uneducated village carpenter, certainly displays no ordinary capacity. The supports consist entirely of systems of arch-braces, but the details were too complicated, and the execution evinced considerable timidity. It would seem, from an inspection of the plan, that the design had been conceived of spanning the whole interval at once, as there is a system of arch-braces extending from the abutments towards the centre; but apprehensive that such a long interval would cause the bridge to fail, two other systems of arch-braces were introduced, extending from the extremities towards the centre of each span.

It would have been better, either to have spanned the whole interval by one magnificent truss of 365 feet, which could have been constructed on the arch-brace principle, or else have employed two separate trusses, one for each interval.

A glance at the figure, which exhibits merely the general principle without attempting to represent the complicated details, will show that it was destitute of counter-bracing; and Mr. Cox, a traveller in Switzerland, states that “a man of the slightest weight felt it almost tremble under him, yet wagons heavily laden passed over it without danger.”

Upon the principle of the Schaffhausen bridge are the viaducts of the Baltimore and Ohio Railroad, designed we believe by B. H. Latrobe, Esq., Chief Engineer. The arch-brace system is here combined with diagonal ties of iron, by which it is effectually counter-braced. The sizes of the braces are calculated from an exact estimate of the weights they are required to sustain, and the whole arrangement and proportionment evince a thorough acquaintance with the subject, and render the plan admirably adapted to span any interval, or sustain either a uniform or variable load.

LONG'S BRIDGE.

Fig. 86.