

POWER GENERATION THROUGH GRAVITY

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ABSTRACT

A gravity power generation mechanism utilizes a gravity energy conversion unit to convert the gravity potential energy into the kinetic energy. The gravity energy conversion unit produces positive torques by adopting outward-spreading single directional swing arms and reduces the negative torques by cooperating with the folding action of the single directional swing arms, so as to perform a long-time, effective and continuous energy conversion of converting gravity potential energy into the kinetic energy. Next, the kinetic energy will be transmitted to a power generating unit to perform another energy conversion of converting the kinetic energy into the electric energy. And finally, a power supply system is used to transmit the electric energy out. By such arrangements, the gravity power generation 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 to perform a long-time energy conversion. Power generation is done through various methods, some of which uses Renewable energy sources and some use Non-Renewable Energy Resources. But all these methods can be used to produce the Electrical energy only for some extent. The energy generated from Renewable sources is also not continuous throughout the day for 24hrs. Therefore a source through which energy can be harvested continuously for 24hrs is to be found. Gravity is the force that is present on the earth at every instant of time, hence with suitable mechanism it can be used as a source to generate Electrical energy. An arrangement is made in such a way that the Kinetic Energy of a body due to the gravitational force is converted into electrical energy.

Key word: power generation mechanism, gravity energy, kinetic energy .

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I. INTRODUCTION

Non-renewable we are avoiding as they are decreasing renewable energy. Non-renewable energy sources are those sources that drain fossil reserves deposited over centuries. This result in depletion of these sources and are currently suffering from the side effects of drilling these energy reserves from deep underground. Example of these countries includes china and India these are many places in the world that are experiencing fast degradation of non-renewable sources in terms of fossil fuel. Soon there will be none left is appropriate measures are not take into consideration. This is a trend that has to be reserved if the world is to survive the degradation process that going or happening at a much rapidly. As non-renewable sources

burst, pollution increases and or one layer decreases day. Now "renewable energy" is any naturally occurring, theoretically inexhaustible sources of energy that is not derived from fossil or nuclear fuel. These sources include bio-mass, solar, wind, geo-thermal, tidal, wave, hydroelectric power, gravity etc. In the past five years, Indian has made tremendous strides in the use of wind, bio-fuel, solar and biomass resources; furthermore, India has used manufacturing skills to become an integral part of these energy industry supply chain. Gravity power generation is a step towards being an integral part of these energy industry supply chain and provide pollution free generation. During the last few decades power requirement has reached to high extent, for various purposes, due to ever increasing population, development and modernization.

Power can be harnessed through various methods using Renewable energy source or Non-Renewable energy source. But all this method used to produce electricity, have their own limitations and energy can be grasped only in a specific quantity and only for some extent. Therefore there is vital need for having a source which would generate power overcoming these limitations. Gravity is one such source which can serve our purpose. Gravitational force is force that attracts any object with mass. The primary objective is to provide a gravity power generation mechanism which can continuously convert gravity potential energy into kinetic energy. This motion is converted into circular motion and is then converted into electricity using a generator. Thus in this paper we are mainly concerned with study of power generation using a technique which produces power from gravity force. Gravity engine is a free energy generator that apparently harnesses power of gravity and use it to make mechanical work.

Principle Objectives:

An apparatus which generates electric power from the gravitational forces is sole concept of this project. The weight in the right section of the system is these sources of potential energy. This potential energy is converted into kinetic energy of the gears. At initial the weights is placed on height and hang to chain then it provides acceleration to dynamo through gears and power is generated. Generation by gravity is a new concept. in which generation is done with the help of gravity. A dead Wight is main part of the principle without it the system can't be run. When the dead weight is hanged to height then it attracts or pulled by gravity in linear motion at downward motion. This motion is converted in rotary motion and this motion is given to dynamo. Then dynamo generates electricity. Here, as the weight increase, the generation will increase Dead weight α generation. This machine is based on the simple principle i.e., when an object is placed on a higher level ground then due to the gravitational force it experiences a pull towards the lower level and gains kinetic energy. This kinetic energy can be utilized in a précised manner in which it can be transformed into electrical energy.

II. LITERATURE SURVEY

Power Generation through Gravity and Kinetic Energy Md.Muqtar Ahmed, Heena Naaz 2014, Gravity is the force that is present on the earth at every instant of time, hence with suitable mechanism it can be used as a source to generate Electrical energy. An arrangement is made in such a way that the Kinetic Energy of a body due to the gravitational force is converted into electrical energy.

A Review on Gravity Power Generation Mr Rakesh S. Ambade, Mr Roushan Prabhakar 2014, The concept of gravity power generation is simple. The basic concept of gravity power generation mechanism is, when a body moves down from higher altitude to lower one its potential energy is converted into kinetic energy. This motion is converted into circular motion and that circular motion is converted into electricity by using a Mini DC generator.

Gravity Power Generation Mr. Digvijay S. Jadhav, Mr. Sagar N. Hullule 2016, In this paper we studied a power generation mechanism. The gravity power generation mechanism of the present invention utilizes a gravity energy conversion unit to which can provide a continuous and stable operation to continuously convert the gravity potential energy into the kinetic energy and then into electric energy so as to perform a long-time, effective and stable energy output.

Power Generation By Gravity B. SUSHMITHA, G. Sowmya 2017 A gravity power generation mechanism utilizes a gravity energy conversion unit to convert the gravity potential energy into the kinetic energy. The gravity energy conversion unit produces positive torques by adopting outward-spreading single directional swing arms and reduces the negative torques by cooperating with the folding action of the single directional swing arms, so as to perform a long-time, effective and continuous energy conversion.

III. SYSTEM MODELING

Block Diagram & Description

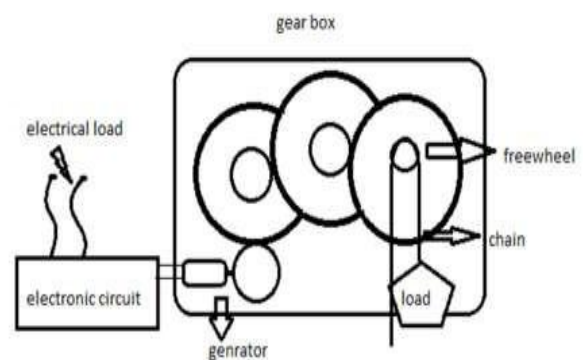


Figure1.1 : Block diagram of Power Generation Through Gravity

The system of power generation by gravity is as shown in fig. the assembly consists of gears, shaft and chain. Gears are also called as cogwheel. It is a rotating machine parts having cut teeth, or cogs which mesh with another toothed parts to transmitted torque. Geared devices can change the speed, torque and direction of power source. The teeth on the two meshing gears all have the same shape. Two or more meshing gears, working in sequence are called a gear train. These gears are mounted on shaft. Stainless steel, also known as inox steel or inox, Stainless steels resistance to corrosion and staining, low maintenance and familiar lustre make it an ideal material for many applications like shafts. Gears, sprocket, bearing, etc are mounted on the shaft. On these shafts spur and pinion gears are mounted. There are three spurs and four pinion gears. Spur gears are used to make compound gear train. A compound gear train is a system in which there are no. of gears fix together and mounted in gear box. When there are two gears are connected solidly on a single shaft then it is called compound gear train. Normally this type of compound gear

train is used to change the revolutions of the system either from higher revolutions to lower or from lower to higher revolutions. We used compound gear train to convert lower revolution to higher revolutions. On low rotation side a free wheel is solidly connected to gear, on which a chain is placed. A dead weight is hanged to chain. on this dead weight gravitational pull will act, because of gravitational pull the dead weight will move in linear motion i.e. from higher attitude to lower attitude.

In our project assembly gears are placed. This gears are arranged in such a manner that the gears make a gear train system. Sometimes, two or more gears are made to mesh with each other to transmit power from one shaft to another such a combination is called as gear train or train of toothed wheels. The nature of train use depends on the velocity ratio required and the relative position of axes of shaft. A gear train is consist of spur bevel or spiral gears This system converts the rotation from lower to higher value. At the higher rotating side of the gears train a dynamo is coupled with the gears while at the lower rotating side of the gears train a free wheel is connected which is mechanical part commonly used in cycle mechanism.

The chain is mechanically placed on the freewheel teeth which is hanging towards the ground with both end of the chain open. The loading end of the chain is connected with the weight which acts as a load and is hanged vertically. The whole gear train system and the loading system is placed between two plates having and the whole assembly is mounted on a stand.

IV. DESIGN

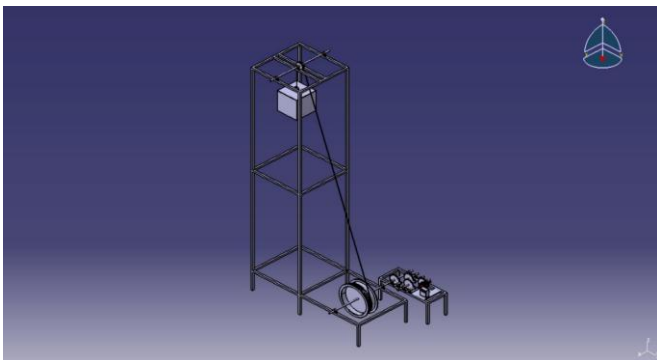


Figure 2. 3D View of System (Designed on CATIA Software)

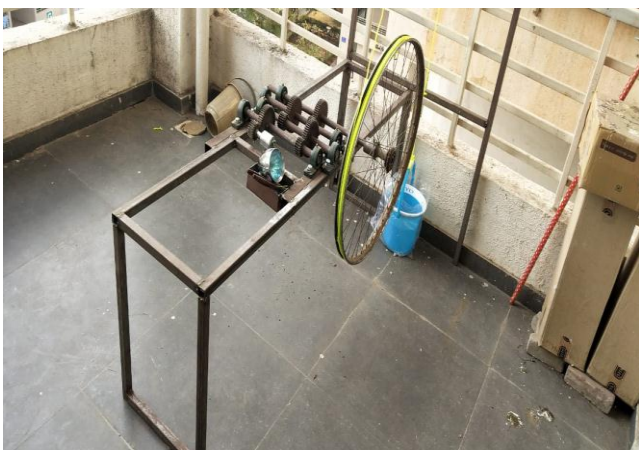


Fig 3. Actual setup

V. CONCLUSION

By such arrangements, the gravity power generation mechanism not only has the advantages such as more simplified structure, higher conversion ratio and more environment-friendly but only needs a little starting energy to perform a long time energy conversion and stable energy output. The other main advantage of the gravitational power generation mechanism is that it can independently generate electricity and it can be parallel connected to the wind power and the solar power generation systems to generate electricity. The gravity power generation mechanism of the present invention utilizes a gravity energy conversion unit to which can provide a continuous and stable operation to continuously convert the gravity potential energy into kinetic and then to electrical energy so as to perform a long time ,effective and stable energy output. The present invention not only can independently generate electricity but can be parallel connected to the wind power and solar power generating systems to generate electricity thus in this paper we studied a power generation mechanism. That produces power from gravity having a simplified structure as well as eco-friendly and which would overcome present pollution problems and global warming faced by existed generation methods.

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