



**FIGURE P6-15**

Problem 6-52 Power hacksaw Adapted from P. H. Hill and W. P. Rule. (1960). *Mechanisms: Analysis and Design*, with permission

†6-52 Figure P6-15 shows a power hacksaw, used to cut metal. Link 5 pivots at  $O_5$  and its weight forces the sawblade against the workpiece while the linkage moves the blade (link 4) back and forth on link 5 to cut the part. It is an offset slider-crank mechanism with the dimensions shown in the figure. Draw an equivalent linkage diagram; then calculate and plot the velocity of the sawblade with respect to the piece being cut over one revolution of the crank at 50 rpm.

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