

Considering the forces acting on the truss to the left of a section through AB and B], it is seen that Fig. 145 will again represent the condition of equilibrium provided 1,000 be substituted for the value of the downward reaction.

$$\begin{aligned}\sum Y &= Y_{AJ} - Y_{AB} - Y_{DB} - Y_{EB} = 0 \\ 1,000 - AB - 4 - 0 &= 0 \\ AB &= \frac{5}{1} = 1,000\end{aligned}$$

AB in the above is Compression 1,000 pounds.

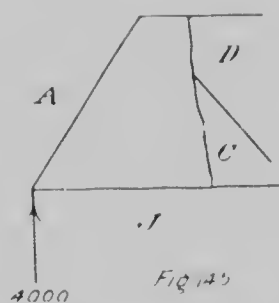


Fig. 145

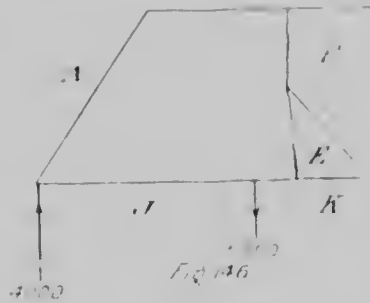


Fig. 146

Consider the forces acting on the portion of the truss to the left of a section through AD, DC, and CE. See Fig. 145.

$$\begin{aligned}\sum Y &= Y_{AJ} - Y_{AD} - Y_{DC} - Y_{CE} = 0 \\ 4,000 - 0 - DC - 4.5 &= 0 \\ DC &= \frac{5}{1} = 1,000 \\ &= 5,000\end{aligned}$$

The member DC is in Tension 5,000 pounds.

Fig. 146 represents the forces acting on the portion of the truss to the left of a section through AE, EF, and FK.

$$\begin{aligned}\sum Y &= Y_{AJ} - Y_{AE} - Y_{EF} - Y_{FK} - Y_{KJ} = 0 \\ 4,000 - 0 - EF - 4.5 - 0 - 0.000 &= 0 \\ EF &= \frac{5}{1} = 2,000 = 2,500\end{aligned}$$

The member EF is in Compression 2,500 pounds.