

The Bollman Truss

Once widespread but now reduced to a single known extant example in the world, located over the Little Patuxent River at Savage Mill in Howard County, Maryland, the Bollman truss type is perhaps Maryland's most significant contribution to metal truss design, if not American civil engineering itself. Wendel Bollman's national significance as an early, innovative bridge engineer has been chronicled by technological historian Robert Vogel (Vogel 1964) and is discussed in more detail below in the subsection "Metal Truss Bridges in Maryland." Patented in 1852 and utilized extensively on the Baltimore and Ohio Railroad, for which Bollman worked as master of road, the Bollman truss featured vertical members in tension, with diagonals also in tension and running from the top corner of each truss endpost to every panel point (joint where verticals met the lower chord) on the truss. Vogel has shown that Bollman's truss was, as Bollman originally maintained, a composite suspension-and-truss bridge, with a non-structurally functional lower chord and diagonals performing much like the suspenders or hangers on a suspension bridge (Vogel 1964).

Like the similar truss developed by Albert Fink for the B&O and other railroads, Bollman's truss represents the key transitional stage in American bridge engineering between empirical, rule-of-thumb design and the mathematical analysis of truss loading promoted by such engineers as Squire Whipple and Herman Haupt. Although his Patapsco Bridge Company offered Pratt trusses as well as his own patented truss for railroads and highways, the Baltimore-born Bollman stands as one of the most important engineering figures of the industrializing nineteenth century. Bollman bridges were built so often by the B&O between 1850 and 1880 that the railroad has accurately been spoken of as being "Bollmanized," but such structures were also located on roads in Baltimore City and County as well as western Maryland (Harwood 1979; Vogel 1964).