

PIER No. 5.

Although the loss of the first caisson made Pier No. 4 practically the last foundation begun, No. 5 was the pier on which the original work was latest taken in hand. The erection of the caisson was begun on the 20th of January, 1868 ; it was built in position on a dry sand bar, and in general form and construction it was similar to the caissons used for Piers 1 and 3 ; the upper end was built entirely of square timber, the cutting edge was made by cutting off the vertical planking with a bevel, and the spaces between the timbers were filled with rubble masonry. A cluster of anchor piles was driven fifty feet from the upper nose, and the false-works, with their supporting piles, were placed inside of the caisson. The object of this device was to arrange the works in that form best adapted to withstand the washing of the spring floods, but the site of the pier proved to be beyond the range of the scour and the precaution a needless one. The lower section of the caisson was finished on the 13th of February ; it was attached to 12 long screws, eight of which had been previously used at Piers 1 and 3, raised from the blocking it was built upon, and lowered to the ground.*

After the wreck of the old caisson at Pier No. 4, the machinery which had been in use there was set up at No. 5, and dredging was begun on the 26th day of March. The small dredge used at Pier No. 3, and a second large dredge which had been used on the Quincy bridge, were shortly added to this equipment ; the three dredges were mounted above the caisson, the small dredge being placed in the middle, and one of the large ones at each end, all discharging towards the south ; they were driven by a single 25-horse power engine, the one subsequently used to drive the whole machinery at Pier No. 4, which stood on a platform built on piles directly north of the caisson. The sinking went on very slowly ; the sand did not flow readily to the dredges, and the amount of excavation was greatly in excess of the displacement of the caisson. The dredges often dug out holes, working down 8 or 10 feet below the base of the

* For plan of this caisson see Plate VI.