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Electricity Generated by Using Speed Breaker

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ABSTRACT: Power is everything in this recent world, from the beginning of the science still people try to discover the source, modify and develop many concepts and method for better future. The efficiency of power generation is the key to making a country economically enriched. This project includes how to utilize the energy which is wasted from the vehicle which is passes every minute over a speed breaker. There are four mechanisms to generate electricity through the speed breaker like, Rack and pinion mechanisms, gear and flywheel mechanisms and spring coil mechanisms. We can tap the energy generated and produce power by using the speed breaker as power generating unit. The kinetic energy of the moving vehicles can be converted into mechanical energy through the rack and pinion mechanisms or some other mechanisms. Then, this mechanical energy will be converted into electrical energy using generator which will be saved with the use of a battery.

I. INTRODUCTION

In the present day power becomes the major need for human life .The availability and its per capita consumptions are regarded as the index of national standard of living in the present day civilization. Energy is an important input in all the sectors of any countries economy. Energy crisis is due to two reasons, firstly the population of the world has been increased rapidly and secondly standard of living of human beings has increased. India is the country, which majorly suffers with lack of sufficient power generation. The availability of regular conventional fossil fuels will be the main sources for power generation, but there is a fear that they will get exhausted eventually by the next few decades. Therefore, we have to investigate some approximate, alternative, new sources for the power generation, which is not depleted by the very few years. Another major problem, which is becoming the exiting topic for today is the pollution. It suffers all the living organisms of all kinds as on the land, in aqua and in air. Power stations and automobiles are the major pollution producing places. Therefore, we have to investigate other types of renewable sources, which produce electricity without using any commercial fossil fuels, which is not producing any harmful products. There are already is exist such systems using renewable energy such as solar wind, OTEC (ocean thermal energy conversions) etc...for power generation. The latest technology which is used to generate the power by such renewable energy” POWER HUMP”. Use of Only Speed Breakers instead of Rough or Plane Roads: Now the question arises as to why only the speed breaker is used and not the rough or plane roads where the kinetic energy of the vehicle is more than that obtained on the speed breaker. The answer to this question is obvious; consider for example: A car or any heavy vehicle moving with a speed of 100 mph on the road and passing over this speed breaker which is fitted at the level of the road then the spring will gain the speed of nearly 90 mph (due to losses) of speed breaker. That is the main reason for using this concept on the speed breaker. The rough or plane road will not provide the torque necessary for energy generation.

II. RELATED WORK

The concept of image inpainting was first introduced by Bertamio et al. [1]. The method was inspired by the real inpainting process of artists. The image smoothness information interpolated by the image Laplacian is propagated along the isophotes directions, which are estimated by the gradient of image rotated by 90 degrees. Exemplar Based method proposed by Criminisi et al. [2] used a best exemplar patch to propagate target patch including missing pixels. This technique uses an approach which combine structure propagation with texture synthesis and hence produced very good results. In [3], the authors decompose the image into sum of two functions and then reconstruct each function separately with structure and texture filling-in algorithms. Morphological technique is used to extract text

from the images presented in [4]. In [5], the inpainting technique is combined with the techniques of finding text in images and a simple algorithm that links them. The technique is insensitive to noise, skew and text orientation. The authors in [6] have applied the CCL (connected component labelling) to detect the text and fast marching algorithm is used for Inpainting.

The work in this paper is divided in two stages. 1) Text- Detection 2) Inpainting. Text detection is done by applying morphological open-close and close-open filters and combines the images. Thereafter, gradient is applied to detect the edges followed by thresholding and morphological dilation, erosion operation. Then, connected component labelling is performed to label each object separately. Finally, the set of selection criteria is applied to filter out non text regions. After text detection, text inpainting is accomplished by using exemplar based Inpainting algorithm.

III. METHODOLOGY

The working principle of this power generation program is to convert the kinetic energy to electric energy via mechanical energy. This can be done when the brakes are applied upon the vehicle kinetic energy is produced. After this the kinetic energy is converted to mechanical energy using a rack and pinion gear and the by connecting the pinion gear to a generator shaft the energy is converted into electrical energy. Speed Breaker:- This is a normally used thing in everyday life. This element can be made from the composite of carbon fibre and rubber so that the speed breaker can sustain the heavy load of vehicles such as a container filled with some material in it. The speed breakers can be made such that the starting and ending slopes would be made up of concrete and cement mixture and the central part would be made up of the composite mentioned before.

IV. EXPERIMENTAL RESULTS

Electricity Can Be Generated With The Help Of Speed Breaker By Making Gear Arrangement And Using Electronic Gadgets, Thus A Huge Amount Of Electricity Can Be Generated Saving Lot Of Money. We Can Develop Electricity From Speed Breakers By Using 3 Mechanisms Basically They Are As Follows:

- 1) Rack & Pinion Mechanism
- 2) Spring Mechanism
- 3) Chain Sprocket Mechanism Since Rack-Pinion Mechanism Is Convenient To Produce Ample Amount Of Energy With Maximum Efficiency. We Have Chosen This Method For Our Project With A Very Simple And Effective Design For Generating Electricity Using A Generator. The Project Is Concerned With Generation Of Electricity From Speed Breakers-Like Set Up. The Load Acted Upon The Speed Breaker Setup Is There By Transmitted To Rack And Pinion Arrangements. Here The Reciprocating Motion Of The Speed-Breaker Is Converted Into Rotary Motion Using The Rack And Pinion.



V. CONCLUSION

electricity plays a very important role in our life". due to population explosion, the current power generation has become insufficient to fulfill our requirements. in this project we discover technology to generate electricity from speed breakers in which the system used is reliable and this technique will help conserve our natural resources. in coming days, this will prove a great boon to the world, since it will save a lot of electricity of power plants that gets wasted in illuminating the street lights. as the conventional sources are depleting very fast, it's high time to think of alternative



resources. we got to save the power gained from the conventional sources for efficient use. so this idea not only provides alternative but also adds to the economy of the country.

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