COMPARISON OF DIFFERENT PLANS OF IRON TRUSS BRIDGES.

CXXXII. It is the purpose of this chapter to canvass the relative merits of most of the several systems of Iron Bridge Trussing, which have claimed and received more or less of public notice and approval during the last few years; and of which the distinctive principles have already been discussed in preceding pages; though not in the precise combinations here about to be presented.

We may take the number, lengths and stresses (the latter governing principally the required cross-sections), of the several long pieces or members of the truss, in the manner employed in the fore part of this work, as affording a near criterion of the comparative cost and economy of the bridges respectively. Then, after reference to such peculiarities as may seem advantageous or otherwise, leave the reader to his own conclusions in regard to the relative merits.

The Bollman Truss, Fig. 47,

Is founded upon the general principle discussed in sections xxii and xxiii, with oblique tension rods, and a thrust upper chord, in place of the thrust braces and tension lower chord as represented in Fig. 9.

Let Fig. 47, represent a truss 15' high, and 100' long; or, in the proportion of 1 to $6\frac{2}{3}$. Also, let $w$ represent the maximum variable load for each of the points $c$, $d$, $e$, etc., and $w'$ (say; $=\frac{1}{4}w$), the permanent weight of one panel of superstructure, supposed to be constantly bearing at each of said points. Then making $W = w \times w'$, we have $\frac{5}{8}W = \text{weight sustained by ac}$. 31