

RIDER'S PATENT IRON BRIDGE. (Plate 8)

Description.

The truss of the Rider bridge is principally composed of an upper and lower chord, upright posts, and diagonal ties. The upper chord is made of cast iron, with heavy horizontal flanges. The lower chord is made of wrought-iron. The diagonal ties, or suspension rods, are also made of wrought-iron, and are secured only to the upper and lower chord, at regular intervals, running upwards and downwards diagonally with the chords, and at nearly right angles with each other. The posts are of cast-iron, and are placed at equal distances apart along the whole length of the chords, to keep the upper and lower chords asunder, and at the same time to assist in preserving the truss in line.

A wedge is inserted on the top of each iron post, under the top chord, by the action of which the diagonal rods are kept in a state of tension.

Bill of Materials for a Single Span of 60 feet.

Height of truss, 7 feet. Width in the clear of chords, 12 feet. Floor-beams of wood.

Cast-Iron.

54 cast-iron posts 6 feet long, cross-section 9 sq. in.	8,784 lbs.
132 lineal feet cast-iron top chord, " 15 "	5,940 "
110 " caps for lower chord, " 2½ "	825 "
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Total cast-iron 15,549 "	

Malleable Iron.

104 diagonal ties, each 9.2 ft. long, cross-section $\frac{25}{8}$ 4,500 lbs.