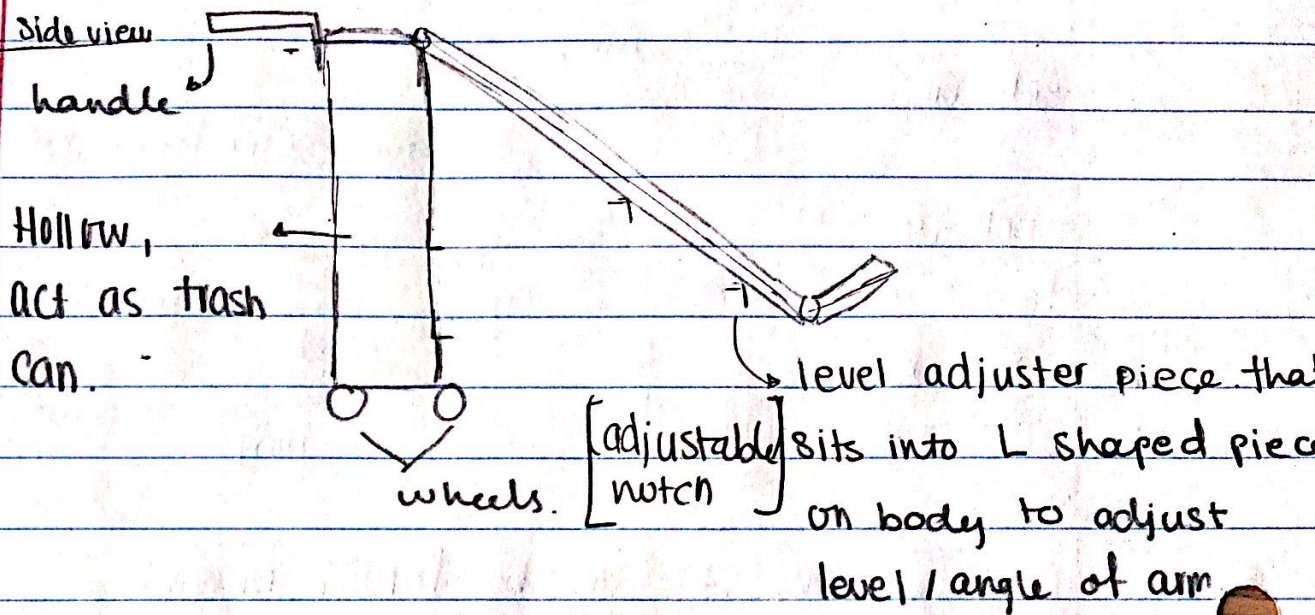


Strategy 2

The toilet paper holder for the elderly.



assuming.

$L = 25 \text{ in.}$ $m = 9 \text{ lbs.}$

+ Torque of retractable arms.

$\tau = F \cdot L \rightarrow$ length of body.

$\rightarrow$ torque $\rightarrow$ Tension force in arms.

$$+ \tau = F \cdot L = (88.2 \text{ N})(25 \text{ in} \cdot 1 \text{ in} / 0.025 \text{ m}) = 9.3345 \text{ N m}$$

$$\rightarrow F = mg = (9 \text{ lbs})(9.8 \text{ m/s}^2) = 88.2 \text{ N.}$$

$$m = 9 \text{ lbs}$$

$$g = 9.8 \text{ m/s}^2$$