5. As to the General Plan under discussion, besides the modifications of enlarging the Thrust pieces generally, and, of forming the Thrust diagonals in two parts, I would farther recommend, that the top chord be formed of Single timbers in all parts of each half-chord; increasing in section, as the acting forces increase, from the ends centreward, instead of producing the increase of section by the addition of thin laminae. The more united and concentrated the timber, the more effective will it be, in withstanding the action of thrust.

It was this consideration which suggested the use of mortised Thrust diagonals; but which seems to have been overlooked in some degree, in the arrangement of the upper chord.

The question may occur,—If consolidation have advantages dictating its adoption in the case of the upper chord, why abandon the principle with respect to thrust diagonals? The answer is, that in the chord, the advantages are available with little or no extra labor, or inconvenience of any kind, while, with respect to diagonals, the case is different. The mortising and putting together of diagonals, involve labor and expense, while mortises and bolt holes together, use up rather too much of the cross-sections of pieces.

And still, in neither of these instances, should the rules above suggested be regarded as peremptory. In case of long trusses, the upper chord may, not improperly, contain two courses to each half—