account the curvature of the cables in the saddles, which will nearly double it.

To the underside of the lower floor 50 stays are attached, which are anchored in the rocks below, and occupy positions calculated to insure against horizontal as well as vertical motions. Their principal duty is to guard against the force of winds, but at the same time they contribute materially to preserve the equilibrium of the structure during the passage of trains. Their usual tension averages about 2 to 3 tons. Considering their positions, their aggregate force, exerted upon the lower floor in a vertical direction, at a medium temperature, is less than 100 tons. In summer this force is less, in winter it is more. In the disposition of these stays, I have taken advantage of the ample opportunity this locality offers. There are bridge sites where this cannot be done, and where security against the force of winds has to be entirely obtained by over floor stays, and by the inherent stiffness of the structure. But the difficulty is no greater in the one case than in the other. In all localities perfect safety against the force of winds can be obtained.

To present a fuller analysis of the work, I will review its various parts in the same course in which they were put up, and commence with the

ANCHORAGE

The anchorage was commenced in September, 1852, and was formed by sinking 8 shafts into the solid Limestone rock, that here composes the upper-most stratum of the cliffs. This layer is solid for a depth of 14 feet, underlaid by a lime-stone shale, which again is followed