

“ Exploring Theoretical generating energy: Perpetual motion: Utilising Gravity and Buoyancy.”

By Adrian Gibbons

Introduction.

Here is my research on generating energy through using gravity and buoyancy as forces to create motion, they are based on my thought experiments. I have included eight designs, of which drawings of the machines mechanisms , all based on the same principles. Designs from 1 to 4 are trying to create an unbalanced wheel , theoretically would turn. But these were my first designs and I quickly found that this mechanism would not work. The wheel would not turn due to being each side being equal weight.

The design 5 uses a rail system to generate electricity through a dynamo, the design 6 does not use a rail system, the dynamo is attached to the pod and wheel. So there is advancement in design features shown from the two designs. The design 7 creates an electric generator by the upward and downward movement of a pod with magnets , inside a stainless steel tube with copper wire around the inner lining to create an electric generator. It uses buoyancy to sink and float thus create the motion needed create electricity.

I have not tried to actually construct a working model, these drawings are just experiments from my mind pushing the boundaries of physics. I have just used pen drawings to illustrate the principles behind the mechanisms and concepts. By doing this intellectual thought experiment I have come up with novel these novel mechanisms, this brief look at my research shows what I have learnt through trial and error.

These drawings are just starting points to obtain a truly efficient mechanism to create energy and try to defy the laws of physics. My drawings are based on a unique approach to try and create energy and motion .

Concept of designs 5 to 8.

These drawings are just theoretical and are not totally accurate plans to make such a machine, but I am trying to propose the concept of such a machine as a thought experiment.

The machine would be a totally enclosed mechanism, consisting of a large cylindrical metal tube with a top and bottom, this tube would have an internal rail system attached to the interior walls. This rail system would have a sphere , a pod the size of a basketball, that is connected to the rail system, that allows the pod to move up and down. (this rail system is used on my first study of such a machine, the other ones do not have a rail system.)

Another feature is that the tube would be filled with water , not right up to the top , leaving a large air pocket.

The spherical pod would act as a submarine , and able to sink and be able to raise. It would do this through filling ballast chambers with water to sink and filling air into the ballast chamber to gain buoyancy by compressed air. The pod once at the surface, the computer tells the air compressor to refill air tanks. The energy required to do this comes from the dynamo creating enough electrical energy to mechanism going. Therefore the height is important feature in the amount of energy created.

Another feature of the design is on the tubes inner surface parallel to the other rails would be an another rail that a dynamo attached to the pod is attached.(this feature is only on my first thought experiment, the other drawing does not include this feature.)

As the pod sinks by filling the ballasts with water, a wheel / cog attached to the track is connected to a dynamo that creates electricity that is stored in batteries inside the pod. (in other designs the dynamo is connected to the wheels of the pod, no rail system is used.)

The pod would sink to the bottom of the tube, then a depth meter would tell an onboard computer to fill the ballasts with compressed air, the electricity stored in the batteries enables this function. So the energy created by the sinking and floating , turning the dynamo, this energy powers the compressor to suck in air when at the top surface. The mechanisms height determines the power generated.

By filling with air the pod raises upwards, through buoyancy. As it travels upwards the dynamo is generating electricity to store in the batteries to power pumps, air compressor , computer.

It is generating electricity every time it sinks and surfaces, it repeat these steps , sinking and floating therefore theoretically creating continuous motion.

Design 5,

In design 1, it consists of a long cylinder of stainless steel , which has been capped on both ends, (would have a hatch to open at top.) The cylinder is filled with water,(might have to experiment with different liquids such as Isopropyl alcohol).

The water is not up to the top, but leaves a large area filled with air.

On the interior walls of the cylinder is a track system, two of which keeps a metal pod on track. The main feature of the machine is the pod, which is submersible, the pod floats due to compressed air being pushed into a ballast. The pod then can sink by the air vent opening creating low pressure in the ballast , thus the water is pushed through filling the ballast tank. The pod would move along the vertical tracks, going up and down, sinking and floating. While it is sinking and floating a large wheel from the pod is against the wall of the cylinder, on a third track , a small wheel of a dynamo pushes against this large wheel to produce electricity.

The electricity from the dynamo, powers the pods air compressor, computer . The pod once at the water surface, self refills its tank with air. The machine would repeat this process, sinking and floating. Generating energy every time it sank, or floated.

The machine large wheel would have to the size of a bikes wheel, the sinking pod would need to gain a terminal velocity of over 10km/h or 6.217 mph to create energy using a dynamo. My calculations on on the falling pod would be around 14 mph , so should be fast enough to generate energy. Another feature of generating energy is the height of the cylinder, it would have to be high enough so the pod when sinking or falling is creating enough energy to power itself.

Design 6,

The second design, is based on the first, following the same principles, it consists of a stainless steel pod with ends at both ends, and is filled with water.

In this design, I have taken away the rail system, and streamlined the pod so it creates less friction in the water, going up and down.

The pod still would be submersible and use the ballast tank to sink, by filling with water , and float by releasing compressed air into the ballast. It would not need a track system, it uses small wheels on legs to make sure the pod is positioned in the middle of the cylinder when it moves up and down.

The pod uses one large wheel which is pushed against the wall of the cylinder as the pod sinks and floats the large wheel turns a small dynamo that generates electricity. this electricity is used to power the air compressor. The air compressor self refills when the pod reaches the water surface, by using an onboard computer that controls and monitors depth, with depth gauges controls refilling.

Another feature of the design is it uses coiled springs at the top and bottom of the cylinder to slow pod to stop it hitting the bottom or top. The top spring would also have another function , when pod at at the surface it would be in contact with the spring , the pod would send any surplus DC electricity to the rechargeable battery. This battery could then send any surplus electricity that is not needed for the machine , out to a bridge rectifier to convert DC into AC.

The height of the cylinder determines how much energy the pod can create, so therefore the height must be worked out so the energy created is large enough to power continuously. The large wheel would have to be as large as a bike, and the pod would have to sink and float at over 6.2 mph to generate enough energy by using a dynamo. The pod should sink and float at over 14 mph, as rough calculations, but would need further data, like exact shape of pod, size, weight, length of cylinder to be accurate . So therefore this is only theoretical at the moment and a prototype scale model would need to be built to see if principles shown have are valid.

Design 7 and 8

Design 7 and 8, utilises a cylindrical magnet , basically a large vertical cylinder made of copper, sealed at one end . This copper cylinder would be filled with water , the bottom of the copper cylinder making it waterproof , the cylinder would be filled not right up to the top leaving a large air pocket. The copper cylinder would have insulated copper wire wound around it hundreds of times, tightly and evenly all the way around the tube.

The design uses a submersible pod with magnets around the pod , this pod would sink through filling its ballast chamber with water, doing this by opening the air vents at the top of the pod, the air vents are opened and closed by an electric actuator.

The bottom of the pod is flood ports that are just holes, that are always opened, that let in water.

The pod uses gravity to sink, generating energy from gravity. The pod has no wheels , or track system, it is smooth and aerodynamic like a tick tac, so when it sinks and floats to the surface it creates as little friction as possible. The reason the pod does not need any wheels to stabilise it against the inner wall of the cylinder is because the magnets on the pod and the copper wall create a magnetic field that repels would push the pod to the middle, so no wheels would be necessary to keep it in the middle of the cylinder.

Design 7, once at the bottom of the copper cylinder it would push compressed air into the ballast chamber to raise the pod with magnets. So the pod would float to the surface of the cylinder, thus creating energy from buoyancy.

By the pod sinking and floating, it is creating energy, the Lenz's law, and Lorentz force, create eddy current down the copper cylinder, the magnets on the pod slows down according to the eddy currents, the copper tube creates a magnetic field, When the magnet of the pod pushes through this field of the cylinder it causes electricity to be created. The insulated copper wire around the copper cylinder collects the electricity. Design 8 , would use an external air compressor to send air through a air hose, with two check valves to stop water back flow.

So when the pod sinks it creates electricity and when it floats it creates electricity. The energy used to power the pods compressor to fill the ballast , computer controls would come from the electricity collected.

At both ends of the copper cylinder , the insulated wires are then attached to a bridge rectifier , to change the AC current into DC. Then wires would go from the bridge rectifier to a rechargeable battery. The energy created would then be sent back up to the top of copper cylinder to the top spring, this acts to send DC current back into pod when it is docked at the surface to recharge the rechargeable batteries on the pod.

The design would then repeat the process of sinking and floating, each time creating energy through using gravity and buoyancy. There could be surplus energy left over from this design if the height of the cylinder is high enough to create more energy than necessary to power machines continuous motion.

First Law of Thermodynamics.

According to the first law of thermodynamics, energy can not be created or destroyed, only transferred from one form to another.

My concept drawings does not break or defy this law, for gravity we can obtain energy from it. But to repeat the process of continuing to obtain energy from gravity to make it continuous is breaking the laws of Thermodynamics.

These concept drawings try and obtain the energy from gravity by transforming it into kinetic energy, then electrical energy. Energy transformation which is within the current laws of physics.

When the pod is at the top of the cylinder , floating on the surface, it possesses gravitational potential energy, by sinking, and floating to the surface, the pod, it creates kinetic energy, by the pod sinking, or floating is creating motion, it turns a dynamo that transforms the kinetic energy into electrical energy.

The pods sinking and floating to the top, buoyancy, is the kinetic energy of this system.

The systems energy is the depth , strength of magnet , distance from the top of the cylinder to the bottom, therefore to create more energy, the distance or height of the cylinder just needs to increase, the strength of the magnet increased or size of magnet, so pod length could be increased. For the greater the height or depth of water the pod sinks or floats to the surface , the greater the size and strength of magnet the more energy would be created.

Therefore my concept drawing is using gravity and buoyancy to create energy, and create a continuous motion.

$$W = F \cdot d$$

Archimedes principle of buoyancy

$$F_b = \rho \cdot V \cdot g$$

Gravity. F_g

$$F_g = M \cdot g$$

Hypothetical formula for Perpetual Motion.

$$F_b + F_g = F_{\text{net}}$$

Force buoyancy + Force gravity = Force perpetual motion

Disclaimer

The drawings in this project are theoretical in nature, they are thought experiments on paper, and are used to for educational purposes, they do not claim to be able to obtain perpetual motion. For perpetual motion is impossible for the laws of physics, Thermodynamics make it unreachable.

Conclusion

The designs 5 to 8 do not work due to the energy required to push air into the ballast tank is greater than the energy gathered through the dynamo or generator.

For even if the height of the cylinder is very high , and generates more energy this still would not be enough to power the compressor to fill the air tanks to make the design work , for the increased height increases water pressure. This is because of increased water pressure , the higher the water cylinder the higher the water pressure, so the water pressure is not the same at all depths of the cylinder. One could increase the magnet size and strength, making the pod longer , so more energy is produced, but heavier weight means more compressed air to raise .

So these designs can not work continuously , but could work for a short time till machine runs out of energy to power compressor, but the energy was put into the system beforehand.

I am designing these for a challenge, and because they are fun thought experiments, they are not supposed to work.

Thank you for reading this and looking at my drawings, all the best for your search for knowledge.

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