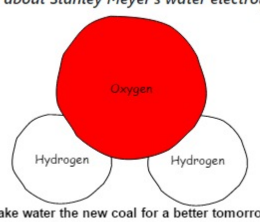
HOLOMORPHE

Think about Stanley Meyer's water electrolyser !



Make water the new coal for a better tomorrow

Informations générales de la société Holomorphe

Dénomination sociale : S.A.S.U. à capital variable HOLOMORPHE / Capital social : 100 euros

Adresse du siège social : 31 Avenue de Ségur - ABC LIV Ségur - 75007 Paris / Siret : 88363255600014

Registre du commerce et des sociétés : R.C.S. PARIS - Greffe du Tribunal de Commerce de PARIS

Activités : Commerce de gros de produits chimiques - Edition de logiciels applicatifs / Code NAF : 4675Z

Numero TVA intracommunataire : FR06883632556 / Président : Monsieur Jason ALOYAU / Date d'immatriculation : 26 Mai 2020

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Fundamental research for the Chas Campbell's gravitational engine

Course

Fundamental principle of rotating dynamics

We have :

$$F_t = m * a_t$$

is the tangential component of the resultant forces.

We have :

$$C = F_t * r$$

is the moment of force with respect to the origin in N*m.

We have :

$$a_t = r * \frac{\mathrm{d}\omega}{\mathrm{d}t}$$

Gravitational energy of simple pendulum

We have :

$$E_p = m * g * r * (1 - cos(\theta))$$

Kinetic energy of simple pendulum

We have :

$$E_c = 1/2 * m * V^2$$

$$E_c = 1/2 * m * (\omega * r)^2$$

Energy conservation of simple pendulum

We have :

$$E_m = E_c + E_p$$

is the mechanical energy of the system.

$$E_m = \frac{1}{2} * m * (\omega * r)^2 + m * g * r * (1 - cos(\theta))$$

Engine torque

We have :

$$P_{motor} = C_{motor} * \omega_{motor}$$

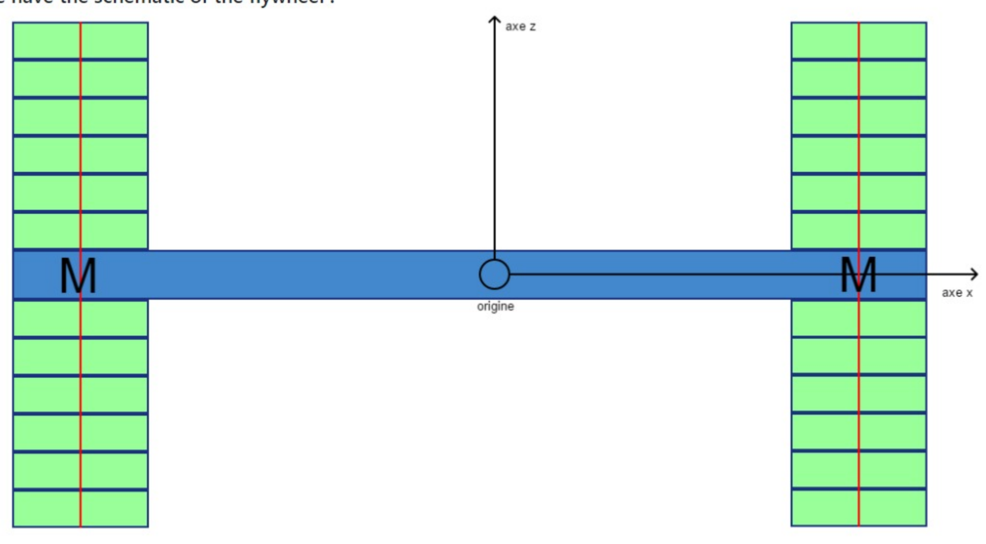
Pulley-belt ratio or drive ratio

We have :

$$\frac{d_{out}}{d_{in}} = \frac{\omega_{in}}{\omega_{out}} = \frac{C_{out}}{C_{in}}$$

Proof

We have the schematic of the flywheel :



We have :

$$E_{c,flywheel} = M_{flywheel} * (\omega_{flywheel} * r_{flywheel})^2$$

is the kinetic energy of the flywheel.

We have :

$$E_{p,flywheel} = 2 * M_{flywheel} * g * r_{flywheel} * sin(\theta_{flywheel}(t))$$

is the potential energy of the flywheel.

We have :

$$E_{m,flywheel} = M_{flywheel} * (\omega_{flywheel} * r_{flywheel})^2 + 2 * M_{flywheel} * g * r_{flywheel} * sin(\theta_{flywheel}(t))$$

is the mechanical energy of the flywheel.

We have :

$$E_{m,flywheel} = M_{flywheel} * (\frac{\mathrm{d}\theta_{flywheel}(t)}{\mathrm{d}t} * r_{flywheel})^2 + 2 * M_{flywheel} * g * r_{flywheel} * sin(\theta_{flywheel}(t))$$

$$E_{m,flywheel} = M_{flywheel} * (\frac{\mathrm{d}\theta_{flywheel}(t)}{\mathrm{d}t})^2 * r_{flywheel}^2 + 2 * M_{flywheel} * g * r_{flywheel} * sin(\theta_{flywheel}(t))$$

$$E_{m,flywheel} = constant$$

In derivating the mechanical energy of the flywheel, we have the moving equation of the flywheel :

$$\frac{\mathrm{d}E_{m,flywheel}}{\mathrm{d}t} = 0$$

$$\frac{\mathrm{d}E_{m,flywheel}}{\mathrm{d}t} = 2 * M_{flywheel} * \frac{\mathrm{d}\theta_{flywheel}(t)}{\mathrm{d}t} * \frac{\mathrm{d}^2\theta_{flywheel}(t)}{\mathrm{d}t^2} * r_{flywheel}^2 + 2 * M_{flywheel} * g * r_{flywheel} * cos(\theta_{flywheel}(t))$$

$$2 * M_{flywheel} * \frac{\mathrm{d}\theta_{flywheel}(t)}{\mathrm{d}t} * \frac{\mathrm{d}^2\theta_{flywheel}(t)}{\mathrm{d}t^2} * r_{flywheel}^2 + 2 * M_{flywheel} * g * r_{flywheel} * \frac{\mathrm{d}\theta_{flywheel}(t)}{\mathrm{d}t} * cos(\theta_{flywheel}(t)) = 0$$

We have :

$$\frac{\mathrm{d}\theta_{flywheel}(t)}{\mathrm{d}t} \neq 0$$

$$\frac{\mathrm{d}^2\theta_{flywheel}(t)}{\mathrm{d}t^2} + \frac{g}{r_{flywheel}} * cos(\theta_{flywheel}(t)) = 0$$

$$\omega_{flywheel} = \sqrt{\frac{g}{r_{flywheel}}}$$

Parameters of the motor

Let be

$$\omega_{motor} = 1500$$

the angular speed in turns per minute.

Let be

$$C_{motor} = 2 * M_{flywheel} * g * r_{flywheel}$$

the torque.

Let be

$$P_{m,motor} = C_{motor} * \omega_{motor}$$

$$P_{m,motor} = 2 * M_{flywheel} * g * r_{flywheel} * \omega_{motor}$$

the mechanical power.

Let be

$$P_{e,motor} = P_{m,motor}$$

$$P_{e,motor} = 2 * M_{flywheel} * g * r_{flywheel} * \omega_{motor}$$

the electrical power if there is no resistance.

Let be

$$d_{pulley,motor}$$

the diameter of the pulley of the motor in meter.

Parameters of the electrical generator

Let be

$$\omega_{generator} = 60 * f_{generator}$$

$$\omega_{generator} = 60 * 50$$

$$\omega_{generator} = 3000$$

the angular speed in turns per minute.

Let be

$$P_{e,generator} = E_{e,generator} * \omega_{generator}$$

$$E_{e,generator} = \frac{P_{e,generator}}{\omega_{generator}}$$

the electrical power in watts.

Let be

$$E_{e,generator} = E_{m,flywheel}$$

$$M_{flywheel} * (\frac{\mathrm{d}\theta_{flywheel}(t)}{\mathrm{d}t})^2 * r_{flywheel}^2 + 2 * M_{flywheel} * g * r_{flywheel} * sin(\theta_{flywheel}(t)) = \frac{P_{e,generator}}{\omega_{generator}}$$

the electrical energy in joules.

Let be

$$d_{pulley,generator}$$

the diameter of the pulley of the generator in meter.

Parameters of the flywheel

Let be

$$\omega_{flywheel} = \frac{d_{pulley,motor} * \omega_{motor}}{d_{pulley,flywheel}}$$

the angular speed in turns per minute.

Let be

$$d_{pulley,flywheel} = \frac{\omega_{generator} * d_{pulley,generator}}{\omega_{flywheel}}$$

the diameter of all the pulleys of the flywheel in meter.

We have :

$$d_{pulley,generator} = \frac{\omega_{flywheel} * d_{pulley,flywheel}}{\omega_{generator}}$$

$$d_{pulley,motor} = \frac{\omega_{flywheel} * d_{pulley,flywheel}}{\omega_{motor}}$$

With

$$\theta_{flywheel}(t) = \frac{\pi}{2}$$

, we have :

$$M_{flywheel} = \frac{P_{e,generator}}{\omega_{generator} * g * r_{flywheel} * 2}$$