statistics—joined the organization in 1933.

Source: *Louden Catalog Number 75*, 1942.

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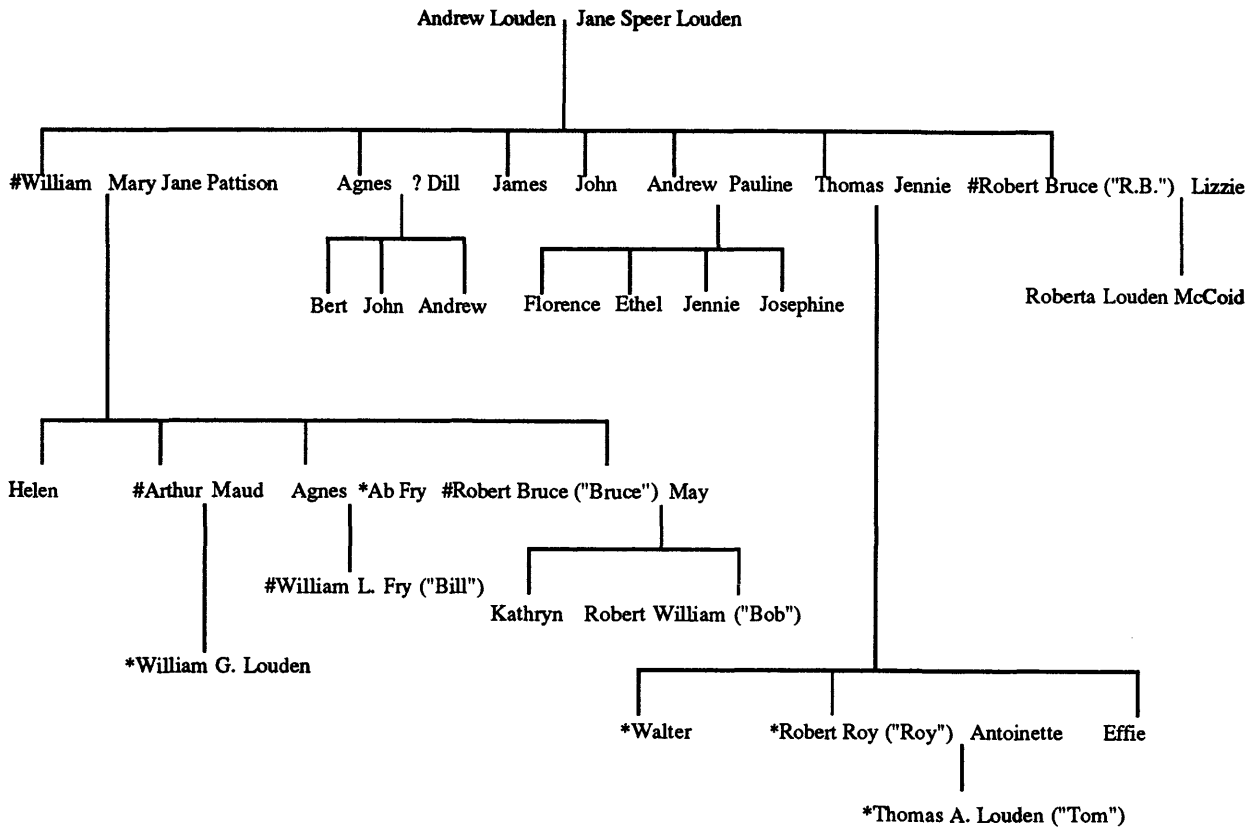
LOUDEN FAMILY TREE



* = Affilated with Louden Machinery Company at one time or another in business carrer.

= Served as President of Louden Machinery Company.

Source: Information courtesy of Thomas A. Louden.

II. BUSINESS AND INDUSTRIAL HISTORY

INTRODUCTION

This chapter discusses the business and industrial history of the Louden Machinery Company. It is divided into the following sections:

- Thumbnail Sketch
- Formative Years
- Reorganization and Success
- Louden in the 1920s
- Louden in the 1930s
- Louden and World War II
- Louden in a New World
- Engineering Department
- Sales and Marketing Department
- Advertising Department
- Labor Relations
- Iowa Malleable Iron Company
- Conclusion

The thumbnail history provides a brief chronological discussion of the Louden Machinery Company from its inception in the 1870s to its end as a family business in the 1950s. The factory building itself is then discussed. The Engineering, Sales and Marketing, and Advertising Departments of the company played key roles in its success. Each of these is discussed in turn, followed by labor relations and factory operations. The last section of this chapter discusses Iowa Malleable Iron Company, a brother industrial enterprise in Fairfield to Louden.

THUMBNAIL SKETCH

In 1924, William Louden spoke at a luncheon of the Fairfield Rotary Club, hosted at the Louden plant, and distributed a brochure outlining the following "Louden Landmarks." This document provides a useful sketch of the company's growth.

Looking back fifty-seven years

by William Louden

1866 First patent issued to William Louden on a Hay Stacker.

1867 Invention of the Hay Carrier in this year really marked the beginning of the business. Previous to this time barns were built no higher than one could pitch hay by hand. Hence the Hay Carrier made possible the two-story barn now so common the world over.

1868 What might be termed the first Louden factory was the old workshop located six miles southeast of town--just beyond the cross roads at the Cedar Township church--on what is now the Herold farm.

1869 Business moved to Fairfield and continued under name of the Louden Manufacturing Works, Wm. Louden, proprietor.

1870 Built first factory in town on present site of Mitten Factory.

1873 Jay Cooke [*sic*, probably Jay Gould intended] failure. Hardest times in history of country. Gold at a premium of 160. Government getting ready to resume specie payment in 1879. By that time everything was swept away.

1879-1886
Didn't give up. Spent seven years up in the cobweb region [in the hay mow of barns (editor)] developing the Hay Carrier industry.

1887 Partnership formed by Mary J. and William Louden--name Louden Machinery Company adopted.

1889 R. B. Louden, a Kansas lawyer, admitted to partnership.

1892 Company incorporated: R. B. Louden, Pres.; William Louden, Vice Pres.; C. J. Fulton, Sec. and Treas.

1895 Invented first flexible Barn Door Hanger. The forerunner of practically every door hanger used today.

1898 Brought out a Manure Carrier for cleaning the barn--holds the first patent ever issued by U. S. Government on such a device.

1900 Canadian business established at Windsor, Ontario. Factory later located at Guelph, Ontario.

1903 Established branch house in Minneapolis. Removed to St. Paul three years late.

1904 H. M. Miller became general sales manager. Came up via the shipping room.

1904 Iowa Malleable Iron Company factory completed. [Editor])

1906 Established the first free barn planning service whereby farmers could get competent advice and help on the best type of barns for their individual needs. This department has planned some 20,000 barns.

1907 Originated the all-steel cow stall. Made the first exhibit ever shown of such a stall--at National Dairy Show. Previously cow stalls were made of wood.

1909 Established branch house at Albany, N.Y.

1912 Invented the first individual drinking cup for cows--which prevented the spread of disease from cow to cow through the water such as often occurred with previous cups. This individual type is the only type now used.

1914 Invented the "Easy Feeding Hog Trough." An innovation in modern hog house equipment.

1915 Established branch house at Chicago.

1917 Developed and put on the market an industrial line of Overhead Carrying Equipment.

1920 Sales near two and a half million mark. Would have been half a million more if supplies could have been obtained.

1924--Oct. 2nd
The very latest. Right on the spur of the moment.
This memoranda.

Source: Courtesy of the Jefferson County Historic Preservation Commission.

About the same time Louden gave this speech, overhead handling equipment manufactured by the Louden Machinery Company had become a staple for the firm and came to overshadow the volume of the farm line's production. This fact is not reflected in Louden's list of landmarks. It was also not

recognized in Fairfield. For example, the *Fairfield Ledger* reported in 1939 that the Louden Machinery Company would participate in a local centennial celebration.

> One of the most interesting exhibits in the show will be that of the Louden Machinery Company, which brings to Fairfield residents their exhibit recently returned from the World's Fair in New York City. This is the Louden MotoVeyor, a monorail tractor with a pneumatic tire drive which furnishes the motive power for transporting materials in an industrial plant.
>
> This departure from the original production of hay tools by the Louden Company was started in 1922, and since then has become a substantial part of the Louden output. However, few Fairfield residents are aware of either the extent or importance of this division, and this exhibit will serve as an excellent means of learning more of this part of Fairfield's manufactures. (*Fairfield Ledger* 1939)

Other milestones, reached after William Louden made the above list, bring this thumbnail sketch up-to-date:

1931 William Louden dies.

1932 Biggest employee lay-off in Louden history.

1939 R. B. Louden dies and is succeeded by R. Bruce Louden as president.

1941-1945
Production of overhead handling equipment for the war effort propels Louden production to all-time highs.

1952 R. Bruce Louden dies and is succeeded by Arthur Louden as president.

1953 Louden Machinery Company ceases to be family-owned.
Sold to Mechanical Handling Systems, Inc., of Detroit, Michigan.

1960s Fairfield plant builds equipment for Apollo space program.

1965 Louden farm line completely discontinued.

1965 Louden Machinery Company becomes a member of the American Chain and Cable Company (ACCO) Material Handling Group.

1970s ACCO changes plant name to the Crane & Monorail Systems Division of ACCO. Babcock and Wilcox, Ltd. of Britain, buys ACCO.

1987 FKI, another British firm, purchases what had become Babcock International plc.

1996 *The very latest. Right on the spur of the moment. Fairfield plant continues in operation.*

FORMATIVE YEARS

William Louden suffered from many illnesses in his youth, which left him without the strength required for pioneer life. Because he could not work harder, he used his mind to work smarter. In 1867, Louden received his first U.S. patent for a hay carrier. This device utilized the already existing hay fork tool but broadened its use by attaching it to an overhead monorail along which the hay fork and hay could be moved within a barn.

This period of Louden's life coincided with the Panic of 1873. The nation's economy also affected Louden's, and he was forced into bankruptcy. Convinced that his hay carrier product was practical, Louden continued his efforts to manufacture and install hay carriers locally. He built a small factory in Fairfield, Iowa, in the 1870s and began employing a few workers to help.

During the early years of William Louden's factory operations, he produced hay loading equipment on a small scale. An historic photograph of an early Louden factory pictures a small frame building. A sign across the front, reading "Hay Tools," indicates the purpose of this building. The small scale of this building graphically calls attention to the limited quantity of production capacity at the time. (See illustration at the end of this chapter.)

The Louden Machinery Company drew on employees who had learned the blacksmith's craft. For example, Samuel B. Turner, who previous to his service in the Union army during the Civil War, had trained as a blacksmith, joined William Louden's employ as head of the blacksmith shop. (*Fairfield Daily Ledger* :1932)

> When the factory was closed some time later he returned to Glasgow [in the vicinity of Fairfield] and again engaged in business. When the Louden factory was again opened here he returned to Fairfield and was employed by the firm for a number of years. (*Ibid.*:1)

These early years of William Louden's production also saw another aspect of metal fabrications. At least two buildings in downtown Fairfield feature Louden cast iron columns and decorative embellishments. One of these buildings is the former U.S. Post Office, located at 110 South Court Street. Constructed in 1876, it features columns with "Louden/Fairfield/Iowa." embossed into the base of its columns. This building is listed on the National Register of Historic Places, under Criterion B, because of its historical associations with U.S. Senator James F. Wilson, who built it.

(Page 1989) Another building, located at 106, 108, and 110 North Main Street, features columns with "Louden Mfg. Co." embossed on their base. This building also features cast iron capitals on these columns. This building is also documented from the 1870s. The question naturally arises as to the origins of these cast iron architectural elements. One theory follows:

> On the subject of the iron posts on the down town buildings, I have a theory. Andrew Louden, Jr., who moved to California before the turn of the century, was a carpenter and built several buildings in Fairfield before his departure. One of them is the recently remodeled large home on the west side of Highway 1 south (one time owned by Wilbur Mayer). Anthony DeMarce had a foundry at the south end of C street, and made custom castings. It's conceivable that Andrew built the building, and had DeMarce run the posts including the Louden name. This would have been common foundry practice. (Thomas A. Louden letter of correspondence to Mark R. Shafer)

REORGANIZATION AND SUCCESS

William Louden lacked two essentials for industrial success: capital and executive expertise. Recognizing his limitations, Louden invited R. B. Louden, his brother, to relocate to Fairfield and to join him in the business. "R.B.," as he was universally known, accepted this invitation, and the Louden Machinery Company was incorporated with him as president in 1889. The firm went quickly from success to success, enjoying the general prosperity of the Midwest during American's Golden Age of Agriculture.

About the same time of its incorporation, the Louden Machinery Company occupied a new factory site, located at 607 West Broadway. The factory was subsequently expanded on numerous occasions. For example, the office and pattern shop building, which was constructed circa 1900 with six bays on its facade, was expanded circa 1910 by another six bays to the west and a third floor constructed across the entire facade. (See illustration at the end of this chapter .) Later expansions also took place at the rear of the factory.

The success of hay carrier equipment led the Louden Machinery Company to explore other avenues to increase the efficiency of agriculture. Such inventions as a flexible door hanger (1895), barn litter carriers and track (1898), all steel dairy stanchions (1907), and automatic watering bowls for cows (1912) followed. By 1900, sales had reached a magnitude to warrant the establishment of the Louden Machinery Company of Canada with a factory located at Guelph, Ontario. The company's first branch office in the United States was established in 1909 at Albany, New York.

In 1906 the Louden Machinery Company established a barn planning service. The service of this Architectural Department complimented the company's equipment manufacturing operations. Louden architects designed farm facilities to promote more efficient use of space and labor saving devices. These plans naturally recommended use of Louden equipment. Although this service was provided

free of charge for standard plans, the Architectural Department also custom-designed institutional agricultural operations. A fee was charged for this service, and the department's big projects--such as Deere and Company president's Homewood Farms--lay in this field. By 1939, the company boasted that it had planned more than 25,000 barns throughout the nation and the world.

At the National Dairy Show in St. Paul, Minnesota, in 1917, Louden displayed its line of farm equipment including its litter carrier. (See illustration at the end of this chapter .) The litter carrier captured the imagination of eastern industrialists, who recognized that the monorail concept could be employed to handle scrap metal in the production of ammunition for the World War I effort. William Louden responded to this challenge by designing an overhead handling system for that purpose. Subsequent orders for miles of monorail equipment were placed and manufactured by Louden to assist in the nation's World War I effort.

These events had a fundamental effect on the Louden Machinery Company. The success of these efforts broadened the scope of the Louden Machinery Company's products. By the 1920s, the monorail division of the company accounted for much of its profits, manufacturing custom monorail equipment for factories and other industrial operations.

William Louden's "Looking back fifty-seven years" (quoted above) outlines other milestones of this reorganized business and its success. Put simply, this success was due to William, who provided the inventive genius for new products, and to R.B., who possessed the executive ability to manage their fabrication and distribution.

LOUDEN IN THE 1920S

By the 1920s, Louden had expanded its products to serve a variety of agricultural and industrial needs. A principal product was the highly adaptable monorail system and its accessories. The company's *Bulletin 101*, for example, pictures photographs of Louden monorail systems serving the following: a national cake baking corporation, a foundry, a tractor plant, a bolt making operation, a bed spring plant, a coal handler in the boiler room of a large office building in Chicago, a coal-handling system in a school building, and a paint dipping machine. (Louden *Bulletin 101*)

By the end of World War I, it was clear that industrial applications for the monorail had emerged as a major component of the Louden Machinery Company's sales. For example, the firm published in 1926 a catalog specifically for its monorail products. In the preface to this catalog, the firm stated:

> The fact that Allis-Chalmers, Continental Motors, General Motors and hundreds of other large concerns with highly developed and extensive engineering departments, have installed thousands of feet of Louden Monorail and are continually adding more is ample assurance that it is practical, durable, lends itself more readily to all conditions and

> requirements and gives more value for less money than any other Monorail System on the market. (Louden 1926:3)

In addition to providing monorail equipment, the Louden Machinery Company also provided a monorail planning service for its industrial customers. This service, staffed by members of the Architectural Department, was somewhat similar to that provided by the firm's barn planning service. The service included preparing surveys and recommendations for appropriate monorail systems for industrial applications. As the company stated, "Louden Engineers were also the pioneers in carrying their service so far as to plan and provide buckets, platforms and carriers for carrying the loads on the Monorail System." (*Ibid.*) This understates the amazing variety of industrial applications shown by photographs in a 1926 company publication of Louden monorail systems. These uses include a foundry, grand piano factory, pottery installation, clothing handling, automobiles, textile mills, Lenox china chinaware, rattan bundle handling, heavy kegs of castings, brickyards, tannery racks, bales of cotton, heavy rolls of paper for printing, ladles of hot iron, metal wire, coal handling including side-dump and bottom-dump buckets, Klieg lights for motion picture studios, boiler plate handling, tombstone handling, wood products, track hoists to connect monorail systems between different levels of floors of buildings, Louden dipping machines for industrial painting of metal products (used particularly in the automobile industry), monorail scales, and push and pull cranes. (*Ibid.*)

A list of sites using Louden monorail equipment would be international in its breadth. Because the focus of this report is Jefferson County, Iowa, and vicinity, the international scope of monorail installations is far beyond these limits. Property types associated with the Louden Machinery Company might be, however, eligible for nomination to the National Register of Historic Places in this regard. Registration requirements for such property types are included in Chapter F of this report.

LOUDEN IN THE 1930S

In retrospect, the 1930s were a period of transition for the Louden Machinery Company. Early in the decade, it looked more like the end of the line. William Louden, founder and philosophical mentor of the firm, died in 1931. R. B. Louden, the presiding business executive, who had saved the firm from bankruptcy and led it to financial success, withdrew from the firm's day-to-day business and died in 1940. The Great Depression gripped the nation in the 1930s, and the agricultural sector, which had already suffered economic decline, was hit hard.

Julius Hilleary, a pattern-maker who joined the Louden firm in 1928, recalled those times:

> I was laid off in late 1931 for a month or so. January 1932, that was the big, permanent one. There were only seven people down there and I wasn't one of them. I went back to work in October, 1932. (Julius Hilleary personal communication)

Included among these lay-offs was A. H. Neller, William Louden's right-hand man. Neller was reduced to janitorial work at Lincoln School in Fairfield. (Fairfield City Directories)

A Louden notebook of field information, from 1936 and 1937, lists products offered by the firm's Ventilation Department during that period. These products included: fans, wall nipples, exhaust louvers, elbows, pipe, inside thermostats, single and double acting intake valves, double acting valves for hog house, double acting valves for poultry house, intake hoods and louvers, intake air spreader, natural draft out-takes, and fan guards. (*Field Information Notebook*) This notebook is reproduced by a Photostatted process, a cheap means of publication in comparison with the firm's early publications. This quality differential also may be an indication of company profits during the period.

The reduction of the Louden Machinery Company's branch offices is another indication of a slump in the company's business during the 1930s. By circa 1935, for example, the firm had reduced its previous branch offices to three, located in Albany, New York, Toledo, Ohio, and St. Paul, Minnesota. (Louden c. 1935).

In spite of these economic conditions, the Louden Machinery Company issued a new catalog, number 73, of its farm line in 1940 (Louden 1940). This book pictures and describes the company's feed and litter carriers, ventilation products, and hay tools, the company had produced since the 1920s. The catalog also briefly mentioned which the company's "barn plan department." Although this is a well-designed and attractive catalog, it is smaller than the 1920 catalog by about 60 pages. Here is another indication of the slump in the nation's farm economy.

In 1942, the Louden Machinery Company celebrated its diamond jubilee by publishing catalog number 75. This publication was touted as the "Seventy-fifth Anniversary" catalog of the firm, then celebrating its establishment in 1867. With the nation then at war, perhaps the firm thought farmers were ready to purchase new equipment to boost the nation's critical effort to produce food.

LOUDEN AND WORLD WAR II

The entrance of America into World War II brought new challenges to the Louden Machinery Company. As with the American economy in general, the war brought a swift end to the stagnant national economy. The war's challenge to America's industrial production propelled Louden's production of overhead handling equipment to all time highs.

One indication of improved financial position during the war is a new Louden catalog issued in 1944. This publication begins by discussing how the Louden "Super-Track" monorail systems can aid the war effort:

> To **conserve** manpower and to use it most effectively while at the tasks to which it is directed, is a problem which has long occupied the attention of executives in every line of business. (Louden 1944:2)

Seniority lists of factory workers provide a good indication of the volume of manufacturing at the factory. A list dated July 8, 1943, for example, shows the following numbers of employees by year they joined the firm:

Table II-1

Louden Seniority Lists

Year	Number of Employees
1935	5
1936	4
1937	3
1938	N/A
1939	6
1940	13
1941	55
1942	62
1943*	45

* only to July 9th.

Source: *Louden Seniority List*, July 8, 1943.

Although unknown locally at the time, the Louden Machinery Company participated in America's effort during World War II to develop an atomic weapon. Following victory in the Pacific, the firm was commended for its contributions to that work at Oak Ridge, Tennessee. (Stone & Webster) Another of its contributions was providing overhead handling systems for the B-29 bomber plant at Marietta, Georgia. (See illustration at the end of this chapter .)

LOUDEN IN A NEW WORLD

Following Victory in Europe, Louden continued to supply the American industries with crane and monorail equipment for manufacturing purposes. The firm expanded its overhead handling operations into international markets as well. The farm line continued to decline in significance.

As the company retooled its plant for peacetime, the firm sought to reestablish its market share for agricultural equipment. In about 1947, the firm published its first catalog in many years. This catalog contained a full line of products, which the firm had provided over the years. As with the products of the 1920s, dairy farm equipment headed the list. (Chapter III of this report discusses this topic in greater detail.)

After several years of debate among the family share-holders of the business, the Loudens decided to sell the business. The William Louden Trust had owned 51% of the company. The beneficiaries under the trust were his children or their successor children, Bruce, Arthur, and Agnes. When Agnes died, William Fry, her son, became primary beneficiary. Although it was clear to members of the Louden family that Fry would become president of the board and that the company should remain a family business, Robert William Louden pressed to sell the company. In this matter, the swing vote on the board was Arthur ("Art") Louden. Attorneys were hired and the worth of the company assessed. The high cost of estate taxes concerned Art. Although William Fry and Thomas A. Louden attempted to persuade Art from selling the firm, the matter went forward. (Thomas A. Louden personal communication) The dissolution of the trust involved law firms in New York City, Chicago, Detroit, and Davenport. After protracted negotiations, the trust was dissolved and the company offered for sale.

In 1953, Mechanical Handling Systems, Inc., a Detroit, Michigan based firm, acquired the Louden Manufacturing Company as a subsidiary. The plant in Fairfield continued to produce crane and monorail products, and the enterprise was frequently still called "Louden." Over the next decade, the plant produced a variety of products with its focus on overhead carrier equipment.

Louden continued to operate its Monorail and Farm Line Divisions. In 1959, the firm instituted a New Products Division. The purpose of this division was the sale of pest control equipment and insecticides. (*Fairfield Ledger* 1959)

In the 1960s, the defense industry in the United States continued to be one of the company's biggest customers. In 1961, for example, the firm supplied monorail equipment used in construction of a new U. S. Air Force B-52H Stratofortress for the nation's Strategic Air Command. Equipped with skybolt ballistic missiles, the first eight planes in this series were constructed at the Boeing Airplane Company plant in Wichita, Kansas. (*Ibid.* 1961)

In the early 1960s, the nation's emerging space program placed new demands for crane and monorail systems. Louden successfully competed in this new market and contributed to the nation's emerging Apollo space program. Under subcontract with the Chrysler Corporation's Space Division plant in New Orleans, Louden manufactured a series of 27 overhead cranes used to raise and lower component parts to assemble the Saturn booster rocket for launching the first instrumented Apollo capsule into space. Included in Louden's contract was about two miles of track used for runways upon which the cranes transported the materials. (*Ibid.* 1963)

As manufacturing emerged in the Third World, Louden participated in this growth. In 1964, for example, the firm manufactured overhead carrier equipment to modernize the Rajasthan Rayon Company textile mill in Kotah, India. This contract included:

> one and a half miles of Super Track, 206 two-way control switches, 132 special curves to adapt the system to the Kotah plant, 380 two-wheel trolleys with clevis fittings and hanger rods for suspending the system. (*Ibid.* 1964)

The purchase of this new equipment for the India plant was financed through the U. S. Government Agency for International Development.

As American industry continued to consolidate in the 1960s, Louden participated in another purchase agreement in 1965. At this time, the American Chain and Cable Company of New York acquired the Mechanical Handling Systems, Inc. Both companies had plants in Fairfield. That of American Chain had been constructed in 1956. American Chain was

> a major producer of chain, wire rope, malleable iron castings, instruments and other products. The company has 22 divisions or subsidiaries in the United States, two in Canada and two in England. (*Fairfield Ledger* 1965)

As industries consolidated internationally, the Fairfield plant was sold and resold. In 1975 ACCO was purchased by the British firm of Babcock and Wilcox Ltd. Later known as Babcock International p.l.c. of London, England, the Fairfield plant was subsequently acquired by FKI, another British firm, in about 1987. The following thumbnail sketch outlines the Babcock operations:

> Babcock International plc is a worldwide organization engaged in the design and construction of a wide range of power and process plants as well as the production of ancillary equipment for such facilities. It also manufactures numerous types of machinery and engineered products to serve many other fields.
>
> Other Babcock subsidiaries in the United States include Keeler Corporation, Grand Rapids, Michigan, which manufacturers automotive and furniture hardware as well as components for a number of consumer products; Huwood-Irwin Co., Irwin, PA coal mining equipment; Babcock Contractors Inc., Pittsburgh, PA, bulk material handling systems and Ajax International Corporation, San Diego, California, water desalination equipment.
>
> The Fairfield Operating Unit serves an endless variety of the country's manufacturing, processing and fabricating plants, chemicals, aircraft, automotive, metals food, paper,

> rubber, steel and many other industries. The company has also entered the space age, providing the U.S. government and private companies with sophisticated systems of overhead material handling to assist the classified missile programs. We have come a long way from a simple hay carrier idea in 1867 to space age technology in a little over one hundred years. (Babcock International MS)

ENGINEERING DEPARTMENT

Numerous Louden publications over the years mention the firm's Engineering Department but few comment on its organization and development over time. Fortunately, several individuals in Fairfield contributed oral history for this subject and fleshed out this important aspect of the firm's history.

In addition to the inventive genius of William Louden, discussed above, by common accord one individual remained key to the success of the firm's engineering department during the 1910s and 1920s. This was A. H. Neller, right-hand-man to William Louden. "Albert" Neller's name repeatedly surfaced in oral informant interviews (Thomas A. Louden, Roberta Louden McCoid, and Julius Hilleary, and Ben J. Taylor). Registration lists of the U. S. Patent Office confirmed Neller's contributions to the firm's creative genius. (See bibliography.)

Julius Hilleary recently discussed Albert Neller. (Personal communication with William C. Page) In 1928, Neller interviewed Julius Hilleary for employment at Louden, hired him as a pattern-maker, and supervised his work for the next ten years or so. (Hilleary remained at Louden until his retirement in 1973.) According to Hilleary, Neller:

> was not an early bird. He would come to work late in the morning and stay maybe until Midnight . You couldn't tell. (*Ibid.*)

The following story from the 1920s illustrates how Neller worked:

> We were having a trade show, and we needed a latch for two monorails. New ideas were put together the first time in the pattern shop. You did not want to mess up the production department. Something new was tried out in the pattern shop before put in the production department. [I left work at the end of the day.] The next a.m. Albert Neller was there. He had never gone home. He saw immediately that this thing could be improved. He spent all night making a pattern to correct that. It was known thereafter [at Louden] as the Neller latch. (*Ibid.*)

Neller's life ended suddenly and tragically in the 1930s. He was returning to his home-state of Minnesota for his wife's funeral. Neller and a friend were involved in an automobile accident and Neller was killed.

The Hilleary interview also provided an insight into the evolution of the Louden Engineering Department. When Hilleary began his employment as a pattern-maker, the firm employed about seven pattern-makers. Neller supervised their work and patterns were made mostly from verbal descriptions. William Louden and/or Neller would provide the inventive idea and then describe it to the pattern-makers. When designing a water bowl, for example, William Louden urged one pattern-maker to fashion the shape of the bowl "like your knee." (Julius Hilleary personal communication) Tom Louden has provided another insight into this personal manner by which ideas were translated into physical reality. According to him, William Louden often cut patterns from paper and gave these to pattern-makers to replicate in three-dimension. (Thomas Louden personal communication with Mark Shafer)

As the Louden firm grew, these procedures became more formal and the Engineering Department more structured. Ideas now, often as not, would be drawn by "design engineers" and communicated to the pattern-makers by this means. The following example illustrates this movement towards structured management. The Louden firm maintained at least two vaults where patterns were kept. In case of fire, these original patterns for machinery would be protected. Julius Hilleary recounts entering these vaults to deposit a pattern for safe-keeping or to fetch an older pattern for reuse. By the later 1920s, the firm had begun storing the drawings of these patterns rather than the patterns themselves in the company vaults. (Julius Hilleary personal communication) This change of procedure at Louden provides a good illustration of the transition from craftsmanship, where the individual participates in all steps in fabrication, to industrial manufacturing, where a number of individuals partake in specialized steps to fabricate a product.

SALES AND MARKETING DEPARTMENT

The Louden Machinery Company maintained a sophisticated sales and marketing department. The firm participated in many trade shows, fairs, and other public venues where company products could be featured. The quality of these displays was high. (See illustration at the end of this chapter .)

In 1904, for example, the company participated in the Louisiana Purchase Exposition in St. Louis.

> Louden Machinery Company of this city has one of the tastiest displays for farming tools on the grounds... A life size portrait of William Louden, president of the company and inventor of most of its appliances, has a prominent place in the booth. It is the work of H. G. Shriner of this city. Several paintings by the same artist are shown in the Iowa building and critics are giving them many favorable comments. (Ledger 1904:7)

One of the most successful of these promotions was the 1917 National Dairy Show in St. Paul, Minnesota, noted above. The company displayed a wide-range of its products at this show, including its monorail devices. Representatives from an Eastern munitions plant attended this show and realized that the concept of the litter carrier could be equally well adapted to carry heavy scrap metal in the fabrication of steel castings.

Louden's field sales operations were managed by a number of field representatives and offices. The Louden firm maintained "branch houses" across North America. They included offices in Albany, New York, Toledo, Ohio, St. Paul, Minnesota, and Los Angeles, California. These offices changed somewhat over the years. For example, Louden's *General Catalog No. 43* listed a branch house in Fort Wayne, Indiana. This office was excluded in later catalogs.

Louden also maintained district offices. These offices and locations follow:

• Albany, NY	1047-53 Broadway# *
• Boston, MA	Old South Building#
• Chicago, IL	565 W. Washington Blvd.# *
• Kansas City	The Harbison Mfg. Co.# *
• New York, NY	Grand Central Terminal#
• San Francisco, CA	98 Folsom St.#
• St. Paul, MN	2282-88 University Ave.# *
• Buffalo, NY	
• Detroit, MI	
• Philadelphia, PA	1505 Race St.#
• Pittsburgh, PA	2419 Grant Bldg.#
• St. Louis, MO	
• Toledo, OH	2294 Albion St.#
• Canadian Factory	Guelph, Ontario
• Fort Wayne, IN	**

** = 1915 Catalog
* = 1920 Catalog
# = 1929 Catalog

The company continued to operate its factories in Fairfield, Iowa, and Guelph, Ontario, Canada. While the district offices listed above were probably staffed by one representative on either a full-time or part-time basis, this coverage helped the Louden Machinery Company maintain a national presence.

To coordinate the field offices and the home office, the Louden firm held an annual meeting of all the factory managers, salesmen, and directors. A photograph taken at one of these meetings, circa 1922,

pictures 46 men. They included managers from St. Paul, Minnesota; Guelph, Ontario, Canada; and Albany, New York. (See illustration at the end of this chapter .)

During this same period, the firm also employed a full-time company representative abroad. Based in the North of England, he represented Louden's interests on the continent of Europe as well as in Great Britain. (Roberta Louden McCoid personal communication) He was also an accomplished linguist, speaking English, French, German, and perhaps other languages. *(Ibid.)* Although the Louden Machinery Company prepared no catalogs specifically for international markets, sales in Europe were good during the 1920s. Little information is currently available about this branch. If it survived the difficult years of the 1930s depression in Europe, which is unlikely, it certainly ceased with the coming of war in 1939.

ADVERTISING DEPARTMENT

The Louden Machinery Company developed and maintained a strong Advertising Department charged with the preparation of materials for the company's active advertising programs. These materials included publications, such as product catalogs, brochures, newspaper advertisements, and other "dealers' helps" for local retailers, as well as sales displays for trade fairs, expositions, and local retail operations. For each of these jobs, the Advertising Department employed up-to-date techniques. They included sophisticated advertising copy--using personal testimonials, institutional testimonials, and appeals to authority--as well as attractive commercial art. For public relations purposes, the Advertising Department of the Louden Machinery Company also elevated the person of William Louden into an icon of American wisdom and inventive genius.

Advertising played a key role in Louden's success. The company issued on a semi-regular basis a series of quality-designed catalogs during the second and third decades of the Twentieth Century. These and other company publications were instrumental in the firm's national advertising campaigns. The Advertising Department also urged local retailers to tie into these campaigns with their own local advertising by providing electrotypes of ready-to-print advertisements for local newspapers (Louden 1920:32).

Advertising Copy

The Louden Machinery Company paid careful attention to the copy used in its advertising publications. Advertising brochures were often composed around a theme. This increased the directness of the message, as well as contributing to their overall appeal. In the 1920s, for example, the firm issued a 17 page booklet about overhead litter carriers. Designed with a cover featuring a boy guiding a Louden litter carrier into a manure dump, the text read "'It's A Snap'--Turning a Man's Job Into Boy's Play." Associations of the litter carrier with play continued throughout the brochure. For instance, the

farm boy drawing appeared at the foot of each page along with pagination, and the lead-in text for the booklet began:

> If you want to make a boy like his job, inject the element of play into his head as well as his hands. And don't forget that "men are only boys grown tall"--they like to play.
>
> You can transform the drudgery of barn cleaning into a pleasant, profitable task through the use of a Louden Litter Carrier--clean, quick, labor-saving, water-tight--the equipment that turns a man's job into boy's play. (Louden 1920c:2)

Testimonials

The personal testimonial and the institutional testimonial were popular advertising techniques employed by Louden. For example, the 1915 *Louden Barn Plans* catalog contained a total of 49 testimonials, each from a different enthusiastic customer. Most were personal testimonials from satisfied farmers. A few written institutional testimonials were also included in the catalog. The company's strongest institutional testimonials were communicated by big photographs of actual installations, such as the prestigious Hershey Chocolate dairy farm.

The Louden Machinery Company prided itself upon its testimonials and solicited potential customers to discuss the merits of Louden products with those whose testimonials it published. In 1920, for example, R. B. Louden wrote as part of the company's guarantee:

> Our most enthusiastic customers are those who have used other equipments and *have LEARNED FROM EXPERIENCE* the superior merits of ours. We want the prospective purchaser to ask the men who use our equipment and to find out for himself which is *THE BEST* from every point of practical service and genuine utility. (Louden 1920)

It should be remembered that this was the age of boosterism across America. Local commercial clubs sponsored all kinds of local projects and activities to stimulate business. These testimonials ranged from satisfied individuals to satisfied institutional customers. The following letter from Iowa State College must have been gratifying to Louden:

> Louden Machinery Company,
>
> Gentlemen:
> The Louden goods used by the Iowa State College, consisting of litter carriers, hay tools, stalls and stanchions have proven to be very satisfactory and have proven to be all that you claim for them. We have used more or less of your equipment for many years and find that the cost of repairs has been exceedingly low.
> Trusting this may be of interest to you, we are
>
> Very truly yours,
> Department of Agricultural Engineering,
> By J. B. Davidson, Professor of Agricultural Engineering,
> Iowa State College, Ames, Iowa.
>
> (Louden 1915:40)

The bare bones of many of these testimonials were sometimes embellished. For example, E. C. Barrick, proprietor of the Fairview Stock Farm at Janesville, Iowa, concluded his testimonial letter by extending an invitation for others to visit his establishment.

> Any intending purchaser who would call at our farm would get a better idea of the success of the equipment than simply by reading testimonials, and would be welcome at all times. (Louden 1915:16)

One wonders what stimulated so many letters of satisfaction.

Appeals to Authority

Louden often advertised the quality of its products by associating it with symbols of authority. For example, in the 1930s the letterhead of the Iowa Malleable Iron Company included an "Iowa Quality Certified" logo (Iowa Malleable 1930). Although the sponsor of this logo is not known, the company's employment of it insinuated public authority. Further research is required before it can be stated that the Advertising Department of the Louden Machinery Company cooperated with that of the Iowa Malleable Iron Company.

William Louden as Icon

Established by William Louden, the Louden Machinery Company elevated the person of this individual into a company icon. Photographs of Louden's face--his restrained smile, Victorian beard

and mustache, and kindly eyes--appeared on page after page of the company's advertising throughout the first half of the Twentieth Century. Blurbs stressing trust and reliability, such as the following, frequently accompanied these photographs:

WM. Louden
Barn Specialist of
Over 50 Years'
Experience

WM. LOUDEN
whose Labor Saving
Barn Equipment is
used in over a Million Barns.

(Louden 1920a:16-18)

Chapter I of this report discussed the problems of historical methodology presented by the elevation of William Louden's person into an archetype. By all indications, it appears that Louden approved of this elevated status.

Commercial Art

The Advertising Department of the Louden Machinery Company consistently produced outstanding graphics over a period of many years. Although little is presently known about the commercial artists who produced these materials, the graphics they created continue today to exert powerful appeal. The cover of this report provides one example. Taken from the firm's 1919 "Louden Barn Plans" catalog, it illustrates the great barns of the Homewood Farms, at Moline, Illinois, owned by William Butterworth, president of Deere and Company, and planned and equipped by the Louden Machinery Company. If one compares a photograph of this installation (Louden 1919:56-57) with the drawing, one appreciates the fidelity of the artist's graphic representation, while also noting the landscape embellishments, which provide so much of the drawing's appeal. The warm colors chosen for the drawing project a cheerful scene and invitation to open the book.

In the 1920s, Swede Lundberg, a local graphics illustrator, provided much of the Louden advertising materials. Lundberg was a master of the airbrush technique. (Thomas Louden personal communication).

Magill Weinsheimer Company, printers of Chicago, Illinois, provided much of the printing work for Louden advertising. (Thomas Louden personal communication 10-19-95). For example, the 1919 *Louden Barn Plans* catalog was printed by that firm. (Louden 1919:112) Roy Louden handled much

of the liaison in the 1920s (*Ibid.*) The fact the Roy Louden wanted each illustration to include round wheels is one indication of the care with which the Louden Machinery Company took in planning a new catalog. If the selected illustrations did not picture "round wheels," Roy would request retouching of those not up to standard. (*Ibid.*)

Other printers also provided service to Louden. In the 1920s, for example, R. R. Donnelley & Sons Company of Chicago, Illinois, printed Catalog 8 for the firm (Louden 1926). For many years, R. R. Donnelley & Sons also printed *Better Homes and Gardens* and other slick magazines for the Meredith Corporation of Des Moines, Iowa.

Louden advertising showed a strong predilection for graphic reproductions of actual product blueprints. Many catalogs feature full-page spreads of plans, sections, and details of Louden products. These drawings illustrate the workings of the parts and machines they picture as no photograph can. These graphics must also have appealed to engineers, to whom the catalogs were directed. Finally, the reproduction of these blueprints was an efficient use of the graphic because it had already been prepared as part of the design process. Evidently the Louden Machinery Company believed that the added cost of these blueprint graphics in its catalogs was beneficial. Such blueprint graphics appeared in numerous company publications during the 1920s. They are among the most appealing of the firm's many advertisements.

Puffing

Puffing is a term used to describe advertising which stretches the truth. The Louden Machinery Company prided itself on its plain talk and honesty in advertising. Advertising hyperbole, or "puffing," was also sometimes employed. For example, the company's 1915 barn plans catalog stated that "Any ideas that we have gained through our 48 years of barn specializing experience are yours" (Louden 1915:5). This dates the beginning of the company's experience in 1867, the date of William Louden's patent for his first elevating and conveying device. The Louden Machinery Company steadfastly maintained the year 1867 as the date of the company's establishment, a stretching of truth. Such advertising also ignored or glossed over the two bankruptcies, which William Louden suffered during the same period of time.

LABOR RELATIONS

Labor relations between Louden management and workers were generally good. Former employees today speak with pride about the factory and its products. It is true that most of these employees worked at Louden during World War II, when national pride was high, or after the company had been acquired by outside interests.

The first decade of the Twentieth Century saw the expansion of labor unions throughout many sectors of American industry. The Louden Manufacturing Company was not immune from the labor disputes, which increasingly marked the industrial history of this era. In 1908, for example, employees at the Louden factory went on strike. Although this survey did not research the events surrounding this 1908 strike, further research on this subject is recommended. The subject of the unionization of labor at the Louden plant should also be researched.

IOWA MALLEABLE IRON COMPANY

The Iowa Malleable Iron Company was a producer of iron casting products. It was established in Fairfield, Iowa, by entrepreneurs associated with the Louden Machinery Company and the Dain Manufacturing Company of nearby Ottumwa, Iowa. Both these industrial concerns believed they could produce the malleable iron castings needed for their own products more efficiently on the local level than by outside suppliers. Iowa Malleable Iron Company remained closely associated with the Louden Machinery Company for many years. Because of this relationship, Malleable forms an important chapter in the Louden story.

Malleable iron is fabricated by a special process using high carbon pig iron. Malleable iron has greater tensile qualities than common cast iron, as well as being considerably lighter in weight. When malleable iron is cast into molds, the resulting castings are stronger and more durable than cast iron. Such castings were important for the Louden Machinery Company because its equipment lines--such as stanchions--required strong couplings because they were subject to heavy animal weight.

The first stockholders meeting for this new endeavor met on July 27, 1903, in Fairfield, Iowa. At this time, a Board of Directors was established. Included among these original stockholders were R. B. Louden (Iowa Malleable 1930) and owners of the Dain firm. These and other investors purchased equipment from a malleable iron company in St. Catharines, Ontario, Canada, and moved it to Fairfield. (Welty:291)

By the end of 1904, the Iowa Malleable Iron Company foundry was constructed, its equipment installed, and operations begun. An announcement brochure, published by the company in that year, detailed the firm's prospectus.

In addition to the foundry's melting furnace and annealing ovens, the firm also operated a pattern shop, where molds could be made to shape the molten iron into needed parts. The firm boasted of its dominance in the region:

> We have the first and only Malleable plant in Iowa, and the third west of the Mississippi river, and to manufacturers in this great and rapidly growing region, who have heretofore

> been handicapped by having to send away off East for their malleables, this plant will be a great convenience and advantage. (*Iowa Malleable Announcement* Brochure)

Iowa Malleable also sought the patronage of other manufacturing concerns in the region to use this foundry for its malleable iron needs:

> Manufacturers now using cast iron are invited to confer with us in regard to changing their cast iron patterns to malleable. In many cases it will be found that they can much improve their goods by so doing.
>
> We will be pleased to figure with the users of malleable iron on their requirements. We will guarantee first-class iron and reasonable prices. We especially solicit the patronage of Western manufacturers. (*Ibid.*)

The need for scores of different fittings and couplings can be gauged by the fact that, in 1920, the Louden Machinery Company advertised it had over 1,200 barn equipment patterns available for purchase (Louden 1920:160).

CONCLUSION

The business and industrial history of the Louden Machinery Company is complex and the research design for this survey did not foresee how important the role the firm's overhead handling systems played in its success. This became clear during the project. As a result of this research, we now know that the Louden Machinery Company achieved national significance not only for its contributions to American agriculture but also within the context of the nation's industrial history.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

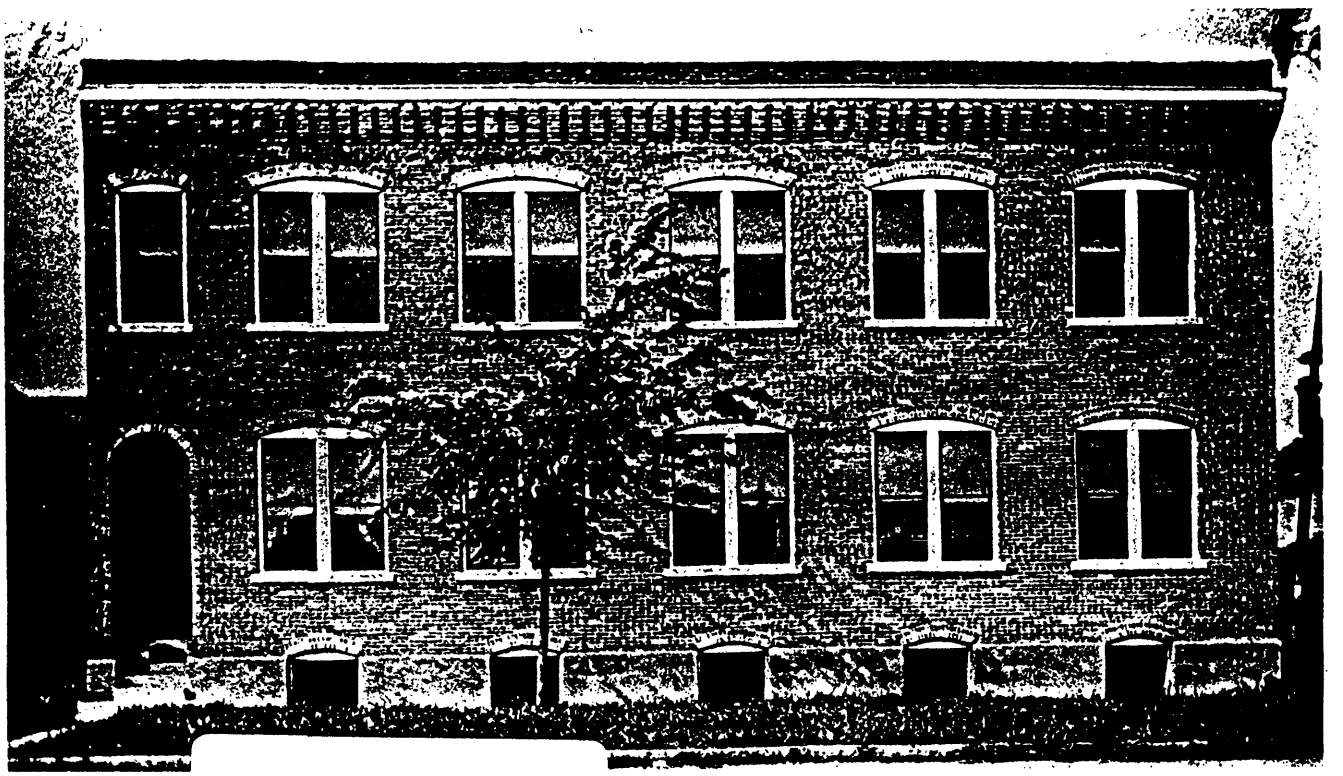
LOUDEN'S ORIGINAL FACTORY BUILDING IN FAIRFIELD

Source: Photography courtesy of *The Fairfield Ledger*.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

LOUDEN MACHINERY COMPANY CIRCA 1900

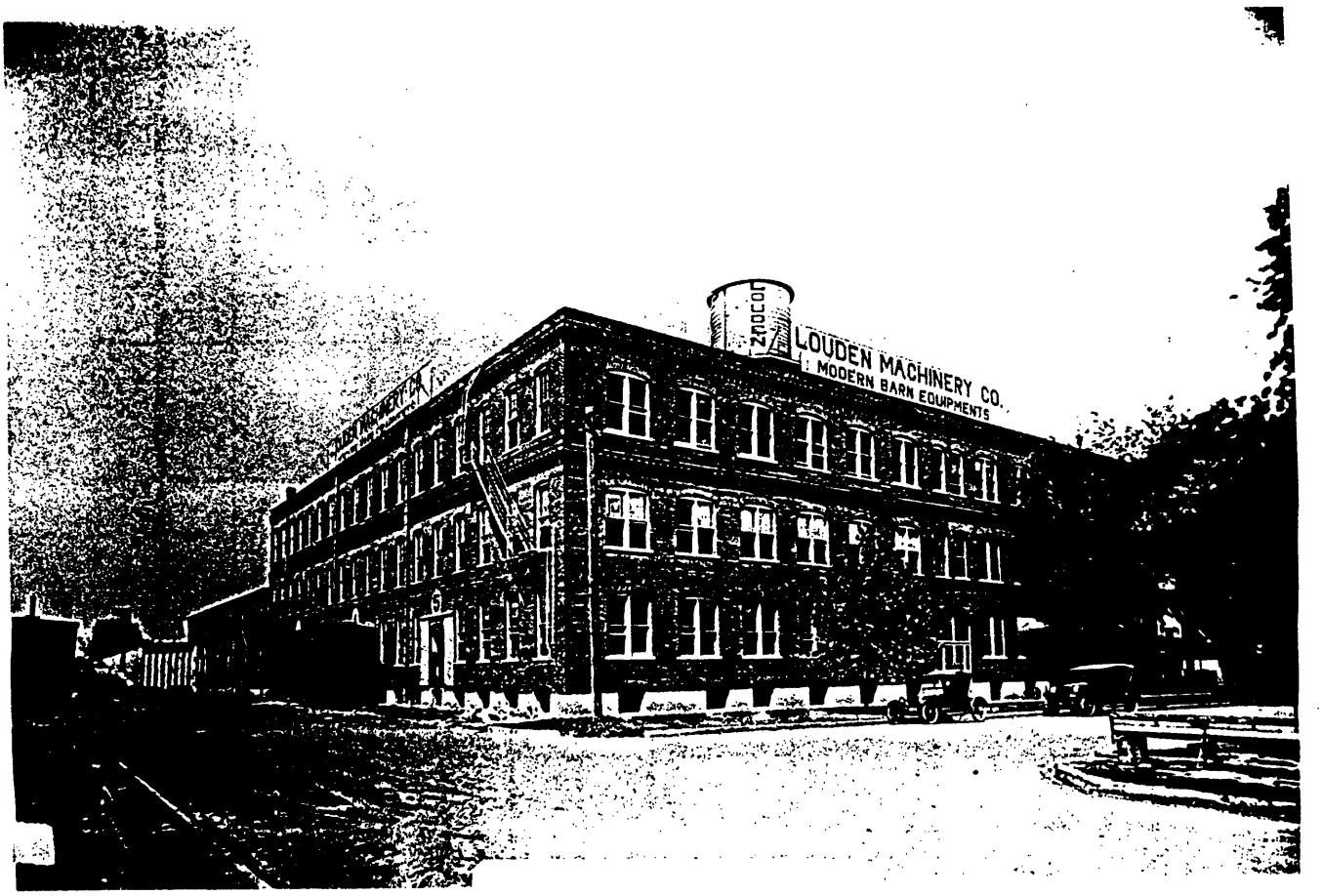


Source: Private collection.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

LOUDEN MACHINERY COMPANY
1920s



Source: Private collection.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

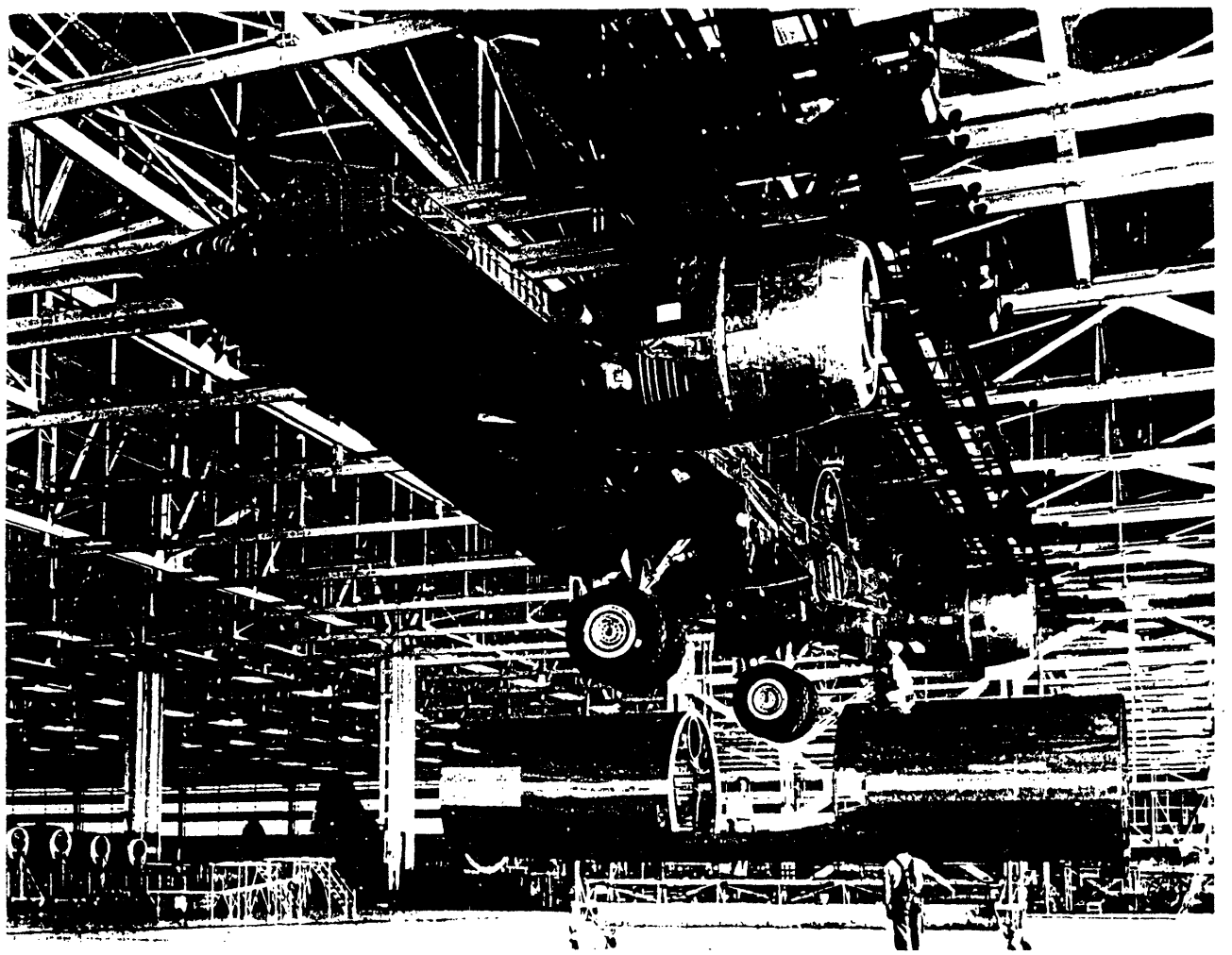
NATIONAL DAIRY SHOW
1917

Source: Private collection.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

B-29 BOMBER PLANT, MARIETTA, GEORGIA USING LOUDEN MATERIAL HANDLING EQUIPMENT WORLD WAR II



Source: Private collection.

III. PATENTS AND PRODUCTS

INTRODUCTION

The Louden Machinery Company offered an extensive line of agricultural equipment to the farm community during the late Nineteenth and much of the Twentieth Century. Already by 1886, an illustrated catalog was available from the firm. (See Continuation Sheet E-55.) As the company grew and prospered, it sought to expand its line not only to include a full-range of products to equip farm structures, but also to include pre-fabricated components required for their construction. Some of these components, such as barn cupolas, the firm itself manufactured, while others, such as "Louden's Window Ventilator," the firm subcontracted. By the 1920s, the firm's overhead lifting and carrying equipment, based on William Louden's concept of the monorail, had attained a major portion of its sales.

The firm's agricultural equipment initially focused on tools for working hay. William Louden's inventions for stacking hay and, particularly, for carrying hay into and within barns found widespread acceptance throughout the Midwest. During the early decades of the Twentieth Century, comparisons of the company's product offerings from one catalog to another show an ever widening variety of equipment. These catalogs illustrate, for example, a growing emphasis on dairy farming. In this regard, the company's offerings reflect the expanding importance of dairy farming in the Midwest during this era. By the 1920s, dairy farm equipment comprised the single largest sector of the Louden firm's agricultural equipment.

Louden catalogs also show the company expanding its products to meet the broader needs of the American markets during this period. For example, by 1920 thousands of Americans had purchased automobiles. The "Louden Garage Door Hanger" filled a growing need among these motorists to house their new machines in buildings secured and protected against the environment yet conveniently accessible. Louden's patented overhead door tracks provided such protection. Louden also capitalized on its experience working with iron and steel products, such as metal pipe. By the 1920s, for example, the firm manufactured playground equipment. These products included slides, swing poles, see-saws, gym sets, horizontal ladders, swing bobs, collapsible flag poles, and whirl-arounds (*Louden Playground Equipment*).

Also by the 1920s, Louden overhead handling systems had become one of the company's chief products. Stemming from the firm's pioneering concept of a monorail to carry hay, the Louden Machinery Company expanded this application to include an amazing number of applications in industry. Louden firm engineered overhead handling systems to handle a wide variety of goods through use of switches, cross-tracks, turntables, scales, dipping machines, cranes, trolleys, carriers, and other essential units, such as elevators (Louden *Bulletin 101*:2). The concept of the monorail and the Louden firm's experience with its engineering has enabled the factory to remain in operation long

after the fabrication of the firm's agriculture equipment ceased. Even today, the Louden plant produces overhead handling equipment in Fairfield, albeit under different corporate ownership.

The 1930s were difficult years at Louden, as they were throughout the nation. World War II brought new challenges to the firm and returned prosperity. The closing sections of this chapter discuss these periods. They also look at the Louden Machinery Company in the post-World War II era. In 1953, the firm was sold to outside interests, ending its long period of family ownership.

"Patents and Products" begins with a discussion of the United States patents granted to William Louden and others associated with the Louden Machinery Company. The chapter then discusses in order the following product lines of the firm:

- Hay tools
- Barn and garage door hangers
- Dairy barn equipment
- Litter, feed, and other carriers
- Window ventilators
- Ventilator systems
- Barn plans
- Playground equipment
- Overhead lifting and carrying systems
- Bent board type of laminated barn rafter

"Patents and Products" discusses the difficult years of the Great Depression, the challenges of World War II, and the Louden Machinery Company in the post-war era.

"Patents and Products" concludes with comparisons and contrasts between the Louden Machinery Company and several of its competitors. This section will help evaluate the firm within the larger context of agricultural equipment production in the United States during the late Nineteenth and early Twentieth Centuries.

LOUDEN PATENTS

William Louden's patents brought industrial significance to the Louden Machinery Company.

William Louden received his first United States patent in 1867. The bibliographical section of this report lists many of William Louden's patents, as well as other patents granted by the United States government to the Louden Machinery Company. This list should not be construed as all-inclusive. It was prepared specially for this report from U. S. Patent Office records available at the Iowa State

Library. Although extensive, the records at this depository are incomplete. This list also does not contain patents granted to the Louden Machinery Company or those associated with it following William Louden's death in 1931. (See U.S. Patents in bibliography.)

In 1892, William Louden began registering patents and assigning them to the Louden Machinery Company (Patent Office 1893:222). That same year, Ozro J. Baldwin appears as an assignor to William A. Louden *et al.* in the U. S. Patent Office records (*Ibid.*).

HAY TOOLS

Hay handling tools heads the list of products because Louden's patented hay carrier was the firm's first successful invention. It will be seen that later additions to the Louden line developed the concept of the monorail for other agricultural purposes.

Various inventions and devices sprung from the initial hay carrier, either as refinements or as "go alongs." Some of the more important include the following:

- Hay carriers and fittings
- Power hoists
- Hay forks, slings and fittings
- Pulleys and other specialties
- Barn arrangement for hay tools

The above arrangement of subjects within the 1920 catalog may have intentionally been compiled with those most popular nearer the front of the book. Hay tools, which formed the core of the company's success, for example, appeared first. Other products, as listed above, could well be in a decreasing order of importance to the average catalog reader. Such an interpretation is reinforced by the fact that another listing of the catalog's contents is also printed on the cover of the catalog. Here, the section on "Barn Plans" is excluded, replaced by the generic "Specialties." If this supposition is correct, one concludes that Louden's barn planning service was an incitement to the estate or institutional farm rather than a primary source of profit derived from the average farmer.

Hay Carriers and Fittings

William Louden received his first patent on August 28, 1866, Number 57,525. This "basic" patent was for a device to stake hay in the field. It featured a one pole design. (Louden 1942:153) Since that time, over 200 patents were subsequently issued to the Louden Machinery Company (*Ibid.*)

William Louden patented his invention for a hay carrier on September 24, 1867. This device allowed farmers to move hay into and about their barns with ease and dispatch. The Louden Machinery Company's catalog of 1942 pictured one of these early hay carriers. It shows a simple machine of three wheels, a catch, and a rope fabricated to moved along a crude, wooden beam. (Louden 1942:2) Louden continually sought to improve this invention. By 1868, for example, he experimented with a wheel-free model. Between 1883 and 1914, Louden patented at least 27 different devises directly related to the hay carrier. (See U. S. Patents in bibliography.) An example of one of Louden's improved models is pictured in the company's 1940s catalog captioned:

> Shown at the right is Keith Hootman, Keosauqua, Iowa holding a Louden hay carrier that was installed in his great grandfather's barn in 1868. This carrier was used every year until the fall of 1939 when the 4 x 4 wood track broke down. The carrier is still usable. It had no wheels but slid along on a greased or tallowed track. After such service you can bet that Hootman got another Louden outfit. You too will get good service from Louden hay tools. (Louden 1942:135)

Louden Machinery Company continued to manufacture hay unloading tools into the 1940s. The firm's Catalog 79 circa 1947 offers a wide array of these devices, including those operating on wood tracks. Production of hay unloading tools ceased when the firm was purchased by Mechanical Handling Systems, Inc., in 1953.

Each of these versions of the hay carrier required special couplings and fittings for its installation and assembly. The Louden Machinery Company also manufactured these parts or subcontracted with the Iowa Malleable Iron Company in Fairfield for their fabrication. Louden also maintained an extensive parts department, where replacement pieces for its equipment could be obtained. (Louden: *Illustrated Price List of Repairs*)

Power Hoists

Power hoists were included in the 1920 Louden catalog. This is a good example of "go along" equipment intended to compliment the firm's basic products. It is not presently known if these hoists (and other such go alongs) were engineered and manufactured by the firm, or if their fabrication was subcontracted out and sold under the Louden name.

Hay Forks and Slings

The hay fork and carrier formed a staple of Louden's products. By 1920, a total of seven different styles of hay forks could be purchased. They included forks with 4-tines, 6-tines, and extra large 6-

tines, as well as the Harris Double Harpoon, Nellis Single Harpoon, Rocker-Bar, and Triple Harpoon varieties (Louden 1920:223).

Pulleys and Other Specialties

The Louden firm manufactured and stocked a wide-range of pulleys and other specialties. These were not studied in this survey because they were incidental within the firm's products. Nonetheless, they provided Louden customers with the full-line of equipment.

BARN AND GARAGE DOOR HANGERS

The Louden Machinery Company realized that the concept of an overhead track could be applied to other jobs on the farm. In 1897, for example, William Louden was granted his first patent for a door hanger. This invention allowed one easily to slide a heavy door along an overhead single-track rail. It was different from other door hangers because it was flexible. When stock crowded against the door, it swung out. This improvement helped protect doors from damage. Louden improved this idea and received further door hanger patents in 1899, 1901, 1902, 1904, and 1908. (U. S. Patent Records)

As more and more Americans took to the road with automobiles, the Louden firm recognized that garages were becoming standard features of Americans' homes. Capitalizing on this new application for the overhead single-track door hanger, Louden introduced a line of garage door hangers. The following discussion of garage doors, taken from the firm's 1920 catalog, admirably illustrates the plain and straightforward language Louden catalogs used to describe their products. This unadorned discussion of a seemingly trivial subject makes the reader pause and reflect that garage doors are important.

> We have given a great deal of thought to this subject of garages in general. We have studied the conditions necessary for the proper housing of the car. This is a much more important subject than most people realize--the garage is the home that must house and protect an automobile representing quite an investment in dollars and cents. The garage must be made so as to insure against accidents and damage to the car in going through the doors, it must be constructed so as to give proper ventilation, it should be convenient--in fact, there are many, many details which limited space in this catalog prevents us from going into, but which are fully described and illustrated in our special booklets which thoroughly cover this one subject. Drop us a line and we will send them to you--no obligation on your part whatever. (Louden 1920:62)

The utility of Louden's design for garage door hangers is such that several remain in working order in Fairfield to the present day.

DAIRY BARN EQUIPMENT

Dairy barn equipment comprised one of Louden's most popular and probably profitable lines. As already noted, the first three decades of the Twentieth Century saw the emergence of dairy products as a major growth market for agriculture in the Midwest.

By 1920, the Louden Machinery Company had developed the following line of dairy barn equipment:

- Litter Carriers
- Cow stalls and fittings
- Stanchions
- Water bowls
- Mangers and manager divisions
- Concrete mangers and cement tools
- Steel pens, gates, hinges, etc.
- Miscellaneous supplies and information
- Cupolas, ventilators and window ventilators
- Manger and gutter drains
- Paint

This list makes clear that the monorail--the firm's basic concept--played little role in many of these products. On the other hand, the company's experience with metal castings and fabrications made products like steel stalls and stanchions a logical extension of their equipment line. It is clear that the Louden Machinery Company developed its line of dairy barn equipment in response to the growing market for such products. In 1911, for example, William Louden was granted a patent for a cattle stanchion design. A number of others followed. Dairy barn equipment quickly became a major product line for the firm. About 86 pages of the 224 page catalog of 1920--more than one-third--are devoted to dairy barn equipment.

All dairy barn equipment left the Louden factory coated with "Silver Gray" paint unless the order called for galvanizing (Louden 1920:171). This paint was also available from the company for the maintenance of the equipment. Red was another popular color at Louden both for equipment and publications.

Concrete Mangers and Cement Tools

By 1920 concrete had emerged as a staple building material for farm construction. The Louden catalog of that year provided information on construction of concrete mangers for dairy barns. Three sizes of mangers were recommended, each depending on the requirements of different breeds of cows. Louden had patented ready-made cut-out concrete forms to shape poured concrete for these mangers.

These forms were available by order from the company. Louden even stocked the hand tools needed to lay and finish the concrete (Louden 1920:131). Of course, Louden also offered cow stalls and stanchions for these facilities.

According to one expert report, these concrete mangers were well received:

> I am glad to see these improvements. They are certainly a credit to your Company, and will be of great value to dairymen as well as a benefit to mankind in general.
>
> Prof. T. O. Haecker
> Chief of the Division of Dairy and Animal Husbandry
> University of Minnesota
>
> (Louden 1920:129)

LITTER, FEED, AND OTHER CARRIERS

Litter carriers and feed carriers constituted products closely associated with the Louden Machinery Company. A carrier consisted of a container suspended by wire or rope to a trolley attached to an overhead track. Regardless of weight, such a container could easily be conveyed along an overhead track. The carrier idea was an extension of William Louden's original concept for hay loading carriers. In this guise, manure or feed could be easily handled using these machines. In 1907 William Louden was granted his first patents for "elevated carriers," and in 1908 he received one for a feed carrier. In order to offer a full-line of overhead carrier equipment, the Louden company also produced the following accessory items:

- Litter carriers
- Feed carriers and trucks
- Swill carriers
- Harness carriers
- Milk can carriers
- Track and fittings, swinging cranes, switches, etc.

Litter Carriers

The litter carrier was an economical piece of agricultural equipment primarily for large dairy operations. Louden personnel recognized this fact. Company catalogs, for example, featured Louden litter carriers on the same pages as the large dairy barns. (Louden 1915:28). In its advertising for

litter carriers, Louden stressed the utility of manure for soil enrichment, as well as the ease by which this could be accomplished with Louden equipment. (See Chapter II.)

BARN DESIGN

Beginning in 1906 or 1907, the Louden Machinery Company operated an Architectural Department. This department prepared plans to construct a wide variety of farm buildings and structures, as well as to design these facilities with up-to-date equipment. Chapter IV of this report discusses the operations of the Louden Architectural Department at length.

In addition to this barn planning service, the Louden Machinery Company patented and developed a bent board type of laminated rafter. This technique was used primarily for barns with Gothic roofs shaped like that shown on Continuation Sheet E-56. A Louden catalog of circa 1932 described how Gothic roofs were usually constructed:

> One way is to saw 10 or 12-foot lengths of 1x10's or 1x12's into curved lengths, which are then nailed together to build up the curved rafter. The other way, which requires less work, saves time and results in less waste of lumber, is to bend standard 1x4 boards to proper shape around nailing blocks on the mow floor, breaking the joints and nailing and bolting the five thicknesses together. Every second, third or fourth rafter is built up of six thicknesses of 1x4's and trussed and bolted as shown on the front cover of this book. (Louden c. 1932:7)

One indication of the pride the Louden Machinery Company took in this patented technique is the fact that the cover of their catalog from the 1930s featured a barn constructed using it (Louden c. 1932).

This catalog continued to explain the design:

> This bent board type of laminated rafter construction was developed by Louden. It should always be used with the reinforced rib at proper intervals.
>
> While the sawed type of gothic roof rib, first described, is usually broken at the ridge and held together by a collr, the bent board type extends unbroken over the top, from one side to the other, with short rafters nailed tangent to the curve to form the peak. These are tied with a 1x8 vertical cleat to the center of the curved rib. This construction adds to the strength of the rafter and carries the hay carrier loads with less strain on the ribs.
>
> Ribs are spaced every two feet, and are raised by a light block and tacke. Each rafter should be braced by a double 2x6, spiked to truss and floor joists.

> The bent rib gothic usually makes more gracefully curved roof than the sawed rib gothic. (*Ibid.*:7)

The success of the laminated design poses some questions. Later, the firm abandoned this concept, promoting instead the following:

> To simplify construction and to use lower priced lumber our engineers designed AND PATENTED the method of gothic rib construction whereby the rafters are built up of five 1 inch x 4 inch boards, bent to proper curvature and nailed and bolted together. (*Louden Barn Plan Book*)

The Fred and Rosa Fulton Barn near Selma, Iowa, is a good example of this nail-and-bolt technique. The words "lower priced lumber" in the passage above suggests that the laminated design proved too expensive.

PLAYGROUND EQUIPMENT

During the 1920s, the Louden Machinery Company purchased the J. C. Porter Company of Ottawa, Illinois. The Porter firm held the patent on a steel bar design, which Louden needed for its overhead carrier systems. To obtain the patent rights, Louden purchased this company. J. C. Porter also manufactured playground equipment. In this way, the Louden Machinery Company expanded its line of products to include these items. (Roberta Louden McCoid personal communication)

The playground line included horizontal bars, parallel bars, high jumping and pole vaulting standards, baseball back stops, basketball goals, tennis posts and back stops, volley ball goals, etc. (*Louden Playground Equipment*).

Following World War I, many people across the nation advocated better health for children through physical exercise, games, and organized play. The Playground Movement, as it came to be known, campaigned for playgrounds to be built adjacent to schools and for these grounds to be equipped with swings, slides, and other game equipment. A Louden brochure of the period pictures a classroom with teacher and pupil in one cut, and a playground with children playing in another cut. These two pictures are joined by text reading: "They are Equally Important Factors in Your Educational Program." (*Ibid.*)

The Louden Machinery Company would also provide playground design.

> Louden Playground Engineers are at your command for any help they can give you. They will gladly suggest the most economical and useful arrangement of equipment. . . supplemented by drawings and diagrams if necessary... for diversified play; for the separation of children of varying ages; to promote absolute safety.
>
> This service is at your disposal without charge. If you will send us a rough sketch of your grounds giving dimensions, and the number of children to be accommodated, we shall be glad to give you our suggestions. (*Ibid.*)

Although by all accounts popular with children at the time, some of the Louden playground equipment lacked modern safety standards. The "Louden Swing Bob," for example, was said to accommodate "a dozen or more children," but its horizontal swing seat looks more like a battering ram! Children undoubtedly enjoyed this apparatus immensely.

The playground equipment line never became an important aspect of Louden production. These products were not advertised in the firm's catalogs. The Louden Machinery Company did contribute some of this equipment to the Fairfield Golf & Country Club. One of the merry-go-rounds, called a "whirl-around," and a set of swings remain at this site today.

OVERHEAD LIFTING AND CARRYING SYSTEMS
LOUDEN INDUSTRIAL MONORAIL SYSTEMS

By the 1920s, Louden industrial monorail systems had become one of the firm's largest sales components. An outgrowth of the single-track concept as applied to hay handling and other agricultural needs, Louden had developed the concept for overhead lifting and carrying in industry. By 1926, a 128 page company catalog featured the full-line of this equipment, as well as photographs of the scores of industrial sites across the nation in which it had been successfully installed. (Louden 1926) This catalog contains several dozen full-page graphics of blue print drawings prepared by the Architectural Department, showing details of this material handling equipment. These details include such components as hoists, trolleys, fittings, beam clamps, track hangers, switches, turntables, track openers, and dipping machines, among others. These drawings visually illustrate the need for professional draughtsmen for such a manufacturer as Louden. They also suggest the large number of parts needed to install and operate monorail systems. Each of these parts had to be conceived, tested, drawn, modeled, fabricated, finished, and packed. Most of these operations took place in Fairfield at either the Louden factory or at Iowa Malleable Iron Company's plant.

It is not clearly understood if these drawings were prepared by the Architectural Department or by the Engineering Department of the Louden Machinery Company. Also not clearly understood at present is which department handled field trips to the sites of new installations. This engineering consulting formed an important part of the Louden Machinery Company's service. As the 1926 catalog stated:

> There are without doubt more lineal feet of Louden Monorail in operation today than of any other Monorail line on the market. Naturally Louden Sales Engineers are material handling experts. They devote all of their time in and about plants of every description, planning and laying out Louden Monorail Systems for the handling of all kinds of products in process of production or warehousing. They work in conjunction with your own engineering department and make their own survey and recommendations, furnishing working drawings and, where necessary, often making time studies. This service does not obligate anyone. Louden Engineers were also the pioneers in carrying their service so far as to plan and provide buckets, platforms and carriers for carrying the loads on the Monorail System. (Louden 1926:3)

The main component of Louden's overhead lifting and carrying systems was the "Super-Track." This Louden product line applied the monorail concept of its litter carrier to industrial operations. During the 1920s, the Super-Track became one of the firm's most important product lines. Eventually, the wide-spread and continuing applicability of this concept to industrial needs ensured that the Louden plant would survive as a viable business long after its production of agricultural equipment had ceased.

The Super-Track was an off-shoot of the single-track concept first employed for hay handling equipment and extended to the firm's litter carrier systems. At its simplest, the super-track was a heavy duty monorail capable of handling industrial weights. As a 1920s Louden publication explained:

> Super-Track is a highly organized material handling system, with switches, cross-tracks, turntables, scales, dipping machines, cranes, trolleys, carriers and all essential units. It may be manually operated in conjunction with chain or electric hoists and can be made into a continuous conveyor when trolleys are connected with chain which in turn is propelled by electric motor. Motor driven trolleys are also available. (Louden *Bulletin 101*:2)

By 1926, the scale of Louden's industrial monorail system production warranted a 128 page catalog devoted exclusively to this equipment. (Although this catalog is numbered "eight," earlier catalogs in this series have not come to light.)

To assist in the selection and installation of monorail equipment, the Louden Machinery Company offered potential customers complimentary consultation with a company field service representative. This representative would visit the site, determine needs, sometimes conduct efficiency studies, and recommend an installation of Louden monorail system products. It is thought that the Architectural Department of the Louden Machinery Company provided much of these planning services, but this is not clear. The company also maintained an Engineering Department at certain times and this office

may have been responsible for field consultations. (More about the Architectural Department and its operations with monorail systems is included in the "Architectural Department" section of this report.)

GREAT DEPRESSION YEARS

The 1930s were slim for the Louden Machinery Company. William Louden died in 1931. Employee layoffs occurred in 1931 and 1932. Although this period needs further research, the likelihood of innovative equipment development during this era appears to have been slight.

WORLD WAR II

Production levels at the Louden Machinery Company reached unprecedented highs during the war years. Wartime security imposed many restrictions on information concerning products and equipment manufactured at Louden. Employees themselves usually did not know what they were making. Undoubtedly the war effort required many new and innovative applications of material handling equipment. The Jefferson County Historic Preservation Commission has recently identified several of these employees, who might provide information about security at the plant during the war.

POST WORLD WAR II

Following Victory in Europe in 1945, industries in the United States began to retool their plants for peacetime. The Louden Machinery Company had prospered during the war, and now it too sought to gain a market share in the post-war economy.

To this end, the firm issued a new and extensive catalog to advertise its products, published about 1947. An analysis of the products presented in this catalog provides an indication of the firm's current equipment line. It contains virtually all the staple products from previous years. The following table shows the amount of space devoted to each of the firm's products in the catalog. This table makes it clear that dairy equipment constituted the firm's most extensive line of agricultural products.

Table III-1

Post-World War II Louden Products

Type of Equipment	Number of Pages
Dairy Barn Equipment	56
Horse Equipment	8
Hog Equipment	5
Feed and Litter Carriers	21
Ventilation	11
Door Tracks	13
Hay Unloading Tools	29

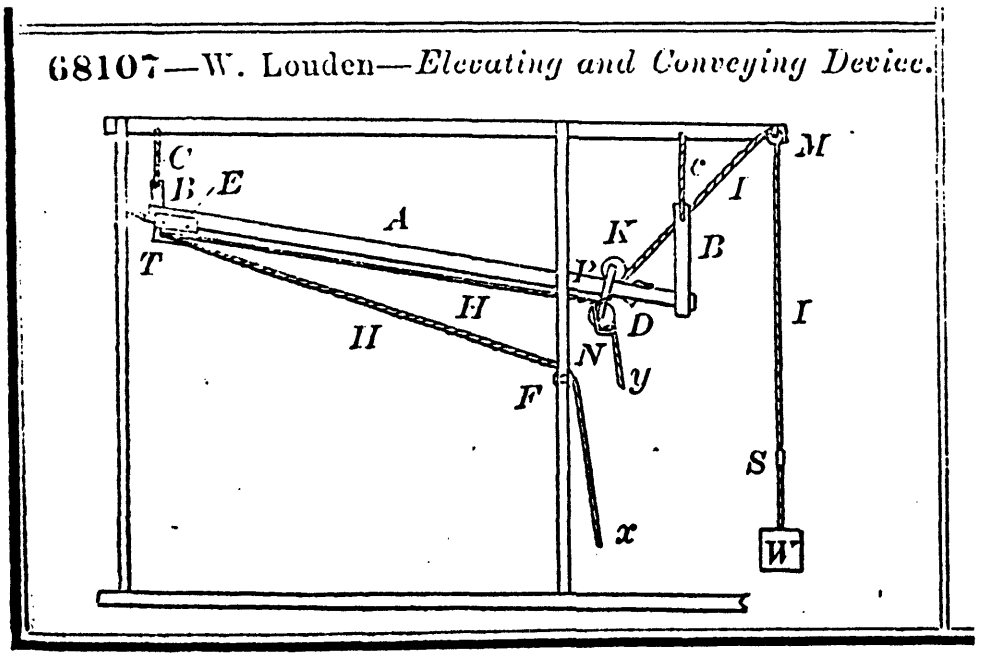
Source: *Louden Catalog 79.*

The dairy barn equipment included milking stalls and stanchions; cow, calf, and bull pens; and water bowls and salt cups. Horse equipment included stalls, mangers, and fittings. The catalog featured a photograph of horse-back pleasure riding, an indication of the decline in horse power for farm work.

Within about five years of publication of this catalog, the Louden Machinery Company was sold to outside interests. The new owners ceased production of the firm's farm equipment. These two facts point to the stagnant market for farm equipment in the post-war world.

WILLIAM LOUDEN'S FIRST PATENT

1867



Source: *U. S. Patent Office Records*, Volume 4, 1868 [for year 1867], p. 972.

TRIBUTE TO WILLIAM LOUDEN

PUBLISHED SOON AFTER HIS DEATH

The PIONEER » » » » » » » Of Better Barns

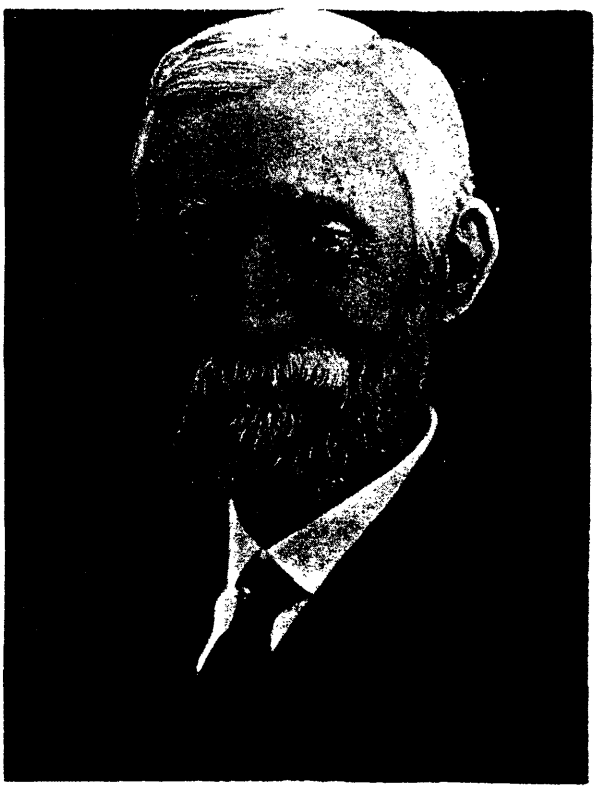
Away back at the close of the Civil war, near the little town of Fairfield, Iowa, there was born in the mind of a young man an idea that was destined to have a tremendous effect on barn construction and the handling and housing of livestock.

The young man was William Louden, founder of this Company, and the idea was the hay carrier, now found in practically every hay mow. This invention made it practical to build barns with enormous mow capacity—sufficient for storing a season's supply of hay and straw.

With that idea William Louden began a long career as inventor and manufacturer of labor-saving barn equipment. Other inventions followed, all for the barn. Letters came in increasing numbers from farmer customers, asking advice on barn building problems arising from use of his new products.

He answered them all, as best he could. But no one could see better than he the need of farmers for specialized barn planning help.

When, in 1907, he established the Louden Barn Plan Department, he fulfilled a long felt desire. Because of the great influence of this original service in improving our farm livestock structures, William Louden will long be remembered as the far seeing pioneer of better barns.



William Louden
1841 — 1931

Source: *Barn Plan Book*, Louden Machinery Company, circa 1932.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

EARLY LOUDEN ADVERTISEMENT

1886

Are the result of twenty years experience, and are WARRANTED superior to all others.

DON'T FAIL

To send for illustrated catalogue, giving full description of our iron rod and wood track one way, and reversible *Self Returning* carriers, our Triple Harpoon and Light Grapple Forks, our Single Pole Stacker and Hoisting Single Tree, our New Hay Slings and Sling Holders, and all our late and valuable improvements for 1886.

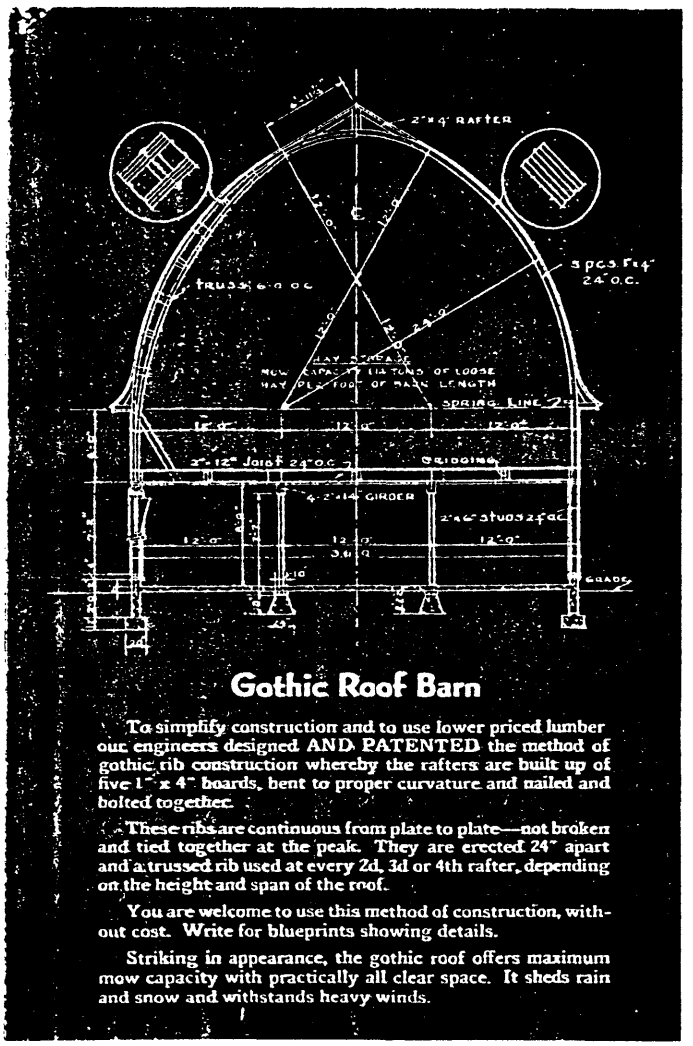
Address or call on

LOUDEN MACHINERY CO.,

Cor. 5th West and 2d South Sts., FAIRFIELD, IOWA.

Source: Fairfield City Directory, 1886, p. 12.

NAIL AND BOLT RAFTER GOTHIC ROOF BARN



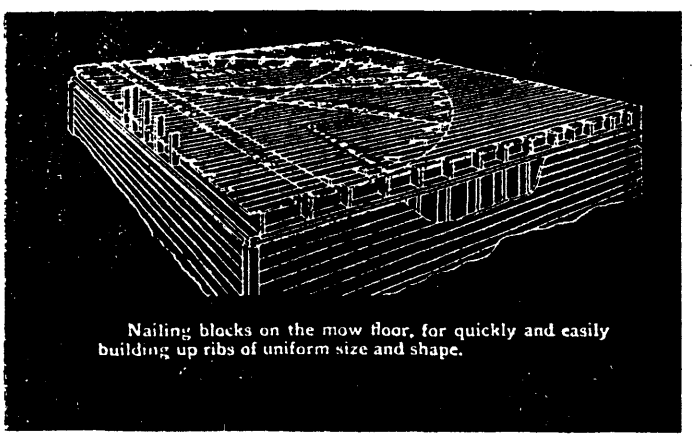
Gothic Roof Barn

To simplify construction and to use lower priced lumber our engineers designed AND PATENTED the method of gothic rib construction whereby the rafters are built up of five 1" x 4" boards, bent to proper curvature and nailed and bolted together.

These ribs are continuous from plate to plate—not broken and tied together at the peak. They are erected 24" apart and a trussed rib used at every 2d, 3d or 4th rafter, depending on the height and span of the roof.

You are welcome to use this method of construction, without cost. Write for blueprints showing details.

Striking in appearance, the gothic roof offers maximum mow capacity with practically all clear space. It sheds rain and snow and withstands heavy winds.



Nailing blocks on the mow floor, for quickly and easily building up ribs of uniform size and shape.

Source: *Louden Barn Plan Book.*

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Section number E Page 57

CFN-259-1116

The Louden Machinery Company, Fairfield, Iowa

III. Patents and Products

ADVERTISEMENT FOR LOUDEN "FIRSTS"

FIRST in 1867 . . . FIRST TODAY

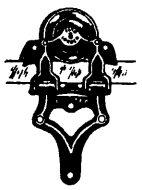
Original Hay Carrier

Beginning of a great industry that gave farmers greater production and profits . . . a happier life.

"Senior" ForkCar

Today, as in 1867, Louden Hay Unloading Tools are still "first". See catalog pages 57 to 66.

FIRST in 1895 . . . FIRST TODAY



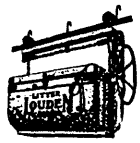
Flexible Door Hanger

Door swung out when stock crowded against it. Forerunner of practically every hanger used today.

Modern Louden Hangers

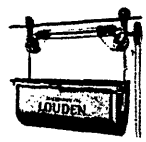
Advanced design, fine expert craftsmanship, have made Louden Hangers today the choice of millions. See pages 68 to 72.

FIRST in 1897 . . . FIRST TODAY



Litter and Feed Carriers

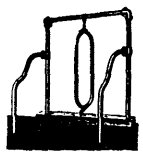
Eliminated wheelbarrow drudgery. Feed carriers saved steps, adding up to many miles every year. Both saved time.



"Emancipator" LitterCar

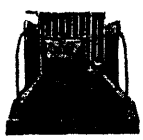
Hundreds of improvements over the original. Louden Litter and Feed Carriers are the most advanced on the market. See pages 37 to 39.

FIRST in 1907 . . . FIRST TODAY



Original Louden Stall

First practical all-steel cow stall. Smooth . . . sanitary . . . easy to clean. Made possible steel stalls for every farmer.



"Testall"

The "Testall" and all Louden stalls are the latest in modern design. Cheapest and best cow insurance available. See pages 14 to 20.

FIRST in 1907 . . . FIRST TODAY

"Bolt-on-Top" Coupling

Permitted connecting stall uprights without threading. Made possible first low-priced, steel stall. A great development.

Interlocking Coupling

Completely streamlined. Absolute sanitation. Greater strength. Only 2 bolts to tighten instead of 3. See page 14.

FIRST in 1912 . . . FIRST TODAY

Automatic Water Bowl

First device to provide a cow with water at the right time. Greatly increased the flow of milk.

"MasterMade" Bowl

Louden water bowls are world famous. Scientifically designed, sanitary. See pages 34 and 35.

Source: *Louden Better Barns Book Catalog No. 87*, 1954, pp. 11-12.

IV. ARCHITECTURAL DEPARTMENT

INTRODUCTION

The Architectural Department of the Louden Machinery Company operated over a period of about forty years from circa 1906 to circa 1947. Its primary job was to prepare designs for farm buildings laid out with Louden equipment. The plans for these buildings employed standard construction techniques current at the time. Although company advertising intimated that these plans were unique, in actuality they resembled many of their competitors' designs. Because the Louden Machinery Company offered this planning service for free, however, the firm was able to disseminate literature about its product lines to a wide audience.

The department maintained a number of draftsmen to prepare these plans. At any one time, this staff might number six or seven full-time employees. The designs they prepared included a wide variety of agricultural property types, including dairy barns, horse stables, hog houses, chicken houses, farmstead sites, and other agricultural properties. A glance at any of the firm's barn plans catalogs issued over the years quickly confirms not only this variety of property types, but also the numerous design variations within each type.

The Louden Machinery Company claimed that "the company established the first free barn planning service in 1906 to aid farmers in arranging their barns to increase the production of their animals and save labor" (*National Cyclopaedia*:210-211). From this description, it is clear that the free barn planning service performed a number of different functions. First, it served as an effective form of advertising for the firm. Farmers are of an independent mind and cautious with money. The appeal of something free is high in this market. The service would provide designs to retro-fit older barns with new Louden equipment. Second, the service would provide designs for new barns to meet Louden standards for efficiency, including plans for new Louden equipment installations to achieve that end. Finally, Louden's barn planning service also helped disseminate information about new technologies in the field of farm buildings. Many farmers purchased the company's Louden Barn Plans catalogs at their nominal price of $1.00. Regardless whether they ordered Louden equipment or bought Louden barn plans, the information contained in these catalogs helped spread professional information about good farming practices.

PLANNING SERVICE

From the onset, it should be remembered that the Louden Machinery Company was primarily a manufacturer of equipment. There should be no misapprehension about the company being innovative in the field of structural engineering for farm buildings. When Louden recommended poured concrete for dairy stalls in the 1910s, for example, the firm was applying a widely employed, albeit up-to-date, construction technology. During the 1930s, the barn planning service sometimes specified laminated

wood for barn rafters. Here again, this up-to-date technology was an innovation which Louden helped popularize rather than create.

The Louden Machinery Company published a number of Louden barn plans catalogs. Actual catalogs for the years 1915, 1919, 1920, and 1921 were available for this survey. Other barn plans catalogs might also exist, although they were not identified during this project. These catalogs provide the best documentation of the company's barn planning service available to date. They contain scores of contemporary photographs of barns across the nation that Louden designed, scores of elevation and floor plan drawings of Louden designed barns, and scores of personal testimonials from individual farmers who had purchased Louden equipment for their family farms. While the catalogs frequently featured large-scale farming operations, it is not presently known whether these customers constituted the largest source for the service's custom designs. In fact, many individual farmers purchased Louden equipment and retro-fitted older barns with it according to "cookie cutter" plans prepared in advance by the Architectural Department and sent out on request. If surviving examples of Louden-equipped barns in Jefferson and surrounding counties in Iowa are any indication, few individual farmers built new barns from designs prepared by the Louden barn service but many retro-fitted old barns with new Louden equipment.

More is presently known about Louden's corporate and institutional barn designs because a glance at any of the firm's catalogs quickly shows that these were the farming operations they preferred to illustrate. Louden's client list included the Hershey Chocolate Company, the New Jersey State Home for Feeble Minded Women, and Homewood Farms, a dairy operation in Moline, Illinois, owned by the president of Deere and Company. Roberta Louden McCoid has described an even more colorful customer. In the 1920s, a White Russian émigré living in France, whose marriage to an American railroad heiress had enabled him to establish a dairy farm equipped with Louden equipment near Bordeaux, sought to fulfill one of his personal dreams: to encourage the French to drink milk. (Roberta Louden McCoid personal communication)

The years immediately following World War I were the heyday of the Louden Architectural Department. This can be gauged by the number of specialty publications issued by the firm during those years and listed in the following table:

Table IV-1

Selected Louden Publications

Title	Year of Publication
Louden Catalog No. 48	1918
Louden Catalog No. 49	1919
Louden Barn Plans	1919
Louden Catalog No. 50	1920
Dealers' Helps	1920
Louden Barn Plans	1920
Louden Barn Plans	1921
Louden Catalog No. 51	1922
Louden Hog House Book	1922

The bibliographical section of this report also lists other publications of a minor nature.

The Architectural Department of the Louden Machinery Company continued operations into the 1940s. Although this service survived World War II, it appears that its activities were considerably curtailed. It is unclear if the Architectural Department survived into the 1950s, but if it did, these activities ceased when Mechanical Handling Systems, Inc., acquired the Louden Machinery Company in 1953 and family ownership of the firm came to an end.

Although the Louden Machinery Company frequently advertised the services of its Architectural Department as a "barn planning service," the scope of its operations actually embraced a full range of farm planning. These services included barn planning, barn remodeling, horse stables, hog houses, chicken houses, and landscape architecture site plans.

The barn planning service of the Louden Machinery Company was established in 1906 (*National Cyclopaedia*:210-211), or as described below, in 1907:

> After the turn of the century, requests began flowing in about proper farm building construction. The volume of these requests became so heavy that in 1907 the first free planning service for farmers was established by William Louden. (Louden 1942:157)

From the onset the Louden Machinery Company was primarily a manufacturer of equipment. Metal fabrications were its specialty. When Louden inventions required wood fabrications, such as the patented "Louden's Window Ventilator," they were subcontracted out to other firms to manufacture.

The barn planning service operated in similar fashion. Louden prepared designs and provided specifications for these facilities. The firm did not supply the building materials to construct them. As a result, customers implemented Louden barn designs in whatever way they thought best from building materials readily available, usually from local suppliers.

In designing these barns, Louden employed up-to-date building techniques. For example, in the 1910s, the firm championed poured concrete for stalls in dairy barns. In the 1940s, the firm sometimes specified laminated wood for barn rafters. It should not be thought, however, that Louden was exclusive in designing this new technology. For example, Gordon-Van Tine had popularized commercial production of laminated rafters in the 1920s (Soike 1995:161-162). More research is required before the contributions of these and other competing firms can be identified and analyzed.

1915 Catalog

Copyrighted in 1915, the *Louden Barn Plans* catalog remains one of the most comprehensive publication of designs for barns offered by the Architectural Department of the Louden Machinery Company. Although this catalog contained elevations and floor plans for 60 different types of barns--including dairy barns, combination barns for cows and horses, and round barns--it also included designs for horse barns, "hog barns," and miscellaneous structures, such as hay sheds, a chicken house, and a creamery. Plans for most of these property types could be ordered in different sizes. For example, plans for dairy barns were available in 19 different designs to accommodate any number from five to 80 cows.

Each drawing of these different structures prominently featured Louden equipment. For example, Design 2065B For 29 Horses, clearly shows a Louden barn door track servicing the double doors to the barn's interior driveway, as well as another track serving its side door (Louden 1915:93).

The 1915 catalog introduced the hay shed, a new type of structure, to the public. This structure featured inexpensive construction and was designed for southern farms where heavy duty structures were not required.

Through these plans, we can analyze what constituted a well-designed barn for Louden engineers. The 1915 catalog, for example, outlined the following qualities, which they believed contributed to an economical and functional barn. They included:

Economical construction
Lighting
Heating
Ventilating and Drainage
Disposal of manure

Other sanitary and hygienic problems
Protection against the weather

(Louden 1915:3)

From the various designs offered by this barn plan catalog, it is clear that dairy barns formed the largest single type of barn offered by the company.

Within this context, it should also be noted that the Louden Machinery Company manufactured a full line of equipment for the dairy farmer. (This subject is discussed in Chapter III of this report.)

Other manufacturing companies in the Midwest also supplied a line of dairy farm equipment. These firms included the James Manufacturing Company of Fort Atkinson, Wisconsin, and the Clay Equipment Corporation of Cedar Falls, Iowa. (Nash 1995) Each of these firms manufactured similar dairy equipment and comparisons between these companies and their products cannot be made until more research on them is completed.

Round Barns

The Louden Architectural Department offered plans for round barns. The 1915 catalog, for example, featured two different designs--one for 32 cows and one for 12 cows and five horses (Louden 1915:38, 76). The department held the round barn in reserved esteem, however, partly because of costs associated with equipping such a structure with Louden equipment. The design for the 32 cow round barn, for example:

> has the same capacity for live stock, feed and hay storage as the rectangular barn shown on page 39. The round barn covers a ground area of 2,827 square feet which is 651 sq. ft. more than required for the rectangular barn of same capacity.
>
> This round barn also requires more feet of track for overhead carriers and all equipment costs more than in rectangular barns because it must be made to special curves. (*Ibid.*:38)

Although the inclusion of these two round barn designs indicates the Louden Machinery Company's attempt to cover that market, this quote demonstrates the company's lack of enthusiasm for round barns.

By 1920, however, Louden devoted more attention to the needs of equipping round barns. Although operating a hay carrier in a round barn presented more difficulties than in rectangular ones, the company advertised a method to overcome these problems:

Other sanitary and hygienic problems
Protection against the weather

(Louden 1915:3)

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Although the inclusion of these two round barn designs indicates the Louden Machinery Company's attempt to reach many markets, the pointed contrast quoted above also shows the company's small esteem for this type of farm structure.

By 1920, however, Louden devoted more attention to the needs of equipping round barns. Although operating a hay carrier in a round barn presented more difficulties than in rectangular ones, the company advertised a method to overcome these problems:

> Within recent years there has been much discussion regarding the advantages and disadvantages of round barns. It is not our purpose in this catalog to enter into a discussion of the merits of such buildings. We know that in certain localities round barns have come into favor and one of the problems in connection with these buildings has been the hay unloading outfit. Operating a hay carrier on a straight-away track and operating a hay carrier on a circle track are two entirely different propositions. It was our business to provide successful tools for unloading hay on the circle track. We have perfected hay unloading equipment to meet every condition in the round barn and with which hay may be handled and stored as quickly, as cheaply, as easily, and as safely as in rectangular barns. (Louden 1920:25)

Such considerations notwithstanding, the Louden Machinery Company equipped round barns. One local example was completed in 1923. A contemporary newspaper report noted:

> Round barn is farm landmark. Just recently completed three miles north of Douds. Frank Cramblit & Son. Louden equipment throughout... (*Ledger* 1923:1)

This round barn remains extant today and is located near Libertyville, Iowa, in Jefferson County.

Dairy Barns

The Architectural Department provided plans for a number of dairy requirements. Based on the size of the herd and the number of cow stalls they would require, these plans offered different kinds of interior arrangements and were classified by different letters of the alphabet. Although Louden did not recommend combination barns for dairy purposes, the company provided two types of combination barns if desired.

Louden's Type "T" barn provided a combination horse and dairy barn with an interior floor plan for the stock to face in. Louden's Type "S" barn provided a combination horse and dairy barn with an interior floor plan for the stock to face out. Louden's Type "U" dairy barn provided strictly for dairy purposes with livestock facing in. Type "V" dairy barn provided strictly for dairy purposes with livestock facing out. The Louden Machinery Company believed that the facing-out and the facing-in positions each offered benefits. For that reason, the firm recommended neither one nor the other and offered special ventilation systems for each design.

The plans for the combination barns, if desired, emphasized the separation of different animals into different zones. For example, horse stalls might be located at one end of the barn and separated from cow stalls by a feed room. The cow stalls, located in the middle of the barn, were then separated from

bulls, calves, and nursing cows who had their stalls at the far end. (Louden 1919:34) This layout could be designed for animals to face either in or out.

Louden's standard dairy barns--the Type "U" and the Type "V"--provided housing exclusively for cattle. Here again, the dry stock was separated from the milking stock. Cow stalls were located on one end of the barn, with pens for bulls, calves and nursing cows at the other. These two animal zones were separated by a feed room. (*Ibid.*:39)

Barn Remodeling

Some of the Architectural Department's work involved remodeling old barns to new purposes. The Louden Machinery Company thoroughly approved of this idea. As dairy farming increased in importance for the family farm, Louden encouraged these farmers to remodel barns to accommodate new ideas and equipment to increase the dairy herd's efficiency. For example, in expanding a dairy herd, one barn plan catalog stated:

> On most farms, the old barn is remodeled for the dry stock [bulls, calves, and heifers] when a new modern dairy barn is built; this is good economical practice. (*Ibid.*:35)

It is presently impossible to gauge the amount of work the Architectural Department performed for barn remodeling. Too little information is known about this subject. It stands to reason, however, that retro-fitting old barns with new equipment usually took place on family farms rather than large institutional or corporate farms, which could afford custom designs, new buildings, and new equipment. The Architectural Department probably provided pre-prepared plans for most family farm remodeling projects.

Excluded Designs

The Architectural Department of the Louden Machinery Company imposed limitations upon the scope of its architectural planning. For example, the firm excluded silos from its service. In 1919, the firm stated that:

> The working plans we furnish for barns show the size and location we would recommend for the silos, but do not include plans and specifications for their construction. (*Ibid.*:33)

The reason for this exclusion stemmed from the fact that this market had quickly become specialized and was well served by other providers. The 1919 *Louden Barns Plan* continued:

> We will not undertake to discuss as to how a silo should be built, because there are such a great number of silos on the market made by experienced manufacturers along efficient lines that it would not pay any farmer to build a silo after his own ideas. . . The manufacturers and builders of these various silos furnish complete information and directions for the erection of their silos. (*Ibid.*:33)

Aesthetics

As with other Louden designs, aesthetics played an important role. For example, in the 1919 *Louden Barns Plan* catalog the firm noted that:

> for a finish to a modern barn, nothing will equal in appearance one of the double or Gambrel roofs when well built and rightly proportioned. (*Ibid.*:32)
>
> A beautiful farmstead need in no way conflict with the economical operation of the farm, but on the other hand, the convenient buildings would very much reduce the labor problems. (*Ibid.*:48)

Louden's concern for visual beauty should not come as a surprise. Any reader of the company's advertising literature is familiar with the firm's insistence on it. The fact that the company had an architectural rather than an engineering department for barn design is further evidence of its concern for aesthetics.

Barn Designs from the 1930s and 1940s

During the late 1920s and 1930s, the Architectural Department of the Louden Machinery Company introduced new improvements for the construction of bent-rafter Gothic barns. As Lowell J. Soike has pointed out, the firm patented several inventions to strengthen the curved rafter design. (Soike 1995:162) Although innovative in their design, this type of rafter remained expensive. To lessen this expense, the firm patented a method to build up rafters from five 1 x 4 inch boards, bent to proper curvature on the ground, nailed and bolted together, and raised into place. (See illustration at the end of Chapter III.) The Fred and Vera Fulton Barn in Jefferson County, Iowa, employed this method.

Farm output during the war had been at full production to provide critically needed foodstuffs for the international conflict. Farmers could not obtain new farm equipment because of rationing and

manufacturing restrictions. After the war ended, it seemed logical to assume that built-up needs for farm equipment would stimulate markets for new products. In this belief, the Louden Machinery Company retooled its plant from wartime to peacetime production.

Partly to celebrate its seventy-fifth anniversary, the Louden Machinery Company issued a new publication in 1942, *Louden Farm Building Plans and Equipment Catalog 75*. This publication advertised a free *Louden Barn Plan Book*. This publication featured on its cover a barn under construction with laminated wood rafters. (Louden 1942:157) Although this appealing cover continued the Louden tradition of outstanding commercial design--the graphic emphasizes the beauty of a Gothic-roof barn--not many barns were constructed during World War II. In this catalog, Louden devoted only one page at the end of its 160 pages to its "Barn Plan Department." This low profile suggests a decline in the service. The styling of what the firm formerly had called its "Architectural Department" is another suggestion of decline.

The Architectural Department of the Louden Machinery Company had survived the Great Depression and World War II, albeit it on a limited basis. Following the war, the firm continued to issue catalogs. The Fred and Vera Luedtke Barn was one of the few structures in Jefferson County constructed from Louden plans during this era this time. (Gene Luedtke personal communication) The Fulton Barn, mentioned above, was another. Whatever its other activities in the late 1940s and early 1950s, the Architectural Department ceased operations altogether when Mechanical Handling Systems, Inc., acquired the Louden Machinery Company in 1953 and family ownership of the firm came to an end.

LANDSCAPE ARCHITECTURE

In addition to "expert dairy architects," the Architectural Department also advertised that it employed a landscape architect on staff. This individual "can so arrange the farm buildings of any large estate that they will harmonize with their surroundings, and be in harmony with one another" (Louden 1915:3). In addition to such site planning, Louden also offered services for site selection. For example, the same catalog stated:

> We can furnish a man of acknowledged ability to visit you and consult with you upon any subject relating to the betterment of the farm, whether your desire is to increase the efficiency of an old farm and its buildings, or to establish a newly acquired estate upon a modern basis.
>
> The choice of a property is often difficult for the inexperienced. An expert opinion on the worth and adaptability of land is a part of our service. The fees for this special service are very reasonable. (*Ibid.*:5)

The firm repeatedly emphasized the importance of comprehensive site planning for the farmstead and the staff landscape architect was available for this consultation.

> There are so many points that must be taken into careful consideration in the proper location and grouping of permanent improvements on the farm that the cost of the service of our specialists will be money well spent on the average farm and for a small farm an opinion as to the location of your buildings may be of great help to you. Where no special trip to your farm or other expense is involved we make no charge for assistance along this line. (Louden 1919:48)

While it might be assumed that this service was more usually provided to the large, institutional farm operations, Louden could effectively argue that this experience also enabled the firm to perceive quickly the needs of the family farm. The firm emphasized the fact that the experience of its landscape architecture staff embraced many geographic locations in the United States and overseas and that this experience provided the staff with a broad understanding of many different environments and local conditions.

> The farmstead specialists in our department of Agricultural Architecture are perfectly equipped and capable of furnishing you expert advisory service and practical plans for the general arrangement of your farmstead. Having made this work a life study and having traveled in all parts of the United States makes them conversant with climatic and soil conditions. *(Ibid.)*

The landscape architectural designs of the Louden Machinery Company placed special emphasis on the direction of prevailing winds, the location of public highways in relation to the farmstead, and recommended a central vehicular corridor among the farm buildings. (*Ibid.*:48)

Generalizations about Louden's landscape architectural designs should be restricted until site plans prepared by the Architectural Department and farmsteads implemented according to them are found and analyzed. During the present survey, the only site plans identified as Louden designs were those published in company catalogs.

STAFF OF THE ARCHITECTURAL DEPARTMENT

At any one time during the 1920s, the Louden Machinery Company employed five or six full-time employees in the Architectural Department. The following thumbnail sketches of staff personnel bring together the fragmentary information currently available about their lives and contributions.

Edward C. Peterke

Edward Carl. Peterke (1879-1940) was a member of the Architectural Department of the Louden Machinery Company. He was born on May 22, 1879, at Two Rivers, Wisconsin. Peterke relocated to Fairfield sometime between 1904, when he is not listed in the city directory, and 1909 when he is shown living at 306 South Main Street with Helen C. Peterke, his wife. (Fairfield city directory 1909:79) Peterke's obituary from 1940 states he had lived in Fairfield for 34 years. (*Fairfield Daily Ledger*) It is reasonable to assume that Peterke relocated to Fairfield because of employment with the Louden Machinery Company. The 1909 directory lists his occupation as "draughtsman L Mach Co." (Ibid.)

Peterke was a key employee in the Architectural Department of the Louden Machinery Company. Employed for more than three decades by the firm, Peterke served as head of the specifications department. (*Ibid.*) Although he was never registered by the State of Iowa, this was not uncommon among architects of Peterke's generation. Peterke also participated to some extent in the research and development aspect of the firm. For example, in 1922 he received from the U.S. Patent Office the patent rights for a structural coupling mechanism. Peterke assigned these rights to the Louden Machinery Company. (U.S. Patent Records 1923)

To date, the First Church of Christ Scientist is the only ecclesiastical example of his designs documented in Fairfield. That church was built in 1926. Peterke was an active member of that religious organization. Other examples of Peterke's work have not been identified.

Guy A. Carpenter

Guy A. Carpenter is well remembered in Fairfield as a member of the Architectural Department's staff. He was also active in the partnership of Carpenter, Eckland, & Company along with Henry C. Eckland. (Thomas A. Louden personal communication) When the First Methodist Episcopal Church of Fairfield embarked on construction of a new church building in the 1920s, Carpenter and Eckland were selected to prepare its design. A watercolor rendering of the building's facade survives and bears the following title:

Sketch Design
First M. E. Church Edifice
Fairfield Iowa
Guy A. Carpenter & Henry C. Eckland & Co.
Architects.

Source: Anonymous

Conceived under the influence of Tudor Revival architecture, the building was also notable for its engineering design. Carpenter designed a Louden ventilating system to cool the sanctuary. Air registers were installed at the front of the sanctuary with a large ventilator installed on the roof. Unfortunately, this barn exhaust system did not perform as expected. Some criticized the loud noise of its fan, while others believed the system could have worked if proper air intakes had been more closely controlled by closing doors and windows.

Carpenter's partner for the First Methodist commission, Henry C. Eckland, was based in several states over the years, including Illinois and Minnesota, and worked in partnership with others. Born in Sweden, Eckland also designed the First Methodist Episcopal Church and the high school in Washington, Iowa, and North Hill School in Burlington, Iowa, among other Midwestern assignments. (*Architects in Iowa*)

Guy Carpenter also designed the O. F. and Lulu Fryer House at 902 South Main Street in Fairfield. Fryer was president of the Iowa State Savings Bank in Fairfield and a leader of the First Methodist Episcopal Church. Satisfied with Carpenter's design for that building, Fryer employed him to design a new house for him and his family. This property on South Main was constructed in the 1920s, and featured a porte cochere, garage, and sweeping concrete driveway with curbs, all of which remain extant today.

C. Eugene Fleming

Charles Eugene Fleming worked as an architect for the Architectural Department of the Louden Machinery Company in the 1920s and the 1930s. Although Fleming was never registered by the State of Iowa, this was not uncommon among architects of his generation.

A series of Fleming designs have been identified in Fairfield. They include the following:

Table IV-2

Eugene Fleming Architectural Designs in Fairfield

Name of Property	Address	Notes
Gobble House	704 S. Main St.	Built 1926, Colonial Revival
Louden House	905 E. Adams Ave.	Built 1925, Colonial Revival
Fleming House	505 E. Burlington Ave.	Tudor Revival
Fleming House	53 Forest Dr.	Tudor Revival

House	51 Forest Dr.	Tudor Revival
House	55 Forest Dr.	Tudor Revival
House	54 N. Park	Tudor Revival
Court Hotel	N. Main St.	Remodeling job, nonextant

The identification of the latter six resources occurred near the end of this National Register project. (Lee T. Gobble informant interview) They could not be surveyed intensively for this reason. Such a survey is recommended for future registration activities. As a collection, these resources call attention to the considerable architectural skills of Fleming. They also provide good illustrations of how the presence of the Louden Machinery Company and its employees influenced the architectural history of Fairfield.

Fleming was the son of Jesse E. Fleming, whose family came from Stockport, Van Buren County, Iowa. "Gene," as he was known grew up in Fairfield. Jesse was a building contractor working with a partner under the name Knowles and Fleming. This partnership constructed quite a few buildings in Fairfield. (Thomas A. Louden personal communication) Gene probably helped them during the summers.

Gene Fleming was one of many people employed in the Architectural Department of the Louden Machinery Company. He also practiced independently, as did Guy A. Carpenter and Edward C. Peterke, two other employees of that department. Fleming was listed in the 1922 Fairfield city directory as an architect living at his parents home at 1206 South Main Street.

Fleming designed the R. B. and Mary Vera Atchison Gobble House at 704 South Main Street. Lee T. Gobble, their son, described Fleming's work with his parents in this way:

> He would come at night and sit around the dining room table. They started out with a Colonial plan and discussed the arrangement and the sizes of rooms and closets. Mother's previous home had had a central hall from front door to the kitchen in the back, and she wanted to avoid that. Night after night he came. The first house was to have been brick, but it cost too much money, so the built house was frame. It cost $11,000, of which $2,000 was for the foundation. It had back-to-back fireplaces, etc. My mother had to have them. Bruce [R. B. Gobble] had wanted to be a landscape architect. Ours was one of the few houses without a flat lawn. It was next door to my grandparents. Their barn still had a manger in it, so I was able to keep my pony. Our house was built in 1926. Jess, Gene's father, was the contractor. The Flemings and the Knowles were families, who had moved to Fairfield from Stockport. In Fairfield, the posh times were the 1920s

> before the crash, that is when people were able to build, with no income tax, so many of the best houses were built. (Lee T. Gobble personal communication)

Another example of Fleming's work is the R. R. and Antoinette Louden House at 905 East Adams. This brick, single-family dwelling in a Neo-Colonial style was constructed in 1925. (See National Register nomination for that property in this MPS.)

Following employment at Louden, Gene Fleming left Fairfield. Although it is assumed he continued his career elsewhere, no further information was discovered about him locally.

Others

Few blueprints and other architectural drawings prepared by the Architectural Department survive. Those that do rarely include names of the architects responsible for the designs. At best, initials are sometimes shown. The anonymity of the Architectural Department's staff poses difficult research problems. Specific information about these architects may now be irretrievable.

One additional resource, the Whitney Monument Works Building, located at 601 West Depot in Fairfield, is known to have been built by former Louden employees. It shows Louden influence in its ventilating system. (Thomas A. Louden personal communication)

PROFESSIONAL EDUCATION

During the second decade of the Twentieth Century, the Louden Machinery Company sponsored a Barn Planning Contest, administered by the Manitoba Agricultural College at Winnipeg, Canada. Students at this government-sponsored school were eligible for cash prizes given by the Louden Machinery Company for the best designs. At the end of the competition, a banquet, also underwritten by the company, was given. (Louden 1915:23) It was not learned in this survey why the Louden firm supported a program so far removed from its plant in Ontario, Canada.

SAMPLE SITE PLAN

DESIGNED BY THE LOUDEN ARCHITECTURAL DEPARTMENT

ESTABLISHED 1867
LOUDEN MACHINERY COMPANY
FAIRFIELD, IOWA

Designing the Farmstead

Every farm owner should have definite plans developed in advance for all future improvements and should hava some idea of the cost of each improvement long before he is ready to make it so that he will be fully prepared to make improvements intelligently as the profits of the farm will permit.

The increased value of the property by having the buildings well planned and their surroundings beautified with material which can in most cases be had for the gathering, is at once apparent.

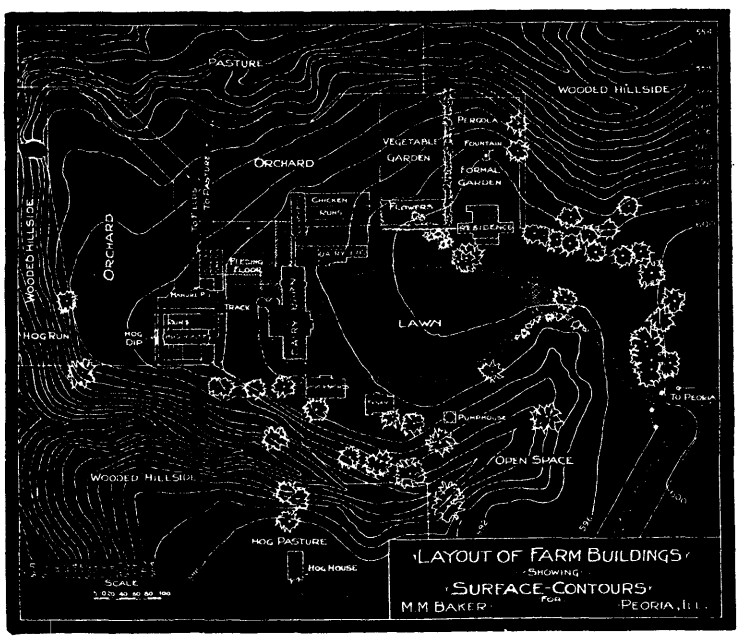
The buildings should be placed in their relation to each other and also with regards to a fine outlook and of a pleasing effect in outline. The location of trees and plants should be studied in connection with the buildings so the appearance will be that of a place where it would be a pleasure to live and encouraging for the young folks to stay on the farm to later complete the execution of the plans previously made by their parents.

Good air, good water, good drainage, sunshine, shelter from cold winter winds, away from the dust of the highway and the odors of the stock are some of the important requirements of the farm house.

There are so many points that must be taken into careful consideration in the proper location and grouping of permanent improvements on the farm that the cost of the service of our specialists will be money well spent on the average farm and for a small farm an opinion as to the location of your buildings may be of great help to you. Where no special trip to your farm or other expense is involved we make no charge for assistance along this line.

Some of the points that should be considered are climatic conditions, existing improvements, convenience to fields and highway, direction of prevailing winds and sunshine, kind of farming to be practiced and a general pleasing effect.

The farmstead specialists in our department of Agricultural-Architecture are perfectly equipped and capable of furnishing you expert advisory service and practical plans for the general arrangement of your farmstead. Having made this work a life study and having traveled in all parts of the United States makes them conversant with climatic and soil conditions.



ARCHITECTURAL DEPARTMENT

Page Forty-eight

Source: *Louden Machinery Company General Catalog*, 1919.

VARIETY OF BARN DESIGNS

OFFERED BY THE LOUDEN ARCHITECTURAL DEPARTMENT

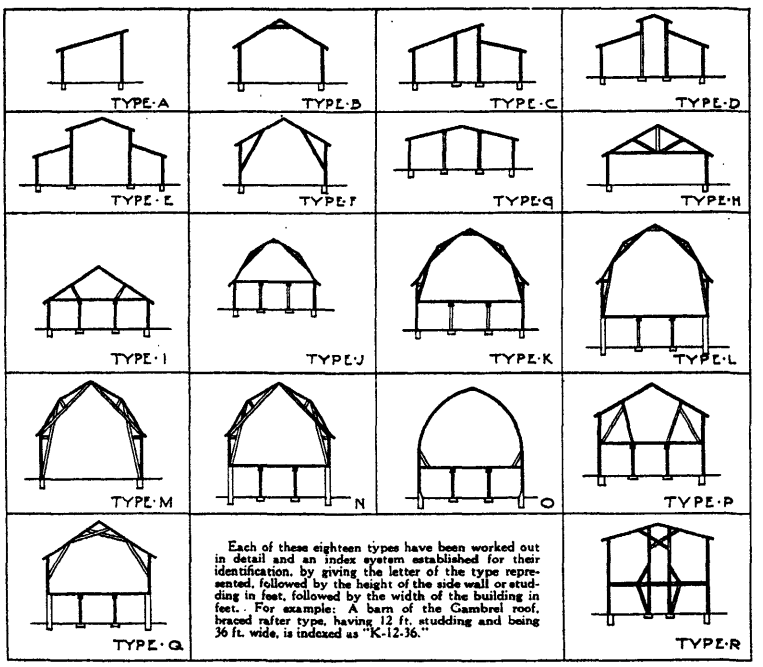
ESTABLISHED 1867
LOUDEN MACHINERY COMPANY
FAIRFIELD, IOWA

Standard Barn Construction

The following designs of barn construction have been carefully selected and we consider them the standards of barn construction which most efficiently lend themselves to the average barn requirements.

From a large number of designs, representing almost every conceivable type of building construction, we have selected the outlines representing eighteen kinds of construction which can be applied efficiently to meet nearly all the needs of the farmers in various climates.

For convenience these eighteen outlines or types of construction have been lettered in alphabetical order from "A" to "R" inclusive, as illustrated below.



Each of these eighteen types have been worked out in detail and an index system established for their identification, by giving the letter of the type represented, followed by the height of the side wall or studding in feet, followed by the width of the building in feet. For example: A barn of the Gambrel roof, braced rafter type, having 12 ft. studding and being 36 ft. wide, is indexed as "K-12-36."

These types of construction are particularly well adapted for various farm buildings as follows:—For general purpose or dairy barns, use type J, K, L, N, O, P or Q. For milking barns without hay mow, use type D, G, H or I. For horse barns, use type J, K, O or P. For hog houses, use type A, B, C, D, G or I. For hay sheds, use type B, E, F or M. For implement sheds, use type A, B, G, H or I. For sheep barn, use type B, C, D, E, G, H, I or J. For chicken houses, use type A, B, C, D or G. For cattle feeding barns, use type E, G, K, O or R. (For type R also see page 102.) For garage, use type A, B or H.

Page Eleven

Source: *Louden Machinery Company General Catalog*, 1919.

United States Department of the Interior
National Park Service

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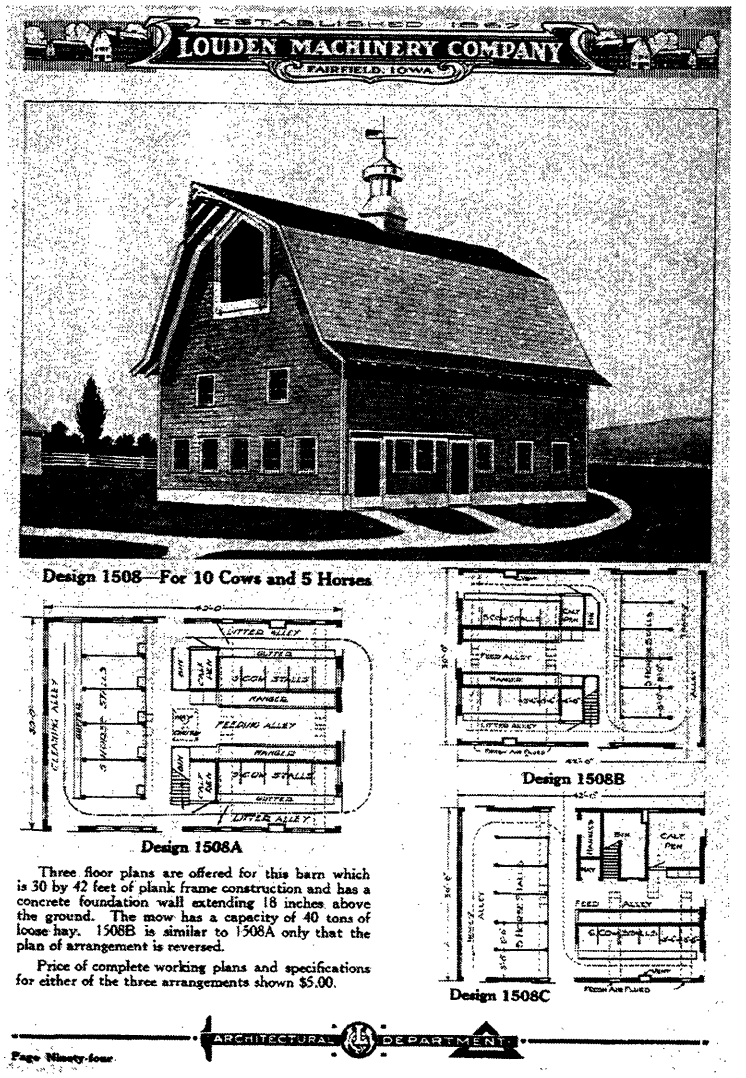
CFN-259-1116

The Louden Machinery Company, Fairfield, Iowa

IV. Architectural Department

COMBINATION BARN

DESIGNED BY THE LOUDEN ARCHITECTURAL DEPARTMENT



Source: *Louden Machinery Company General Catalog*, 1919.

EXAMPLES OF CUSTOM DESIGNS

PREPARED BY THE LOUDEN ARCHITECTURAL DEPARTMENT

Source: *Louden Machinery Company General Catalog*, 1919.

F. Associated Property Types
(Provide description, significance, and registration requirements.)

I. Property Type:

Districts, Buildings, Structures, Sites, and Features Associated with Louden Family, circa 1867-1953.

a. Description: Although few, if any, resources associated with the Louden Family remain extant from the early period in Jefferson County, their number increases toward the end of the Nineteenth Century and during the first decades of the Twentieth Century. The William and Mary Jane Louden House and the Elliott-Louden House, both in Fairfield, remain from this period. Most historic buildings associated with the family farm in Cedar Township are nonextant. Although the Loudendale Barn stands as a ruin, its integrity has been severely compromised. The potential historic archaeological record has not been adequately assessed at this point for this farm.

b. Significance: The growing prosperity of the Louden Family can be seen through sites associated with them as a reflection of the Louden Machinery Company's business success. These resources also have the potential of calling attention to the Architectural Department of the company, because it is known that this department prepared designs for the family. Although its interior was not surveyed in this project, it can be assumed that the William and Mary Jane Louden House contains numerous "gadgets" of Louden's invention to improve home life and provide efficient labor. While some people might consider such details minor, they might provide interesting illustrations of the scope of Louden's inventive mind. Significance can also derive from sites whose locations call attention to spatial relationships with other resources associated with the Louden Machinery Company. For example, the William and Mary Jane Louden House is located in an unfashionable section of Fairfield, but in the vicinity of the Louden Machinery Company factory. This spatial relationship illustrates a common Eighteenth and early Nineteenth Century practice among entrepreneurs--the desire to live near the site of their factories.

c. Registration Requirements:

Criterion A: Properties which illustrate important moments in the company's history and growth or patterns of product and market development.

Criterion B: Properties which illustrate the inventive genius of William Louden, the financial capabilities of R. B. Louden, or which otherwise call attention to the personal and/or professional life of important members of the Louden Family associated with the Louden Machinery Company. Properties that are directly associated with leading members of the Louden Family who played pivotal or otherwise important roles in shaping the evolution of the Louden Machinery Company.

Criterion C: Properties which illustrate designs of the Architectural Department of the Louden Machinery Company applied to buildings owned by members of the Louden Family; or other resources associated with the family, whose architectural design calls attention to personal qualities of or associations with the family.

Criterion D: Sites of nonextant properties, which contain intact subsurface deposits with good information potential concerning the material culture of significant members of the Louden Family identified with the site.

Integrity Considerations: Unless a property has lost most of the characteristics that convey a sense of time and place associated with the early period of the Louden Family in Jefferson County or no longer has the ability to provide important information with respect to building type, construction technique, social or domestic practice or other subject of scholarly interest with this period, it should be considered eligible. Newer properties--those dating from the end of the Nineteenth and the early decades of the Twentieth Centuries--may be eligible when they derive significance from events, persons, and/or architectural value associated with important members of the Louden Family.

d. Eligible or Potentially Eligible Properties:

William and Mary Jane Louden House *
501 West Washington Ave.
Fairfield, Iowa 52556

R. B. and Lizzie L. Louden House *
107 West Washington Ave.
Fairfield, IA 52556

R. Bruce and May W. Louden House *
501 West Adams St.
Fairfield, IA 52556

R. R. and Antoinette Louden House
905 East Adams Ave.
Fairfield, IA 52556

Arthur C. and Maud Louden House
201 South Highland St.
Fairfield, IA 52556

R. Bruce and May W. Louden House (#2)
1106 South Second Street
Fairfield, IA 52556

* Asterisk indicates property being nominated with this submittal.

II. Property Type:

Districts, Buildings, Structures, Sites, and Features Associated with Business and Industrial History, circa 1867-1953

a. Description: Properties associated with this historic context are of an industrial nature, designed for the inventing, testing, manufacturing, advertising, displaying, and marketing of farm equipment and/or industrial material handling, as well as for the business activities associated with such operations. Buildings and structures associated with this property type may be of wood frame, brick, stone, concrete, or other building materials. Size of these resources will generally be commensurate with the scale of company operations during the period of their functional life. Objects may also be identified and evaluated within this historic context. Because the Louden Machinery Company was an expanding business during its period of significance, it is probable that buildings, structures, and sites associated with this historic context will possess new additions, wings, upper floors, or other evidence of expansion reflecting this growth.

b. Significance: Properties within this historic context derive significance because of their association with events, individuals, and architecture, which call attention to the business and industrial history of the Louden Machinery Company. These associations can be direct, as illustrated by the Louden Machinery Company Building itself. These associations can also be by extension to properties, whose establishment, siting, or other important quality is a direct result of the Louden Machinery Company's needs, influence, philanthropic contribution, or other association of substance. Iowa Malleable Iron Company, for example, owes its establishment to the Louden need for malleable iron castings, and Malleable's building possesses such an extended association to this historic context. Resources within this property type, which date from the immediate post-World War II period and have not yet reached the National Register 50-year limit, should be evaluated for eligibility when they reach that age.

c. Registration Requirements:

Criterion A: Properties directly associated with significant events in the business and industrial history of the Louden Machinery Company during its period of significance.

Criterion B: Properties that are directly associated with individuals who played key or influential roles within the business and industrial history of the Louden Machinery Company during this period and whose contributions to that history emanated from those properties.

Criterion C: Properties which display architectural characteristics associated with the business and industrial history of the Louden Machinery Company. These properties might include demonstration models of equipment and/or structures, field test-facilities, field demonstration sites possessing integrity of design, extant examples of Louden salesmen samples (a small shed until recently remained extant--sometimes used by Roberta Louden McCoid as a playhouse--used to display a variety of Louden hardware), and other resources calling attention to Louden business and industrial

activities.

Criterion D: Sites of nonextant properties that contain intact buried deposits with good potential to yield, or may be likely to yield, information important to the understanding of the business and industrial history of the Louden Machinery Company during its period of significance.

Integrity Considerations: Resources considered eligible under this historic context should possess integrity of location, design, setting, materials, workmanship, feeling, and association. Properties exhibiting an evolution of expansion should be evaluated within the context of the Louden Machinery Company's expanding operations during its period of significance. Newer wings, additions, upper floors, or other evidences of expanded operations should not necessarily be evaluated as intrusive to the resource if those alterations reflect qualities of significance within the context. Properties constructed of wood frame should be expected to have undergone more alteration than those constructed of permanent building materials such as brick or stone.

d. Eligible or Potentially Eligible Properties:

Louden Machinery Company
607 West Broadway
Fairfield, IA 52556

Iowa Malleable Iron Company *
West Kirkwood Avenue
Fairfield, IA 52556

* Asterisk indicates property being nominated with this submittal.

III. Property Type:

Districts, Buildings, Structures, Sites, and Features Associated with Patents and Products, 1867-1953

a. Description: Properties associated with this historic context are of two kinds: 1) those resources associated with the invention, design, testing, fabrication, marketing, distributing, or other process or processes involved to place Louden equipment in use, and 2) those resources possessing installations of equipment. For example, the Louden Machinery Company Factory calls attention to the manufacturing of Louden equipment. The Midway Stock Farm Barn features an installation of Louden equipment as an important component of its functional purpose. Resources associated with this property type may be of a wide variety of building materials and types. They can included agricultural resources, domestic resources, institutional resources, commercial resources, industrial resources, and a variety of other resources, where Louden equipment was installed and utilized.

b. Significance: Significance can derive from the processes by which Louden equipment was developed and manufactured, as well as from equipment installations, which call attention to the utilization of the company's products. Equipment installations--particularly installations of Louden monorail equipment--can vary widely and include property types of agricultural and industrial facilities. Equipment installations must be judged on a case-by-case basis. Generally, those installations, which contain a wide range of Louden equipment or a heavy concentration will be found more significant than those that possess one or two Louden products. For example, a barn now possessing one single-track litter-carrier rail will lack the significance of a "fully equipped" Louden installation. A fully-equipped installation might originally have featured a network of single-tracks for litter-carriers with switches; Louden cupolas; Louden ventilator windows; steel stalls and stanchions; Louden designed concrete feeding stations and stall floors; among other of the firm's products.

c. Registration Requirements:

Criterion A: Properties directly associated with the invention, design, fabrication, marketing, distributing, or other activity associated with placing Louden equipment in use during the period of significance; properties possessing Louden equipment installations either as remodeled facilities retro-fitted with this up-to-date equipment or facilities specially designed for such equipment.

Criterion B: Properties that are directly associated with individuals who played key or influential roles in these operations during this period.

Criterion C: Properties that display design characteristics associated with installations of Louden equipment during the period; properties that display engineering qualities associated with installations of Louden equipment during the period; properties that display the diverse applications to which Louden equipment could be put.

Criterion D: Sites of nonextant properties that contain intact buried deposits with good

potential to yield, or may be likely to yield, information important to the understanding of Louden equipment during this period.

Integrity Considerations: Resources associated with this historic context and possessing significance associated with the invention, design, fabrication, marketing, distributing, or other process or processes involved to place Louden equipment in use will possess integrity of location, design, setting, materials, workmanship, feeling, and association. The integrity of resources associated with this historic context and possessing significance because of their equipment installations must be evaluated both within the context of the equipment as machinery and within the context of the installation as a site. Although not every piece of this equipment need remain extant, a high enough integrity must remain so that the viewer can readily understand how the component parts of the equipment as machinery functioned. The site of this equipment installation must also possess sufficient integrity so that the viewer can readily understand how the equipment operated within the facility, what purpose the equipment served, and in what ways the equipment increased efficiency. Louden equipment detached from its original installation will generally be ineligible for nomination to the National Register because it has lost integrity of location, unless special criteria considerations are met. These criteria considerations should be addressed as part of the next phase of this survey project. Although equipment constructed of Louden parts ("jerry-built" devices, as it were) will be found in the field, such equipment will generally be considered ineligible for nomination to the National Register, unless special criteria considerations are met.

d. Eligible or Potentially Eligible Properties:

Louden Machinery Company
607 West Broadway
Fairfield, IA 52556

Midway Stock Farm Barn *
Vicinity Mount Zion, IA

Louden Whirl-Around *
Fairfield Golf and Country Club
905 East Harrison Ave.
Fairfield, IA 52556

Fred and Rosa Fulton Barn *
1204 - 278th Blvd.
(Jefferson County)
Selma, IA 52528

August and Vera Luedtke Barn *
1938 - 185th St.
Vicinity Fairfield, IA 52556

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Commercial Block *
106, 108, 110 North Main St.
Fairfield, IA 52556

Auto Repair Shop
117 East Broadway St.
Fairfield, IA 52556

Albert H. Neller House
300 West Washington Street.
Fairfield, IA 52556

* Asterisk indicates property being nominated with this submittal.

IV. Property Type:

Districts, Buildings, Structures, Sites, and Features Associated with the Architectural Department, circa 1906-circa 1953

a. Description: Property types associated with the Louden Machinery Company Architectural Department include a wide variety of resources. They include agricultural buildings and structures--such as dairy barns, horse barns, hog houses, chicken houses, milking parlors, implement sheds--as well as farmstead site designs, planned by Louden during its period of significance and implemented during the same period. Property types also include agricultural facilities whose equipment calls attention to designs provided by the Architectural Department.

b. Significance: Significance can derive from a variety of ways in which the Architectural Department of the Louden Machinery Company was manifest during this period, such as associations with entities or individuals who made outstanding efforts to the department.

c. Registration Requirements:

Criterion A: Properties directly associated with the Architectural Department of the Louden Machinery Company; studios or other buildings associated with employees of the Architectural Department if significant work of these individuals was accomplished at these sites.

Criterion B: Properties that are directly associated with individuals who played key or influential roles in the Architectural Department of the Louden Machinery Company during this period.

Criterion C: Properties that display design characteristics and/or building materials and techniques associated with the Louden Machinery Company. Case needs to be made for properties not directly related to the Louden Machinery Company contracts.

Criterion D: Sites of nonextant properties that contain intact buried deposits with good potential to yield, or may be likely to yield, information important to the understanding of the Architectural Department of the Louden Machinery Company during this period.

Integrity Considerations: Resources associated with this historic context and possessing significance associated with the Architectural Department of the Louden Machinery Company will possess integrity of location, design, setting, materials, workmanship, feeling, and association. The integrity of resources associated with this historic context and possessing significance because of their equipment installations must be evaluated both within the context of the equipment as machinery and within the context of the installation as a site. Although not every piece of this equipment need remain extant, a high enough integrity must remain so that the viewer can readily understand how the component parts of the equipment as machinery functioned. The site of this equipment installation must also possess sufficient integrity so that the viewer can readily understand how the equipment operated within the facility, what purpose the equipment served, and in what ways the equipment increased efficiency. Louden equipment, whose installation was designed by the Architectural Department but is now detached from its original installation, will generally be ineligible for nomination to the National Register because it has lost integrity of location. In cases of the exceptional significance of this equipment, special criteria considerations will need to be meet for National Register eligibility. These criteria considerations should be addressed as part of the next phase of this project.

d. Eligible or Potentially Eligible Properties:

Louden Machinery Company
West Broadway
Fairfield, IA 52556

R. B. and Lizzie L. Louden House *
107 West Washington Ave.
Fairfield, IA 52556

First Methodist Episcopal Church
201 North Court St.
Fairfield, IA 52556

First Church of Christ Scientist
300 East Burlington Ave.
Fairfield, IA 52556

O. F. Fryer House
902 South Main St.
Fairfield, IA 52556

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

Fred and Rosa Fulton Barn *
1204 - 278th Blvd.
(Jefferson County)
Selma, IA 52528

August and Vera Luedtke Barn *
1938 - 185th St.
Vicinity Fairfield, IA 52556

Sunset Addition Historic District
Fairfield, IA 52556

Gobble House
704 South Main St.
Fairfield, IA 52556

Fleming House
505 East Burlington Ave.
Fairfield, IA 52556

Fleming House
53 Forest Dr.
Fairfield, IA 52556

House
51 Forest Dr.
Fairfield, IA 52556

House
53 Forest Dr.
Fairfield, IA 52556

House
55 Forest Dr.
Fairfield, IA 52556

House
54 North Park
Fairfield, IA 52556

* Asterisk indicates property being nominated with this submittal.

H. Summary of Identification and Evaluation Methods
(Discuss the methods used in developing the multiple property listing.)

PROJECT HISTORY

This Multiple Property Documentation Form is the result of several previous studies. In the late 1970s, a series of cultural resources surveys were undertaken in Jefferson County, Iowa, as part of a comprehensive survey of the Area Regional Planning Commission. At that time, William C. Page prepared an historical survey of Jefferson County. This survey indicated that the Louden Machinery Company made important contributions to the history of agriculture.

In 1994, the then newly formed Jefferson County Historic Preservation Commission was awarded a *Planning for Preservation* grant by the State Historical Society of Iowa. The commission subsequently selected Page to undertake this study. Its object was to identify areas of historical significance within Jefferson County and recommend steps for their National Register listing and protection. This Planning for Preservation project, completed in 1994, identified several areas. The report highlighted the Louden Machinery Company as having high potential for National Register listing potential.

Upon completion of the *Planning for Preservation* grant, the Jefferson County Historic Preservation Commission prepared an application for a Certified Local Government grant to fund an intensive historical and architectural survey of resources associated with the Louden Machinery Company. This application was accepted by the State Historical Society of Iowa. Many resources and Louden-related information resulted from this intensive survey.

In 1996, the Jefferson County Historic Preservation Commission applied for another Certified Local Government grand-in-aid to fund the National Register listing of resources identified in the intensive survey. This report in hand is one result of that grant.

This series of projects began with a literature search of archival resources concerning the Louden Machinery Company. There are two principal county histories, written in 1879 and 1912-1914. The first is really too early to address the company. The second, written by Charles J. Fulton, is also somewhat early for the company's history. It is interesting, however, to note that historian Fulton was, at this time, secretary-treasurer of the Louden Machinery Company. About fifty years later, Susan Fulton Welty, his daughter, published what will undoubtedly remain the definitive general history of Fairfield in the Nineteenth and early Twentieth Century. *A Fair Field* stands as a model local history.

Local newspapers and city directories are available at the Fairfield Public Library, and these sources proved invaluable in filling in many of the gaps in the secondary literature. The Jefferson County Records, a series of volumes with local genealogical, historical, and related information from

newspapers, was an invaluable resource. These volumes provided a wealth of family history, as well as providing citations for newspaper accounts of events and built resources associated with the Louden Machinery Company. The Sanborn Fire Insurance Maps for Fairfield from various years also provided invaluable information, particularly concerning industrial resources.

Important information also came to light from oral history interviews conducted by the principal investigator, the chair of the JCHPC, and other members of the commission. This oral information was provided both on the telephone and in person-to-person interviews. Key oral informants included Roberta Louden McCoid, a nonagenarian and daughter of R. B. and Lizzie Louden, and Thomas A. Louden. Tom is a paternal grandson of William Louden and was associated with Louden management in the 1940s. Other oral informants included former Louden employees and knowledgeable individuals of the local scene in the Jefferson County. The contributions of these individuals are cited in the text of this document and in its bibliography. The value of oral history in a state like Iowa cannot be overstated. Local residents often remain many years in one place, have long memories, and constitute an incomparable source of information otherwise unavailable in print. Oral informants proved especially helpful on questions concerning Louden family history and identification of local resources built by and/or equipped by the Louden Machinery Company.

Also important to the methodology of this report was liaison with staff, Community Programs Bureau, State Historical Society of Iowa. Dr. Lowell J. Soike, grant reviewer for this project, was particularly helpful. As author of the study *Without Right Angles,* Soike's long experience with barns and barn planning proved invaluable. He responded to the consultant's initial questions about the project's research design, discussed potential historic contexts, recommended additional sources of information for review, and helped evaluate sites from photographs taken in the field. This project greatly benefited from the exchange of information at a series of meetings and telephone calls with him.

Marni Mellen, reporter for *The Fairfield Ledger*, contributed significantly to this project. While on other business in Washington, D. C., in 1994, she visited the Smithsonian Institution by appointment. The Smithsonian's collection of Louden Machinery Company memorabilia was placed at her disposal. (When the firm ceased operations as a family business, many of its archives were sent to Washington, D. C., for curation.) At the Smithsonian, Betsy Burstein of the Agricultural and Natural Resources section of the Smithsonian's Museum of American History and Bill Worthington of that museum's Engineering and Industry section assisted Mellen. Mellen prepared a list of all these materials available at the Smithsonian. These materials included catalogs, photographs, and a few pieces of equipment. The extent of this material was hitherto unknown locally. Some amount of time was also required for the Smithsonian to research their records, determine what Louden materials they had accessioned, and locate the materials for public use. Marni Mellen's commitment of time and money provided this project with information (a list of which appears in the bibliographical section of this report), which otherwise could only have been conjectured.

From a synthesis of this information, the consultant and project associate established a research design with eleven topics identified as key to understanding resources associated with the Louden Machinery Company. The list on the following page outlines them:

- Business history
- William Louden and family--biographical
- William Louden inventions and product development
- Louden technical achievements and American agriculture
- Louden manufacturing practices
- Marketing
- Architectural planning services
- Local impact
- State and national impacts
- Louden Machinery Company in World War II
- Other

As the project progressed, it was found that a tighter organization of these topics would facilitate National Register registration requirements for the evaluation of identified resources. For this reason, the number of chapters was reduced to four. They are:

- Louden Family
- Business and Industrial History
- Patents and Products
- Architectural Department

It was thought that this organization covered all the topics addressed in the Research Design, while providing a more efficient means for National Register evaluation. The "Statement of Historic Contexts" section of this report, as well as its chapter on "Associated Property Types," employs this simpler format.

Research in primary source materials was conducted by the consultant, the project associate, and many of the volunteers. In general, publications prepared by the Louden Machinery Company provided the largest body of primary source material for the project. A glance at the bibliography section of this report will show the extent of these materials. Period newspapers provided additional detail, and in some cases conceptual leads. For example, a *Fairfield Ledger* blurb recorded that the new Fred Cramlet & Son round barn was fully Louden equipped. (*Fairfield Ledger*, April 25, 1923) This source confirmed that Louden had actually designed the building.

Most identifications of resources associated with the Louden Machinery Company came from volunteers. Mark Shafer solicited information through questionnaires, cable television broadcasts, newspaper articles, radio announcements, and other media. Lillian Thada wrote several columns in a local shopper newspaper featuring the Louden project. Reports, stories, photographs, and drawings identified by the researchers were copied or indexed. A number people contributed Louden Machinery Company catalogs and other company materials to the Jefferson County Historic Preservation Commission for archival deposit. More information came to light as a result of a project display booth

at the 1996 Junior Ag Fair in Fairfield. A surprising number of individuals recounted that they had rescued these materials from wastebaskets at the factory. Both the consultant and the project associate then read, analyzed, and evaluated these sources, incorporating them into the text.

Volunteers perused Louden catalogs and other advertising material, recorded the owners' names and locations of Louden equipped and/or designed facilitates. Earl Brown reviewed a number of color slides, discovered during the project, showing Louden employees. Brown identified the names of the individuals pictured.

The principle investigator made an extensive literature search at the Parks Library of Iowa State University. Because of this institution's associations with agriculture, it was thought that its archival holdings might provide important information. Although the papers of "Uncle" Henry Wallace and James ("Tama Jim") Wilson are curated there, as well as an extensive literature concerning agricultural topics, these records proved to be rather disappointing sources for information specifically about the Louden Machinery Company.

After the initial research, field investigation, and consultations, the historic contexts were re-examined, re-evaluated, and refined. The historic contexts as refined were then developed in the Section E of this report.

Acknowledgments

The authors wish to thank the members of the Jefferson County Historic Preservation Commission for their help throughout the life of this project. They include Mark R. Shafer, chair; Jonathan Bram Lipman, secretary/treasurer; and commissioners Gene M. Luedtke, Lillian Thada, Dr. Robert L. Tree, and Frank H. Stever. Dr. Lowell J. Soike, Historian, Community Programs Bureau of the State Historical Society of Iowa, is due many thanks for his support and administration of this project.

Volunteer efforts have been central to the life of this project, and the quality of their efforts is hard to overestimate. A special effort by Mark R. Shafer deserves recognition. Early in the survey the project consultant and project associate recognized the fact that time and financial resources precluded protracted field survey. Shafer embarked on an extensive public relations campaign to inform the Jefferson County community about this project. This campaign included radio, television, and newspaper features about the project. Mark also interviewed individuals with information about the Louden story. He also possesses the ability to attract donations of archival materials and Louden artifacts.

Oral history interviews and other informants who graciously gave of their time and knowledge to the principal investigator included Roberta Louden McCoid, Thomas A. Louden, Julius Hilleary, and Ben J. Taylor.

A number of individuals have collected Louden publications and memorabilia over the years. Many of these individuals shared this information. They included: Glen E. Dimmitt, Richard E. Raymond, Ben J. Taylor, Kenneth Larson, Mark R. Shafer, Thomas A. Louden, Gene Luedtke, the late Dale McLain, George Zillman, and William C. Page.

RECOMMENDATIONS FOR FUTURE IDENTIFICATION, EVALUATION, REGISTRATION, AND TREATMENT ACTIVITIES

The intent of this project was an "intensive level" survey of historical and architectural resources in Jefferson County associated with the Louden Machinery Company of Fairfield, Iowa, and a follow-up National Register listing project. Although resources in surrounding counties were not excluded from this scope, only a few were actually identified and surveyed. A primary focus of attention for this intensive survey was the identification of sites and districts that illustrate the historic contexts discussed in this document. Those resources are listed in Chapter F of this report, "Associated Property Types."

Numerous, extant resources associated with the Louden Machinery Company continue to come to light. These also should be listed on the National Register of Historic Places. A few of them are listed in the "Associated Property Types" section above.

The Jefferson County Historic Preservation Commission might wish to continue this project by surveying additional resources associated with the Louden Machinery Company. For example, a reconnaissance survey project with a statewide scope could focus on Louden barn designs and agricultural products manufactured by the firm. Such a project should include the following:

- Feature articles in newspapers having regional and statewide circulation to provide contacts for information. The agricultural sections of Sunday editions, for example, often look for subject material of broad interest. Publications such as the *Des Moines Sunday Register* and the *Cedar Rapids Gazette* would be ideal vehicles for such feature articles.

- A questionnaire should be devised with appropriate blanks for inventory information, including the type of Louden barn and/or the kind of Louden-manufactured equipment featured on the farm. These questionnaires could be distributed to local Farm Bureau agencies and/or county extension offices. The questionnaires might be distributed on a focused area, for example in heavy dairy farming regions of the state where the likelihood is strong for concentrations of Louden-manufactured dairy equipment and dairy barns.

- Intensive survey of selected resources should follow-up on questionnaires, which prove to be most promising.

- It is anticipated that at least two dozen Louden-associated barn designs and agricultural-related facilities equipped with Louden products would be identified of sufficient significance for National Register nomination.

- Such a CLG survey project should be followed-up with National Register nominations.

Another Louden-related activity would be the continued registration of resources associated with the Louden Machinery Company in and around Jefferson County. A number of identified resources have already been identified in this regard. They include the A. H. Neller House at 300 West Washington Avenue and numerous houses designed by C. Eugene Fleming, all in Fairfield. The Sunset Addition to the City of Fairfield is another resource with potential for National Register nomination. The JCHPC might wish to conduct a hybrid reconnaissance and intensive survey of these resources with National Register nominations to follow.

Such activities will help the JCHP commission continue the momentum of this project. The Certified Local Government grants-in-aid program and the Historic Resources Development Program, both administered by the State Historical Society of Iowa, are appropriate sources for potential funding.

Other recommendations stemming from this report include the following:

- Barns and other agricultural-related structures are among the most fragile historic resources in Iowa. This is due, in large part, because of their size and because their historic functions are often perceived to be at odds with present-day farm needs.

  At the same time, barns and other agricultural structures exert a powerful appeal over Iowans.

  Although financial incentives for barn preservation are limited, it is thought that publicity about the significance of these resources can help their preservation. When property owners see their buildings held before the public eye as historically significant, this attention contributes to a willingness to invest in their maintenance. For example, one barn owner in Jefferson County decided to re-roof his Louden-designed barn

with asphalt shingles rather than sheet metal because he recognized the building possessed historical significance.

- The Louden Machinery Company remained a family business until its sale in 1953 to outside interests. The period presently postdating the National Register 50-year cut-off date should be included in all survey activities. This is because resources constructed during these intervening years--the late 1940s and early 1950s--are rapidly attaining 50-year status.

- The oral history program begun during this project should be continued to identify and interview former Louden employees. These sources of information will soon disappear. Without written record of it, critical data about the company's history will be lost.

- Fairfield city directories should be researched in an attempt to identify other architects employed by the Architectural Department of the Louden Machinery Company not mentioned in this report.

- Branch offices maintained by the Louden Machinery Company in the United States, as well as the firm's factory in Guelph, Ontario, Canada, should be surveyed and evaluated for historic designation potential.

- The James Manufacturing Company of Fort Akinson, Wisconsin, and the Clay Equipment Corporation of Cedar Falls, Iowa, produced a line of dairy farm equipment and competed with the Louden Manufacturing Company for markets. Research into the histories of these two competing firms is recommended. This will help flesh out the history of farm equipment manufacturing in the Midwest during the late Nineteenth and early Twentieth Centuries.

- The James Manufacturing Company, the Gordon-Van Tine Company, and Radford Architectural Company of Chicago also offered farmers a barn planning service. Research into these activities is also recommended so that comparisons with the Louden service can be made.

- Other geographic sections of Iowa should also be surveyed to identify Louden associated resources. The northeastern quadrant of the state might be a target area with its concentration of dairy farming.

- Louden catalogs picture numerous Louden barn designs and equipment installations in numerous other states across the nation and internationally. An inventory list of them should be prepared and analyzed to further the knowledge of Louden business history and agricultural impacts.

- The history of the Louden Machinery Company's labor relations is a topic which should be addressed in more detail. Former employees speak with pride and goodwill about their former employer, and this pride is shared in the wider Fairfield community. Nonetheless, events such as the 1908 strike at the Fairfield plant should be researched and analyzed for their historical significance. This survey was unable to research Fairfield newspapers concerning this topic.

- Harvard University curates the archives of the Dunn and Bradstreet Company's historical records. This data contains much information about credit ratings of businesses and industries in Nineteenth and early Twentieth Century America. To date, these records have not been made available for this survey project. It is thought that they might contain useful information about the Louden Machinery Company during that period, and/or its principals.

- A research methodology should be developed to outline survey techniques to address the Louden Machinery Company's pioneering role in overhead handling systems. This subject has national significance. Its ramifications are only now beginning to be appreciated.

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1931 Patent granted by the United States Patent Office.

Patent #	*Patent Date*	*Description*
1,809,622	06-09-1931	Grappling apparatus

*Vern G. Ellen assignor to LMC.

Evans, Frank J. and H. C. Hansen (Minneapolis, Minnesota)
1927 Patent granted by the United States Patent Office.

Patent #	*Patent Date*	*Description*
1,637,898	08-02-1927	Automatic oil burner*

*Assignors by mesne assignments to LMC.

Harris, Frank C.
1922 Patent granted by the United States Patent Office to Frank C. Harris.

Patent #	*Patent Date*	*Description*
1,404,522	01-24-1922	Structural coupling*

*Frank C. Harris assignor to LMC.

Hassler, Paul M.
Various Patents granted by the United States Patent Office to Paul M. Hassler.

Patent #	*Patent Date*	*Description*
1,346,313	07-13-1920	Track for overhead carriers*
1,386,496	08-02-1921	Brake for overhead carriers*
1,646,244	10-18-1927	Connection for track hangers*
1,682,175	08-28-1928	Elevated conveyer*
1,774,233	08-26-1930	Stop for overhead carrying equipment*

*Paul M. Hassler assignor to LMC.

Johnson, Albert C.
1930 Patent granted by the United States Patent Office.

Patent #	*Patent Date*	*Description*
1,753,862	04-08-1930	Roof structure*

*Albert C. Johnson assignor to LMC.

Lesher, Charles O. (Fairfield, Iowa)
1927 Patent granted by the United States Patent Office to Charles O. Lesher.

Patent #	*Patent Date*	*Description*
1,620,976	03-16-1927	Filter for the panels of animal pens*

*Charles O. Lesher assignor to LMC.

Louden Robert B. (R. B.)
Various Patents granted by the United States Patent Office to Robert B. Louden, *et. al.*

Patent #	*Patent Date*	*Description*
Unidentified	1912	Unidentified*
1,447,562	03-06-1923	Feed trough for animals#
1,629,719	05-24-1927	Panel for animal pens
1,636,189	07-19-1927	Panel for animal pens%

*Robert B. Louden and A. H. Neller assignors to LMC.
#Robert B. Louden and Ivar Mattson assignors to LMC.
%Robert B. Louden assignor to LMC.

Louden Thomas
Various Patents granted by the United States Patent Office to Thomas Louden.

Patent #	*Patent Date*	*Description*
945,561	01-04-1910	Carrier for green-clay products
1,108,506	08-25-1914	Building-block
1,094,370	04-21-1914	Hanger for overhead tracks

Louden Walter A.
1920 Patent granted by the United States Patent Office to Walter A. Louden.

Patent #	*Patent Date*	*Description*
1,343,631	06-15-1920	Trolley*

*Walter A. Louden assignor to LMC.

Louden William
Various Patents granted by the United States Patent Office to William Louden, *et. al.*

Patent #	*Patent Date*	*Description*
69,107	09-24-1867	Elevating and conveying device
71,771	12-03-1867	Hoisting machine for stacking hay
177,258	05-09-1876	Cultivator
282,003	07-24-1883	Hay-stacker
290,591	12-18-1883	Hay-carrier
298,218	05-06-1884	Hay-stacker
315,423	04-07-1885	Hoisting single-tree
328,896	10-20-1885	Hay elevator and carrier
337,173	03-02-1886	Hay-carrier
347,052	08-10-1886	Hay-elevator
348,632	09-07-1886	Hay-elevating fork
434,544	09-19-1890	Hay-carrier elevating-pulley
444,546	01-13-1891	Hay-sling
465,380	12-15-1891	Horse hay-fork
472,175	04-05-1892	Hay-carrier
476,721	06-07-1892	Device for holding and operating the jaws or ends of the reins of a temper-screw Ozro J. Baldwin of Youngsville, Allegheny Co., PA assignor of one-half to W. A. and G. W. Louden
481,263	09-23-1892	Hay-elevator pulley*
524,177	08-07-1894	Pulley-block
525,425	09-04-1894	Hay-carrier

526,839	10-02-1894	Hay-carrier apparatus
527,531	10-16-1894	Jack and tri-pulley for hay-carriers
530,232	12-04-1894	Hay-elevator
515,296	02-20-1894	Hay-carrier*
527,530	10-16-1894	Hay-elevator*
539,524	05-12-1895	Hay-sling
547,272	10-01-1895	Singletree
548,319	10-22-1895	Spreader-bar for harness-traces
546,975	09-24-1895	Hay-carrier track#
555.605	03-03-1896	Hay-carrier
555,505	03-03-1896	Hay-carrier track
555,607	03-03-1896	Hay-carrier track
555,608	03-03-1896	Hay-carrier track
559,588	05-05-1896	Hay-carrier apparatus
562.547	06-23-1896	Singletree
564,092	07-14-1896	Hay-carrier attachment
565,762	08-11-1896	Ice-elevator
568,953	10-06-1896	Hay-carrier and attachment therefor
568,953	10-06-1896	Track and hanger*
576,461	02-02-1897	Ice-tongs
589,902	09-14-1897	Hay-carrier
591,235	10-05-1897	Door-hanger
610,865	09-13-1898	Trip-coupling
617,491	01-10-1899	Track-suspending device
620,467	02-28-1899	Hay-carrier
626,177	05-30-1899	Door-hanger
631,896	08-29-1899	Hay-carrier
634,948	10-17-1899	Hay-carrier stop
634,949	10-17-1899	Hay-carrier
677,746	07-02-1901	Door-hanger
700,211	05-20-1902	Door-hanger
700,212	05-20-1902	Pulley
706,245	08-05-1902	Roll-holding camera
707,853	08-26-1902	Door-hanger
726,552	04-28-1903	Hay-carrier
733,230	07-07-1903	Hay-fork
738,338	09-08-1903	Hay-carrier
741,803	10-20-1903	Cross-timber clamp
744,372	11-17-1903	Overhead switch
752,569	01-16-1904	Hay-carrier
768,669	08-30-1904	Door-hanger
769,175	09-06-1904	Hay-carrier
827,928	08-07-1906	Hay-carrier
828,616	08-14-1906	Cross-timber clamp
865,113	09-03-1907	Elevated carrier
865,509	09-10-1907	Elevated carrier

891,493	06-23-1908	Overhead switch#
887,258	05-12-1908	Fixture for wagon racks and boxes
890,243	06-09-1908	Door-hanger track
897,381	09-01-1908	Elevator and carrier
898,489	09-15-1908	Feed-carrier
901,717	10-20-1908	Transfer for overhead tracks
990,827	04-25-1911	Cattle-stanchion
1,092,655	04-07-1914	Structural coupling for pipes, shafts, and the like
1,097,809	05-26-1914	Holder for cattle-stanchions
1,092,655	04-07-1914	Structural coupling for pipes, shafts, & the like
1,097,809	05-26-1914	Holder for cattle-stanchions
1,150,781	08-17-1915	Structural coupling for pipes, shafts, etc.
1,168,528	01-18-1916	Gate-hinge
1,169,412	01-25-1916	Manger for animal-pens
1,170,648	02-08-1916	Window-ventilator
1,179,852	04-18-1916	Gate-latch
1,183,090	05-16-1916	Gate-latch
1,192,080	07-25-1916	Structural coupling
1,193,035	08-01-1916	Cattle-stanchion
1,194,199	08-08-1916	Cattle-stanchion
1,294,366	02-11-1919	Manger for animal-stalls
1,296,586	03-04-1919	Water-bowl
1,297,974	03-08-1919	Manger for animal pens & stalls
1,302,939	05-06-1919	Drinking bowl for animals
1,342,554	06-08-1920	Device for bending metallic track-rails
1,344,914	06-29-1920	Pipe-coupling
1,356,212	10-19-1920	Receptacle for feed-carriers
1,385,563	07-26-1921	Fastener for closures*
1,530,780	03-24-1925	Cattle stanchion
1,699,333	01-15-1929	Animal stall*
1,761,137	06-03-1930	Metallic angle bar*
1,743,719	01-13-1930	Animal waterbowl@
1,757,651	05-06-1930	Elevated trackway**

*William Louden assignor to LMC.
#William and R. B. Louden, Fairfield, Iowa.
@William Louden and A. N. Neller assignors to LMC.
**William Louden and Lee F. Berthold assignors to LMC.

1,659,329	02-14-1928	Valve for supplying compressed air%%
1,778,560	10-14-1930	Ventilating system & apparatus&
1,797,963	03-24-1931	Water bowl

*A. H. Neller assignor to LMC.
#A. H. Neller and William Louden assignors to LMC.
@A. H. Neller and R. B. Louden assignors to LMC.
**A. H. Neller & A. F. Lagemann (Quincy, IL) to LMC.
##A. H. Neller assignor of 1/3 to I. L. Eales & 1/3 to F. S. Boies.
@@A. H. Neller assignor to American Ironing Machine Co., Chicago, Illinois.
%A. H. Neller and William H. Jones.
%%A. H. Neller assignor to New Boss Manufacturing Co., Inc., Fairfield, Iowa.
&A. H. Neller, Charles A. Marsh & J. L. Strahan assignors to LMC.

Northmore, Robert S. (Chicago, Illinois)
1927 Patent granted by the United States Patent Office.

Patent #	*Patent Date*	*Description*
1,643,749	09-27-1927	Hanger for overhead trackways*

*Robert S. Northmore assignor to LMC.

Peterke, Edward C.
1922 Patent granted by the United States Patent Office.

Patent #	*Patent Date*	*Description*
1,408,906	03-07-1922	Guard rails for pig inclosures*

*Edward C. Peterke assignor to LMC.

Silver, Herman
Various Patents granted by the United States Patent Office, assigned to LMC.

Patent #	*Patent Date*	*Description*
15,223	11-08-1921	Ventilating-cupola for barns & the like (reissue)*
1,509,848	09-20-1924	Ventilating cupola*

*Herman Silver assignor to LMC.

Sprecht, Walter E. (Moline, Illinois)
1927 Patent granted by the United States Patent Office.

Patent #	*Patent Date*	*Description*
1,617,085	02-08-1927	Trolley wheel*

*Walter E. Sprecht assignor to LMC.

Strahan, James L.
1927 Patent granted by the United States Patent Office.

Patent #	*Patent Date*	*Description*
1,623,286	04-05-1927	Air control for ventilating system*

*James L. Strahan assignor to LMC.

Young, Lester J. (Oswego, Illinois)
1915 Patent granted by the United States Patent Office.

Patent #	*Patent Date*	*Description*
1,145,452	07-06-1915	Stanchion

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The authors express their gratitude to Mary Barnes Prill, chronicler of Jefferson County, whose *Jefferson County Records* provided most newspaper accounts from the early period.

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1889 *Louden's Two Pole Hay Stacker.* Advertisement and picture. June 28, 1889.

Tribune (Fairfield)
1892 *Louden Hay Tools.* April 13, 1892.

Ledger (Fairfield)
1896 *Wm. Louden is erecting a two-story frame residence 38x53 on W. Washington St..* December 2, 1896.

Tribune (Fairfield)
1892 *Work has been begun on the Louden Machinery Company's factory...* January 25, 1892.

Fairfield Daily Ledger
1884 *Samuel Berry Turner, War Veteran, Is Summoned.* January 25, 1932.

Ledger (Fairfield)
1904 *Greatest of the Fairs.* May 25, 1904.

Journal (Fairfield)
1911 *Marriages.* May 10, 1911.

Ledger (Fairfield)
1923 *Round barn is farm landmark.* April 25, 1923.

Ledger (Fairfield)
1926a *William Louden Discusses epochs In The Progress Of The County.* April 6, 1926.

Ledger (Fairfield)
1926b *Wm. Louden's are 59 years married.* December 31, 1926.

Ledger (Fairfield)
1931a *Who's Who--Wm. Louden.* June 30, 1931.

Ledger (Fairfield)
1931b *Wm. Louden 90 years young.* October 16, 1931.

Ledger (Fairfield)
1931c *Louden Company Founder Dies, Wm. Louden, At 90, Ends Long Useful Life.* November 5, 1931.

Ledger (Fairfield)
1931d *City Gathers To Pay Tribute To Wm. Louden.* November 9, 1931.

Fairfield Ledger
1932 *Louden To Add New Products.* December 17, 1959.

Ledger (Fairfield)
1934 *Fire destroys old "Loudendale" farm home.* April 11, 1934.

Ledger (Fairfield)
1938 *Mrs. Wm. Louden (Mary Jane Pattison) died today at her home.* October 12, 1938.

Ledger (Fairfield)
1939 *Louden Show Same Seen at World's Fair.* Centennial Edition, 1939.

Ledger (Fairfield)
1940 *R. B. Louden, Manufacturer Dies Thursday.* Undated clipping courtesy of the Jefferson County Historic Preservation Commission.

Ledger (Fairfield)
1969 *Mrs. Arthur C. Louden died this morning at Jefferson County Hospital.* March 22, 1969.

Fairfield Ledger
1959 *Louden To Add New Products.* December 17, 1959.

Fairfield Ledger
1961 *Louden Has Part In Building Of New Bomber-Missile Combination.* January 13, 1961.

Fairfield Ledger
1963 *Apollo Program: Louden Cranes Used In Saturn Booster Project.* December 2, 1963.

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1964 *Large Louden Shipment Bound For India Plant.* January 27, 1964.

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1963 *Mrs. Peterke Rites Monday.* April 20, 1963.

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1965 *American Chain To Acquire Mechanical Handling Firm.* August 13, 1965.

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1969 *Mrs. Arthur C. Louden died this morning....* March 22, 1969.

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1908 *Editorial Correspondence.* December 11, 1908.

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Mary Estrin, *Louden and the Community*
Joshua Fillinger, *The Louden Family*
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Alex Pollitt, *William Louden and the Louden Machinery Company*

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