GENERAL DESCRIPTION.

...utted uniformly, and laid down alongside of the chords, all over the work. It may also be the proper time to make use of the main-stays, and to attach their ends temporarily to the lower chords, and to the platform. When up, they will not only add to the supporting power, but also to the steadiness of the platform. The whole process of erection will be much facilitated by a narrow track, laid down in the centre of the platform between the two walks, for the support of a few small trucks, on which the bars may be transported from both abutments. With a favorable stage of water in the river, the delivery of materials may also be forwarded by boats moored at the piers and hoisting the bars up, then distributing them.

The work has now so far progressed that we may proceed to put up the posts. There are several methods by which this may be accomplished. One plan is to proceed from the centre piers each way toward the main span and the side spans uniformly at the same time. As soon as one or two sets of posts are up, connect them by the upper chords, and also secure the latter by transverse beams and temporary wooden braces. Next, put in place the panel-rods, which will increase the stiffness of the framing considerably.

While this process of building out from the piers is going on, the level of the platform must be maintained at the same time, by distributing the bars for the posts and chords all along. The weights being uniformly distributed, the level will be preserved, and the steadiness of the platform will also be increased. A few small wire-ropes may likewise be applied below the platform, fastened to the masonry of the piers, to serve as storm-cables, in case of a heavy blow. Before commencing with the arches, the posts and upper chords may be put up through the balance of the spans, the panel-rods put in, the cross-connections made, and the trusses nearly completed.

Changes of temperature, causing expansion and contraction, may be accommodated by placing the lower chords on wooden rollers about 6 in. diameter.

Slight changes will not be noticed; but should great changes take place, and produce considerable contractions and expansions, it will be good policy to provide slip-joints in the chords as well as the arches at various points, and use a few temporary splicing-plates to that effect, or timbers bolted on sideways. No rigid connection should be made at any place: no riveting before the whole structure is up.

It was remarked that the whole superstructure may be put up and completed without the assistance of scaffolding. This can be done, if absolutely necessary. But a few light supports under the platform, 50 or 100 feet apart, will greatly facilitate the operation. I therefore propose now, before advancing any further, to scaffold one of the side spans, or both, leaving the central span open for navigation. This being done, we may put up the arches in the two side spans, and also put up one transverse iron beam every 20 feet, to give a good, permanent lateral connection to the lower floor.

By the completion of the arches of the side spans, the resistance of the anchor-plates will have been much increased.

One half of the beams under the side spans may now be removed with safety, and put under the spring of the arches in the central opening; and as much material may also be distributed over the platform of the central span as will be necessary to balance the side spans. By this distribution we will maintain the equilibrium of the cables. The thrust of the arches in the side spans will be fully met by the lower chords, which should be completed; so that it may be safe now to remove all the beams from under the side spans and put them up in the centre opening. This being done, the closing of the arches in the centre is now to be accomplished, and the trusses may be sufficiently completed to render a further support by scaffolding unnecessary.

If, during the process of erection, a sudden flood should occur, or floating masses of ice endanger the safety of the scaffolding, the latter should be watched day and night, and cut loose if necessary. This may cause some delay, but no further damage.

If the spire of the arches descends below the lower chords, the raising of the superstructure will be easier. And, as has been remarked before, this plan should always be adopted if possible. The plan before us is, under all circumstances, the most unfavorable in point of lateral stability as well as in point of cost and appearance.