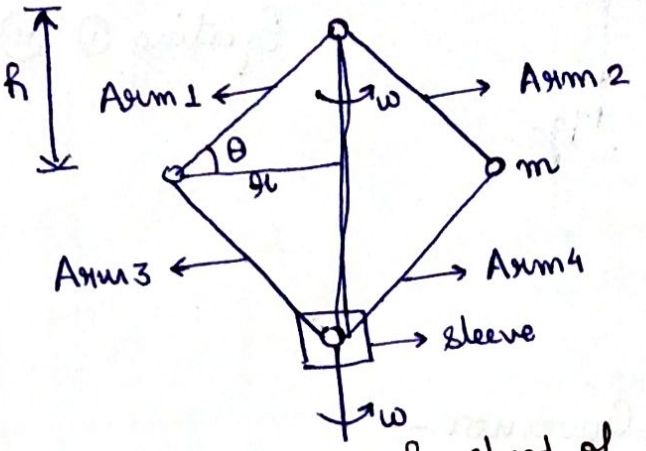
Governor and Flywheel

Governor → maintain mean speed of engine.

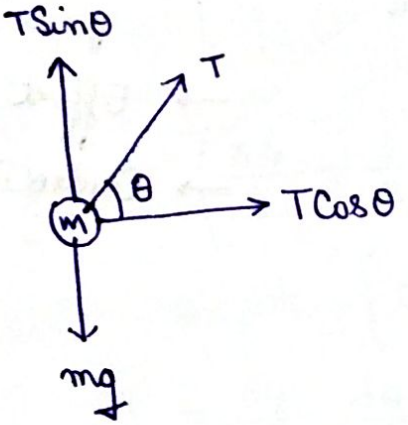
→ Watt governor.
→ Proter governor.
→ Procell governor.

Flywheel → controls the fluctuation of speed.



Watt Governor

Relationship b/w height of governor & speed of engine –



$T\sin\theta = mg$ ---(1)

$T\cos\theta = \frac{mv^2}{R}$ ---(2)

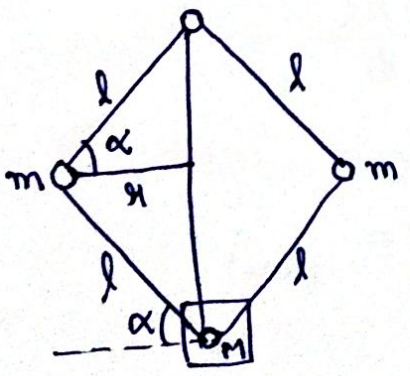
Dividing both eq^n –

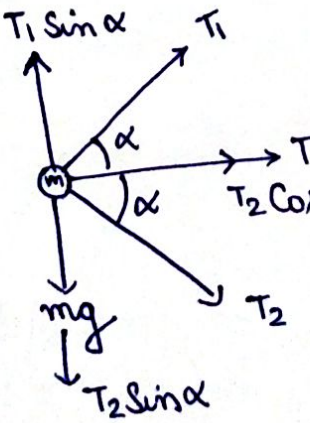
$\tan\theta = \frac{g}{\omega^2 R}$

$\frac{h}{R} = \frac{g}{\omega^2 R}$

$$\boxed{h = \frac{g}{\omega^2}}$$

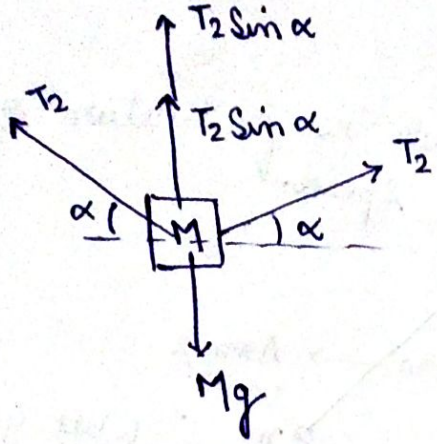
Proter Governor –





(1) $T_1\sin\alpha = mg + T_2\sin\alpha$

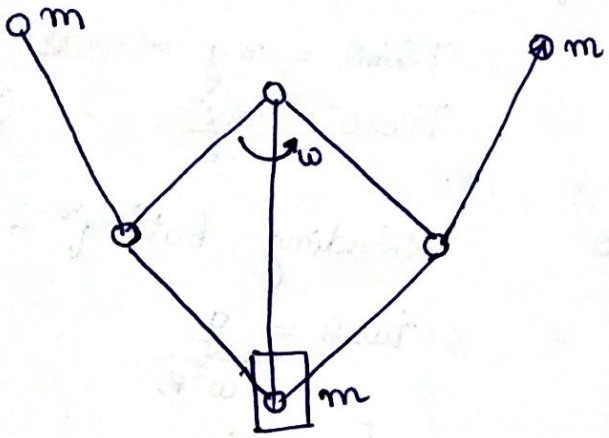
(2) $T_1\cos\alpha + T_2\cos\alpha = \frac{mv^2}{R}$



$$2T_2 \sin\alpha = Mg + f_s \quad ----(iii)$$

Equating (i), (ii) & (iii) -

Proell Governor -



Imp. Terms

- → sensitiveness
- → Isochronous
- → Stable & Unstable governor.
- → Effort
- → Controlling force