an additional weight besides its own. Reducing the width of the chasm to 3,000 feet, the tension will only be \( \frac{1}{3} \) of the breaking strain, and as the width is being still further shortened, so will the tension of the wire be lessened, and consequently, in the same proportion may we increase the extra load, it will safely bear. If we substitute steel wire in place of iron wire, we will still further increase its strength, according to quality. And as the rate of strength is increased, in the same proportion may the span also be increased.

From the above simple facts and considerations, it is plain, that the central span of the East River Bridge, which is only 1,600 feet from centre to centre of tower, is far within the safe limits of good wire. A span of 1,600 feet or more can be made just as safe, and as strong in proportion as a span of 100 feet. The larger span is not a question of practicability, but simply a question of cost. But as the span increases, so does also its cost increase.

The weight of superstructure of the central span, as far as supported by the cables and stays, and including the weight of four steel cables, is equal to.......................... 3,483 tons.

The maximum transitory weight which can at any one time come on the Bridge by crowds of people on the road and footways, and the railway trains fully loaded, will be........... 1,270 tons.

Making an aggregate of.............. 4,753 tons.