

## **The Bridge Builders: Robert W. Smith**

(Information was extracted from George Gould's Indiana Covered Bridges Thru the Years for the following)

Robert W. Smith, either on his own or through agents, built some 45 covered bridges in Indiana. He used either his own patented truss or the Howe truss.

Smith was born in 1833 in Miami County, Ohio, and had little formal education although his mother taught him at home. He worked as an apprentice for several years before going out on his own. His very first invention, though never patented, was a self-supporting roof truss for large barns.

Smith was living in Tiptecanoe City, Ohio, in 1867 when he was granted a patent for a wooden truss bridge. Later that year, he formed the Smith Bridge Company and moved to Toledo. He built five bridges in Ohio and Indiana in 1867, 22 in 1868, and 75 in 1869. Also in 1869, a second patent was granted to Smith on an improved bridge truss. However, in his bridges, Smith never exactly followed his patented designs, but constantly made changes to improve strength and design. The Smith Bridge Company maintained a yard in Toledo where all timbers were cut and first fitted together for each bridge. They would then be disassembled and shipped by rail or boat to the bridge site for reassembly by either a company carpenter, a Smith Company agent, and a local crew of carpenters. So in a sense, Smith was the Henry Ford of the covered bridge business.

A typical Smith truss rarely had vertical posts. The timbers between the two chords were braces set at an angle. The late Ray Wilson of Pennsylvania made a study of the Smith truss bridges and recognized four distinct types: Type 1 was the original patent with two posts and crossed timbers in the center panel; Type 2 had open V-timbers; Type 3 was a reinforced truss with two diagonal timbers; Type 4 was the strongest as it had further reinforcements of both double and single sets of diagonals.

According to George Gould, prior to 1977, there remained many original documents in the Carroll County Courthouse concerning Smith and his proposed bridges for that county. Smith himself appeared for a contract letting on July 14, 1870. Two handwritten bids gave the cost of proposed bridges. For a superstructure with the Smith Patent truss, the following costs were quoted: an 80 foot span, \$11.50 per linear foot, plus \$250 extra for siding and roof; a 100 foot span, \$14 per linear foot, covering extra; a 120 foot span complete with siding and roof at \$19.50 per linear foot; and a 150 foot span complete at \$21.50 per linear foot. He eventually received contracts for two Howe truss bridges in Carroll County, the Lancaster and Adams Mill, and the construction of these was done by A. Wheelock using his own patented iron abutments. Both are still standing.

Gould credits the Smith Bridge Company with responsibility for 21 bridges in Indiana. Agents involved, including A. Wheelock, Wheelock and partners, W.T. Washer, and Thomas Hardman. Trusses assembled in Toledo for Smith or his agents included some 25 Smith, at least 8 Howe, and 10 others, type unknown.

Regardless of whether a bridge was built by Smith or an agent, Smith always guaranteed the structure. Bridges with Smith constructed trusses were built in Indiana, Ohio, Pennsylvania, and Oregon.

Some 20 years after its inception in the early 1890's, the Smith Bridge Company was taken over by the Toledo Bridge Company. Smith then became interested and involved in real estate until his death in 1898.

Arthur Gatewood in his book, *Indiana Covered Bridge Location Guide*, gives the Smith credit for the following bridges still standing in Indiana:

Standing bridges believed to be erected by Smith in Indiana are: Cataract Falls, Vermont, Spencerville, North Manchester, Adams Mill, Lancaster, Cumberland, Scipio and Roann.

W.T. Washer, as an agent of the Smith Bridge Company, erected the Old Red and Wheeling bridges, which are still standing in Gibson County.