



Power generation using railway track

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ABSTRACT

In this project we are generating electrical power as non conventional method by simply attaching the power generating mechanism with the movement of train wheel cam. Non conventional energy system is very essential at this time to our nation

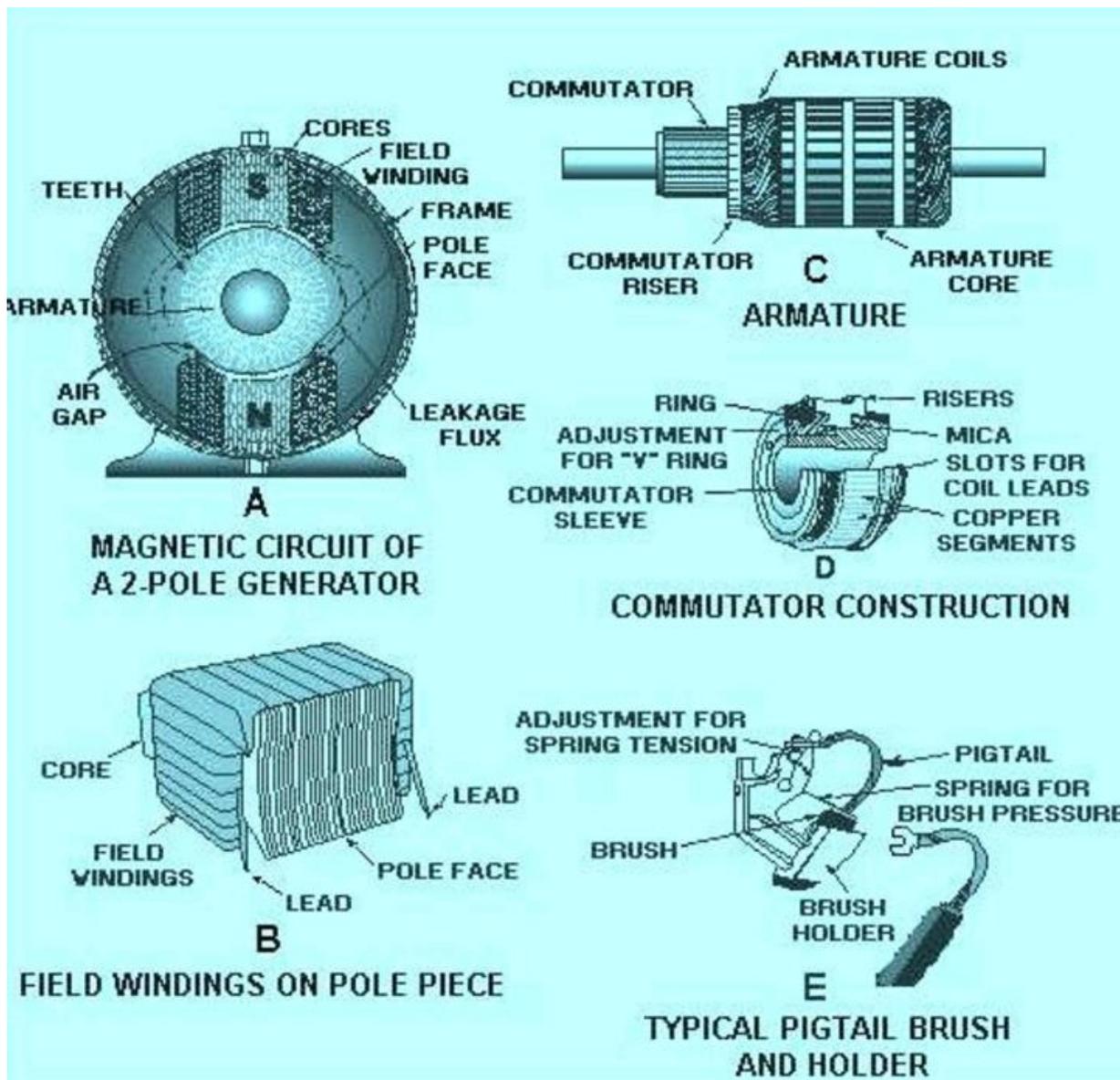
Non conventional energy using railway track is converting mechanical energy into the electrical energy into the electrical energy. This project using simple drive mechanism such as spring, sprocket and chain drive mechanism .For this project the conversion of the force energy in to electrical energy. The control mechanism carries spring, sprocket and chain mechanism, D.C generator, and M.S Fabricated stand.

Keywords: Crank Mechanism, Chain Drive, Electricity

INTRODUCTION

Man has needed and used energy at an increasing rate for his purpose and wellbeing ever since he came on the earth a few million years ago. Primitive man required energy primarily in the form of food. He derived this by eating plants or animals, which he hunted. Subsequently he discovered fire and his energy needs increased as he started to make use of wood and other bio mass to supply the energy needs for cooking as well as for keeping himself warm.

With the passage of time, man started to cultivate land for agriculture. He added a new dimension to the use of energy by domesticating and training animals to work for him. With further demand for energy, man has begun to use the wind for sailing ships and for driving wind mills, and the force of falling water to turn water wheels. Till this time, it would not be wrong to say that the sun was supplying all the energy needs of man either directly or indirectly and that man was using only renewable source of energy.



In electricity generation, an electric generator is a device that converts mechanical energy to electrical energy. A generator forces electric charge to flow through an external electrical circuit. It is an analogous to a water pump, which causes water to flow. The source of mechanical energy may be a reciprocating or turbine steam engine, water falling through a turbine, a hand crank, compressed air or any other

source of mechanical energy. The reverse conversion of electrical energy into mechanical energy is done by an electric motor, and motors and generators have many similarities. Many motors can be mechanically driven to generate electricity, and frequently make acceptable generators.

SCOPE OF THE PAPER

There are almost 14,300 trains operating daily on 67,000 route kilometres of railway in India. This technique would be capable of producing power in almost 500 to 1000 megawatts of power in India alone. More use of renewable source of energy will lead to sustainable development. A survey states that over 100 halts in Bihar and Uttar Pradesh do not have any facility of lightning at night due to which passengers face difficult in boarding. Supply of electricity in village is very low. Hence, more research and development is needed in that field. Generation of electricity by crank mechanism method in railway track is a method with which electricity will be produced in a very low efficient manner. With the continuous passing of train the generation of electricity will take place and eradicate the problem of darkness at small station or halts.

METHODOLOGY

There are following steps used for generation of electricity by crank mechanism method through railway track given below

- **MATERIALS REQUIRED**

In this section there are various material used for generation of electricity through railway track. The main equipment used as follows metal railway track, helical spring, rack and pinion mechanism, chain drive, flywheel, gears and DC generators.

- **WORKING PRINCIPLE**

Railway track generating electricity is a system developed to generate electricity by the load applied by train on track. It converts mechanical energy into electrical energy. As the train passes through the railway track, a load is applied on the track due to which the helical spring present below it gets and provides a motion to the rack and pinion mechanism. From there, the motion is transmitted to chain drive.

The motion mixes with the stored energy of a fly wheel and passes through the rectifier. Through gear it reaches to DC generator. A reading can be taken as multi meter showing generation of electricity.

ADVANTAGES

- Very cheap method of generating electricity.
- One time installation charges.
- Useful for isolated station
- Less noise is produced.
- This is non conventional system.
- No need fuel input.
- Battery is used to store the generated power.

CONCLUSION

We have decided an equipment namely “POWER GENERATION USING SHOCK ABSORBER” has been completed successfully to our entire satisfaction. While processing the project, we happen to visit number of libraries and industries to collect information.

We got an opportunity to meet a few experienced person in his field. This experience have also enriched our knowledge both theoretically and practically creating confidence which would be useful in my future span of life.

ACKNOWLEDGEMENT

We are highly thankful to our guide Mr. ANBUAZHAGAN from department of mechanical engineering, Vel Tech High Tech, Avadi, Chennai for guiding to get through the bottleneck encountered during the work.

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