inches; sectional area, 12×18 inches. The posts are 8×12 inches, and the sustaining braces are six inches in thickness, and vary from eight to thirteen inches in width. The chord pieces are closely fitted together; "packing blocks" are inserted between, and the whole secured with vertical bolts. The posts are "locked on" to the outside of the chords and arch, and are fastened together by means of bolts, which pass over and under the same: they are not framed into the chords or arch, as they were intended to be moved horizontally in either direction, and are so framed as to permit a large wooden key to be inserted above and below the arch. Large wooden keys are also inserted back of each pair of posts, passing through the chords, and receiving the entire thrust of the braces. The arch abuts upon large cast iron "shoes," which are laid upon the chord, and attached thereto by means of heavy wrought-iron links, which pass around projections on the "shoes," and around castings inserted in and passing through the chord, thus transferring the thrust to the latter. The counter braces are adjusted by means of wooden keys. By this method, it was supposed that a perfect adjustment could be attained; that, by loosening the keys under the arch, and driving the keys over the same, the truss could be raised, and the whole strain placed upon the arch; that, by driving the keys back of the posts, the latter could be made to slide horizontally upon the chord and arch, and thus the whole, or any portion of the strain, be put upon the truss.

Very soon after these bridges were brought into use, it became evident that however plausible this method of adjustment might seem in theory, it was an entire failure in practice. The sudden shrinkage of the arch, posts, and keys, caused an almost immediate deflection of the whole