

caissons, in which case the level of the inner portion of the pier, Mr. Cruttwell, namely, 2 feet above the outer portion, would have been sufficient. It was afterwards found advisable to increase the width of the under-cutting to 5 feet. That necessitated carrying the base all along the circumference of the pier an additional 2 feet deeper. It was not considered necessary to carry down the whole of the inner area of the pier, as it was thought that the benching would be no detriment to the foundation. It had been suggested that the staging might have consisted of one row of piles on the outside only; but, considering the very heavy traffic on the Thames and that the damage from barges &c. might be disastrous, he thought that the adoption of such a narrow staging would have been inexpedient. The staging was only 13 feet 6 inches from centre to centre of the two rows of piles. That was quite narrow enough. With regard to the details of the cost, he had given all the quantities of the materials, from which, and from the total cost, some idea might be obtained as to the cost of the individual items. In the absence of Mr. Jackson, the Contractor, he did not feel at liberty to give the actual cost of each item. By keeping the trussed beams at so low a level on the staging, the cranes were able to pass over them, whereas, if they had been at a higher level, the cranes would not have been able to turn round, although they might have been able to travel past the truss-beams. Mr. Moir had stated that a batter of 1 in 100 was given to the caissons at Blackwall. No batter was given to the caissons at the Tower Bridge, but a device which answered somewhat the same purpose had been adopted; the cutting-edge projected $\frac{3}{4}$ inch outside the skin-plate, and that, on the caisson forcing its way down, made a hole in the clay $\frac{3}{4}$ inch larger than the skin-plates above. That materially aided the descent and acted in the same way as giving batter to the caissons.

Correspondence.

Mr. CRAWFORD BARLOW observed that the chief part of the Mr. Barlow. weight which the foundations had to carry was due to the mass of masonry in the base of the piers. Taking the figures given in the Paper, the gross weight each foundation would carry at 4 tons to the square foot was about 66,000 tons, whilst the weight of the materials in each base to a level of 4 feet above high-water mark was about 38,000 tons; to which had to be added the weight of the materials up to the roadway level, say

Mr. Barlow. 8,000 tons, making a total of 46,000 tons—or over 70 per cent. of the whole weight which the foundations were arranged for. As the height of these bases with the cut-waters was 80 feet above foundation-level, every square foot of foundation with solid masonry above it from top to bottom had a load exceeding 4 tons from the masonry alone; therefore economy in respect to their size, especially where the masonry was not supporting the super-structures, was very desirable.

4 April, 1893.

This being the Tuesday in Easter week, there was no meeting, in accordance with the by-laws.
