throughout the length of the tie or bottom chord. The longitudinal thrust through the arch varies with the inclination of the arch-segments, being equal in amount to that of the horizontal strain at the centre only. To find the horizontal strain at the centre under uniform load, "multiply the abutment reaction (in this case $2\frac{1}{2}$ panel-loads) by its lever or $\frac{1}{2}$ span, from which subtract the intermediate panel-loads, multiplied by their leverages, acting in the opposite direction to the reaction, and divide the result by depth of truss." The extreme longitudinal thrust in the arch occurs in the last segment, being the one of greatest inclination, and is at once found by "multiplying the reaction by the lever of one panel-length, and dividing by the perpendicular let fall from the point around which the moments are taken upon the direction of the segment." Or the longitudinal strain in any segment may be found by multiplying the maximum horizontal strain by the length of segment, and dividing by its horizontal stretch.

In the web, under uniform loading, there is no other strain than tension on the verticals, amounting to a panel-load, and the diagonals are unnecessary; but under a variable load, moving from end to end of the truss, the verticals are brought under a compressive strain through the medium of the diagonals, the strain on which may be most conveniently computed as follows: For each position of the load as it advances from point to point, determine the abutment reaction as for an ordinary truss on the principle of the lever. From this