with these the cables of the East River bridge, we find that the strength required for the latter exceeds over two and a half times the strength of the former cables. If composed of the same material, their bulk and the time required for making them would be increased in the same proportion, two items, which it is desirable to have reduced as much as possible. It was therefore concluded to manufacture these cables of steel-wire. In order to determine the size of the wire and the most advantageous quality of steel, very thorough experiments, continued over a series of years, were made with all kinds and grades of steel-wire of different sizes in regard to their tensile strength and ductility. As the result of these tests a wire was decided upon, as described in the following extract from the specification:

"The wire must be made of steel of superior quality, must be hardened and tempered and, lastly, must be galvanized. The size of the wire shall be No. 8