towers of the Niagara Bridge during the passage of a train, moving at the rate of 5 miles an hour, I feel less vibration than I do in my brick dwelling at Trenton, N. J., during the rapid transit of an Express Train over the New Jersey R. R., which passes my door within a distance of 200 feet. I will further remark that the Land Cables are not at all affected by the passage of trains; the very slight vibrations and concussions, noticeable in the superstructure, are not transmitted over the towers. This fact is gratifying, as it will insure the durability of the masonry. The stiffness of the lower floor has been a matter of general observation, ever since its opening in June last. Strange as it may appear, a number of loaded teams produce more motion than results from the transit of a train. But for the rumbling noise over head, such transit would not be noticed by persons on the lower floor.

Suspension Bridges have generally been looked upon as loose fabrics, swung up in the air, as if for the very purpose of swinging. Repeated failures of such works have strengthened this belief. My success in the construction of suspended aqueducts, however, should have been deemed a strong argument against it, at least by professional men. This fact should have cautioned them against forming hasty conclusions upon a subject, which they had but partially investigated. I have built five such works, and two of them of large capacity and great extent, which have all proved successful, and are to all intents and purposes as rigid as stone or cast iron aqueducts. The principle of Suspension is certainly much easier applied to Aqueducts than to Railway Bridges, but still these works require a degree of solidity