

2d. *Web Strains*.—The web strains must be computed separately under each condition of loading. The posts and braces are strained the greatest when the moving load covers the segment *from* which any given diagonal slopes. Thus the diagonal *ec* is strained the greatest when *c* and all points to the right are loaded with moving load; *fg* when *g* and all points to its right are loaded, etc. While the web strains can be readily calculated by finding the horizontal components for each maximum condition of loading, and converting them into longitudinal strains, as was done for the Queen Post truss, the method is somewhat tedious when there are a number of panels, and a separation of dead and live loads must be made. For trusses with parallel chords, the following method will be found most convenient, and is the one usually employed. It is based on considering the load on each panel-point, tracing its action on the posts and ties, and summing their effects—or, in other words, finding the vertical components, which are the post strains. Taking first the dead load, there is *w* at each panel-point, or, under the example, 3000 lbs. Since three panel loads are supported by each abutment, the loads, and therefore the strains, are symmetrical with the centre, and it is only necessary to compute the strains for one half the truss. At the point *c*, 3000 lbs. is taken up by the inclined tie *ec*, and delivered to the vertical post *eb*, which has a compression, therefore, of that amount; the tension on the tie being $3000 \text{ lbs.} \times \frac{\text{its length}}{\text{depth of truss}}$, or $3000 \times \frac{14.1 \text{ ft.}}{10 \text{ ft.}} = 4230 \text{ lbs.}$ This panel load