cantilevers consist of two continuous T-iron frames, each 4 ft. 6 in. deep at the fixed end, and 16 in. deep at the loose end, with full webs of ½ in. plates at both ends, and a number of T-struts in the intervening space. The bottom members of these frames consist of two T-irons, 4 in. × 4 in. × ½ in. in section, rivetted back to back (see Fig. 3), but the top member consists only of one of these T-irons. The fixed end of each cantilever is made into a complete box, about 3 ft. square, by means of wrought-iron plates uniting the two frames transversely, and each half of the bridge swings round a cast-iron post, 12 in. in diameter, similar to that of a jib crane. At the top, the pillar terminates in a pivot 4 in. in diameter, upon which the structure rests by means of a brass bushed boss forming part of a casting bolted to the top of the framing of the cantilevers, and at the bottom the pressure is transmitted to the pillar, and the structure held in position by means of four rollers, 5½ in. diameter, revolving upon 1½ in. steel pins, which are held fast in a hollow casting bolted to the bottom of the framing of the cantilevers.

A cast-iron balance box, 5 ft. 6 in. long, is bolted to the land end of each half of the bridge to balance the weight whilst the bridge is being swung open. The machinery for swinging the halves round consists of a horizontal shaft worked by an ordinary crane handle, which, by means of a bevel pinion and wheel, gives motion to a vertical shaft. A spur pinion keyed to the lower end of this shaft gears into a toothed ring about 5 ft. diameter, which is bolted to the foundation plate of the swinging post. The first-named portion of the gearing is carried by two cast-iron brackets bolted to the web of the framing, and the man who works the handle has to walk round with the bridge as he swings it open.

A wrought-iron saddle, 9 ft. 6 in. high, consisting of a T-iron frame with solid plate web, is bolted to the top of each of the frames in the plane of the axis of the swinging post, and upon these a light truss rod, 1½ in. × ½ in., takes its bearing, and is carried on the one end to as near the end of the half-bridge as possible, and at the opposite end to within about mid-length of the balance box, where it passes through a boss on the side of the box, and is drawn up by means of a nut, the rod being made 1½ in. in diameter from the point where it begins to take its bearing on the saddle.

A couple of 7 in. × 3 in. continuous scantlings are bolted to the top members of the main frames; and the platform, which consists of half-planks 2 in. thick, with 1 in. spaces between them, is screwed on to these. A continuous half-plank with moulded edge, however, is placed lengthwise on these scantlings along the faces of the bridge, so as to give it a neat finish, and a light wrought-iron hand-railing is fixed along the edges of the platform on each side in such manner as to leave a clear footway of about 2 ft. 10 in. in width.

When closed, the two halves of the bridge lock themselves by means of wedges fixed to the meeting ends of them, and by means of pull or catches fixed to the top of the platform. The bridges above described were designed and executed under the superintendence of Mr. H. Grissell, at the Regent’s Canal Ironworks, London.