Energy security, Global warming and Engineering

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Introduction:

Energy security and global warming is serious problem. To do work we need energy. Today's modern world we cant live without car and electricity. So we need one permanent solution of this problem. In this research report I try to show that how we can use engineering to solve this problem. Solution never comes in day but we have to start thinking about it.

Energy,

Problem of fossil fuel
As we know oil is 130 $ per barrel. It is difficult to survive without oil or fossil fuel. Fossil fuel has two big problems

i) It is limited
Ii) Global warming

We can't solve anyone of this problem if we use fossil fuel. We can control pollution with good engine and increasing efficiency. But this is not a solution. So leave fossil fuel for some time

Renewable energy
This is better solution compare to fossil fuel but we can't travel in wind car or we can't travel in solar car. And we cannot survive on electric car because it needs charging after every 50 mile. so keep renewable energy only for electricity. According to me it is even not so viable for electricity but still we believe in Algore so keep it a side only for electricity.

Engineering may be the best solution. Now come to the point why engineering. Simple when there is no other option; we have to go with rest. So we work on engineering.

Force

Newton said apple will always come to down. Means if some force exists it will always apply with same magnitude and in same direction, if I am not getting any wrong meaning.

Definition of force: The influence that produces a change in a physical quantity. Force equals mass times acceleration.

F=Ma Newton or Kg-Meters/second^{2}

Type of force

Applied Force

An applied force is a force which is applied to an object by a person or another object. If a person is pushing a desk across the room, then there is applied force acting upon the object. The applied force is the force exerted on the desk by the person.

Gravity Force

The force of gravity is the force with which the earth, moon, or other massively large object attracts another object towards itself. By definition, this is the weight of the object. All objects upon earth experience a force of gravity which is directed "downward" towards the centre of the earth. The force of gravity on earth is always equal to the weight of the object as found by the equation:

$$F_{grav} = m * g$$

where $g = 9.8\ m/s^2$ (on Earth)

and m = mass (in kg)

Friction Force

The friction force is the force exerted by a surface as an object moves across it or makes an effort to move across it. There are at least two types of friction force - sliding and static friction. Thought it is not always the cast, the friction force often opposes the motion of an object. For example, if a book slides across the surface of a desk, then the desk exerts a friction force in the opposite direction of its motion. Friction results from the two surfaces being pressed together closely, causing intermolecular attractive forces between molecules of different surfaces. As such, friction depends upon the nature of the two surfaces and upon the degree to which they are pressed together. The maximum amount of friction force which a surface can exert upon an object can be calculated using the formula below:

$$F_{frict} \leq \mu \times F_{norm}$$

where μ = coefficient of friction

Normal Force

The normal force is the support force exerted upon an object which is in contact with another stable object. For example, if a book is resting upon a surface, then the surface is exerting an upward force upon the book in order to support the weight of the book. On occasions, a normal force is exerted horizontally between two objects which are in contact with each other. For instance, if a person leans against a wall, the wall pushes horizontally on the person.

Stationary forces.

I sit on chair. My weight is applied on chair. so my weight is called stationary force.

Example of stationary force

Weight of your car

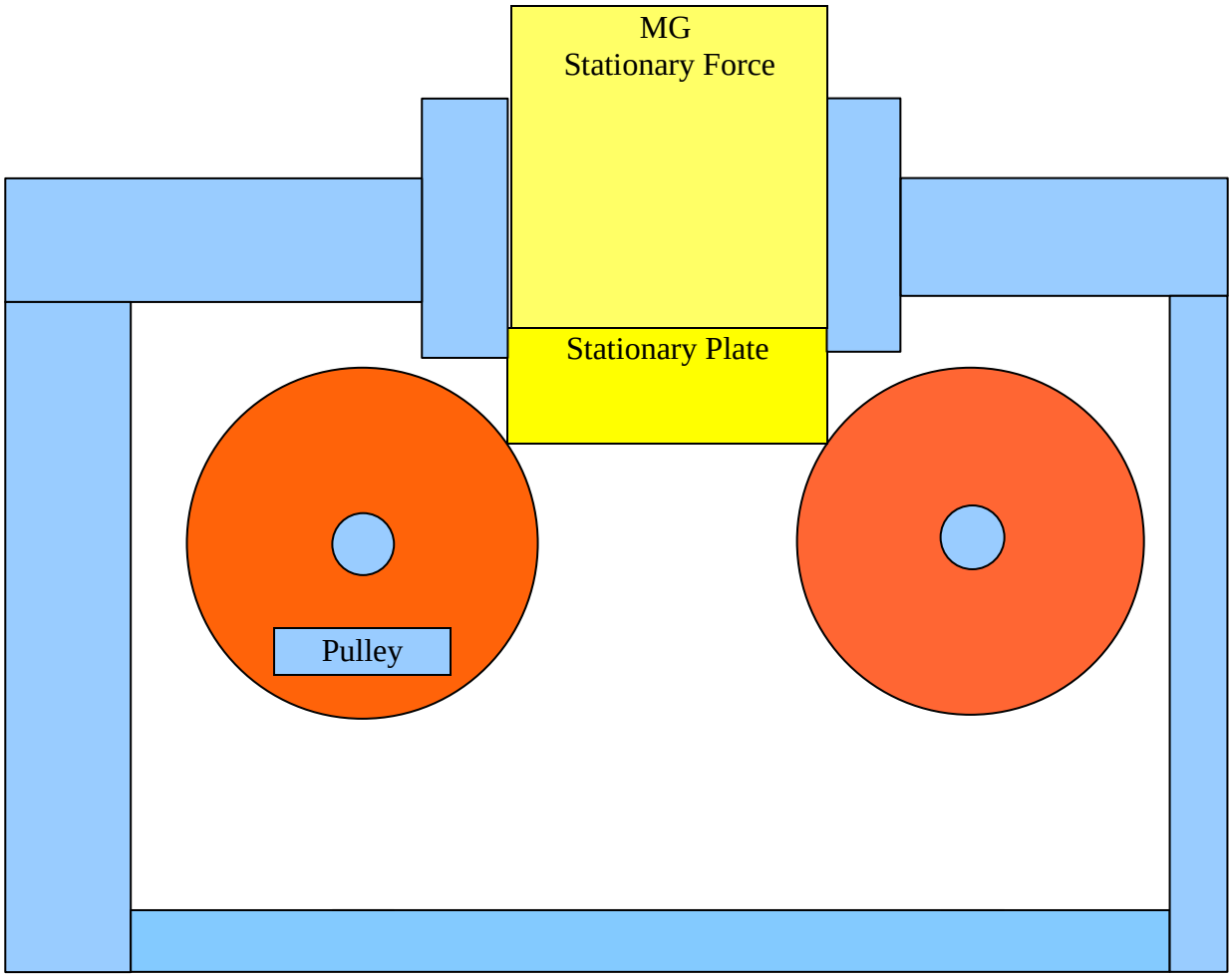
Weight of building

Hydraulic or pneumatic force when piston in cylinder is not moving.

Force of compressed spring until we don’t allow it to spread.

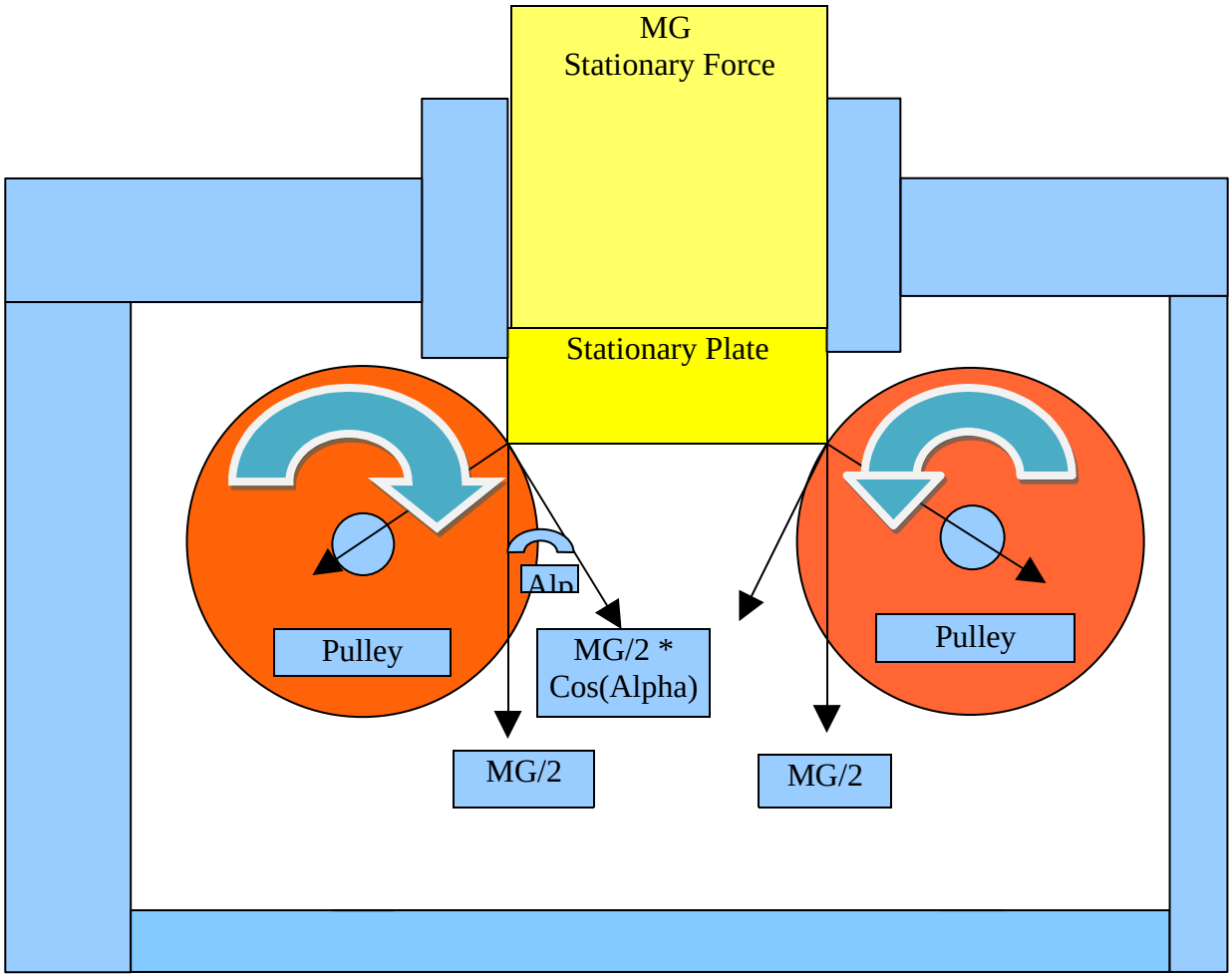
Use of stationary force

I give you one situation. We simply do force analysis on this situation
As shown in figure Mg stationary force applied on two pulleys. Pulleys can rotate about their axis.
We analysis the effect of this force on these pulleys



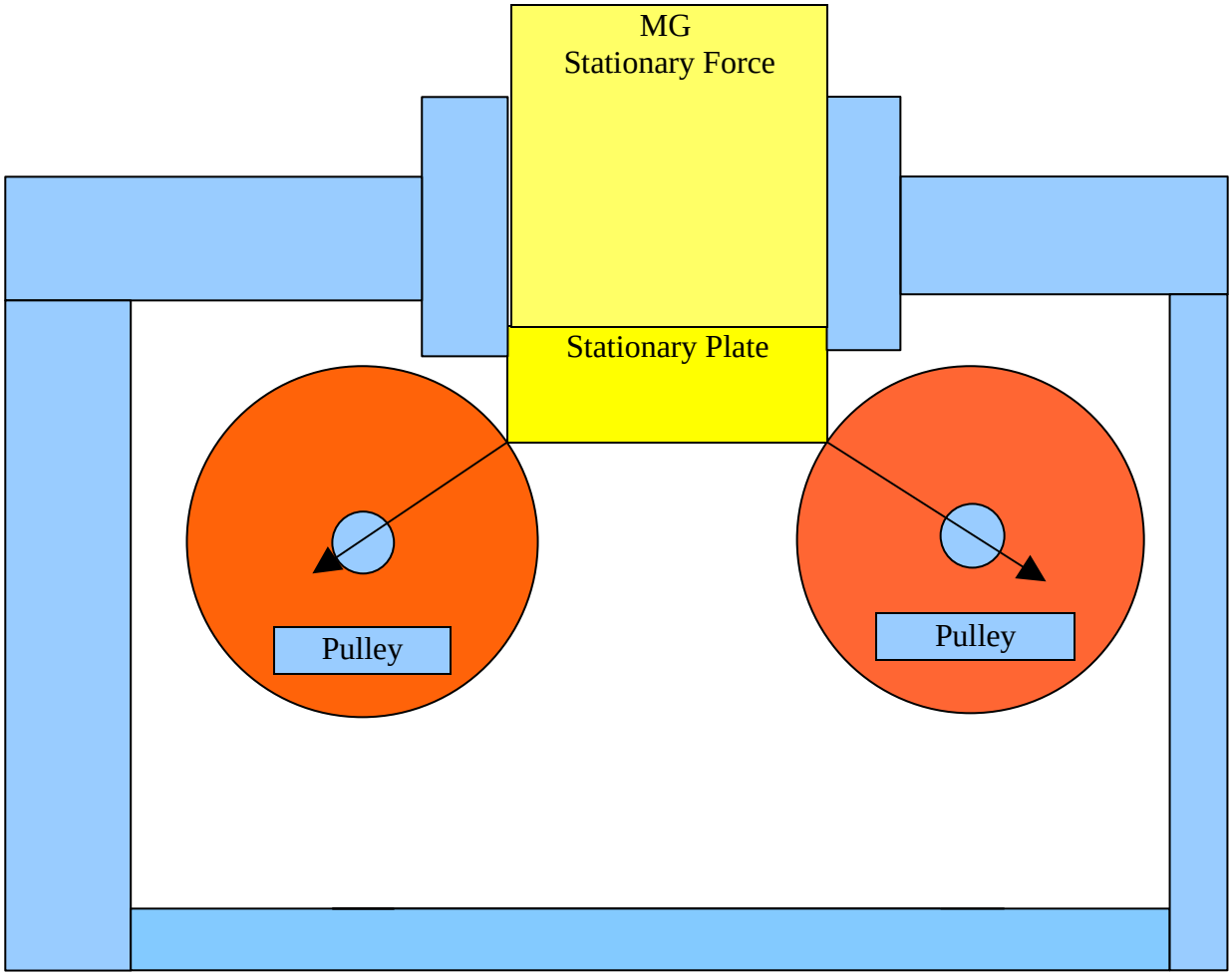
Analysis of this situation

Probablity1
As shown in figure mg will equally divide and applied on each pulley in vertical downward direction. This mg/2 further divided in two parts. One is tangential and second is towards the centre. Tangential part will help to rotate pulley and towards the centre part will generate friction.



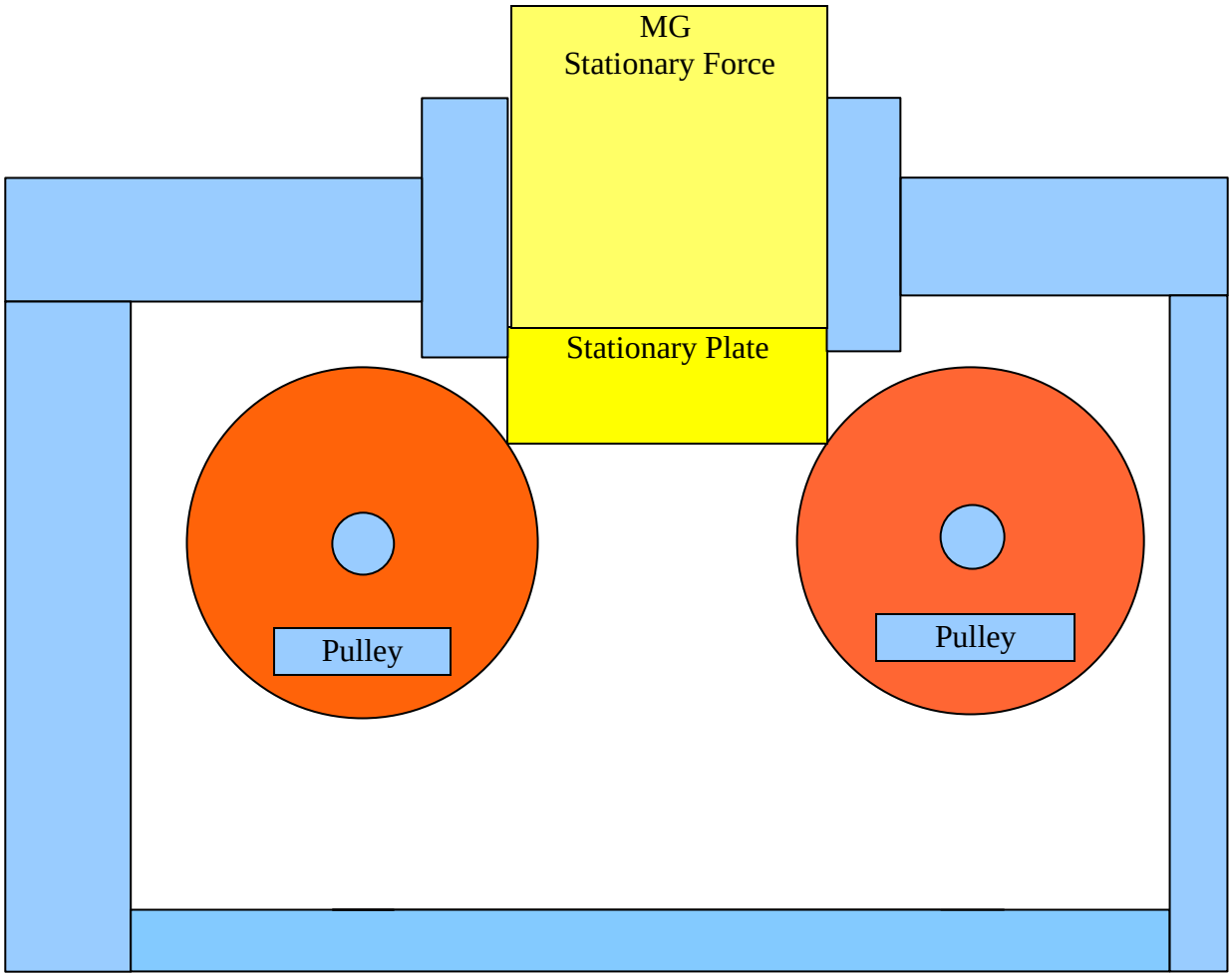
Probablity2.

Only towards the centre force apply on each pulley. This will also help to get what we wish to get. Apply this only towards the centre force and try to weight whole system. Weight will decrease. As per Newton apple law we cannot change the direction of gravity or stationary force and we can't reduce the magnitude of force. So it is not possible as per apple law but still we believe it is possible in that case weight will reduce and we can lift whole system using less energy.



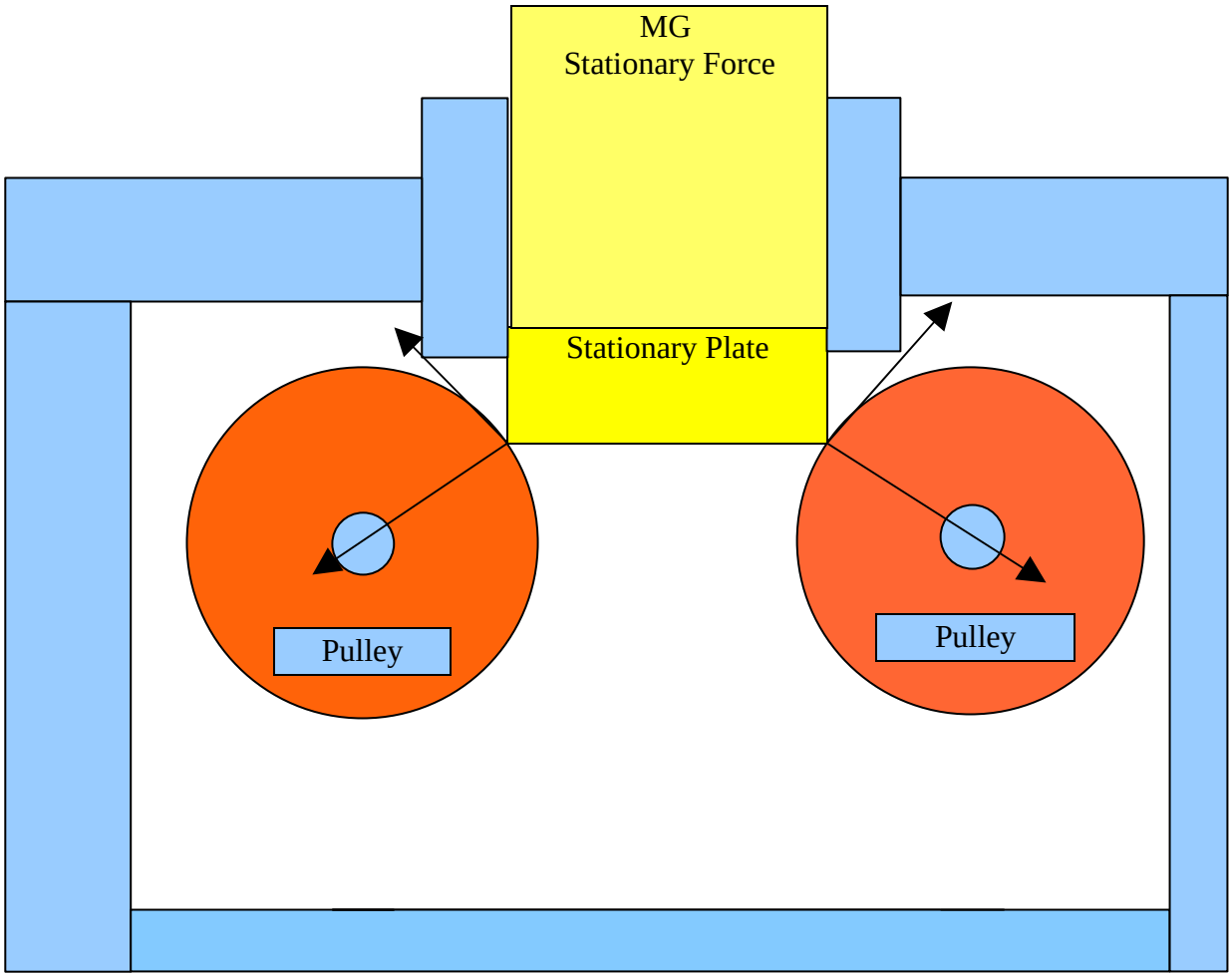
Probablity3

Mg will disappear. I wish this probability but it is not possible as per apple law



Probablity4

Tangential force applied as shown in figure. I wish this also but it is not possible to make apple fly.



So finally we will get something with this engineering situation. we need good accuracy and less friction btw stationary plate and pulley.
Friction can be reduced by lubrication, smooth surface, reducing contact area and contact made btw soft and hard surface.

Conclusion:

I am not 100% sure that what happen in this situation. But whatever happens it will be defiantly good.