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truss, decussion cannot take place, for the same obliquity of the two panels next to the centre one, which produces the tendency toward tension of en and fq, on the contrary, tends to relax do and gp, through which latter alone decussion could take place, in the absence of the former.

On the other hand, if en and fq be sufficiently strong, they may be strained to such a pitch as to bear all the weights at e and f, and leave fm and er entirely inactive. Hence, there is an uncertainty as to the action of these diagonals, which may be best obviated by estimating stresses upon both theories, and taking the highest estimates; as recommended with reference to trusses without verticalls, and as previously suggested with reference to the case in hand.

In view of preceding facts and principles, it may be advisable to avoid the odd panel in trusses with verticalls, when practicable without incurring more important disadvantages in other respects.

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LXI. Are those having the movable load applied at the nodes of the upper, instead of the lower chord, as generally assumed in preceding analyses.

It will readily be seen, on a brief contemplation of Figures 12 and 13, for instance, that weights applied at the upper chord, act directly upon compression members, either erect or oblique, as the case may be; and are thence transferred to tension members at the lower chord; according to the general principle, that weight applied at the upper end of a member, always acts by compression, and that which is applied at the lower end, by tension.