is 65½ tons, requiring only 65½ square inches of resisting area to each side truss. A single stick, 8 × 8, would therefore be nearly sufficient, and when it is considered that the strain is not all at one point, m, as we have supposed it, but is distributed over a considerable length of arc, the amount of counter-bracing necessary to resist it must be very small.

The principle of determining the size of the counter-brace, by the force that would be required to resist the upward action of the arch, is not that which we recommended when this subject was considered.

It is preferable to make them sufficiently strong to throw a permanent strain upon the arch equal to that produced by the passage of the load, and this condition requires as much resisting surface as that presented by the middle braces. It is unnecessary to continue the application of these principles to a greater extent; we believe that every case of much practical importance has been considered; and the illustrations given will be sufficient to indicate the manner in which the results obtained can be applied to the determination of the dimensions of other structures. We propose, in the second part of this work, which will be devoted to an examination of particular modes of construction, to enter more into detail, when an opportunity will be offered of supplying any deficiencies that may exist, and of illustrating the modes of calculation by which the strains may be determined, and the parts proportioned, in every variety of combination.