In such case, the results already obtained, would show the relative cost of the several trusses (excepting the first two), with almost absolute exactness.

But, as the parts of a truss can not be so connected and welded into a single piece, without enlargements at the joinings, by any skill or process now in use, we have to include as an item of cost, in all plans, a considerable amount of material above and beyond the net lengths and cross-sections, as here before determined with regard to the trusses under discussion, required for the lapping of parts, screws and nuts, eyes and pins, &c., to form the connections of the different members with one another.

With regard to the trusses under comparison, no obvious reason presents itself, why any one should require a percentage of allowance for connections materially greater than another. Leaving out the two first, as perhaps already sufficiently discussed, the others consist of about the same number of necessary members, and with the exception of the arch truss, admit of nearly the same forms and connections of parts. The Isometric, or Trapezoid without verticals, presents the fewest lines in the diagram; but some six of those lines represent both tension and thrust members, either separate or combined, which probably complicates the

iron (thrust or tension), at—say 10,000lbs. to the inch of cross-section, it takes 1 ½ square inches to sustain the weight $W$; being about 5½ lbs. to the foot, or 84½ lbs. for 15'. This, increased by—say, 20 per c. for extra material in connections, gives the practical value of $M$; which, multiplied by the coefficient of $M$ in the table, produces approximately, the respective weights of trusses.

Now, $1\frac{1}{2} \times 84.37 = 101.4$ lbs. which multiplied by 113.345, the coefficient for the Arch truss, gives for the weight of that truss, 11,476 lbs.

Add for 10 feet width of platform (with wooden beams), —say 5,000lbs. &c., of timber and plank, equal to about 20,000 lbs., and we have 31,476 lbs. to represent the permanent load of the truss. But we have assumed a truss proportioned to sustain with safety 183,384 lbs., which is a little more than 4 times the weight of structure here above estimated as supported by the truss.