rally from the inequality of pressure upon the joints, it was proposed to obviate this difficulty in the present case, by interposing plates of annealed copper between the ends of the segments, so that if the arch should rise or fall by expansion or contraction, the comparatively yielding quality of the interposed material would distribute the pressure, and prevent the fracture which might be produced if the joint should open, and the pressure be thrown upon the upper or lower corners of the castings.

This intention was defeated by circumstances which rendered it necessary to hasten the completion of the work. The ribs were raised without dressing the joints, and the copper plates were therefore rendered useless, the inequalities of surface being too great to admit of their being advantageously employed. Under these circumstances a substitute was used, which gave more satisfaction than could have been obtained by an adherence to the original design, and was much more economical. The joints were separated to the distance of one-fourth of an inch, and filled with spelter poured into them in a melted state; this was very conveniently done by binding a piece of sheet-iron around each joint, and covering it with clay. The material introduced being nearly as hard as the iron itself, and filling all the inequalities of the surface, rendered the connection perfect.

The pieces of castings were made with inch holes near the ends, through which rods were passed horizontally to assist in raising them. To support them when raised to their proper positions, pieces of board were nailed vertically from the top to the bottom chord, on each side of the truss, and short rods were passed through the holes in the ends of the castings, and through augur holes in the boards. By this arrangement the segments were held securely, and no obstruction was offered to the attachment of the arch-plates, which were added by clamping one end, and springing them around the arch by a rope attached to the other.

The most important advantage that was expected to be derived from the peculiar arrangement exhibited in this structure, was a practical test of the power of resistance of a