

Road Power Generator

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Abstract: Road power generator is one of the most recent power generation concepts. Have you ever thought about the amount of energy wasted by a vehicles with each vehicle weighing around 2 Tons and offered carrying one passenger thus the amount of Energy is Enormous . This Device is Engineered as a practical and usefull alternative energy technology for generating clean electricity from the millions of vehicles on Roadways . This Device can actually converts the kinetic Energy of the vehicles into Electric Energy by installing moving plates on the Road , it takes the Stroke motion of the vehicles and converts it to the rotary motion by crank mechanism and it generates the Electric current .The Merit is that it is Eco friendly and the cost is very less. Hence the conclusion is that : A survey on the energy consumption in India had published a pathetic report that 85,000 villages in India do not still have Electricity , Supply of power in most country is poor . This energy can be used for the lights on the either sides of the roads and thus power that is consumed by these lights can be utilized to send power to these Villages. Hence more research and development of technologies are needed in this field.

Keywords: - Road power generator, RPG Fly wheel system, rank shaft mechanism, Roller mechanism, Rack-pinion mechanism, wastage of power.

ROAD POWER GENERATOR

- RPG is a system design to capture wasted kinetic energy from our vehicles.
- The RPG system captures very small movement from the roads surface and that applies to a unique circulating fly wheel system

I. RPG FLY WHEEL SYSTEM

- For 100s of years large single fly wheel have been used to drive machinery. The RPG includes the method of linking one fly wheel to others, once it reached predetermining the velocity.
- The RPG fly wheel system has been developed to achieve an enormous amount of energy in a relative small space.
- This captured energy is converted to electricity which is then fed into the power grid.

II. BASIC PRINCIPLE

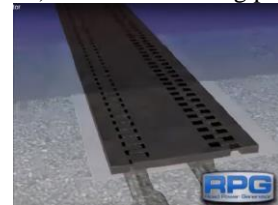
- Simple energy conversion from Mechanical to Electrical.
- To generate electricity using the vehicle wasted Kinetic energy as input.

Possible using 3 different mechanisms:

- Crank-shaft mechanism
- Roller mechanism
- Rack- Pinion mechanism

A. Crank shaft mechanism

- Crank-shafts are required to be mounted on bearings which creates balancing problem leading to mechanical vibrations which in turn damage the bearings.
- Secondly as bearings are of sliding type, any occurrence of variable load(which is bit obvious in case of vehicles!!) leads to balancing problem.



- Roller Mechanism
- Roller mechanism has some different disadvantages.
- Maintenance will be very difficult
- Might cause collision.



B. Rack-pinion Mechanism

- Rack-Pinion assembly gives good mounting convenience
- Maximum gear losses— 3 to 5%
- Efficiency— 95%



III. WORKING PRINCIPLE

- RPG is a system design to capture wasted kinetic energy from all vehicles.
- This device converts the kinetic energy of the vehicles into electric energy by installing moving plate on the road, it takes the stroke motion of the vehicles and converts it to the rotary motion by crank mechanism and it generates the electricity.
- This is done by moving plate installed on the road, this plate captures very small movement from the road surfaces and it transferred to a fly wheel system.

- The captured energy is converted into electricity which is fed into power grid.

IV. WASTAGE OF POWER

- The amount of energy wasted by vehicles is enormous.
- According to traffic authority statistics shows that 15,000 to 20,000 vehicles travel along each main road every day.
- This equates to at least 30,000 to 40,000 tons of wasted energy per road per day.
- Some roads have five times this traffic volume

V. RPG BENEFITS

- The units have minimal visual impact on their surrounding environment
- An RPG emit no noise
- The unit has relatively low set up and trialing costs
- RPG units can be located in close proximity to services and the power grid.

VI. FUTURE SCOPE

- With RPG it may be possible that ectrical vehicles could be recharged with grid power and with the power source coming from vehicles wasted kinetic energy
- The higher the frequency of passing vehicles the higher the amount of electricity RPG could generate

VII. CONCLUSION

- A survey on the energy consumption in India had published a pathetic report that 85,000 villages in India do not still have electricity.
- Supply of power in most of the country is poor. Hence more research and development of technologies are needed in this field.
- This energy can be used for the lights on the either sides of the roads and thus power that is consumed by these lights can be utilized to send power to these villages.

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