extent in sustaining the load according to the adjustment of the arch. In the absence of the arch they would bear the whole weight. These rods in the first and second panels are $1\frac{1}{4}$ inches diameter, and in the 6 middle panels 1 inch diameter.

The rods in the direction of the other diagonals, or those which beginning at the top chord incline towards the ends of the truss, serve as counter-braces. They have no action in sustaining a direct load uniformly distributed; should the truss settle they would bend, but they have a most important action in resisting any upward pressure, such as is produced by a weight upon one side of the truss, when not counterbalanced by a corresponding weight on the opposite side. These rods are also in pairs, but they are only $\frac{6}{8}$ inch in diameter, except in the last panel, where there is a single rod, the diameter of which is $1\frac{1}{2}$ inches. Plates of annealed copper $\frac{1}{8}$ inch thick are placed in the arches between the ends of the castings to equalize the pressure on the joints.

The width of truss from out to out of chord is 19 feet, and height 10 feet 10 inches.

Between chords in clear 16 ft. 1 inch.

The width of the panels from middle of truss is 6 ft. 1 inch.

The floor beams are $6 \times 12$ and 24 feet long; between supports the distance is 16 feet 1 inch; they are placed 3 feet from centre to centre, and the weight is distributed by track strings $10 \times 10$ placed under each rail. These string-pieces are without joints. On the track strings are cross-ties of white oak, or locust, 2 feet apart from centre to centre, $4 \times 6$ inches in cross-section, laid flat side down.

There are 4 panels of lateral braces to each span.

This system of lateral braces consists of diagonal timbers $5 \times 7$ resting against angle blocks, and connected by 1 inch bolts extending through both trusses. The same arrangement is used for both top and bottom chords. The system of diagonal braces is represented in the plan. There are two pairs on each pier, and three piers intermediate.

The length of the arch in the middle being 63 feet 8 inches, the most convenient length for the iron rails would be 21 feet 8 inches; by cutting one bar, but not in the middle, there will