inside longitudinal cover plate before mentioned. The whole of this construction will be understood by reference to the general section, Fig. 3, Plate VI., and the enlarged details, Figs. 10 to 15 on Plate VII. On the outer side of the ribs, cover plates 5 in. wide, and of a section, 3 in. and 1 in. thick, are placed at intervals, to correspond with the T-iron stiffeners.

It will be seen in elevation, Fig. 1, section, Fig. 3, and details, Figs. 13, 14, and 15, that the ribs of the bridge are designed to act as cantilevers, with a central girdler, and that instead of terminating at the face of the abutments, and bearing upon skewbacks there, they are carried through the brickwork, and moored down into an anchor plate placed in the concrete. Each rib is carried down into the abutment with a curve, to a depth of 5 ft. below Trinity high water on the west abutment, the anchor plate in the east abutment being 3 ft. above Trinity high water, where it rests upon bed plates 8 ft. long, 1 ft. 8 in. wide, and 1 in. thick, fastened to the web and flanges of the ribs by four angle irons, 3 in. by 3 in. by 1 in. These bed plates are held down into the abutments by twelve 14 in. bolts, 6 ft. in length, and holding on to continuous washer plates, 6 in. wide by 1 in. thick, forming a rectangle, 12 ft. 6 in. by 7 ft. 6 in., the washer plates overlapping and being rivetted together at the corners, and built into the concrete foundation. This arrangement is clearly shown in Figs. 3, 4, 13, and 14, and was adopted on account of a continuous sheathing being required for the boxes, for the whole of their length.

The arched ribs are connected together transversely on the lower flanges, at each pair of T-iron stiffeners, that is, to say, every 12 ft. These braces consist of rolled beams of section, 6 in. deep, 4 in. wide, and 3 in. thick, which support the gas tubes passing over the bridge. These joists are secured to the webs and flanges of the arched ribs by eight rivets 3 in. diameter, as shown in the enlarged cross section, Fig. 9. The upper flanges of the ribs are also connected together every 12 ft. by T-irons 5 in. by 4 in. by 1 in., cambered 4 in. in the centre, and attached to the webs by gas set plates with rivets 3 in. diameter, as shown in Figs. 9 and 10. In addition to these transverse beams, a system of horizontal diagonal bracing ties the ribs together at the top and bottom, consisting of bars 3 in. by 1 in., each of which is rivetted to the rib at the ends by 2 in. rivets, while the braces themselves are connected at the point of intersection with one 3 in. rivet.

In Figs. 13 and 14 of Plate VII. is shown the detail by which the brickwork is kept clear of the curved ribs as it enters the abutments. It consists of a small girdler built into the abutment to carry it above the main girders, and leaves a clearance of 2 in. between the brickwork and the ironwork.

In Fig. 1 of Plate VI. is shown the general design of the ornamental spandril filling. The spandrels themselves are carried by angle irons 6 in. by 6 in. by 1 in., rivetted to the top flanges of the ribs, and carried through the abutments to the sole plates, and also T-irons at the top of the spandrels, underneath the cornice, and built 6 ft. into the abutments. Between the top and bottom T-irons the spandrels are attached by vertical T-irons, 1 in. by 3 in. by 1 in., at intervals of 6 ft., to stiffen the spandrels, and to transfer the weight of the pathway to the ribs. At the crown of the arch where the upper and lower T-irons of the spandrels intersect, they are connected by means of a triangular cover plate 1 in. thick, and 3 ft. in length, and one set of diagonal braces 3 in. by 1 in. is introduced at the top of each spandril. On the exterior of each rib, cast-iron panels and mouldings are attached by screws 1 in. diameter tapped into the ribs at intervals of 9 in.

The cast-iron cornice, bolted on top of the spandrels, and when it forms a parapet to the bridge, is formed in lengths of 6 ft. 4 in. to the curve of the spandrels; and the ornamental spandril filling is cast in sections to suit the vertical T-irons at the back, shown in Fig. 3. The thickness of the metal in the scrollwork is 3 in., and it is secured to the spandrels by 3 in. bolts. The sections of the various mouldings and the mode of attaching them to the ribs are clearly shown in the enlarged details, Figs. 9, 10, 11, and 12.

The pathway over the bridge is formed to the curve of the cornice, and falls 2 ft. from the centre of the span to the abutments; it is carried by T-irons 5 in. by 4 in. by 3 in., spaced 6 ft. apart from centre to centre, with a 4 in. camber transversely, and secured to the ribs and spandrels by seven 2 in. rivets. Upon these is placed the 2 in. planking, as shown in section, Fig. 9. The planking placed over with tar, was afterwards covered with 2 in. of asphaltum, and gutters 6 in. wide are formed on each side of the bridge in that material, communicating with 4 in. cast-iron water pipes, which pass through the ribs near the abutments.

The sides, top, and bottom of the ribs are lined with 1 in. matched boarding tongue and groove, and fastened to the ironwork with 3 in. wood screws. From Figs. 9, 12, Plate VII., it will be seen that this boarding is secured to a longitudinal timber 6 in. by 4 in., passes throughout the whole length of the bridge, and rests upon the joists which carry the gas tubes; also to timber fillets 6 in. by 4 in. secured to the ribs on each side of the bridge.

In the interior of the bridge, enclosed within the planking on top, and the matched boarding at the bottom and sides, and carried by the transverse joists, are two wrought-iron tubes or boxes, through which the