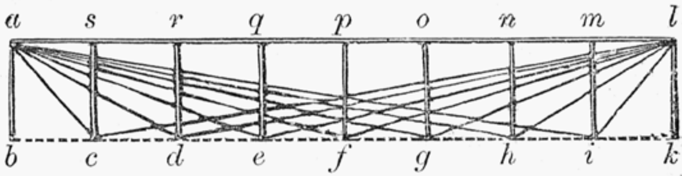
co-efficients used before W, to express the weights respectively sustained by the several oblique rods, in Truss 43, will, when multiplied by the squares of the respective lengths of those obliques, shew the amount of material required for their construction, under the conditions above expressed.

Let $m = \frac{1}{8}M$, and $n = bc$. Then, we manifestly have for material in the 14 obliques of the truss in question, $7m.(n^2+1), +6m.(4n^2+1), +5m.(9n^2+1)$ ....&c., to $+1m.(49n^2+1)$; for those meeting at *a*, with a like amount for those meeting at *l*.

Fig. 43,—Bollman Truss.



From the above, we readily deduce $(672n^2+56) \times m$. But $n^2 = 0.694$, which being substituted in the last expression, gives ~~494~~ 522.368m, which equals 65.296M, = material required to sustain tension, in Truss Fig. 43.

The thrust of the Chord *al*, equals the horizontal action of the 7 obliques connected with either end. Then, making $x = \frac{1}{8}W$, and $n = bc, = \frac{1}{8}bk$; it is obvious that each oblique carries a weight equal to $x \times$ the number of panels not crossed by it, while its horizontal reach $= n \times$ the number of