centre of gravity is kept comparatively low (always a consideration of great weight) by making all the mainstays parallel to each other, and the same with the backstays. The vertical pressures are therefore not accumulated at the top of the towers. But the bridge is, in my judgment, too narrow for entire security against wind pressure, the width of the towers at the base, for a single track railroad being only 49 feet over all, or about 46 feet between the centres of the outer posts. The whole system—bridges and high trestles—appears to be deficient in lateral stability. By increasing the width of the towers sufficiently to remove this serious objection, making them say 68 or 70 feet wide at the base for a single track railway, and keeping the foot-paths on the same level with the roadways, with other changes of detail naturally resulting from these, the design would, in my judgment, be preferable to that of Clarke, Reeves & Co. In the design for a single track road as submitted, Clarke, Reeves & Co.'s two bridges cost $55,599 more, and their whole project, including approaches, $11,041 less, than in that of the Delaware Bridge Company. The modifications recommended in the two cases would make the difference in total cost still greater against the Delaware Bridge Company; and, as you would have a good bridge in either case, you would be justified in giving due weight to the question of cost.

A cross section of the modified towers for the cantilever design might be somewhat like the sketch on the margin, in which a is a carriageway and foot-path, b the same, and c a single track railway. When a second track is added it would be placed at d, and the two inclined tension members moved to e. By this method, or something equivalent to it, the weakness against wind pressure caused by the roadway openings would be entirely obviated.

I think highly of the plan for a suspended girder prepared by Edward W. Serrell & Son, but as I am the only member of the Board whose opinion of its merits places it among the three best