KELLEY CROSSING BRIDGE
Texas Historic Bridges Recording Project
Spanning Plum Creek at County Route 186
Lockhart Vicinity
Caldwell County
Texas

HAER No. TX-31

BLACK AND WHITE PHOTOGRAPHY

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

HISTORIC AMERICAN ENGINEERING RECORD
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HISTORIC AMERICAN ENGINEERING RECORD

KELLEY CROSSING BRIDGE

HAER No. TX-31

Location:	Spanning Plum Creek at County Route 186, Lockhart vicinity, Caldwell County, Texas. UTM: 14/632300/3306290 USGS: Lockhart North, Texas, quadrangle (1973).
Date of Construction:	Circa 1895.
Designer:	Berlin Iron Bridge Company, New Berlin, Connecticut.
Builder:	Unknown.
Present Owner:	Caldwell County.
Present Use:	Abandoned.
Significance:	The Kelley Crossing Bridge is one of two lenticular trusses that survive in Caldwell County and one of a cluster of eight in Texas located around San Antonio. As such, the Kelley Crossing Bridge is part of a once substantially larger concentration of lenticular truss bridges in south-central Texas. It was the remarkable salesmanship of Berlin Iron Bridge Company's Southwestern Agent, William Payson, that made these bridges the only lenticular trusses west of the Mississippi.
Historian:	Dr. Mark M. Brown, August 1996.
Project Information:	This document was prepared as a part of the Texas Historic Bridges Recording Project performed during the summer of 1996 by the Historic American Engineering Record (HAER). The project was sponsored by the Texas Department of Transportation (TxDOT).

I. Introduction

The Kelley Crossing Bridge is part of an unusual concentration of lenticular truss bridges surviving in south-central Texas. With the notable exception of the Smithfield Street Bridge, Pittsburgh, Pennsylvania, (HAER No. PA-2), all lenticular trusses built in the United States were constructed by the Berlin Iron Bridge Company of East Berlin, Connecticut. Most of Berlin's bridges were lenticular trusses and most were constructed of wrought iron. The company, active between 1883 and 1900, was a dominant fabricator throughout New England and New York. It occasionally sold bridges to isolated pockets in Ohio, Indiana, and Texas. The Kelley Crossing Bridge is one of two Berlin lenticular trusses that survive in Caldwell County and one of a cluster of eight located around San Antonio, Texas.[1]

In 1902, approximately seven years after it was constructed, the Kelley Crossing Bridge was presumably damaged by high water and the Caldwell County Commissioners authorized C. Q. Horton, an agent of the Chicago Bridge Company in Austin, Texas, to rebuild the span. The Austin Brothers of Dallas rebuilt the bridge again in 1917. Despite wrought iron's inherent corrosion resistance, the Kelley Crossing Bridge has suffered a loss of structural integrity in recent years. In response to this threat, the Texas Department of Transportation's Environmental Affairs Division has commissioned a complete set of measured drawings, large-format photographs, and this historical report.

Following a description of the bridge, the present report addresses a series of issues raised by the Kelley Crossing Bridge: the historical and topographical context of Caldwell County, known repairs, why Texas has such an unusual concentration of lenticular trusses, and a brief history of the Berlin Iron Bridge Company.

II. Description

The Kelley Crossing Bridge is a single-span, six-panel, pin-connected lenticular, "half-through" pony truss measuring 89'-0" from pin to pin of the end posts.[2] All original metal is presumed to be wrought iron. Each of the end posts are 4'-2" high from their bases to the center of the pin that ties the top chord and the tension members. Composed of riveted plates, angles,

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[1] Victor Darnell, "Lenticular Bridges from East Berlin, Connecticut," *IA: The Journal of the Society for Industrial Archeology* 5, No. 1 (1979): 19; T. Allen Comp and Donald Jackson, *Bridge Truss Types: A Guide to Dating and Identifying*, Technical Leaflet 95 (American Association for State and Local History, May 1977), p. 5; Tom Eisenhour, "The Texas Lenticulars: 1 Down, 8 Survive," *Newsletter, Society for Industrial Archeology* 16, No. 3 (Fall 1987): 1-3.

[2] Victor Darnell, a recognized authority on the Berlin Iron Bridge Company, uses this term to describe a similar, but not identical, pony truss. An alternate term might be "one-third through truss". See photograph No. 3 in Darnell, p. 22.

and lacing, the top chord is 14" wide and 7 7/16" deep. Two 2 1/2" x 3/4" eyebars are used for the tension members. The tapered web posts vary in length from 6'-8" to 12'-2 1/2" pin-to-pin. All diagonal members are 1"-diameter rods with turnbuckles. A 14'-6" long (pin-to-pin) I-shaped horizontal collision strut, fabricated of angles and lacing bars, connects the end post with the adjacent pin connection of the lower chord. Two castings are riveted to the side and top of the end posts. The top castings have a slot to receive now-missing decorative urns.

The 12'-0"-wide deck is connected to the truss by extensions of the web posts (see details, sheet 3). Each floor beam is built up of a plate and angles and, unlike many of the Berlin Iron Bridge Company's deck beams, are not tapered. The crossed lower lateral bracing consists of 3/4"-diameter rods with turnbuckles. Additional plates are riveted to the beams in the area where the lateral bracing is attached. The stringers are rolled steel I-beams and support a wooden deck.

Four cylindrical piers, approximately three feet in diameter and fabricated of riveted metal plates and bands, support the road surface about twenty-six feet above Plum Creek. In Texas, such caissons are typically filled with concrete. A 10'-4" horizontal strut and round vertical cross-bracing stiffen the caissons.[3]

Neither of the two builder's plates remain, though their original location on the top chords are visible by a change in the metal's corrosion pattern.

III. Local History

Few details of the Kelley Crossing Bridge's history are certain. Those that are known give small glimpses into the regional operations of national bridge building firms such as Berlin Iron Bridge Company. In Texas, county residents often submitted petitions for the construction of bridges to the Commissioners' Court. While record of such a petition for the Kelley Crossing Bridge has not been located, its location suggests that it was constructed to connect the Kelley family settlement on the east bank of Plum Creek with the county seat at Lockhart. Given that the Charles Kelley family arrived in 1850, the current structure might not be the first bridge to cross Plum Creek at this location.[4]

In 1891, the Caldwell County Commissioners Court issued bonds worth $6,427.75 to George H. Sage, secretary of the Berlin Iron Bridge Company. The bonds were issued under the provisions of state bonding acts of 1884 and 1887 that gave counties improved flexibility to

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[3] Few details of the obviously later approach spans were recorded by the HAER team save this: the deck stringers on the west approach were rolled I-beams embossed "MONTERRY 1917".

[4] Herschel G. Kelley, "Charles Kelley," typescript, n.d. (Historical Research Center, Luling Public Library, Luling, Texas).

finance modest bridge-building programs.[5] The commissioners's actions included provision for the Berlin Iron Bridge Company to realize the value of the bonds by selling them to the State Board of Education. It seems reasonable to assume, given the dollar amount, that the bond issue funded a single bridge. It is not certain that the 1891 bond issue financed the Kelley Crossing Bridge: the minutes were not explicit about the location of the intended construction, and the Berlin Iron Bridge Company ultimately constructed at least three bridges in Caldwell County.[6]

In 1902, however, the minutes are more explicit. They report that three companies bid on a contract to retrieve and repair two bridges, including a "Kelly Crossing Bridge," that were presumably washed out by floods on Plum Creek. A $2,109 bid from C. Q. Horton of Austin, Texas, was selected over bids from M. S. Hasie, Jr., of Fort Worth, Texas, and the George E. King Bridge Company of Des Moines, Iowa. The Caldwell County Commissioners may have been unaware that appearances of free and competitive bidding was often an illusion during this period: Horton and the King Bridge Company merged with Chicago Bridge in 1890. Furthermore, company agents often met in advance of the bid deadline and decided between themselves who would submit the lowest bid. Unsuccessful companies would receive a portion of the final contract for their trouble.[7]

In December 1917, the Austin Brothers, presumably at the request of the Commissioners, proposed to repair the Kelley Crossing Bridge and to erect two others elsewhere in the county. Structural deck beams found on the site and dated 1917 suggest that a contract was indeed awarded in that year.[8]

The particular details of the Kelley Crossing Bridge's construction and repair history make it difficult to assess which parts of the existing fabric represents the work of each of the companies involved. Missing from the bridge are cast-iron rings which acted as spacers between

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[5] Barbara Stocklin, "Statement of Historic Contexts: Historic Bridges of Texas, 1866-1945," Draft National Register of Historic Places Multiple Property Documentation Form, April 1995 (Environmental Affairs Division, TxDOT, Austin, Texas), pp. 15-16.

[6] Caldwell County, *Commissioners' Court Minutes,* vol. F (Caldwell County Courthouse, Lockhart, Texas), pp. 463-64 (August 10, 1891); vol. G, pp. 5-9 (November 11, 1891); Eisenhour, pp. 1-2.

[7] *Commissioners' Court Minutes* vol. G, pp. 477-78; *The Bridge Works: A History of the Chicago Bridge & Iron Company* (Chicago: Mobium Press, 1987), p. 9; Eli Woodruff Imberman, "The Formative Years of Chicago Bridge and Iron Company" (Ph.D. diss., University of Chicago, 1973), pp. 153-61. For more information on Horton's activities in the Austin region, see U.S. Department of the Interior, Historic American Engineering Record (HAER), No. TX-60, "Bryant Station Bridge," 1996, and HAER No. TX-59, "Brushy Creek Bridge," 1996. Both: Prints and Photographs Division, Library of Congress, Washington, D.C.

[8] *Commissioners' Court Minutes,* vol. I, p. 481.

the various members connected to the lower chord pins. Such spacers are easily damaged, but not absolutely necessary. It should be noted, however, that spacers, whether rings or spools, are still found on at least three of the surviving Texas lenticular trusses: Soda Springs (County Route 230), Caldwell County; Dodds Creek (County Route 133), Coryell County; South Presa Street, San Antonio; and Crockett Street, San Antonio.[9] The vertical web post connecting U2 and L2 of the downstream truss (see sheet 1) has obviously been repaired. Finally, the connection of the lower-lateral bracing and the deck beams is rather clumsy, and not handled with the elegance associated with original work of the Berlin Iron Bridge Company. This detail is different at Kelley Crossing from that at Soda Springs and at Dodds Creek. South Presa and Crockett Street Bridges have welded angles for lower-lateral bracing and consequently are not useful comparisons.

IV. Texas Lenticular Trusses

The particular distribution of the Kelley Crossing and the other surviving Texas lenticular trusses can be attributed to the salesmanship of William Payson, Southwestern Agent for the Berlin Iron Bridge Company. A Berlin Iron Bridge Company catalog shows Payson in Edna, Jackson County, Texas, in 1889. Whether Payson was a resident of Jackson County (located on the coast between Corpus Christi and Houston) who became associated with the Berlin Iron Bridge Company, or whether he was an established agent sent there by the company, is uncertain. But in the following year, Payson moved his office to San Antonio and placed a full-page advertisement in a state-wide directory (see field notes). The year 1890 also saw the Berlin Iron Bridge Company construct three of the four lenticular truss bridges surviving within the San Antonio city limits: Augusta Street, South Presa Street, and one now moved to Brackenridge Road. Crockett Street, the fourth, was constructed the following year. The high visibility and central location of the San Antonio contracts gave Payson a strong marketing tool when making contacts and negotiating with commissioners in the surrounding counties. In the absence of a complete list of the bridges sold by Payson, the fact that he convinced commissioners in an unidentified county to purchase a no longer extant twenty-eight-foot bridge is ample testimony to his salesmanship.[10]

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[9] At the time of writing, the Dodds Creek Bridge is being relocated to Salado, Bell County, Texas. The Augusta Street Bridge in San Antonio probably has spacers.

[10] Darnell, p. 27; Eisenhour, pp. 1-2.

V. Berlin Iron Bridge Company and the Lenticular Truss Type

The history of the Berlin Iron Bridge Company and the lenticular truss is well-documented and need not be given elaborate treatment in this report.[11] Suffice it to note that the Corrugated Metal Company, one of the predecessors of the Berlin Iron Bridge Company, began building lenticular truss bridges in the late 1870s based on William O. Douglas's 1878 patent. Several dynamic managers and entrepreneurs guided the company until it was acquired by the American Bridge Company in 1900.[12]

While Douglas's patent was of questionable originality, the Berlin Iron Bridge Company interests refined it to produce a distinctive truss form using less material than other truss types. This gave the company the advantage of reduced material and shipping costs. On the other hand, the shape of the top chord required complex fabrication that was more expensive than more common parallel-chord trusses. During the 1890s, when the Texas lenticular trusses were built, the American iron and steel industry saw increasing availability and acceptance of structural steel over wrought iron at the same time that labor costs generally declined. While supplying iron bridges to counties surrounding San Antonio represented an effort to expand beyond a New England territory saturated with its bridges, the 1890s saw the Berlin Iron Bridge Company shift its overall business into other product lines.[13]

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[11] See Darnell for the standard history. See also U.S. Department of the Interior, Historic American Engineering Record (HAER) No. MA-98, "Bardwell's Ferry Bridge," for an example of a lenticular through truss and drawings discussing the behavior of these trusses. See HAER No. MA-105, "Tuttle Bridge (Golden Hill Road Bridge)," and HAER No. NY-186, "Cemetery Road Bridge," for brief reports on pony lenticular trusses similar yet different from the Kelley Crossing Bridge. All: Prints and Photographs Division, Library of Congress, Washington, D.C.

[12] Darnell, pp. 19, 24.

[13] Ibid., pp. 27, 21.

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APPENDIX: Suggestions for Further Research

This recording project has raised several issues that remain unanswered or uninvestigated due to limitations of time and resources. The unusual concentration of lenticular trusses, all attributable to the salesmanship of a single agent, presents an unusual opportunity for synthetic research.

1. What can public records and other sources in San Antonio and Edna tell us about the life and career of William Payson and agents like him?

2. The eight Texas lenticular trusses are but a small portion of a once larger collection of bridges. How extensive was Payson's territory? What can the contracts, locations, and historic photographs associated with no longer extant bridges tell us about Payson and his operations? Under what conditions did he win, or lose, bids?

3. What can the surviving trusses reveal about changing appearance, design, and fabrication by the Berlin Iron Bridge Company? A multi-sheet set of measured drawings, similar to that done for cantilever bridges in Washington state (HAER No. WA-106), comparing elevations, sections, and details, could help with these issues.

4. The interior of the end posts at Kelley Crossing has a feature rarely observed on any bridge, lenticular or otherwise.[14] These have the appearance of rivets that have been sheared flush with the adjacent wrought-iron plate. The features, which Victor Darnell has tentatively described as tap rivets, or possibly counter-sunk rivets, are located within an inch or so of the eyebar's outer curved edge. Unlike other types of rivets, however, there is no evidence of their existence on the outside of the end post. Faint circles on Section B-B of the field drawing entitled "Upper End Chord Detail, Side Elevation — Section," show their location. What are these features? How common were they? A partial answer to this later question is known, for the author has observed the same features on the Augusta Street and South Presa Street Bridges. In addition, a similar feature, though not cut flush with the interior plate, is found on the Dodds Creek Bridge.

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[14]Victor Darnell, personal conversations, July 8 and August 1, 1996, and Eric DeLony, personal conversations, Summer 1996.

ADDENDUM TO:
KELLEY CROSSING BRIDGE
Texas Historic Bridges Recording Project
Spanning Plum Creek at County Route 186
Lockhart vicinity
Caldwell County
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HAER No. TX-31

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HISTORIC AMERICAN ENGINEERING RECORD

KELLEY CROSSING BRIDGE

This report is an addendum to a 8-page report previously transmitted to the Library of Congress in 1996.

Occupation:	Traveling salesman, bridge contractors
Dates:	b. ca. 1837; Exeter, N.H. d. 25 November 1909; San Antonio, Tex.
Companies Represented:	Berlin Iron Bridge Company, East Berlin, Conn.; American Bridge & Iron Company, Roanoke, Va.; F.C. Austin Manufacturing Company, Chicago, Ill.; Dow Wire Works Company, San Antonio, Tex.
Significance:	Payson's work as Southwestern area sales agent for the Berlin Iron Bridge Company demonstrates the importance of salesmanship as one factor in the geographic distribution of a particular bridge design.
Historian:	Robert W. Jackson, Ph.D., with preliminary research conducted by Mark Brown, Ph.D., August 2000
Project Information:	This document was prepared as a part of the Texas Historic Bridges Recording Project II performed during the summer of 2000 by the Historic American Engineering Record (HAER). The project was sponsored by the Texas Department of Transportation (TxDOT), Environmental Affairs Division.

Historians who document the engineering and industrial heritage of the United States by studying nineteenth-century metal truss bridges often assume that geographical dispersion is the reason that certain types of bridges occur in certain areas. This assumption is based on the tendency of bridge historians to consider a bridge as an artifact, a work of engineering; the attributes of which are amenable to analysis and evaluation. It also tends to highlight the influence of engineers as creators of competing designs that succeed or fail in the market place based on their function.

Overall, if bridges are considered primarily as products of a commercial enterprise, then the selection of a particular bridge type for a particular location may be influenced by business practices, independent of engineering considerations. These practices may include bid rigging, kickbacks, or aggressive marketing. This perspective brings to the foreground the role of agents who represent a product made by a particular company.

It is this latter view which best explains why a number of lenticular truss bridges manufactured by the Berlin Iron Bridge Company of East Berlin, Connecticut, were built in places far distant from the company's New England facilities.[1] From 1878 to 1900, the company and its predecessor, the Corrugated Metal Company, erected hundreds of bridges in the Northeastern and Midwestern states including Connecticut, Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, New York, Pennsylvania, New Jersey, Ohio, and Indiana. A smaller, but significant number of bridges were also constructed in California, Montana, Kansas, Texas, and Virginia. Foreign sales included Germany, Mexico, Haiti, and much of South America.[2]

In commenting on the company's claim to have built over ninety percent of all iron highway bridges in New York and New England between 1878 and 1889, bridge historian Victor Darnell stated, "This popularity suggests that the design was economical of material—and hence, competitive."[3] But noted bridge engineer J. A. L. Waddell wrote in 1916 that among the objections to the lenticular truss were "its want of economy of material" and "the extra expense in its manufacture due to the many varying lengths of its main members." He further questions

[1] I will not repeat the history of the company, which is well summarized in Victor Darnell, "Lenticular Bridges from East Berlin, Connecticut," *IA: The Journal of the Society for Industrial Archeology* 5, no. 1 (1979): 19-32.

[2] Berlin Iron Bridge Company, *Berlin Bridges and Buildings,* no. 9 (December 1898): 12. The marketing efforts of the company are partially documented by reports published in *Engineering News,* which lists sales in Texas, Virginia, and Bolivia, as well as attempted sales in California and Georgia.

[3] Darnell, "Lenticular Bridges from East Berlin, Connecticut," 19.

the economy of the design by stating, "to the initiated engineer its evident extravagance of material and shopwork is sufficient cause for its condemnation."[4]

Darnell may have been closer to the mark in explaining the wide distribution of the patented design favored by the Berlin Iron Bridge Company when commenting on a sale by Southwestern area sales agent William Payson of a small 28' long truss in Texas. As Darnell observed, it was "a long trip for a little bridge. There was a salesman." Payson, one of three agents identified in an 1889 company catalog as working in territories not covered by the home office, and the only agent with a listed address (in Edna, Texas), shows how salesmanship may have helped spread a company's product.[5]

Payson was born about 1837 in Exeter, New Hampshire. He was probably a descendant of Edward Payson, who emigrated from England to Roxbury, Massachusetts, aboard the *Hopewell* in 1636. The Payson name is common throughout New England and New York, where many of the family members were active in the clergy and in retail trade during the eighteenth and early nineteenth centuries.[6]

Nothing is known about Payson's earlier life before he moved to San Antonio, Texas, about 1884.[7] This was one year after The Corrugated Metal Company of East Berlin, Connecticut changed its name to Berlin Iron Bridge Manufacturing Company. There is no record of Payson's affiliation with that company until 1889, a year in which he sold bridges from the Texas panhandle to the border with Mexico.

In addition to the listing of his name in a company catalog for 1889, the commissioners' court records for Coryell County, Texas, document his sale of four bridges to that county. He

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[4] J. A. L. Waddell, *Bridge Engineering*, vol. 1 (New York: John Wiley & Sons, Inc., 1916), 474. The Berlin Iron Bridge Company built conventional truss types, but is known primarily for use of the lenticular design.

[5] Darnell, "Lenticular Bridges" 27. According to his obituary, Payson was living in San Antonio in 1889. It seems odd that Berlin Iron Bridge Company catalog, 1889 locates him in Edna, Jackson County. The only explanation I can offer for this discrepancy is that the Texas legislature had just passed a law that required traveling salesmen to register and pay a fee in each county in which they did business. Obviously, no salesman wished to register and pay the fee until actually commencing sales in a county. Payson may have listed Edna, Jackson, because that was the first county in which he registered.

[6] *New England Historical and Genealogical Register*, vol. 95 (January 1941): 81; *Genealogical Dictionary of First Settlers of New England*, vol. 3 (Baltimore: Genealogical Publishing Co., 1965), 372-75.

[7] Payson's rather sparse 1909 obituary states that he had been a resident of San Antonio for twenty-five years, thus marking his move to that city about 1884. It is assumed that the information came from his widow, the most likely person to have placed the notice in the paper.

also sold one bridge in Caldwell County in 1889, and notices in *Engineering News* attest to his success is selling bridges in Hemphill (shipped to Canadian City) and Webb (shipped to Laredo) counties during the same year.[8] Although unsuccessful, Payson also bid on jobs in Bastrop, Marion, and Bell counties in 1889.[9]

Payson placed a full-page advertisement for the San Antonio office of the Berlin Iron Bridge Company, with himself identified as "General Southwestern Agent," in the 1890-91 edition of R. L. Polk's *Texas State Gazetteer and Business Directory*.[10] This is the first documentation of Payson's residency in San Antonio. A similar listing was placed in *Johnson & Chapman's General Directory of the City of San Antonio for the year 1891*.[11] These listings coincide with a period of activity during which Payson sold the four Berlin Iron Bridge Company spans that have become the most well known extant lenticular trusses west of the Mississippi River.

In 1881, before Payson became a resident of San Antonio, a young agent for the Corrugated Metal Company named Henry Wulff sold the city a lenticular truss bridge to span the San Antonio River at Commerce Street. The sale also included four 12' tall ornamental iron towers, two for each end of the bridge.[12] Payson sold three more of the (renamed) company's product to the city in 1890, and another in 1891, prompting the company in a December 1898 publication to tout its success in constructing bridges for that community. "It appears to be a matter of considerable interest to many of our friends," the booklet stated, "to know how the Berlin Iron Bridge Company, of East Berlin, Connecticut, can successfully compete with

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[8] See *Caldwell County Commissioners' Court Minute Book F*, 463-64; *Caldwell County Commissioners' Court Minute Book G*, 477-78; and *Engineering News*, 15 June and 6 July 1889.

[9] See *Bell County Commissioners' Court Minute Book G2*, 11 November 1889; and *Engineering News*, 7 September and 21 December, 1889.

[10] R. L. Polk, *Texas State Gazetteer and Business Directory*, vol. 3 (St. Louis: R. L. Polk & Co., 1891), 857.

[11] *Johnson & Chapman's General Directory of the City of San Antonio for the year 1891* (San Antonio: Johnson & Chapman, 1891), 307, 427.

[12] *San Antonio Free Press*, 17 January 1881; *San Antonio Express*, 1 August 1893. The bridge was scrapped, but three of the four towers survive at a new location on Johnson Street in the King William neighborhood.

concerns nearer the point of operation."[13] The article offered no explanation, however, merely stating that "How we do it, is, as Rudyard Kipling says, `Another story.'"

Perhaps the opening pages of that story begins with William O. Douglas, patentee of the lenticular truss design featured by the company. Douglas served with the Reconstruction Bureau in Texas in 1868-69, and may have recognized the possibilities of the state as a market for iron bridges during his assignment. The first bridge sold by Wulff in 1881 represents the only known sale of the company's products which included iron shutters, roof trusses, siding, and prefabricated iron buildings and jails in Texas until Payson sold three spans in 1890.

The first span to be completed was a through truss, approximately 93 feet in length, for St. Mary's Street (relocated to Breckenridge Park). The second span was a pony truss approximately 100 feet in length at Market Street (now called the South Presa Street Bridge), and the third was a pony truss approximately 98 feet long designated for erection at Crockett Street. These bridges were described in *Engineering News* as having "iron buckle plate floors and concrete surfaces and are the first of their kind in Texas."[14]

The relative uniqueness of the floor system does not explain why the bridges were so costly, however. The Market Street Bridge alone, for example, cost the city $12,000.[15] This was considerably more than what a truss bridge of equal length and utility should have cost, based on examination of the bid prices for spans erected in Texas at approximately the same time.[16]

In October, Payson won the contract for another bridge, in competition with eighteen other bridge companies. This bridge, slated for erection on Convent Street, was to be a duplicate of the Crockett Street Bridge. It would also have concrete flooring and would be, according to the *San Antonio Express*, "the only bridge of its class south of Philadelphia." The cost of the bridge was $13,000, with half of the money to be paid upon delivery of materials to the erection site and the other half payable when the completed bridge was inspected and accepted by the city.[17]

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[13] Berlin Iron Bridge Company, "Berlin Iron and Bridges and Buildings" 12.

[14] *Engineering News*, 7 February 1891.

[15] *San Antonio Express*, 1 March 1891.

[16] See documentation in bridge files of Texas Department of Transportation, Environmental Affairs Division, 118 East Riverside Drive, Austin, Texas.

[17] Berlin Iron Bridge Co. v. City of San Antonio, 62 F 882, 884 W. D. Texas Cir. (1894).

At some point after the contract was signed, it was amended so that the span purchased for erection on Convent Street could be erected on Crockett Street instead. Although the reasons for this decision are unclear, it appears that the city desired erection of a bridge at Convent Street as soon as possible, and therefore placed the span originally purchased for Crockett Street at the Convent Street location. Therefore, the span purchased for Convent Street had to be re-designated, by contract, for erection on Crockett Street.

After the components of the bridge superstructure were delivered to the Crockett Street site on 1 February 1891, the City of San Antonio paid the Berlin Iron Bridge Company $6,500. But after inspection and acceptance of the completed bridge on 23 June 1892, the city refused to pay the rest of the money owed to the bridge company. All four bridges had been purchased by the city during the notoriously corrupt administration of Mayor Bryan Callaghan, Jr., with the approval of City Engineer Paul Pretzler. Although Callaghan may not have profited personally from the misdeeds of his organization, he was known to exhibit favoritism in the awarding of city contracts.[18] Apparently, the administration succeeding that of Callaghan who resigned in 1892 to run for County Judge determined that the contracts for all four bridges had been the result of a fraudulent arrangement. It was charged that Payson had paid other bridge companies to underbid the job, thus ensuring that the Berlin Iron Bridge Company would win the contract with an inflated price. The city therefore ended up paying many thousands of dollars more for the bridges than they were worth.

The bridge company responded by suing the city in federal circuit court for the western district of Texas, San Antonio division, on 19 May 1894, for recovery of the $6,500 owed it under terms of the contract. The case, *Berlin Iron Bridge Co. v. City of San Antonio*, was finally settled in 1904.

The court essentially ruled that a valid contract never existed because it was a violation of the Texas State constitution for municipal corporations to create a debt unless making at the same time provision by taxation for payment of interest and creation of a sinking fund. The City of San Antonio had not done so. Therefore the city, which had been using the bridge for twelve years, had not legally purchased it and did not own it. The bridge company, however, did not want the bridge back. Eventually an agreement was worked out whereby the bridge company received a back tax warrant of $2,000 and the city received title to the bridge.[19]

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[18] J. Kaaz Doyle, "Callaghan, Bryan V., Jr.," in *The Handbook of Texas*, vol. 1, ed. Ron Tyler (Austin: Texas State Historical Association, 1996), 904.

[19] *San Antonio Express*, 27 April 1904.

Whether or not the mayor or city engineer ever received any form of kickback for the Berlin Bridge Company contracts is unknown, and there is no conclusive evidence that Payson was involved in bid rigging. Such practices were common during the nineteenth century, however, and have been well documented.[20] What is beyond doubt is that the city paid a very high price for the products of the Berlin Iron Bridge Company, much more than necessary for the length of spans erected. The existence of these bridges owes nothing to their economy, functionality, or superiority of manufacture. They were built because a salesman, working within the bounds of prevailing business practice, won a contact for their construction.

There is no record of Payson having sold any bridges in Bexar County other than four San Antonio spans erected in 1890 and the one span erected in 1891. He was very active in those years, however, selling one bridge in 1890 to Val Verde County (for erection across San Felipe Creek near the City of Del Rio), and three bridges for unknown locations in Duval County in 1891.

Payson's biggest, but perhaps most disappointing, sale during 1891 was to Williamson County. After returning from a trip to San Antonio to examine the Berlin Iron Bridge Company spans already erected there, the Williamson County commissioners voted on 28 April to accept Payson's offer to build twelve bridges at points throughout the county for a sum of $40,000.[21] It was not long before Payson asked to be relieved of the contract.[22] At first the county commissioners refused, although on 3 June 1891, they did approve Payson's request to add another $2,000 to the contract to cover the increased length determined necessary for one of the bridges.[23] Apparently, that was not enough additional consideration because Payson eventually abandoned the contract, and the Chicago Bridge and Iron Company ended up building all twelve bridges.[24] The reasons behind the abandonment were never made public.

In 1893, Payson is listed again as a agent for the Berlin Iron Bridge Company in *Jules A. Appler's General Directory of the City of San Antonio, 1892-93*. But he was also listed as an agent for "American Iron Bridge Co.," which was probably a misidentification of the American

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[20] See Eli Woodruff Imberman, "The Formative Years of the Chicago Bridge and Iron Company" (Ph.D.diss., University of Chicago, 1973), 153-61.

[21] *Williamson County Commissioners' Court Minute Book 8*, 97-9.

[22] *Court Minute Book*, 113.

[23] *Court Minute Book*, 114.

[24] *Court Minute Book*, 144, 147, 173, 512, 514-15.

Bridge and Iron Company of Roanoke, Virginia.[25] There is no record of his ever having sold a bridge for the latter company.

Payson was never again listed in a San Antonio city directory as an agent for the Berlin Iron Bridge Company, although he sold one of that company's spans in Frio County in the mid-1890s. He also sold another three spans to Caldwell County: one in 1895, one in 1897, and the other during the same period.[26]

Payson was listed in *Jules A. Appler's General Directory of the City of San Antonio, 1895-96*, as an agent for F. C. Austin Manufacturing Company of Chicago. But, as was the case with the American Bridge and Iron Company, there is no record of him having sold any bridges for the Illinois firm.[27] The last affiliation of Payson with an individual company was a listing in *Jules A. Appler's General Directory of the City of San Antonio, 1897-98*, in which he is identified as an agent for Dow Wire Works Company[28]

From 1899 to 1904, Payson is listed in San Antonio city directories as either a traveling salesman or bridge contractor, unaffiliated with any particular company. This may be a result of the consolidation of twenty-eight bridge firms, including the Berlin Iron Bridge Company, into the American Bridge Company in 1900. The consolidation could well have terminated any pre-existing arrangements between certain organizations and their agents. But the titles that Payson chose for himself after 1899 also reflect his self-identification.

Payson was proud to be a traveling salesman, or "drummer," and was an active member of Post D, Texas Division, of the Traveler's Protective Association of America. This group was formed in Denver, Colorado, on 3 June 1890, to protect the interests of traveling salesmen and to "further elevate the social and moral character of the members of the association." Based in St. Louis, the organization was represented in thirty-two states and ninety-eight large cities, and had a membership of approximately 10,000 by the mid-1890s.[29]

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[25] *Jules A. Appler's General Directory of the City of San Antonio, 1892-93* (San Antonio: Jules A. Appler, 1893), 505, 681.

[26] Documentation for these sales is in bridge files of Texas Department of Transportation, Environmental Affairs Division, 118 East Riverside Drive, Austin, Texas.

[27] Appler's, 468.

[28] Appler's, 459

[29] *San Antonio Express*, 3 June 1895.

Payson attended the association's 1892 national convention held in Old Point Comfort, Virginia, and served as chairman of the committee on hotels and public comfort when the 1895 national convention was held in San Antonio.[30] The *San Antonio Express* published an account written by Payson after his return from the 1892 convention, and referred to him at that time as "king of bridge men in Texas."[31]

Yet, despite Payson's activity as a member of the association, his name was not mentioned by Howard Wallace Peak in *A Ranger of Commerce, or 52 Years on the Road* (1929).[32] The book, a memoir of the activities of San Antonio-based members of the association during the late nineteenth and early twentieth centuries, was written by a president of Post D during the period of Payson's membership. Since Peak made a point of listing the most prominent members of post D, the absence of Payson's name suggest that the two men were not on good terms. Perhaps this is because Peak did not approve of the unethical business practices that were so prevalent among bridge salesmen during that era. After all, bid-rigging and contract- fixing did not tend to elevate the moral character of those who participated in such activities, and would thus violate one of the central purposes of the association. Payson's only known sale as an independent bridge contractor was a contract for the erection of three spans in Burnet County in 1906. The commissioners' court of that county had accepted plans and specifications from both Payson and M. S. Hasie, an independent agent from Dallas who represented the American Bridge Company and his own Texas Bridge Company. The contract was originally awarded to Hasie, but when he failed to post bond, a new contract was signed with Payson. The new contract required construction of three bridges for $5,900, with half payable upon delivery of the materials to the nearest railhead and the other half upon inspection and acceptance.

T. S. Reed, probably a local contractor hired by Payson to erect the bridge, was paid $2,950 as an assignee of Payson toward the end of 1906. On 12 February 1907, however, Payson had to appear before the commissioners' court to explain why the bridges had not yet

[30] *San Antonio Express*, 26 June 1892, 3 June 1895.

[31] *San Antonio Express*, 26 June 1892.

[32] See Howard Wallace Peak, *A Ranger of Commerce, or 52 Years on the Road* (San Antonio: Naylor, 1929).

been built. His answer was unsatisfactory, and he had to forfeit his bond. The court then reissued the contract to T. S. Reed and Son, who finished the job.[33] On at least one of those bridges, the 60" long Pratt truss erected across North San Gabriel Creek near the little community of Joppa, the builder's plate listed Payson as the builder. No doubt the plate had been ordered and delivered before Payson was tossed off the job, and Reed probably placed it on the bridge in acknowledgment of Payson's contribution.[34]

On the evening of 25 November 1909, Payson died in his home at 301 Richmond Avenue in San Antonio from natural causes. He left behind a widow and two daughters. The funeral was held in his home, and he was buried in City Cemetery No. 2 lot 90. If a headstone was ever erected, it has long since been removed, and no memorial to the man and his life exists other than the bridges he sold.

Much is unknown concerning the circumstances of Payson's work in Texas. We may never learn why he lost the contracts in Williamson and Burnet counties, why Peak excluded his name from *A Ranger of Commerce*, or what Payson did before moving to San Antonio. But if we may assume that the known Berlin Iron Bridge Company spans in Texas represent only part of the total that once existed, then it may be said that Payson was an important factor in the spread of lenticular truss bridges across the landscape of the state.

This investigation into the life and work of William Payson suggests that further research is needed to understand the activities of bridge salesmen and the distribution of particular nineteenth-century bridge designs. The business practices of these men, along with engineering innovation, may be considered as elements influencing the evolution of transportation and communication technology.

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[33] See *Burnet County Commissioners' Court Minute Book E*, 388, 390, 407, 408, 423, 424, 430, 493, 516, 521, 524, 525, 531, 532, 556, 557.

[34] The fabricator of the Joppa Bridge is unknown, but given that the specifications were supplied by Hasie, it was probably and American Bridge Company. A nearly identical span (washed away in 1936) was erected between Burnet and Llano counties at the Tow crossing. See Jim White, com. *A Pictorial History of the Burnet Area* (Marceline, Mo. D-Books Publishing, Inc., 1994), 13.

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