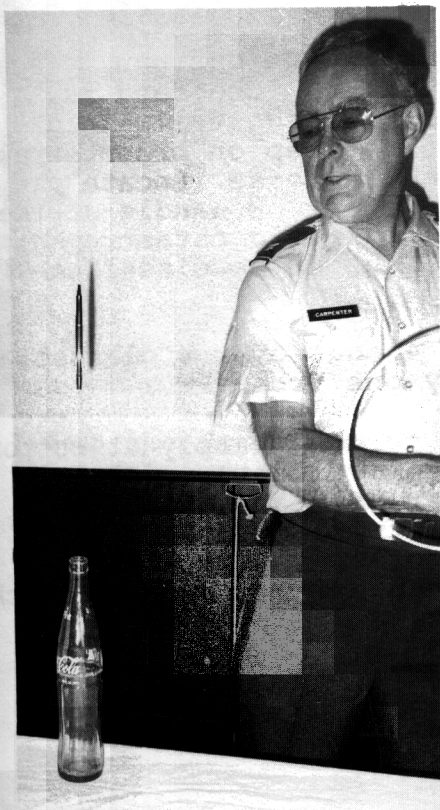


First Law - Inertia

Pen and Embroidery Hoop

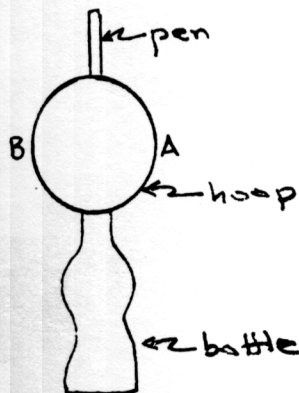


DEMONSTRATION

Balance inner ring of embroidery hoop about 25 cm dia atop soft drink bottle. Remove cap from plastic pen (such as Flair) having larger barrel with FLAT end. Balance flat end of pen barrel atop hoop. Snatch hoop from beneath pen.

Facing sketch, right-handed demonstrator swings outstretched finger rapidly toward INSIDE of hoop just below B, missing A. This tends to elongate hoop HORIZONTALLY. Try to contact hoop at about 8 o'clock position (or 4 o'clock if left-handed) to avoid rotational motion which causes pen to twist. Pen should fall in bottle.

Hitting hoop on OUTSIDE at A should tend to elongate hoop VERTICALLY causing pen to jump upward and missing bottle on way down.



To keep object almost stationary:

$$\Delta p = m \Delta v = F \Delta t$$

Make $\Delta t \cong 0$ to get $\Delta v \cong 0$



Ease of Setup/Construction: A/A