mitted through $fq$ to $ds$. If this be so, then $fm$ and $ei$ do not sustain the full weight of $lw$, but only $7w''$, which, being transmitted to $il$, makes, with the weight $w (= 9w'')$, applied directly at $i$, $16w''$, as indicated by the figures over the diagram, instead of $2w (= 18w'')$, as the figure 2 under the point $i$ would indicate.

Now, whether the two diagonals $en$ and $fq$, being apparently, in a state of partial antagonism, do in whole or in part neutralize the tendency of each other to transmit weight past the centre each way under a uniform load of the truss, is not quite obvious, and it may be proper to estimate stresses under both hypotheses, and take the highest estimate for each part of the truss.

It will be seen that $il$ and $es$ are the only diagonals in Fig. 20, which show greater stress with a full than a partial load, upon the non-decussation hypothesis. But all the diagonals undergo different stresses, with the uniform load, as viewed under the different theories, and consequently, their effects upon the chords are different. The end brace $as$, sustains $4(w + w') = 4W$ substituting $W$ for $w + w'$, under either theory, and the tension of $ae$ equals $4w^h$ (making $h = ab$, and $v = bs$). $es$ sustains $2W$, or $\frac{1}{9}W$, whence $cd$ sustains either $6W_v^h$ or $5\frac{3}{5}W_v^h$. Again, $ds$ sustains $W$, or $1\frac{3}{5}W$, the former without, and the latter with decussion. This diagonal having a horizontal reach of $2h$, adds $2W_v^h$ or $2\frac{3}{5}W_v^h$ to tension of chord, making $8W_v^h$ or $8\frac{3}{5}W_v^h$, as the tension of $de$. For $er$, we have $W$ without decussion, making a tension of $10W_v^h$ for $ef$; while with decussion, $er$ sustains $\frac{3}{5}W$, from which we subtract $\frac{2}{5}W$, for opposite action of $e$, leaving $\frac{1}{5}W$.