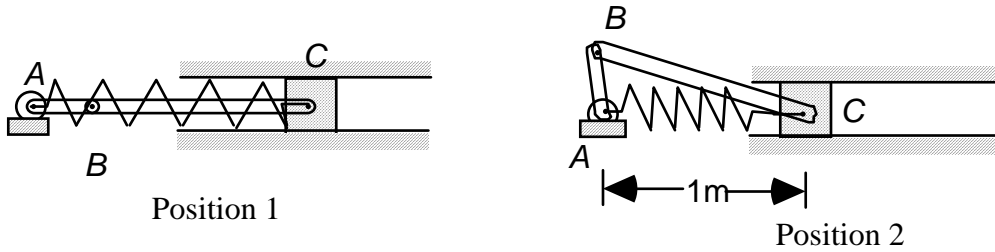


Problem 4.84

The spring with relaxed length of 1m is anchored to points A and C of the slider-crank device. If joint B is given an upward tap, the assembly will rapidly fold up to position 2. Determine the speed of the piston when position 2 is reached.



Parameters: in position 2: $\angle CAB = 108^\circ$; $\angle ABC = 54^\circ$; $\angle BCA = 18^\circ$; $m_{AB} = 1\text{kg}$; $m_{BC} = 1$; $m_{piston} = 12\text{kg}$; $k = 150\text{ N/m}$.