of posts, and the use of a wooden arch composed of layers of plank, instead of an arch of cast-iron.

The advantage of such an arrangement is the great facility which it affords for adjustment. To raise the camber of this bridge it is not necessary to remove a single stick of timber; all that is required is to slacken the counter-braces and tighten the vertical rods, until the bridge is raised to a sufficient extent, after which the counter-braces should be tightened. Two men in less than an hour can adjust a bridge constructed in this way.

The arch can be made to bear any proportion of the weight by tightening the counter-braces on the upper side.

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BOILER PLATE TUBULAR BRIDGE. (Plate 4.)

(COPY OF A LETTER FROM THE INVENTOR.)

Reading, May 1, 1849.

Dear Sir:—Enclosed I send you the drawings of the three bridges I constructed on the Baltimore and Susquehanna Railroad while engaged as Superintendent of Machinery and Road.

The one marked A was built at the Bolton depot in the winter of 1846 and '7, and was put in its place in April, 1847. This bridge is made of puddled boiler-iron \( \frac{1}{4} \) inch in thickness. The sheets, standing vertical, are 38 inches wide and 6 feet high, and riveted together with \( \frac{2}{6} \) rivets, two and a half inches from centre to centre of rivets. You will observe by reference to the drawing, that each truss-frame is composed of two thicknesses of iron, 12 inches distant from each other, and connected together by \( \frac{3}{16} \) iron bolts, passing through round cast iron sockets at intervals of 12 inches; which arrangement, together with the lateral bracing between the two trusses, which is composed of \( \frac{3}{4} \) round iron, set diagonally and bound together at the crossing by two cast-iron plates about 4 inches diameter, the sides next to the bracing being cut in such a man-