

# Generating Voltage Using the Concept of Free Energy

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## Abstract

The highly polluting energy source like fossil fuels can produce adequate energy but are limited in quantity and insufficient for the modern society needs. Thus become an urgent problem to be solved for every country. The non-polluting energy sources such as solar energy, wind energy and tidal energy which are in demand for modern society needs, has its own limitations with controllability. Therefore a gravity power generation mechanism is introduced which convert the potential energy into the electrical energy. The mechanism not only has the advantages, such as more simplified in structure, higher conversion ratio, and more environment-friendly but only needs a little of starting energy in the form of torque to perform a long-time energy conversion action.

## Keywords

Gravityconversion, Torque, Voltage, Free Energy

## I. Introduction

This invention relates to gravity-powered electrical energy generators and, in particular, to apparatus adapted for providing light without the necessity of using electrical storage devices. Attempts have been made in the past to provide apparatus for converting the power of gravity acting on a weight to electrical power. U.S Pat. No. 5,905,312 [1-4] describes a gravity-powered electrical generation system which is powered by water which is fed from a tank above the apparatus into a series of small tanks which are mounted on a vertical loop of material. The weight of water in the tanks causes the loop to turn and its slow rotation is converted via a system of gearing into fast rotation of the power input shaft of an electrical generator. Such a device is complex to build and maintain and unsuited for generating small quantities of electricity to produce light in rural areas.

Clay Moulton introduced the idea of a columnar light, powered by gravity which generates electricity by the slow fall of a mass which further spins a rotor [5-7]. The energy thereby released was said to power ten high output LEDs which emitted light into an acrylic lens to create a diffuse light. This was described as a device which requires the turning over of an hourglass-like mechanism to move a movable weight from a lower position to a higher position, where after it would glide gently downwards while lighting the lamps.

It has been found that, by careful design, it is possible to produce lighting apparatus based on a gravity-powered electrical energy generator [8]. It may be of simple construction and is well-adapted for mass production so as to produce lighting apparatus which is easily deployable in the field. It also provides useful quantities of lighting while being very easy to maintain and resistant to adverse conditions.

## A. Problem Definition

All the energy sources available nowadays have various problems which are faced by all the countries and needs to be solved soon. The problems of several common energy sources are respectively discussed below.

The most common energy source is the fossil fuel (such as crude oil, natural gas and coal). The fossil fuel generally produces high thermal energy or explosion energy through combustion for enabling the engine to use the explosion energy to move the motorcar or utilize the steam to impulse the turbine to generate electricity. However, the burning of fossil fuel will cause the air pollution and the global greenhouse effect. In addition, due to the high consumption of the fossil fuel, the amount of fossil fuel in the earth's crust is decreasing rapidly. As a result, the source of the fossil fuel is becoming less and less, and the price increasingly rises, and it will be used up in the near future [9].

Another energy source is the nuclear energy. Though the nuclear energy is always available for use by nuclear fission and nuclear fusion, the safety of the nuclear power plant is still controversial. It is important that, how to correctly treat the nuclear waste material has become a puzzled problem for human beings. The storage and the accumulation of the waste material are both costly and difficult to perform [10].

Other energy sources, such as solar energy, wind energy and tidal energy, are the non-pollution energy sources which the modern people seek for, but they are the natural energy which the human beings cannot assuredly control. Solar energy, wind energy and tidal energy change greatly with the weather and season and thus cannot be supplied stably [11].

The present research has arisen to overcome above described disadvantage.

## II. Methodology

### A. Basic construction and Working of gravity conversion unit A

The conversion unit used for present research is shown in figure 1. The gravity energy convention unit includes wheel members, a transmitting member and plural swing arms, which are pivotally coupled with wheel member. The transmitting member is mounted on the wheel member, and is drivingly connected with it. This is shown in the figure 2. These single directional swing arms are equidistantly positioned outside the transmitting member by the single directional pivot seats. The single directional pivot seats only allow the respective swing arms to pivotally rotate in opposite direction of the transmitting member. The single swing arm includes at least one swing rod and a pivot rod that are pivotally coupled to each other. An outer end of the swing rod is fixed with a round gravity member. The other end of the swing rod uses an axial elongated pivot hole thereof to restrict a pivot pin of the pivot rod.

The design of the transmitting member and the wheel members causes the circular running in the direction of gravity. The transmitting member and the wheel members can take the form of chain wheels and chain or can also take the form of belt and pulleys. In addition, they can also be the driving delivery wheels and the wheel rail belt.

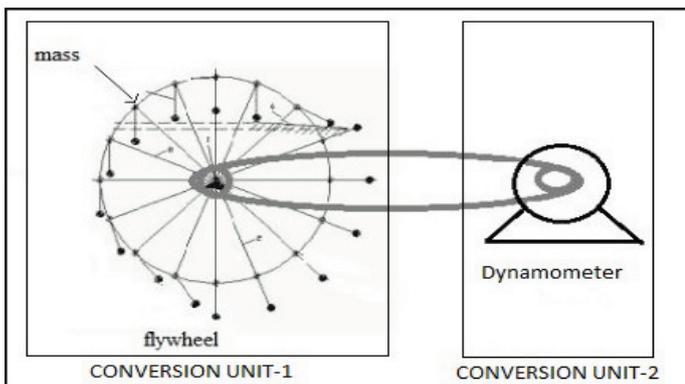


Fig. 1: Schematic Diagram of Working Principle of Gravity Conversion Unit

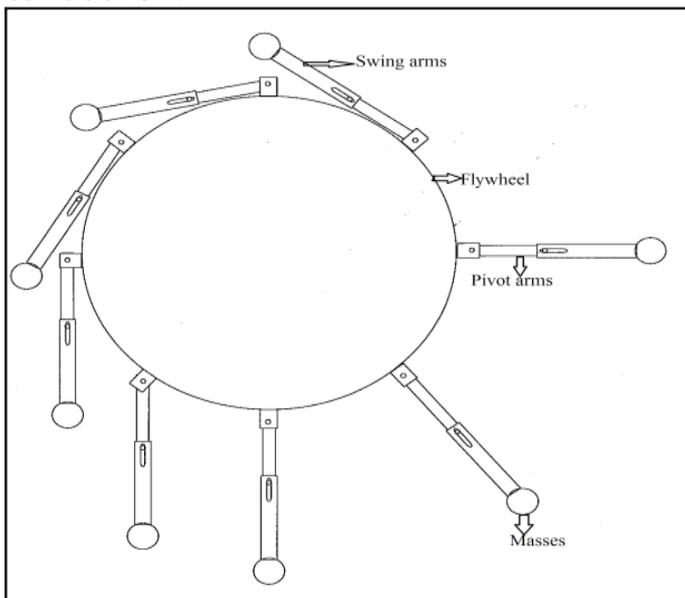


Fig. 2: Concept of Conversion Unit-1

The power-generating unit includes a connecting shaft, a fly wheel, gears, and a generator. The connecting shaft is installed with a universal joint. One end of the connecting shaft is connected with the wheel member of the gravity energy conversion unit. The connecting shaft is driven by the wheel member, and the connecting shaft transmits the rotational kinetic energy to the generator through the fly wheel and the gears. At this moment, the generator starts to rotate to generate electricity. And finally, the power generating unit will transmit out the electric energy.

It is important that, swing arm of the gravity energy conversion unit of the mechanism should be designed by keeping in mind the concept of centre of gravity. Since, the single pivot seats only allow the respective single directional swing arm to pivotally rotate 90 degrees in opposite direction of the transmitting member, therefore, the respective single directional swing arm, which is designed towards one side will produce larger positive torque. The gravity member at the outer end of the swing rod will combine with the larger torque to generate the larger positive energy. The inertial extension between the swing rod and the pivot rod will also enhance the positive energy. On the other hand, the single directional swing arms, parallel rising at the other side of the transmitting member will pivotally rotate to be folded on the surface of the transmitting member, forming a smaller negative torque and a negative resistance. The precise calculation of the smaller negative torque at the other side with the friction loss and the load loss can reduce the negative energy according to

the present research. After being properly designed, the single directional swing arm, continuously descends from high to low, so as to make the connected transmitting member continuously operate too, thus converting the gravity potential energy into the kinetic energy. Since one end of the connecting shaft of the power generation unit (Conversion unit-2) is connected with the wheel member of the gravity energy conversion unit, therefore it transmits the rotational energy generated by wheel member to the generator successively through the fly wheel and the gears. This rotational energy allows the generator to rotate to generate electricity, and then transmits the electrical energy out.

**B. Condition for Obtaining Output From Energy Conversion Unit**

The formulas used for present research are mentioned below [8]:

Negative torque =  $N \times M(R+r)$ ;  
 Positive torque =  $N \times M(R+L+r) = N \times M(R+r) + N \times M \times L$   
 Where,  
 $T_1$  = Output driving torque of the gravity power generation mechanism  
 $T_2$  = Negative torque caused by the rotation of the generator  
 $M$  = Mass of the gravity member  
 $N$  = Quantity of the single directional swing arms  
 $L$  = Total length of the single swing arm  
 $R$  = Radius of the wheel member  
 $r$  = Radius of the gravity member

The output driving torque of the gravity power generation mechanism ( $T_1$ ) = Positive torque – Negative torque =  $N \times M \times L$

When the relation:  $T_1 > T_2$  is satisfied, the whole gravity power generation mechanism can drive the generator to operate. When the speed of the gravity members of the single directional swing arms is stable, the generator can generate the rated capacity output.

**III. Conclusion**

1. The main objective of the present research is to provide gravity power generation mechanism which can provide a continuous, effective and stable operation to generate electricity using gravitational energy.
2. This mechanism can also be connected in parallel to the wind power and the solar power generation systems to generate electricity.

**References**

[1] US590531, [Online] Available: <http://www.google.co.in/patents/US5905312>.  
 [2] US6445078, S. Cieslak, Jr., "Gravity electrical generating system".  
 [3] US7768142, S.Cieslak Jr., "Stanley Gravity motor and method".  
 [4] US6981376, A. Dutta., "Apparatus for converting gravitational energy to electrical energy".  
 [5] [Online] Available: <http://www.vtnews.vt.edu/articles/2008/02/2008-111.html>.  
 [6] US20070012518, M.Gomez-Nacer, "Gravity generator of electricity or how to use gravity to generate electricity by means of pendulums", 2007.  
 [7] WO2006077451 A1, L. C. Kin, T. L. Ning, "Extracting energy from gravity", 2006.

- [8] US 20090115195 A1, "Gravity power generating mechanism".
- [9] [Online] Available: <http://www.livestrong.com/article/126194-disadvantages-fossil-fuel>.
- [10] [Online] Available: [http://www.conserve-energyfuture.com/Disadvantages\\_Nuclear\\_Energy.php](http://www.conserve-energyfuture.com/Disadvantages_Nuclear_Energy.php).
- [11] [Online] Available: <http://www.greenworldinvestor.com/2011/04/01/disadvantages-of-renewable-energy-drawbacks-of-different-alternative-energy-sources>.

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