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EXPERIMENTAL VERIFICATION USING DATABASE MODEL FOR POWER GENERATION BY GRAVITY MACHINE

Pramod Gorakh Ghayal*¹, PROF. R. N. Dehankar²

*¹ MTECH Student of Mechanical Engineering Department, ACET Nagpur, Maharashtra India.

² Assistant Professor of Mechanical Engineering Department, ACET Nagpur, Maharashtra India.

ABSTRACT

In recent times due to effects of pollution and global warming there is a need for generating power from renewable sources. The reason for using gravity is that it is available all over the Earth, abundant and can be utilized at any place on the Earth. Energy demand is increasing day by day with rapid growth in industrial as well as house hold utilization. But the energy resources are gradually decreasing at a higher rate, with this scenario the energy resources would come to an end within a few years and hence there will be scarcity of fuel (coal, wood, water, etc.) for power generation. The other sources like solar, wind, biomass, etc., are available only for a particular duration of time during the day and the night. Therefore it is the time to look for other resources, or to find a new method to generate power in order to fulfil our Energy demands and requirements. Power generation is done through various methods, some of which uses sources and some use Non Renewable Energy Resources. But all this 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 24 hrs. 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.

Keywords: Global warming, gravity, renewable energy.

INTRODUCTION

This mechanism 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 gain kinetic energy. This kinetic energy can be utilized in a precise manner in which it can be transformed into electrical energy. There are many ways to convert gravitational energy into electrical energy.

CONCEPT

The basic concept of gravity power generating mechanism is simple. When a body is at certain height from the ground, it possesses potential energy. Due to gravitational pull the body falls down. In this process, potential energy is converted to kinetic energy in the form of torque. This converted into electrical energy using generator. The electrical energy is supplied to the LEDs, where electrical energy is converted into light energy. Gravia lamp and Gravity Generator follow the same principle.

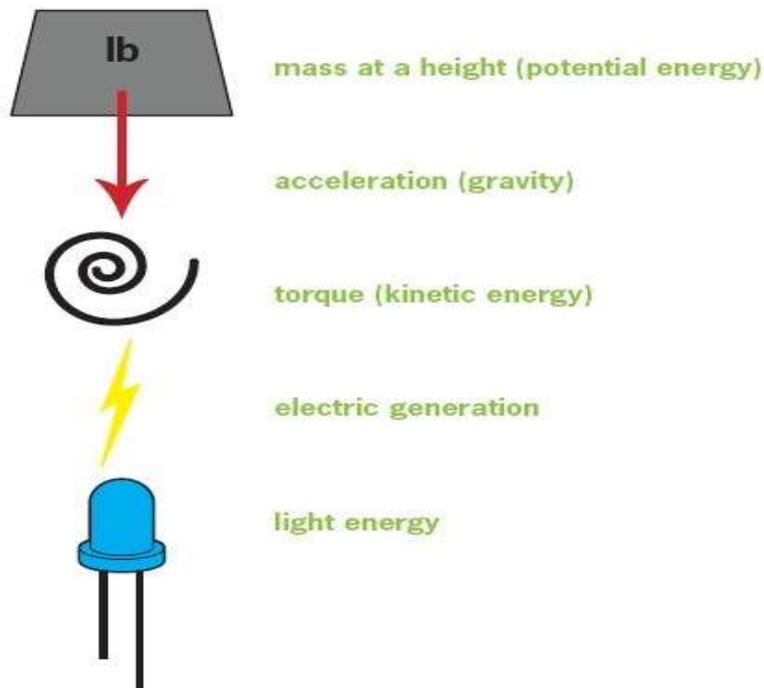


Fig.1:-procedure for power generation mechanism

The apparatus consists of crank and pin arrangement bearing variable loads and supporting stand. The arrangement of pulley in such a way that diameter of upper pulley is large as compared to the bottom pulley and these two pulleys are aligned in a vertical plane. Variable loads are mounted on the belt as shown in the above figure and this belt is mounted on two variable pulleys by using nut and bolt. For the generation of electricity the Mini DC generator is used which is connected to the flywheel through pinion and this flywheel is attached to the bottom pulley. The flywheel is used in this arrangement for the load balance purpose.

OBJECTIVES

1. Design and fabrication of the power generation by gravity m/c
2. Database model of power generation by gravity m/c.
3. Experimentation on power generation by gravity m/c.
4. Validation of the results for experimentation and database model

LITERATURE REVIEW

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 startin energy to perform long time energy conversion and stable energy output. 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 {1}

When compared to other sources of energy like thermal, tidal, wind, nuclear etc. Gravity is more abundant and available everywhere on the earth. over it is eco-friendly. The output of the equipment depends on specifications of the generator, disk, electric circuit, battery. So, by increasing the specifications of the components we can improve the power output. {2}

Therefore compared with the other power generation methods like solar, wind etc., this method of power generation through kinetic energy produced by the gravitational force is very efficient. As the power generated by this method is available throughout the day. This power unit can be installed at any place nearer to the



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populated areas as it doesn't require any fuel or supply resources like water, coal, wind etc., for power generation. {3}

PROBLEM IDENTIFICATION

1. In this Review on gravity power generation in this Mr. Rakesh Ambade did not prepared any database model, we are preparing it.
2. In Power Generation through gravity and kinetic energy they used hydraulic fluid, we are not using this hydraulic fluid.
3. In Power Generation through gravity and kinetic energy they used Electrical circuits, we are not using them also.

CONCLUSION

When compared to other sources of energy like hydal, thermal, tidal, wind and nuclear the gravity is more available and renewable. Gravity power generation having the advantages such as more simplified structure, higher conversion ratio and more environment friendly. It only needs small amount of energy to perform a long time energy conversion and stable energy.

REFERENCES

1. Rakesh s. ambade , Roushan Prabhakar , Rupesh s. Tayade , "Review on Gravity Power Generation" , International Innovative Research in Science , Vol. 3, Issue 4, April 2014. PP1,2,3.
2. K. Preyankha , V. Sheeba Rani , G. Spoorthi , M. SushmaBala – "GRAVITY POWER GENERATION"Department of Mechanical Engineering Gokaraju Rangaraju Institute of Engineering and Technology April, 2013 PP3,4.
3. Md.Muqtar Ahmed, Heena Naaz, "Power Generation through Gravity and Kinetic Energy", International Journal of Scientific and Research Publications, Volume 4, Issue 1, January 2014
4. Modak J. P. and Askhedkar R. D. "Hypothesis for the extrusion of lime flash sand brick using a manually driven Brick making machine", Building Research and Information U.K., V22,NI, Pp 47-54, 1994
5. Modak J. P. and Bapat A. R. "Manually driven flywheel motor operates wood turning machine", Contempory Ergonomics, Proc. Ergonomics Society annual convension13-16April, Edinburg, Scotland, Pp 352-357, 1993.
6. Sohoni V. V., Aware H. V. and Modak J. P. "Manual Manufacture of Keyed Bricks", Building Research and Information UK, Vol 25, N6, 1997, 354-364.
7. A. R. Bapat, "Experimental Optimization of a manually driven flywheel motor", M.E. Thesis, VNIT, Nagpur.
8. A. R. Bapat, Experimentation of Generalized experimental model for a manually driven flywheel motor", PhD Thesis, VNIT, Nagpur.