The springing of the arch is 10 ft. 6 in., and the depth of the masonry is decreased by steps until at the top it is only 4 ft. 3 in. in thickness. The abutment walls are carried upon timber piles.

The foundations in the river bed are all formed of cast-iron cylinders, 10 ft. in diameter. These cylinders are sunk right down through the sand of the river bed, until the solid substratum is reached, which, in some instances, was only found at a depth of 80 ft. from the surface. The excavation within the cylinders during the operation of sinking was accomplished by the employment of a dredger of an ingenious description. Owing to the great quantity of stone debris met with in sinking the cylinders, the operation proved very tedious and annoying to the contractors. The cylinders are filled throughout with concrete formed of sand and hydraulic mortar, and thus they form hard and solid pillars sunk down to the solid rock.

From the cylinders, which in their upper part are 12 ft. in diameter, the piers arise. These are faced on the outside with white Scotch granite, and under the arches they are faced with ashlar masonry in freestone, while the internal portion is of substantial rubble work. The ashlar facing was laid and jointed in Portland cement, and the rubble grouted at every course. Into the interior of each pier and abutment iron beams are built, which receive the weight of the wrought-iron girders forming the arches of the bridge. There are eight of these ribs in each arch. In the outer spandrel filling on each side of the fascia arches, panels are formed enclosing scroll work and armorial shields; and the arms of the city are displayed on the parapet in the centre of the bridge. The ornamental ironwork, as well as the lamp standards over the parapets, are bronzed and picked out with gilding.

In the construction of the roadway, due regard has been had to the heavy and increasing traffic that is likely to come upon the bridge. The upper surface of the supporting plates, coated with gas tar, is covered with a layer of concrete, and that again with asphaltic 3 in. thick. The carriage way formed over this substratum consists of granite blocks 8 in. deep, 9 in. to 14 in. long, and 4 in. thick. With a view to solidity, the stones are bedded in mortar, and grouted with hydraulic lime. The gutters and kerbstones are formed of white granite laid in large blocks.

As already mentioned, the engineers were Messrs. Bell and Miller, and the contractors Messrs. Hannon, Donald, and Wilson. The resident engineer was Mr. Kyle.