mum from variable load, $25w \div 16$; which will require to be *increased*, as we shall shortly see, on account of weight of superstructure.

Now, to obtain the effects of weight of structure, and uniform load; the truss having even panels, we place $\frac{1}{2}$ under the centre node of the lower ch'rd, because half of the weight w' which is supposed to be concentrated at that point, will act on each of the diagonals rising from that point. At the next node from the centre each way, the figure 1 is set, because, of the weights, (w',) concentrated at those points, each bears upon its nearest abutment throu' diagonals running upward and outward from those points. If this be not so, each must transmit a part of its amount past the centre, through the antagonistic diagonals 7/9 and 7\9; which is contrary to the nature of the case.

Then we put $1\frac{1}{2}$, $2\frac{1}{2}$, $3\frac{1}{2}$, &c., under alternate nodes from the centre, and 1, 2, 3, &c., under alternates, beginning at the first on each side of the centre; as in diagram, on opposite page.

These figures form the co-efficients of w', to indicate the weights acting, or tending to act, upon the diagonals running upward and outward from these numbers respectively, arising from weight of structure, and also, the co-efficients for $(w + w')$, for load tending to act on diagonals, arising from both superstructure and movable weight, when the truss is fully loaded. For illustration; the diagonal 5/7, we have seen to be liable to a maximum weight of