



**FIGURE P12-1**

Problem 12-9

\*†12-9 Link 2 in Figure P12-1 rotates at 500 rpm. The links are steel with cross sections of 1 × 2 in. Half of the 29-lb weight of the laybar and reed are supported by the linkage at point  $B$ . Design counterweights to force balance the linkage and determine its change in peak torque versus the unbalanced condition. See Problem 11-13 (p. 563) for more information on the overall mechanism.

\* Answers in Appendix F.

† These problems are suited to solution using *Mathcad*, *Matlab*, or *TKSolver* equation solver programs.