be required of the mode in which it is proposed to make these welds, and to prove their workmanship.

Rivet-holes in wrought-iron members may be punched, but an accurate fit will be required. All other holes shall be drilled. The enlarged ends of eye-bars shall be of such form that the cross section of metal in the head, exclusive of the pin-hole, shall be fifty per cent in excess of that in the body of the bar. The pin-holes shall be bored so that the bars shall not vary in length more than 1-64 of an inch.

Pins shall be of wrought-iron, and shall be turned to fit the pin-hole within 1-32 of an inch. They shall be of such section that the shearing strain shall not exceed 7,000 pounds to the square inch, and their diameter shall not be less than two-thirds of the largest dimension of any tension member attaching to them. It will be preferred that all the various members attaching to pins shall be arranged as compactly as possible.

All screw connections shall be enlarged to such diameter as to provide for an excess of material of ten per cent after deducting the depth of the screw thread, with nuts of equivalent strength, and shall have at least 3 threads projecting beyond the nuts.

All details of manufactured bars shall be of such sufficient strength, that, upon being tested, fracture shall sooner occur in the body of the bar than in any of its connection details.

No wrought-iron or steel shall be used less than 3/8 of an inch thick, except in places where both sides are always accessible for cleaning and painting, or where the entire surface is bedded in some non-corrosive material.

Designs may provide for a wooden trestle on the Long Island side, as far as the same may be more economical than iron; so arranged as to admit of the timber being renewed piece-meal as it decays.

O. CHANUTE,
J. G. BARNARD,
Q. A. GILLMORE,

*Consulting Engineers.*