

Generating Electricity from Human Footsteps

Mr. Sitaram Pal, Dept. of Electrical & Electronics Engineering
Rabindranath Tagore University, Bhopal

Abstract

Because of the fast exhaustion of the fundamental fossil energy source (oil), it is crucial to look for other energy sources. Global pollution from traditional sources Energy makes scientists look for other green energy sources. Sustainable The green energy source is power generation from human footprints. This study aims to design and test a simple device that converts the kinetic energy of Human footprint to electrical energy. This device can be used in all crowded places. Numerous pedestrians such as mosques, churches, subway stations, theatres, Stadium etc. This energy harvesting technology is suitable for the following applications: Street lighting, billboards, information displays

Keywords- Street light, fossil fuel, sustainable energy.

INTRODUCTION

Modern advancement has prompted expanded success for some individuals around the globe that as it may, has additionally prompted a consumption of normal assets and natural harm. The utilization of petroleum products, on which mechanical advancement has been to a great extent based, has been perceived as a noteworthy reason for environmental change[1]–[3]. The effects on the worldwide biological system coming about because of environmental change are thus expected to prompt generous monetary misfortunes.

Accordingly, plainly new methods for powering mechanical advancement must be found in request to abstain from trading off the increases in human welfare that have been accomplished over the past decades. Individuals have gone progressively to elective vitality sources as a response to the practical, natural, political, and social issues connected to petroleum derivative use[4]–[6]. Elective vitality sources are comprehensively characterized as vitality sources that don't cause or confine net emanations of carbon dioxide and along these lines to a great extent maintain a strategic distance from the ecological effects related with the ignition of petroleum derivatives. New and sustainable power sources incorporate sun powered vitality, wind control, bio-vitality, hydropower, geothermal vitality, wave and tidal power, hydrogen and energy components, carbon catch and capacity, and waste-to-vitality. Human dynamic vitality can be moved in various ways. Human vitality is most generally used to push bikes, however can likewise be utilized to create power and power hand-wrench instruments. Some third-world associations are executing human controlled advances to produce power to control PCs and different apparatuses[7].

WORKING-

The assembly of the present model is appeared in Fig. 1. The fundamental parts of the model and its working hypothesis will be delineated in the two coming segments. During the means of this investigation, structure figuring were completed. Also, stress examinations were connected utilizing the business programming Inventor to ensure that the plan computations

are right. Be that as it may, the subtleties of these counts are not appeared here as the paper focuses on the present thought and its usage.

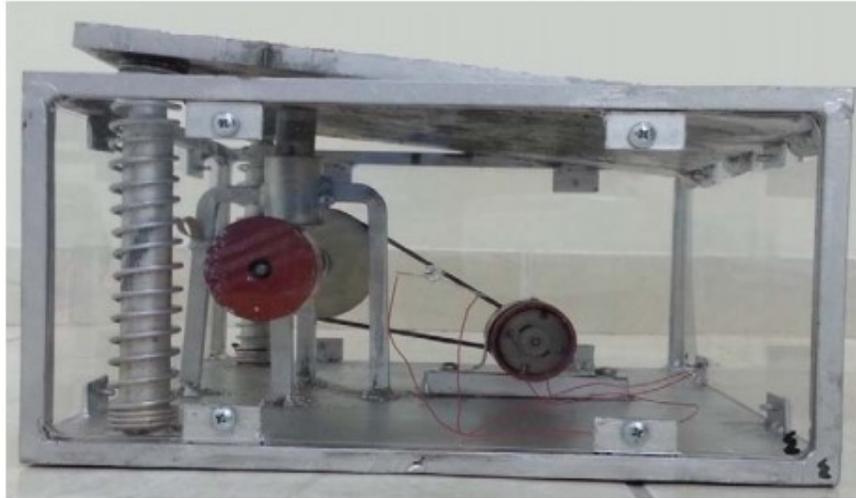
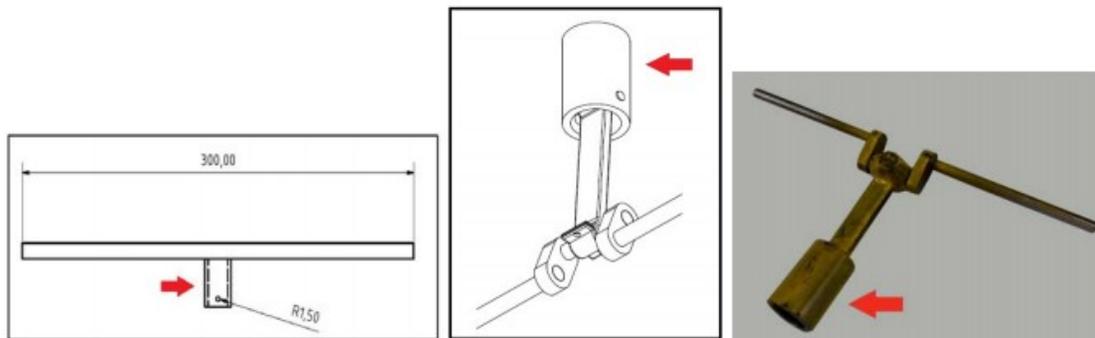


Fig.1 proposed system



(a) Piston in contact with top plate. (b) Piston contacted with connecting rod. (c) Piston after manufacturing.

Fig.2 Piston function and assembly.

RESULT

In view of the above outlines and test perceptions, the accompanying focuses can be expressed:

- 1-The present gadget demonstrated to work effectively as a green wellspring of intensity age.
- 2-The gadget is portrayed by its straightforward structure and simplicity of development.
- 3-Generally, the gadget covers a wide scope of uses relying upon the yield control.
- 4-A solitary gadget or couple of gadgets may deliver enough control for lights or potentially electronic apparatuses (PCs, mobiles, and so on.). A major number of gadgets can produce enough capacity to supply the open power lattice.

5-The gadget is for all intents and purposes helpful in spite of the fact that it is moderately substantial as it lays on the floor.

6-The expense of the gadget can be brought down by large scale manufacturing of the gadget.

REFERENCES

- [1] J. Zhao and Z. You, "A shoe-embedded piezoelectric energy harvester for wearable sensors," *Sensors (Switzerland)*, 2014.
- [2] Z. Yang, S. Zhou, J. Zu, and D. Inman, "High-Performance Piezoelectric Energy Harvesters and Their Applications," *Joule*. 2018.
- [3] A. Gatto and E. Frontoni, "Energy Harvesting system for smart shoes," in *MESA 2014 - 10th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications, Conference Proceedings*, 2014.
- [4] J. Zhong *et al.*, "Fiber-based generator for wearable electronics and mobile medication," *ACS Nano*, 2014.
- [5] S. Niu, X. Wang, F. Yi, Y. S. Zhou, and Z. L. Wang, "A universal self-charging system driven by random biomechanical energy for sustainable operation of mobile electronics," *Nat. Commun.*, 2015.
- [6] Y. M. Choi, M. G. Lee, and Y. Jeon, "Wearable biomechanical energy harvesting technologies," *Energies*. 2017.
- [7] C. De Marqui, "Piezoelectric energy harvesting," in *Dynamics of Smart Systems and Structures: Concepts and Applications*, 2016.