The two longest uprights have usually been made double and divergent from the collar downward, the branches being of iron from ½" to ⅖" smaller in diameter than the single uprights, and passing through the connecting block near the links, either inside or outside, as deemed most appropriate, with a thin nut above, and a common nut below the block; also a cast iron washer above the upper nuts, for the beam to rest on, instead of resting upon the central part of the block. The object is to give lateral steadiness to the arch, and diminish its vibration.

A better effect in the same direction is produced by connecting the upper ends of those uprights across from truss to truss, in case of long bridges. For this purpose, the upright may extend a little above the arch, when necessary to give head-way (or, perhaps better still, the arch itself might rise higher above the chord, thus diminishing the action upon both arch and chord), and a light cast or wrought iron strut introduced, to counteract the tendency to vibration of the arches, arising from the spring of the beams. As the the two trusses naturally tend to vibrate in opposition to each other, it is suggested whether simple ties of ½" iron, would not so break the regularities of the vibrations as to prevent their increase to an objectionable extent. The rigid strut, however, would be more effective, being capable of acting in both directions; and, if thrown into the form of a graceful arch, it would be ornamental withal.

CII. The diagonals are round rods, with an eye at the upper, and a screw and nut at the lower end of each; the screw portion being about ¼" larger in diameter than the plain part of the rod. Two eyes of