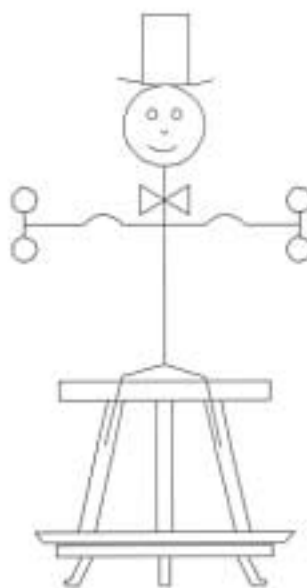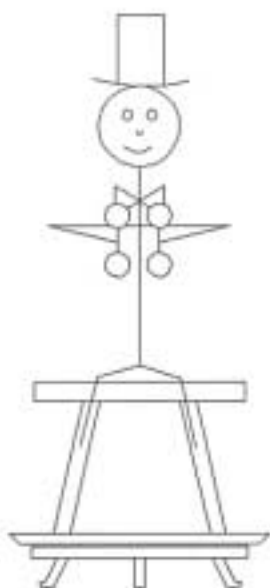# Conservation of Angular Momentum

<u>THINGS TO NOTE</u>:

- Emphasize to the students that kinetic energy is <u>not</u> conserved when the person seated on the stool changes the position of the dumbbells. Energy is supplied or sunk by the arm muscles.

<u>DIAGRAMS/EQUATIONS</u>:

$L = I\omega$ and by Conservation of Angular Momentum $L = L'$ so $I\omega = I'\omega'$ or $\omega'/\omega = I/I'$. For the dumbbells the approximate expression for I is $I = MR^2$. Since $R' > R$, then $I' > I$ and therefore $\omega' < \omega$.