ed capable of supporting its own gravity and effectually resisting the strain thereof?

Answer, A sufficient quantity of the absolute strength of the length-grain of timber, to resist its strain or tension, and also a sufficient superficial of end-grain, to support its weight, and resist compression.

Fifth, How is this furnished?

Answer, The deck or floor of Bridge, with the cap-plates, and string-pieces, will furnish alone, at the least, at the abutment, 194⁴⁄₄ square inches of timber. We shall, therefore, by the same author as before referred to (as his experiments are doubtless the most conclusive,) be guided in our calculations.

Muschenbrock informs us that a single bar of oak, one inch square, will take 17 thousand 300 pounds weight to tear it asunder by Tension. Then of course we conclude that it will also require 33 million, 631 thousand, 200 pounds, to tear asunder 194⁴⁄₄ inches by the same rule; which is more than double the whole amount of the multiplied weight of the projecting arm of the half Bridge from the fulcrum, or the power of this lever of a hundred feet.

Also the superficial of the end-grain timber of the archivolt-rails, and the lower needles, are more than triple the quantity required to resist the compression of the under or lower part of the said arm, by the laws of the strength of timber thus ascertained.

There are also many other means of strength existing in the construction of the author's Bridge, the whole of which are multiplied at pleasure, to the requirements of an arm of any magnitude.