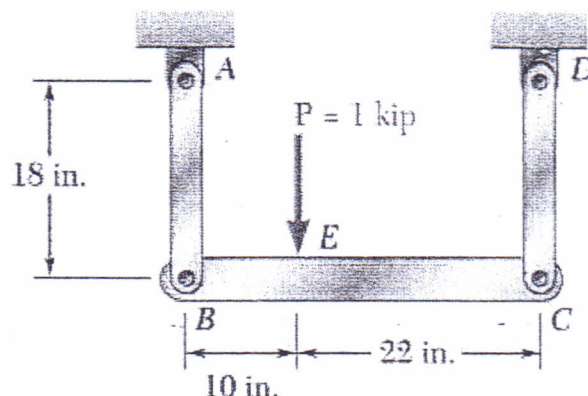


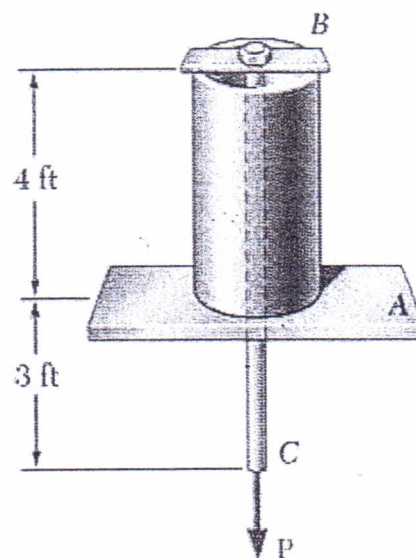
**PROBLEM 1:**

Each of the links AB and CD is made of Aluminum ($E = 10.9 \times 10^6$ psi) and has a cross-sectional area of 0.2 in.^2 . Knowing that they support the rigid member BC. **Determine** the deflection of point E.

**PROBLEM 2:**

A 4 ft section of Aluminum pipe of cross-sectional area 1.75 in.^2 rests on a fixed support at A. The 58 in. diameter steel rod BC hangs from a rigid bar that rests on the top of the pipe at B. Knowing that the modulus of elasticity is 29×10^6 psi for steel, and 10.4×10^6 psi for aluminium.

Determine the deflection of point C when a 15 kip force is applied at C.

**PROBLEM 3:**

A rod consisting of two cylindrical portions AB and BC is restrained at both ends. Portion AB is made of steel ($E_s = 200 \text{ GPa}$, $\alpha_s = 11.7 \times 10^{-6}/^\circ\text{C}$), and portion BC is made of brass ($E_b = 105 \text{ GPa}$, $\alpha_b = 20.9 \times 10^{-6}/^\circ\text{C}$). Knowing that the rod is initially unstressed.

Determine the compressive force induced in ABC when there is a temperature rise of 50°C .

