and by means of the very cables that uphold it. These cables do not swing in vertical planes, but are inclined from the summits of the towers towards the axis of the bridge, and act as constant and effectual lateral supports.

The only motion that is ordinarily perceptible in high winds—and which is manifested, perhaps, more remarkably in the Menai than in any other suspension bridge—is a vertical oscillation, or waving of the flooring, produced by the upward pressure of the currents of air passing at high velocity under the bridge.

The flooring of the Fairmount bridge is 30 per cent. wider than that proposed for the Air Line road; and the wind consequently acts on the former with 30 per cent. more power than on the latter, in producing this motion. But, on the other hand, the flooring of the Middletown bridge is four times as heavy as that of the Fairmount, and it resists, consequently, with four times as much power.

The effect of the wind is not at all hurtful on the Fairmount bridge, and it cannot therefore be injurious on a work which offers four times as much resistance, and on which the force applied is a great deal less.

The width of the Freibourg bridge, of which the flooring is more than 800 feet long, is almost precisely the same as that of the work proposed. The wind, therefore, acts upon both with nearly equal power. But the proposed work is nearly six times as heavy as the Freibourg, and consequently opposes the same force of wind with six times as much resistance.