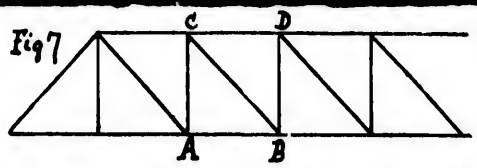
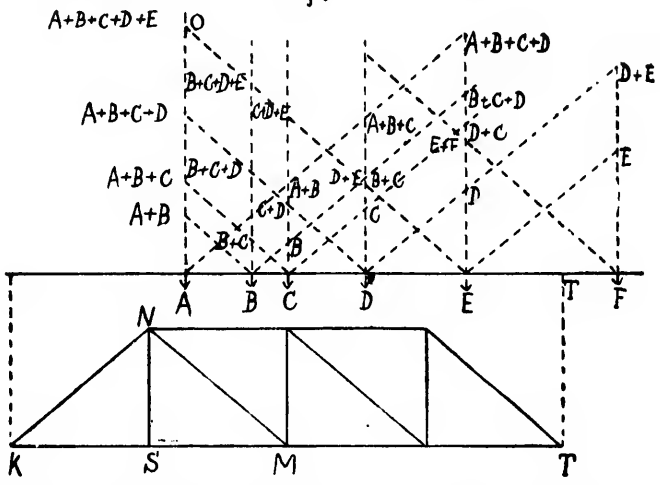


To have the maximum stress in diagonal CB (fig. 7), the sum of the weights on the left of B including the weight at B must be larger than the sum of all the weights on the truss divided by the number of panels.

To have the maximum stress in AB (fig. 7) the sum of the weights at the left of A, not including the weight at A, divided by the number of panels at the left, must be less than the sum of the weights on the bridge divided by the number of panels in the truss.

Fig 8



First draw the diagram shown in fig. 8, and let it be required to find the sum of weights on truss K T, and sum of weights at the left of M. The first sum be given at O by following the diagonal E O, and the second sum at V by following the diagonal A V. By moving the truss so that M occupies the different positions A B C, etc., it will be easy to find the worst situation of the load, applying the theorems given before.

Now let M_2 be the bending moment at M

R the reaction at K

M_1 the moment in relation to M of the weights on the left of M.

Let l be the panel length

N " number of panels in truss

n " " " left of M

$$M_2 = R \times n\, l - M_1$$

$$= (R \times N\, l)\frac{n}{N} - M_1$$

$$MN = R - \frac{M_1}{l} = \frac{\frac{(R \times N\, l)}{N} - M_1}{l}$$ as, to have the maximum of M N

a part only of M S is usually loaded; we want then only to know the quantities R × N l and M. To find those values we will draw another diagram.