to sustain the whole weight applied at its lower extremity, since the diagonals are supposed to be only capable of sustaining the effects of inequality in the load. Therefore the transfer of the road-way from the top to the bottom of the truss, would have the effect to diminish the representative products for material exposed to thrust by $3.7w$ (=the amount due to the verticals,) and increase those for tension by $w \times$ the aggregate length of verticals, which for the truss under consideration is equal to $4.72w$, a change so trifling as not essentially to vary the results of the former comparisons.

It is proper to remark, that, strictly speaking, the whole of the weight of the structure can not be regarded as applied either at $o, n, m, \&c$, or $b, c, d, \&c$. But the more considerable part of it being where the road-way is placed, I have considered it sufficient for my present purpose, to regard it all as concentrated in the main transverse beams or bearers, whether at $o, n, m, \&c$. or at $b, c, d, \&c$.

XXI. To pursue the comparison between truss 7 and 8, when the road-way is at the bottom, and the trusses are not sufficiently high to admit of being tied and secured across the top, the cancelled truss being higher (except in the middle) is somewhat more top-heavy, and may be more liable to yield laterally, though this cannot amount to a serious disadvantage.

The arched truss, moreover, may, by some, be thought to have a more graceful and agreeable appearance than the cancelled truss. I will not take upon myself to decide on this point, except by remarking, that, to a person who comprehends the principles and properties of different kinds of structures, in a case where strength is the grand desideratum, that plan of structure which secures this in the greatest degree, with the least amount of material and expense, will generally excite the most pleasing sensations in the mind.