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**Chapter 1**-***Introduction***

***1.1) Abstract***

In remote areas, hilly regions, strategic location, border areas (army deployment), Islands etc. generation of power is scanty if not nil. In these situations, a Small Manual Battery Charging Unit would be of great help to provide power supply to battery chargers or battery-operated gadgets like mobile phone, communication devices, radio, lamp, fan, TV etc. This product was conceived while studying various means to charge the batteries of an energy efficient lamp. The present design relates to a very compact and easily portable power-generating unit, which besides being used as a power generator can also be used as a cycle exerciser. The power-generating unit is pedal operated. It serves the dual purpose of power generation and helping the person to maintain physical fitness through exercise of muscles of legs and lower torso. The force applied to the pedals gets transmitted to the rotor unit of power generating device through chain sprocket and gear train. The sizes of sprockets and gears are chosen to achieve suitable rotating speed of the rotor for power generation. The shape and size of rotor is chosen to act as a flywheel and impart suitable moment of inertia. The electrical power produced can be fed to a rectifier unit and plurality of electrical connectors in the rectifier unit provides electrical power to various electrical devices. As per the suitability of individual user the height of the present design can be adjusted. The design enables hands-free operation and simultaneously the user can engage himself in other activities like reading, watching TV etc. The user can relax intermittently without stopping the motion of the rotor unit abruptly.

***1.2)Aim of the project***

The use of fossil fuels and other non-reusable sources of energy must be reduced in order to keep emissions low and alleviate the use of diminishing resources. The idea of human powered generation has been implemented in many different situations. Some examples include hand-crank radios, shaking flashlights, and receiving power from gym equipment (William and Jeffrey, 2012). The pedal operated power generator utilizes human energy to produce electricity quickly and efficiently. The goal is to provide technological solution to problem in the rural world by using detailed opportunity recognition, evaluation, and development of prototype. The prototypes are then turned over to the developing world for manufacturing, distribution and use. Less commonly, pedal power is used to power agricultural and hand tools and even to generate electricity. Some applications include pedal powered laptops, pedal powered grinders and pedal powered water wells. Some third world development projects currently transform used bicycles into pedal powered tools for sustainable development.

***1.3)Components used***

***1.4) Tools required***

***Chapter 2-Procedure***

***Chapter 3-Comments***

***3.1)Merits and Demerits***

*Merits*

1. This is of compact in size

2. Less Maintenance is enough

3. Quite running and smooth operation is achieved.

4. Higher efficiency

5. Effective working principle

6. Less Maintenance

*Demerits*

* Less efficiency when compressed to other device.
* Leakage of air affects the working of the unit.

***3.2) Conclusion***

Pedal operated Mobile phone charger an important role in the material, social and cultural life of man kind. Imagine never having to plug your cell phone into the wall again now you can just plug it into your cycle **“Watts Maker”** cell phone charger. The system consists of a small generator that provides power to your mobile phone while you take an evening ride around the neighborhood or pedal to work. This model takes about 90 minutes to go from dead to fully charged, and it produces energy as long as the wheels keep turning.

***BIBLIOGRAPHY***