The mixture used was one of cement to three of aggregate, consisting of sand and crushed stone, so proportioned as to leave a minimum of voids. The bridge was concreted in one week by making special efforts, and the forms and floor were kept wet for another week. The concrete matured without showing any cheeks or hair cracks. Two inches was chiselled off the caps of the newel posts after the concrete had set as they were thought to be too large, and the mortar was found to be as hard as the stone which was embedded in it, for the stones would crack through quite as readily as the mortar. Owing to a misunderstanding these caps were left rough, but the writer regards this as a mistake. They should have been dressed smooth to harmonize with the rest of the bridge. Whatever may be the life of lean concrete mixtures, which are often used in massive work, the engineers believe that concrete proportioned in the above-mentioned way will endure indefinitely and grow harder and stronger with age.

Considère, the eminent French engineer, was the originator of the concrete truss, and he has built several of them in Europe. The approaches to the Sparkman Street Bridge at Nashville, Tenn., are also of this form. The bridge here described is the first concrete truss to be built in Canada.

The principal differences between Considere's concrete trusses and the Middle Road bridge are in the curved upper chords and in the handrailing and other details. Considere's compression chords are much lighter than those of the bridge here described. The upper chord segments of the former bridges consist of heavily hooped concrete columns, an invention of the designer. This results in high unit stresses and light chords. The designers of the Middle Road bridge considered that a more massive construction would have a better appearance in a concrete bridge, besides being more rigid. Consequently the compression chords in the latter bridge are only slightly reinforced, and the concrete itself takes most of the compression. This construction is no more expensive than light wound columns.

Compared with the ordinary (unhinged) concrete arch, the concrete truss has advantages and disadvantages. In the arch the horizontal thrust is resisted by