usually constructed, with two posts dividing the span into three intervals, they are without diagonal rods or braces in the middle interval; this is a defect which should be avoided. For considerable spans, the intervals must be increased in number, and the figure of the truss becomes a polygon, bounded by a straight chord on the upper side, and by one or more iron rods, forming a broken line on the lower side.

An application of this principle, which does not appear to have been made, but which would be useful in many cases, consists in trussing the top instead of the bottom chord. Trussed girder bridges could then be used when the roadway passes through the bridge, as well as when it passes over the top. In this case, the top chord must be well braced laterally, and the ends must be supported by strong posts.

One of the simplest, and, for an iron bridge, one of the cheapest modes of construction, consists in using a single arch, a straight top chord, and vertical posts, or columns connecting the chord and the arch without panel braces or ties of any kind, and without a lower chord. The arch is counter-braced by iron rods extending from the chords over each post to the abutments below the skew-backs, where they are securely anchored into irons passing through the masonry.

Many other arrangements and combinations might be given, but as the object of the author in the first part has been to establish general principles, and not to exhibit details, the reader is permitted to exercise his ingenuity in making other combinations of the elements of bridge trusses, viz., chords, ties, braces, counter-braces, arches, and arch-braces.