each knuckle rests upon a cast-iron plate, bedded upon a large cut stone. This again rests upon one still larger or upon two flat stones, which distribute the pressure upon the masonry below. No labor has been expended upon the face work of the anchor-walls, but the inside has been faithfully executed to insure a strong job.

The aggregate section of the upper links of the four chains is 372 square inches, and their ultimate strength at 32 tons, equal to 11,904 tons. The strain upon the lowest link is at least diminished one-third, which leaves 7936 tons. This pressure on the New York side is resisted by a sheet of solid rock of no less extent than 100 ft. long, 70 ft. wide, and 20 ft. deep. This rock weighs about 160 lbs. per cubic foot. Now assuming only 200 lbs. of resistance in the solid rock, we have a mass of 140,000 cubic feet, opposing a force of 14,000 tons, without taking into account the weight of the superincumbent masonry and embankment. Admitting that the rock was full of fissures and seams, which is not the case, the entire safety of the anchorage is evident.

The great and very sudden changes of temperature, to which this locality is exposed, and also the intense cold, sometimes experienced in winter, made it necessary to enclose the whole length of the chains in masonry. The temperature of the iron is thus preserved more uniform. The chains end at the level of the coping, where they connect with the cables, which are also enclosed in grout and masonry for a length of 12 feet, the latter terminating in ornamental blocks above the coping. The strength of wire is not affected by sudden changes of temperature; no further protection of the cables therefore is required.