

Potentia


Types of Potential Energy


- Gravitational
 - Elastic
 - Chemical
 - Electric
 - Nuclear
- } Mechanical

Definition

- **Mechanical Potential energy** is the stored energy of position possessed by an object.

Rotational Motion

- Linear  Rotational
 - Vertical motion under gravity
 - Spring / Rubber band

- Rotational  Rotational
 - Torsional Spring



Linear → Rotational

- Can we use our knowledge of previous session to design some mechanism ?

Rack and pinion

Give linear motion to rack

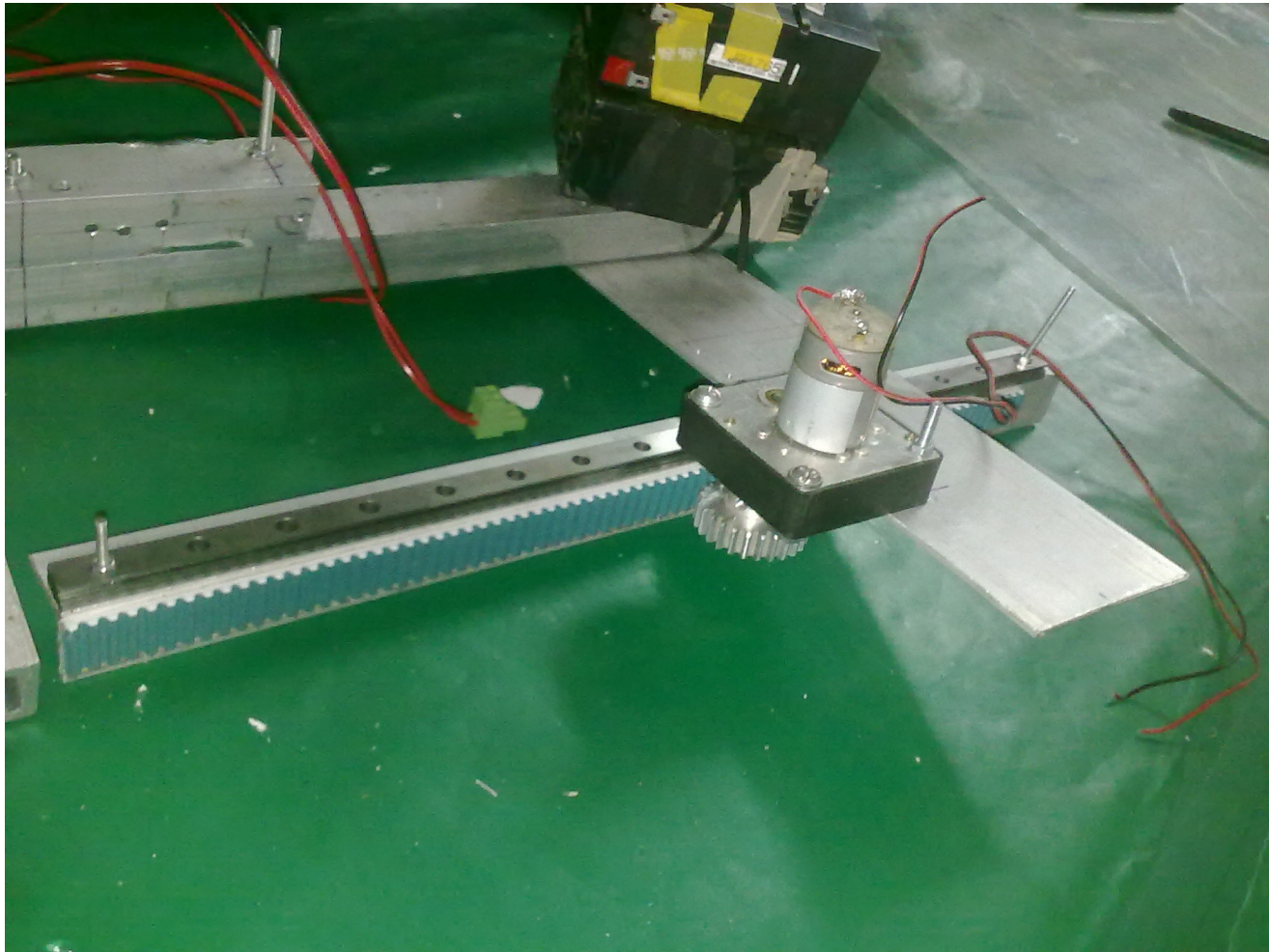
Attach wheels to pinion



Implementation

- Rack and pinion





Linear Rotational

- Gravitational potential energy
 - Linear motion of (rope + weight)

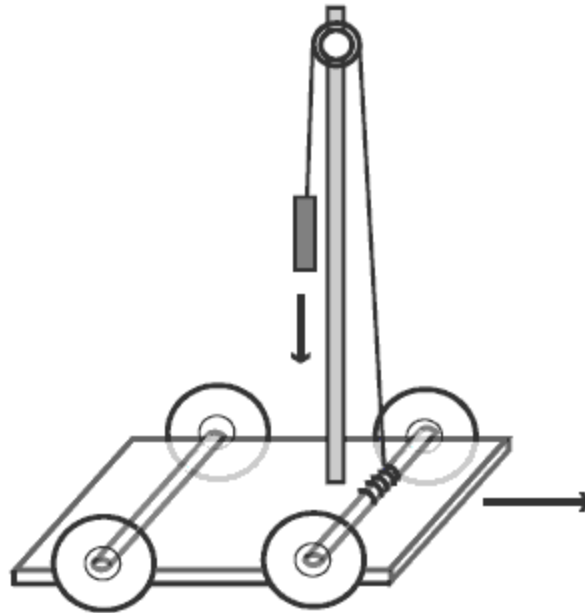


Figure 55-1 *Kilogram car.*

Rotation  Linear

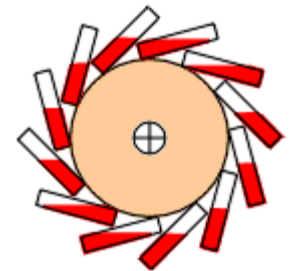
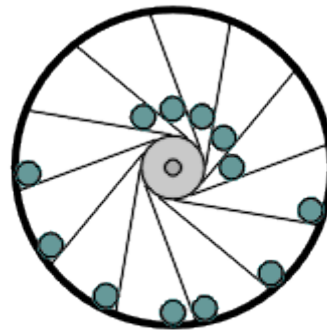
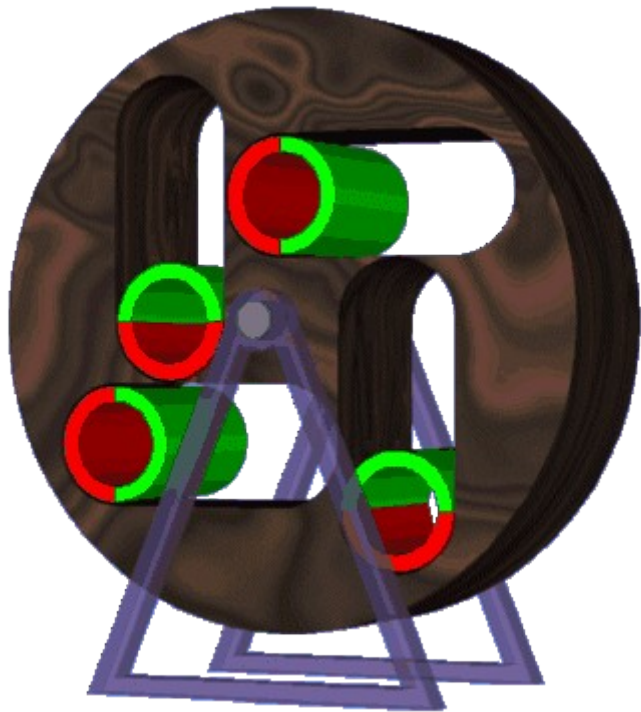
- Impact
 - Most Effective on CG Recoil

$e \longrightarrow 0$

SHM  Linear

- Give a same object
 - SHM better than Impact

Gravity Wheel



- Symmetry
 - Weight distribution

