the angle, of the upper chord; and so form and connect the other diagonals as to enable them to act by either tension or thrust, and we have a truss capable of sustaining weights applied at all, or any of the nodes of the upper and lower chords, in the same manner as the truss with verticals, represented in Fig. 39. In this condition, the truss will act upon the principles discussed with reference to Fig. A., page 14, &c. [See Fig. 40.]

To estimate the strains upon the several parts of such a truss, due to weights $w$, $w$, &c., at the nodes of the lower chord; we may place the figures 1, 2, 3, &c., over the nodes of the upper chord, as was done in the case of Fig. 39. But instead of adding alternate figures to form the second series, to be used in the coefficients of $w$, for expressing the weights sustained by diagonals; we add every 4th figure, because it is only the weights at every 4th node, that act upon the same set of diagonals.

For instance; the weights at 1, 5, 9 & 13, act upon their peculiar set of 8 pieces, (excluding the end braces, but including the tension vertical at 1,) and none of the weights at the other nodes, have any action upon those pieces; as is made obvious by an inspection of Fig. 40.

Again, the weights at 2, 6, 10 & 14, have their peculiar and independent set, and so of those at 3, 7, 11 & 15, and those at 4, 8 & 12.* Therefore, in forming our second series of numbers, we place un-

* These several sets are denoted in Fig. 40, by lines peculiar to each.