

A Review on Gravity based Power Generation System

Bhagyesh Talekar

Scholar Mechanical Engineering, S.B. Jain Institute of Technology Management and Research, Nagpur, India

Abstract -Due to the increase in the energy crises, a conversation of energy become the biggest issue in this modern century. Now a day's factors like global warming and pollution are affecting our life tremendously, so the use of non-renewable sources becomes limited. There is a need for generating power with the help of renewable sources. Gravity is the source that is abundantly present on the earth and it can be conveniently used as sources to run any system. The basic concept of power generation with the help of gravity is, when an object moves down from higher altitude to a lower altitude, kinetic energy is obtained by converting potential energy. The system works on the principle of gravitational force which is used to obtains electricity with the help of DC electric motor. The power generation obtains measured by using the voltmeter. This system gives more output than any other gravity-based system.

Key Words: Gravitational energy, Renewable source, Power Generation System, CAD model, Kinetic Energy, Potential Energy

1. INTRODUCTION

In this contemporary era, pollution is increasing day by day. Global warming is the measure of the cause of pollution. Non-renewable resources are also responsible for global warming. If we talk about electricity generation, then non-renewable sources like coal and diesel are used, but the availability of such resources is very less and predictors predicted that in the coming 30years non-renewable resources will vanish. To overcome the problem of pollution and availability of non-renewable resources, there is one solution which is renewable resources, for example, solar energy, gravitational energy, tidal energy, geothermal energy, wind energy, etc. These resources are available in an abundant amount also they are pollution-free. But some problems are to be there with renewable resources. Solar energy is available in the day time because at night the sun is not present, wind energy depends on the speed of the wind, etc. But gravitational energy is available at anytime and anywhere. If the concept of gravity-based power generation system comes to exist, then many nuclear or fossil plants can be exempted which is hazardous for human life. Hence this paper is focused on a system that generates electrical energy with the help of gravitational force. The main objective of this paper is to design the system which will generate power with the help of gravity.

2. LITERATURE REVIEW

[1] Chun Chao Wang and Yuhsuiang Wang invented a mechanism that generated power by using gravity. The Principle of working of this mechanism was to convert the potential energy of gravity into kinetic energy un-interruptedly. [1]

[2] Design Project of Mechanical Engineering Students – “One-way Unidirectional mechanism.” This is a design and fabrication of small-scale mechanisms for converting the non-uniform and bi-directional motion of rotation to uniform and one-directional rotation.

[3] The phenomenon of gravitational energy was discovered in the year 1687 by Sir Issac Newton. Maximo Gomez Nacer design the system for obtaining electricity by means of gravity, by using pendulum whose mass and velocity deliver energy for electricity generation. [2]

3. METHODOLOGY

3.1 Working Principle:

When the body having mass moves down from higher altitude to lower altitude its stored potential energy is converted into kinetic energy and this kinetic energy is utilized to generate electricity.

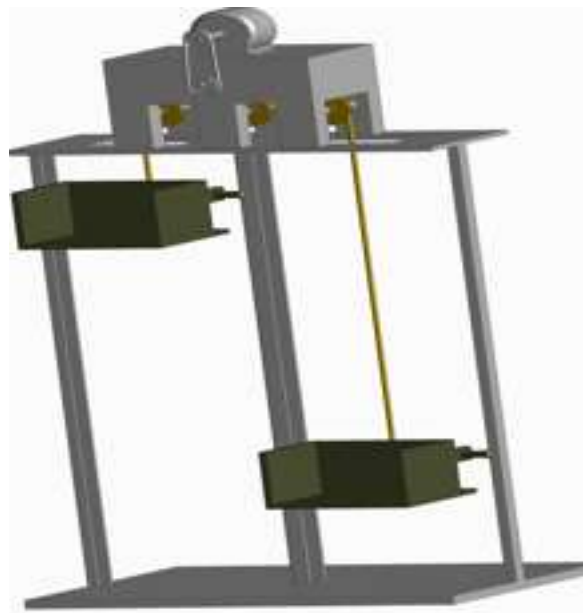


Fig.1. CAD Model of Gravity Based Power Generation System

3.2 Working

The system consists of 2 cabs which are supported with the help of rails. Both cabs are connected with the help of the rope which is wound on a drum. This system consists of the pulley which supports rope to move in a frictionless motion. As the weight is added on the cab it tends to move downward motion while another cab moves upward. Due to such a motion revolution of drum takes place by rope. The shaft of the drum further connected with the gear system which will increase the revolution at the output of the shaft of gear. Thus, the gear shaft is coupled with D.C. electric motor which generates electrical energy. Due to the variation in the load of the cab generation of power varies. This power will measure by the voltmeter.

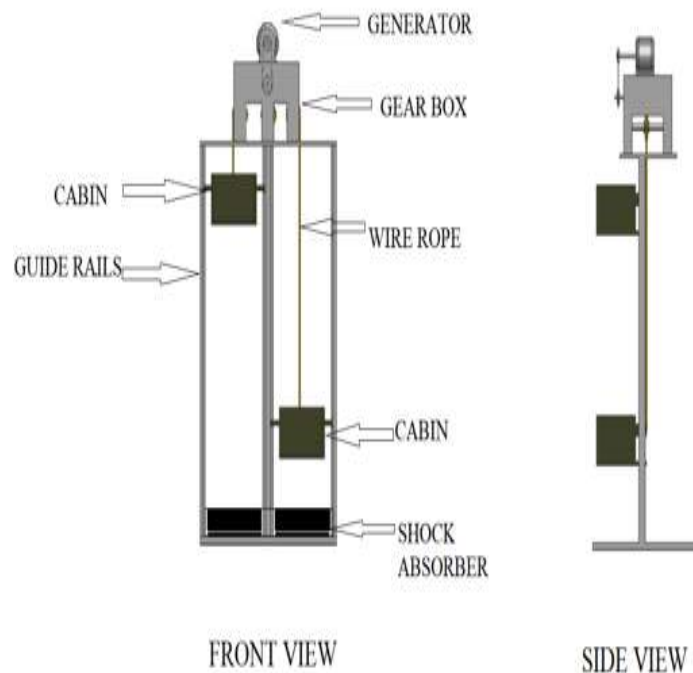


Fig.2. Block Diagram of Gravity Based Power Generation System

4. ADVANTAGES

- [1] The mechanism is completely eco friendly
- [2] Source uses by the system is limitless
- [3] It can be available 24*7
- [4] The small amount of investment for long term generation of power
- [5] Efficiency is more as compared to another gravity-based system

5. CONCLUSION

The Gravity based power generation system gives many advantages such as the use of eco-friendly source which eliminates many problems such as pollution, non-hazardous, simplified mechanism, etc. It can generate electricity independently as it does not need any external sources such as water, coal, etc. The method of power generation is through kinetic energy which obtains from gravity.

6. REFERENCES

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