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Fabrications Of Pedal Powered Mobile Charger

Prof. Sunil Parge[1], Yugant Gawai[2], Jyote Vaibhav[3]

[1]Asst.Professor Mechanical Engineering Vidya Prasarini Sabha's College of Engineering and Technology ,Lonavala

[2]Student Mechanical Engineering Vidya Prasarini Sabha's College of Engineering and Technology ,Lonavala

[3]Student Mechanical Engineering Vidya Prasarini Sabha's College of Engineering and Technology ,Lonavala

Abstract

This project is based on pedal powered energy. The bicycle pedal is connected with the flywheel with the useof chain drive and belt drive. By applying force (bicycling action) on the pedal will make the flywheel rotate at some speed which is based on human effort. At the end of flywheelassembly, the small type of generator named a dynamo is connected for the generation of power. It generates the DC power which is stored in the battery and to make it useful to charge the mobile, Inverter is mounted in between this. The generation of power is only dependent on human effort. In this no fuel is require for the generation of power. That's whyit does not harmful to the environment or any life. Theconcept of this project, It is also used for pedal hacksaw, pedal pump, pedal grass-cutter and many more. This project is very useful for those people who live in rural area. Ultimately the bicycle is used as fat reducing equipment for human and as travelling vehicle.

Key words: Pedal Power, Dynamo, Rotary Motion, Flywheel,Bicycle, Mobile

1. INTRODUCTION

The non-renewable sources of energy are at the empty position in future. The idea of human powered generation hasbeen implemented in many different situations like pedal powered hacksaw. Some examples include hand-crank radios, gym equipment, etc. The pedal operated power generator utilizes human energy to produce electricity speedyand more efficiently. The goal of this project is to provide solution to problem of electricity in

the rural area. The prototypes are manufactured to generate the energy. Pedal power is used to power farming and tools and even to generate energy. Some applications of pedal powered mobile,pedal powered hacksaw and pedal powered water liftingpump. Using human effort the generation gives a powersource that is not directly derived from natural resources. Thepower generated from pedal is perfect for remote areas,mountain regions, rural location, Islands etc., where electricity generation is difficult.

2. WORKING PRINCIPLE

The working principle of this project, the pedal energy is converted into the electricity or say power. When the motiongiven to the pedal which rotates the big sprocket of chain drive. The small sprocket which connected to the big sprocketby chain will rotate by the pedal. Then the small type of generator or say dynamo which mounted on the areal of the bicycle will rotates by the belt and pulley drive. The dynamoproduces the electricity by giving rotation to it. The generatedpower is in D.C. power which stored in the battery. The mobile phone and laptop charge on the A.C. power. Then weshould have the inverter which converts the power D.C. to A.C. The output of the inverter will charge the mobile phoneor laptop by its charger or say circuit board.

A. *Advantages*

The main advantage of this project is to produce electricity by only human effort. There is no burn of fossil fuel or any kind of gases which takes the environment to the danger. So this project is also eco-friendly.

B. *Disadvantages*

Its take time to charge the mobile or laptop. This is Costly then charger of the mobile or laptop.

3. LITERATURE REVIEW

The energy conversion in generator is based on the principleof the production of dynamically induced emf (electro motive force). Whenever a conductor cuts magnetic flux,dynamically induced emf is produced in it according to Faraday's Laws of Electromagnetic induction. This emf causes a current to flow if the conductor circuit is closed [1].Humans are able to generate around power of 100 W during the bicycle riding. However this power is wasting without ourknowledge, but if we make use of this, one can able to powermany electronic gadgets. A dynamo or alternator can be used for harvesting the energy generated by a cycler while riding. Small devices, laptops, mobiles can be charged with this power. This mechanism can also be used with bikes, cars andexercise vehicles also. In cities exercise bikes are used for health purpose, if we adopt this mechanism to such bikes it will have double advantage. Riding bicycle is a good exerciseas well as good source of power. The user will be helping to stay fit too. The typical adult will burn around 300 to 700 calories for a 30 minute workout. Plus the amount of energy created over the time is surprising. In recent times this idea was being used by students in London universities, where thedistance between hostel and class rooms was up to 5kms. Some students go to classes by bicycle using this mechanismto power their laptops, mobiles without going it waste [2]. Ata time when there is energy crisis casting its shadow all overthe world, one has to look into alternator renewable energy sources. One

such alternator way to generate power is presented in this paper. The rotating energy of the tries in thebicycle, generated by pedaling can be used to operate mall powered devices. Both dynamo and alternator can be used and various options and situation where a dynamo or alternator can be use dare provided [3]. Was represented in the bicycle powered generator culmination of the electrical engineering and business education the University provides. Both of the engineers of this project have significant experience in business and were, thus, able to apply their hands-on technical experience to an actual useable product. The results far exceed our expectations with a power source that could provide ample amounts of energy beyond just lights and music. Using our diverse backgrounds in education, we were able to blend form and function togetherto create an easy-to-use and unified system here that meets the specifications originally set forth by the Burning fat [4]. The report discusses the design of a AC-DC converter that can be inserted between the DC generator and the lead-acid battery which is being charged by the generator. The prime mover of the generator was connected to a flywheel which was rotated by the bicycling action. The converter enables charging in a manner which is comfortable for the user, while simultaneously ensuring that the battery is charged in an appropriate manner so as to improve lifetime and performance [5].

4. CONCLUSION

The mechanism of this concept is eco-friendly and the deviceworks with the little or no noise. Since the device is manuallyoperated, it can be used in areas where there is no power supply and would always be readily available and system canbe usable by anybody as well as also useful for gym equipment like treadmills.

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