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est number of the third under the highest of the second series, and vice versa, prefixed as before to \( w' \), will show the weights sustained by thrust and tension of diagonals in the reversed order; i.e., whereas one series shows the amount of tension a particular diagonal is liable to, the reversed series shows the thrust the same piece must exert in a different condition of the load.

Thus we ascertain, as in the case of truss Fig. 13 [XLV], that nearly all of the diagonals are exposed to two kinds of action, thrust and tension; and it is only the preponderance of the larger over the smaller of these forces, which has place when the truss is fully loaded, and it is only this preponderance which is to be used as co-efficient to \( (w + w') \) in estimating the stresses upon the different portions of the chords, and as co-efficient to \( w' \), in modifying the effects of the variable load upon diagonals, as affected by weight of structure. But it is to be remembered that the numbers over the diagram are to be divided by the number of panels, before being used before \( w \) and \( w' \), in the expression of stresses of members. Thus, we have, as the effect of variable load upon the diagonal \( 2/4 \ldots, 2w''(=\frac{2}{16}w) \), as the greatest weight acting by tension, and \( \frac{18}{16}w \), the greatest acting by thrust. Hence the weight upon this piece, due to weight of structure, is \( (\frac{18-2}{16})w' = w' \), and it produces thrust or compression, because the thrust tendency is the greater. This weight \( (w') \), added to \( \frac{18}{16}w \), the greatest effect of variable load shows the maximum weight which can act by thrust upon that diagonal, to be \( \frac{18}{16}w + w' \). We have, also, for the greatest weight acting by tension as modified by weight of struc-