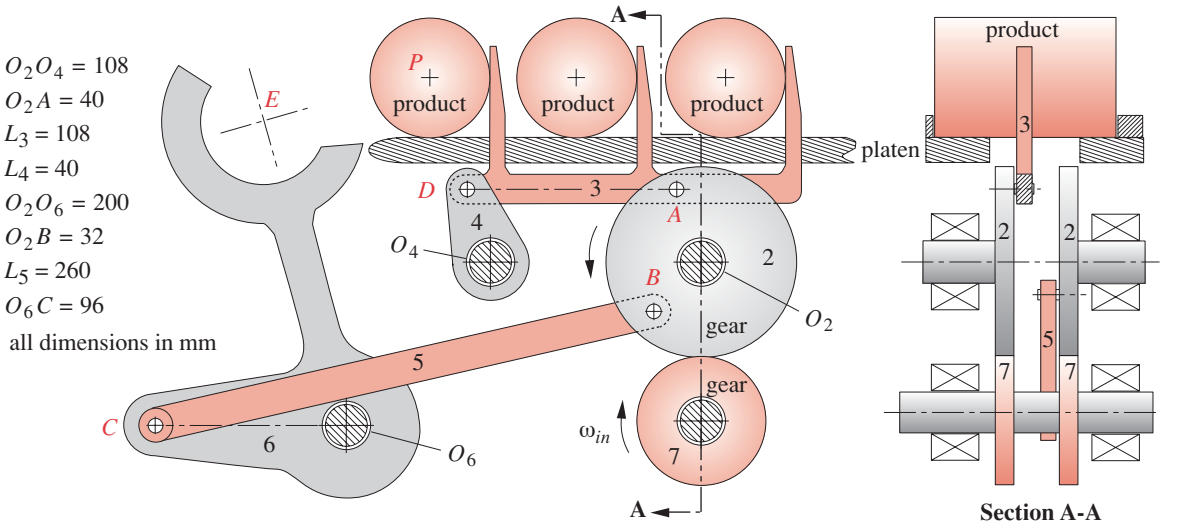

FIGURE P6-16

Problem 6-53 Walking-beam indexer with pick-and-place mechanism *Adapted from P. H. Hill and W. P. Rule. (1960). Mechanisms: Analysis and Design, with permission*

†6-53 Figure P6-16 shows a walking-beam indexing and pick-and-place mechanism which can be analyzed as two fourbar linkages driven by a common crank. The link lengths are given in the figure. Angle $CO_6E = 75°$. O_2O_6 is at 205°. The phase angle between the two crankpins on gear 2 is 120°. The product cylinders being pushed have 60-mm diameters. The point of contact between the left vertical finger and the leftmost cylinder in the position shown is 58 mm at 80° versus the left end of the parallelogram's coupler (point D). Calculate and plot the absolute velocities of points E and P and the relative velocity between points E and P for one revolution of gear 2.

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