



FIGURE P9-7

Problems 9-39 to 9-40 From P. H. Hill and W. P. Rule. (1960). *Mechanisms: Analysis and Design*

- *†9-39 Figure P9-7a shows a gear train containing both compound-reverted and epicyclic stages. The tooth numbers are indicated in the figure. The motor is driven *CCW* at 1750 rpm. Find the speeds of shafts 1 and 2.
- †9-40 Figure P9-7b shows an epicyclic train used to drive a winch drum. The arm is driven at 250 rpm *CCW* and gear A, on shaft 2, is fixed to ground. The tooth numbers are indicated in the figure. Determine the speed and direction of the drum on shaft 1. What is the efficiency of this train if the basic gearsets have $E_0 = 0.98$?

* Answers in Appendix F.

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