

The overlooked high-energy accumulation capability of opposing motion flywheels

V.2.2

Copyright, Author: Gottfried Gutsche; Email: info@realautomation.ca

Abstract: Here we investigate the rarely mentioned physics construct-principle of energy accumulation and energy concentration of pairs of opposing flywheel motions mounted each onto the motor-body and the motor drive shaft! This principle is used in the patented Inertial Propulsion technology for providing the large vehicular directional propulsion energy required!

This elusive accumulation-concentration action of energy can be traced to the eventful year 1914 when the reciprocal inertial mass third law type **hot** gas-energy-root cause motion from within a million guns was unloading a vile-discusting-unnecessary inferno of high destructive energy far-flung within central Europe: This event occurred forward 247 years from Huygens invention-recognition of the **directional plus-minus “+” nature** of impulse motions, including his Vis Viva principle; it was 228 years from Newton’s statement of the third law impulse motion, his sidestepping-neglect of angular motions projected onto straight line motion, forward 32 years from James C. Maxwell’s energy-phenomena statement, 17 years forward from H. Hertz admonition, we must use both energy and momentum side by side to complete our analysis and 9 years after Einstein’s $E=mc^2$ Relativity; within this fateful year is when **Horace Lamb** published his “Dynamics” book: containing the “**conservation of momentum**” section, wherein he apparently attempted to prove to us that **a simple straight line third law collision motion and its repercussions**, and not much else, is accountable for the **universal far reaching all encompassing infinite “superior”** conservation of linear momentum within **all** isolated systems extending unconditional into all possible mechanical constructs without including investigating-considering angular motions.

Lamb’s trivial-impotent collision motion was there resurrected **ignoring** H. Hertz previous “PHYSICS IN A NEW FORM” wherein a side by side admonition view of momentum with energy together was **urgently** recommended; momentum conservation was one-sidedly elevated-trumped up to reach into every aspect of Newton stated inertial mass motion combinations and was **assumed to**

insurmountable prevent-dead-stop Inertial propulsion to infinity without the need of further experiments! But, while nobody disagrees, that a trivial collision (**throw**) straight line motion **alone** within the boundary of an isolated system, isolated from within a car for example, has no effect on the car system center of mass; H. Lamb fails to provide prove to show that his trivial collision is accountable for the conservation of linear momentum in **all multiple** inertial mass particle articulated **directional** simultaneous combinations of angular **a** rotation, tumbling **t** head over heel and overall **f**orward motion:

$$E_{\text{total}} = 1/2(I_a \omega_a^2 + I_t \omega_t^2 + m V_{\text{forward}}^2), \text{ wherein } I_{\text{moment,of,inertia}} = 1/2 m r^2$$

sequences, time durations-variations, including **regenerative** braking actions, within the two domain analysis systems impulse and energy! We must include-start in our analysis, **firstly** most **importantly**, what is the **first** original root **cause** of mutual opposing inertial mass motions within a gun-recoil, it is irrevocable chemical-pneumatic-energy of TNT within-over the length of the gun barrel and gun barrel caliber-area-breadth! The gun **large** range-reach-distance is obtained with the projectile-mass trajectory peak gravitational height by aiming the gun barrel upward:

$$E_{\text{energy,height,gravity}} = m g h_{\text{height}} ;$$

these four first original energy root cause parameters makes the gun inertial mass motion a **primary**-irrevocable **energy** system! Accordingly, Lambs assignment of impotence to a system of internal inertial motions, by itself, is unsuitable-limited-insufficient-redundant to proof the conservation of momentum to infinity without sectionalized-physical experimental evidence including dynamic breaking. Alternatingly, this publication shows and uses again, H. Lambs' impotent collision, but in its' angular-rotational to straight-line projected-combination energy / impulse motion (Huygens, Hertz +-) form! Here we use Lamps impotent collisions to accumulate large amounts of flywheel angular kinetic energy and dispose energy through dynamic breaking, thereby exposing the real nature, capability and possibilities of **Lambs' impotent collision in angular-rotational form translated-projected onto inertial straight-line motion!** At least, let us not forget, inertial speed has destructive-work powers:

$$E_{\text{energy,work,destructive}} = 1/2 m V^2 .$$

Destructive energy is performed by a destructive inertial force passing a rational distance; alternately, a force enduring over a time period is irrational-isomorphic, because, **time** itself, has a kinematic-irrational-inverse-quadratic **declining** magnitude over **rational** repeating distance lengths **S**: $t = (mS_{\text{displacement,distance}}/2F)^{1/2}$; this is so endearingly-convincingly presented with Galileo's notched declining board having ever expanding notch distance-spacing for obtaining a **uniform repeating time-beat-sound** durations between notches.

Next we present a two flywheel mutual reciprocal motion between an electric DC motor having an energy **source-sink supply** over sliprings (not shown) and a flywheel on its output shaft to underscore this principle! The energy **source-sink** supply nature-capability is at the centre point of our discussion! Wherein motor Energy is:

$$E_{\text{energy,electrical}} = V_{\text{voltage,potential}} I_{\text{current,magnitude}}$$

is the energy over the electrical-current time-duration!

Wherein inertial mass flywheel energy is again:

$$E_{\text{energy,required,provided}} = 1/2(I_a \omega_a^2) ;$$

$$I_{\text{moment of inertia}} = 1/2mr^2 ; \omega_a = \text{angular speed}$$

Then the **overlooked Huygens-Hertz energy-conservation** correlation of **reciprocal third** law straight line gun motion is:

$$E_{\text{energy,mass,projectile}} = E_{\text{energy,Gunpowder}} / ((\text{mass}_{\text{projectile}} / M_{\text{mass,gun}}) + 1)$$

This equation structure is congruent with the Lawrence transform!

Because: Third law M, m opposing motions: $t^2 = 2I_M M / F$; $t^2 = 2L_m m / F$; $t = (2I_M M / F)^{1/2}$; $t = (2L_m m / F)^{1/2}$; **reducing by cancelling out equal t, F, 2 each sides remains:**

$$I_M M_{\text{large,mass}} = L_m m_{\text{small,mass}} ;$$

Then the mutual-reciprocal length of each third law opposing motion per time-duration is depending on the mass magnitudes:

$$I_M M = L_m m \ ; \ I_M / L_m = M / m$$

$$L_{\text{length,displacement,small}} M_{\text{mass,large}} + L_{\text{length,displacement,large}} m_{\text{mass,small}} = \text{Length}_{\text{total,usable}} \ ,$$

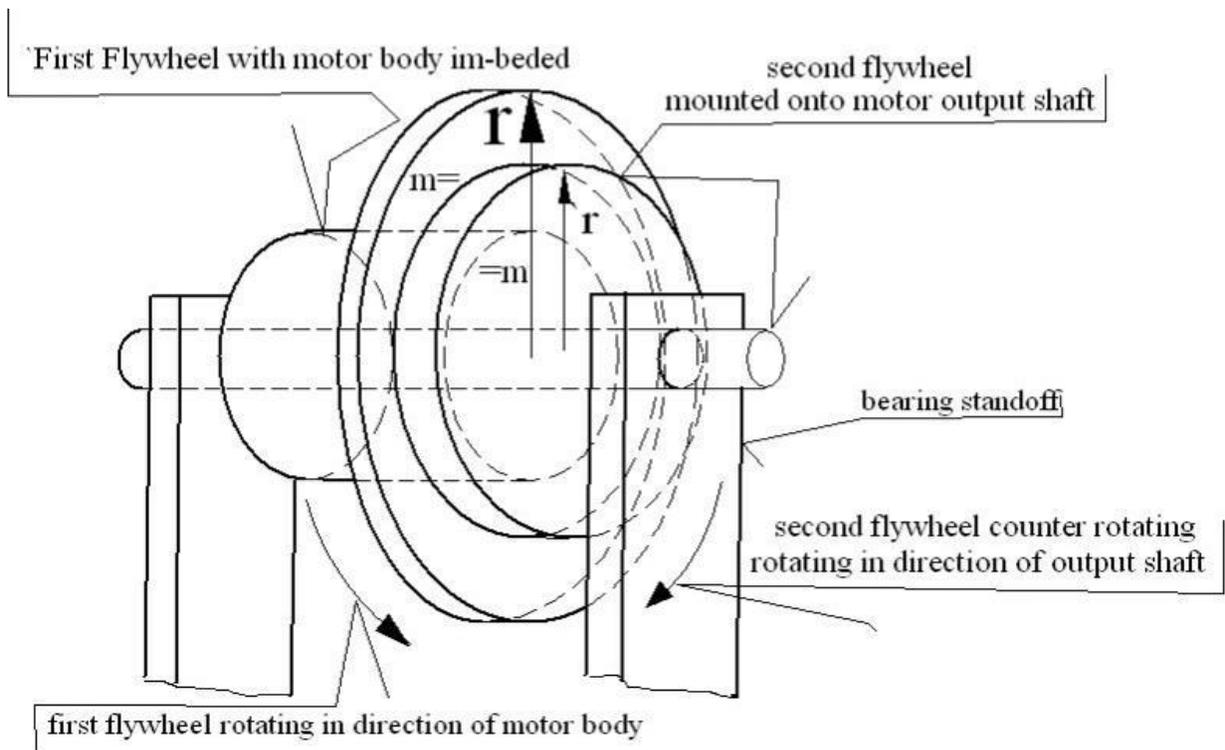
$$E_{\text{energy,work}} = F_{\text{force}} S_{\text{distance,displacement}} \ ;$$

$$a_{\text{acceleration}} = F_{\text{force}} / m_{\text{mass}} \ ; \ E_{\text{energy,work}} = m_{\text{mass}} a_{\text{acceleration}} S_{\text{distance}}$$

The energy accumulation and concentration in angular form is far more pronounced- potent than the gun energy concentration because the **radius squared** and angular **speed squared** function are multiplied with each other together:

$$E_{\text{energy}} = 1/2 (m r^2 \omega_a^2)$$

This is accumulating a **directional** dependant progressive **large** reservoir of energy used for propulsion!



The overlooked angular form for the mutual reciprocal motor energy distribution of inertial mass motion within the above picture is:

$$E_{\text{small,flywheel}} = (I_{\text{current}} V_{\text{voltage}})_{\text{average}} / t \left((I_{\text{small,flywheel}} / I_{\text{flywheel,large}}) + 1 \right)$$

Wherein: $I_{\text{mass,moment,of,inertia}} = 1/2 m r^2$; the m_{mass} is equal for both flywheels, thereby cancels out as a factor, only the reciprocal radius square² remains dictating the reciprocal supply energy distribution in a reciprocal inverse **square root** progression! The small flywheel receives the **Lion**-share of the generated energy of the motor! For example if the two flywheel radius ratio is 1 to 4, then the squared ratio is $1^2 / 4^2 = 1/16$; therefore, the small flywheel receives $1/16 + 16/16 = 17/16 = 0.9411$ time the total supplied lions share of energy; while the large flywheel is acting as a large backrest receives 0.05882 of the total energy, it is a very large backrest mass **relation to a small impact hammer to an anvil relation!**

Please view for reality presentations: youtube account: ggutsche1 ; for viewing these angular inertial mass motion action, wherein large electrical energy **sparks** are discharging from the large induction motor voltage switching action reactions and also important: no straight line motion-reaction-forces are occurring from within this flywheel system!

Now, the reader of this paper will be curious, why not derive these principles of accumulation-concentration within the momentum realm? The answer is:

Momentum is using **time** as a measuring stick, which has an irrational non-uniform diminishing progression in relation to the **rational distance**-displacement defined by the **algebraic** equations of time:

$$\text{time} = (\text{mass} \times \text{distance}_{\text{displacement}} / \text{Force})^{1/2},$$

This is having a square root declining function-progression!

We are also able express time as a time squared function for a repeating distance-displacements:

$$\text{time}^2 = \text{mass} \times \text{distance}_{\text{displacement}} / \text{Force}$$

This is **why** Huygens, Leibniz, LeHospital, Bernoulli, Hertz chose the most **fundamental** energy-force over the **rational** distance realm for the combined-projected straight line and **angular** inertial mass motions!

$$E_{\text{energy}} = m_{\text{mass}} dV V_{\text{average}}$$

We shall not forget again that the reciprocal flywheel physics action presented applies for both acceleration and dynamic breaking in a +- (PLUS-MINUS) SYSEM already first presented-solved by Huygens when posed as a open-unsolved problem of mechanics by Descartes in anno 1660 ties !

The **full** detailed 200 page version book is on Amazon.com books called:

“Inertial propulsion: and you thought it's impossible”

And:

“Inertial propulsion: and you thought you knew everything about physics”

For experimental proof: youtube, ggutsche1, P1100007

Youtube, ggutsche1, P1090003

Youtube, ggutsche1, PC130005

Youtube, ggutsche1

US patent# 9995284 for sale-licenced by Author-owner

