exerts a horizontal stress $= 4w$, (two thirds of the weight borne,) upon the two first sections of the Lower Chord. The steep tension oblique adds two thirds of weight borne, making $5.76w$ for the next section, while the two secceeding diagonals toward the centre, adding $1\frac{1}{3} \times$ weights borne successively, (under a full load of the truss, of course,) give $8.42w$ and $10.19w$, for tension of second and first sections from centre respectively. Then, adding & doubling, and multiplying by length of section, we obtain, material for lower chord $= 43.16\mathrm{m}$.

Add to this the amount for diagonal system, as above found, and we have—whole amount of Tension material for truss $= 84.18\mathrm{m}, = 50.5\mathrm{M}$.

The maximum weights sustained by obliques, & by them transferred to the 7 Thrust Verticals, being in the aggregate $= 6.62w$, the length being unity, need only the substitution of m, to express the required material for said Verticals; which reduced to terms of M, equals 3.97M.

The first & second sections of the Upper Chord, obviously sustain the same action repectively, as the fourth & fifth of the lower chord, while the 4 middle sections of the former, receive the additional action of diagonals $3 \diagdown 5 \diagup 7$, (upper figures,) under full load. Hence, we cipher up, material for Upper Chord $= 32.6\mathrm{M}$.

The End Braces, sustaining $9(w + w') , = 12w$, with a length whose square is 1.44, obviously re-