either way, being but $\frac{39.2}{2657.6}=1\frac{1}{2}$ *per cent. of the total strength of the cables;* so *small* does this fearful bugbear become when critically examined.*

In this investigation no allowance has been made for the strength of the long stays. The safe supporting power of these is 150 tons in the aggregate, or about one-tenth of the load assumed by Mr. Wasell. The factor of safety of the whole bridge, therefore, under this extreme load, on the supposition of equal bearing on all the cables, would be about 4. I admit that these factors are smaller than is usual in such structures, but have already shown that the true factors under all ordinary loads, and even the extraordinary test load applied when the bridge was opened, are fully up to the best engineering practice of the day.

If the upper cables were strained to their breaking point, they would have a deflection of 65 feet, or eleven feet more than that of their mean position. Under the test load of 326 tons, the deflection was only 9⅝ inches, returning to its original amount on the removal of the load; thus showing that the limit of elasticity had not been reached. In this

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* I am unwilling to allow that even this small difference in strains actually occurs. The connections of the cables to the floors is not such as to allow any such action as the author claims. When by lowering the temperature there is a tendency to an increase of the distance between the cables, the cradling of the lower cables will be increased, that is they will swing nearer together; and that of the upper cables will be diminished by their separatnig a little, so that finally, the vertical distances *between* the cables will remain the same. The reverse action will occur when the temperature is raised.

A very casual inspection of the Bridge will make the truth of this statement manifest to any observer.