had to come behind the other (to accommodate other more important structural conditions), thus requiring a certain space independently of other considerations. It was necessary to give the cables such relative positions that the final resultant of the various lines of pressure in the towers should intersect their bases as near the centre as possible. By tracing the various planes in which the several cables lie, it will be found that this result is reached by the plan adopted as near as may be. It was this ingenious arrangement that permitted the use of those slender obelisks which now form the towers of the bridge; whereas any deviation would have necessitated double the amount of masonry, besides a connecting arch at the summit, coupled with a threefold expenditure of money.

A second advantage of the design is, that the cables are attached to the superstructure with its moving loads, in such a way as to give the *greatest amount of stability*. The centre of gravity is low enough to avoid all top-heaviness due to the load on the railroad floor. With a higher centre of gravity, lateral oscillations would occur, and the chances of de-railment would be very great. There would have been no difficulty in suspending both sets of cables at the same deflection, either on the level of the railroad or of the lower floor, at a sacrifice, however, of the advantages already named. If suspended at the railroad level, the pendent truss and lower floor would oscillate from side to side under the influence of the wind, besides increasing the aggregate tension in both cables, which would have to be met by higher towers or heavier cables. On the other hand, to suspend them at the lower