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PROJECT ON REGENERATIVE ELECTRIC VEHICLE-BICYCLE

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Abstract: To days the nature of environment pollution is the major issue. The pollution will occur due to electricity generation and IC engine vehicle. We try to reduce it with the help of electric vehicle are types. They are the, HEV, EV. We introduce new type of they are REV (Regenerative Electric Vehicle) they have generate electric with itself to drive. REVs we are trying to get electricity from charging are less and also not. This is the type of new electric vehicle In this model we have study to the electric regeneration in electric vehicle the production of electricity will be start on second wheel of they have using in this as a dummy wheel the production of electricity will be produced with the help of generator in this model the generator will be generate electricity this store in second battery if the second battery will be charge fully then we have directly change with or replace with first battery due to eat charging frequency will be reduce of electric vehicle

Index Terms – Bicycle Chassis, Battery, Motor, Generator, Transformer, Controller, Pulley, Chain, etc.

I. INTRODUCTION

Scotsman Robert Anderson is credited with inventing the first electric car sometime between 1832 and 1839. And around 1834 or 1835, American Thomas Davenport is also credited with building the first electric car. In this the electric vehicles are simple; they have battery motor and controller. That has limited range around max 500km to days the nature of environment pollution is the major issue. The pollution will occur due to electricity generation and IC engine vehicle. We try to reduce it with the help of electric vehicle are types. They are the, HEV, EV. We introduce new type of they are REV (Regenerative Electric Vehicle) they have generate electric with itself to drive. REVs we are trying to get electricity from charging are less and also not. This is the type of new electric vehicle To the Concept on electric vehicle, we develop new type of electric vehicle That is REV-Bicycle they have infinite range and low frequency of charging due to that we travel infinite distance with no any charge-range problem. Due to the deficiency Normal electric vehicle, we introduced it because of Normal electric which has limited range to drive due to it. we Cannot to it travel long distance. Due to this Problem, we cannot use it properly in drive. We can use also IC engine. Our Introduced REV-B has not it any deficiency of travel problem Or Drive Problem of long distance. Early year vehicle uses the regenerative braking System to run vehicle and It have Create Charge to help the only a System battery But in Our concept. we directly battery charge with full or 70% to 90%. with the help of Generator. It has so many advantages with to the compare to the normal electric vehicle and also so many advantages. with Compare to the Hybrid Electric bicycle

II. LITERATURE REVIEW

EV Charging Station Infrastructure Costs." Electric vehicles seem to have finally gained a solid foothold. With continued adoption, there will be an increasing need for access to charging locations. We recognize that many drivers today do most of their charging at home, but many others still require access to a robust nationwide charging station network before even considering the purchase of an electric vehicle. But high costs of equipment and installation are currently impeding the build-out of such a network. Therefore, cost-effective solutions are needed to ensure future investment in charging stations. We recently interviewed over a dozen companies involved with charging station infrastructure—including utilities, automakers, cities, research institutions, and charging station companies—to pull back the veil on current EV charging station infrastructure costs. From there, the next post in this series can then explore charging station business models and strategies to reduce those per-station costs. We've broken down the cost into several categories: 1) the actual charging station hardware, 2) other hardware and materials, 3) electrician and other labor, 4) mobilization, which we define as time for the electrician and others to prep and get to the worksite (often including an initial on-site consultation), and 5) permitting. This is a look at raw infrastructure costs. We did not include: a) general and administrative overhead, which can easily contribute 20 percent or more to costs but which also reduce rapidly with experience, b) other miscellaneous costs, such as wage requirements for federally funded projects, which can add 15–25 percent to costs, and c) financing (and other costs of capital/debt) for charging station owners. Similarly, we don't include federal, state, and local EV charging station incentives that could reduce per-charging-station infrastructure costs, such as the federal EV charging station infrastructure tax

credit that expired at the end of 2013, Connecticut's EV charging station grant program, and the plug-in EV charger rebate program with the city of Anaheim, CA

III. OBJECTIVE

- Less frequency of charging in our concept vehicle.
- Charging of vehicle itself to drive a long distance
- With compare to the normal electric vehicle.it has travel with the long distance with help of new technology.
- It has no any problem to travel long distance.
- Normal EV has limited range to travel distance.

IV. PROBLEM STATEMENT

In the latest electric vehicles, we are travel limited distance and larger charging Time. Due to it we use IC engine vehicle and burned fuel and Create pollution but it has ultimate range and less fuel filling time. Due to This all problem, we are developed regenerative Bicycle

V. PROBLEM SOLUTION

We introduced the new type of Regenerative electric vehicle (REV). Regenerative electric vehicle systems require further research to develop a better system that captures more energy and stops faster. As the time passes, designers and engineers will perfect regenerative electric vehicle, so these systems will become more and more common. All vehicles in motion can benefit from these systems by recapturing energy that would have been lost during regenerative vehicle process. Future technologies in regenerative electric vehicle will include new types of motors which will be more efficient as generators, new drive train designs which will be built with regenerative in mind, and electric systems which will be less prone to energy losses. International Journal of Mechanical and Production Engineering, ISSN: 2320-2092, Volume- 2, Issue- 5, May-2014 Regenerative electric vehicle (REV) (Future Of REV) 78 Of course, problems are expected as any new technology is perfected, but few future technologies have more potential for improving vehicle efficiency than does regenerative electric vehicle

VI. BLOCK DAIGRAM

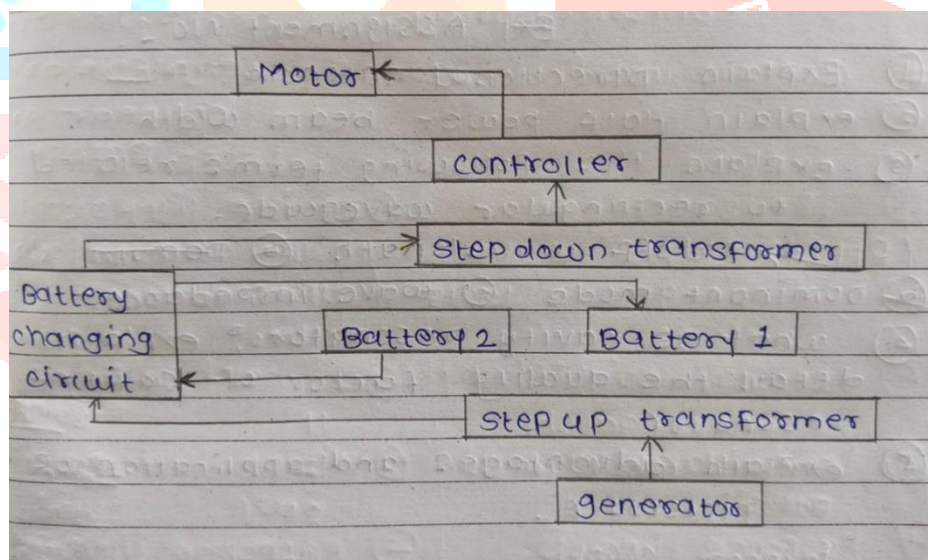


Fig.1 Block Diagram

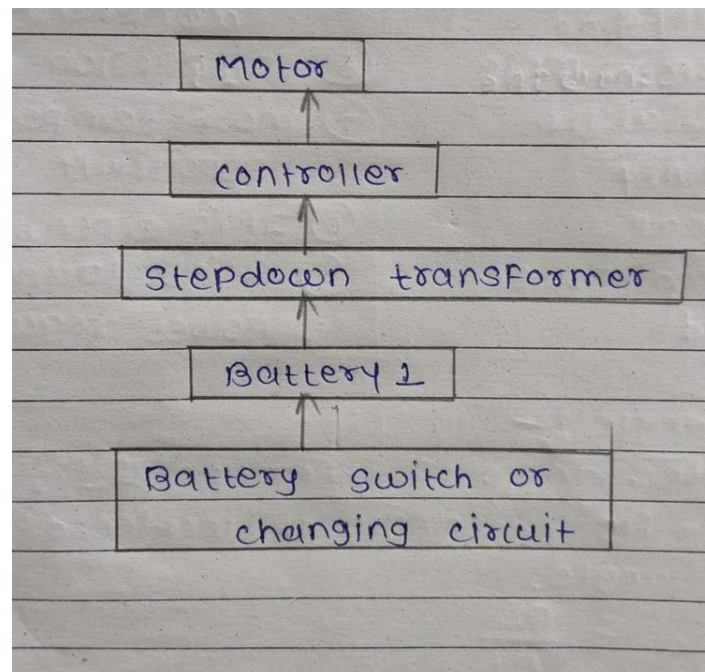


Fig.2 Block Diagram of Running

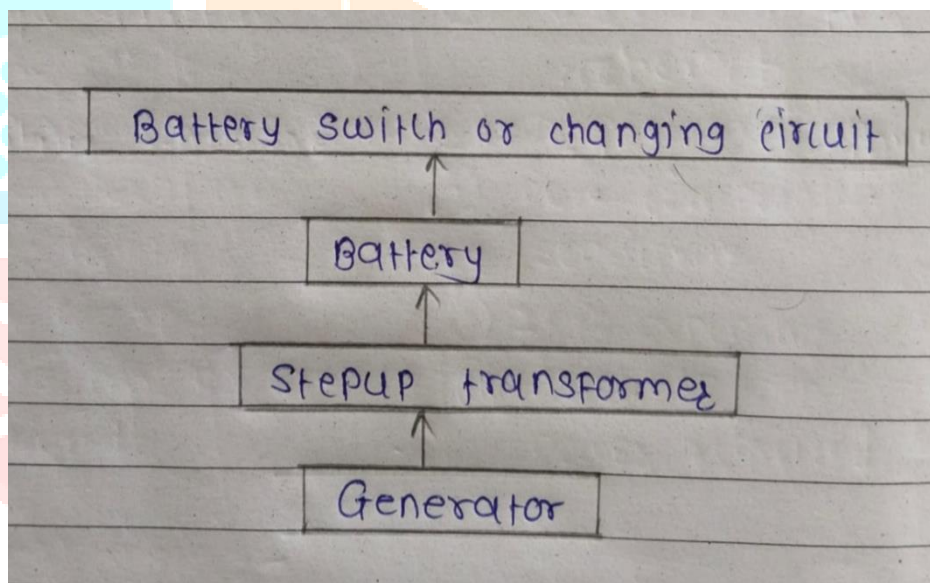


Fig.3 Block Diagram of Charging

Working principle:

In this model bicycle drive on battery power and run with the help of motor. It's meaning the electrical energy will convert it into mechanical energy also the rotation of wheels. Motor will use around 5000 rpm and battery power was 500w. The chain of driving is battery will transfer power in transformer. Transformer work as increase voltage and current. After transformer power was going to controller. Controller work for control the speed direction and power consumption of motor. After this cycle regeneration will star. In regeneration we use the dc generator they start production of power around 2500 rpm. In power generation our running cycle was vice versa or revised. In power generation generator will convert mechanical energy to the electric energy. After generator generating power will goes in transformer to increase voltage and current. after it the power will goes in battery. If the first battery power will discharge then the converting first battery to the second battery, we will use battery changing switch they are button or also MCB. This is the working of model of project. (Regenerative electric vehicles – bicycle)

Component Description:**1)Chassis:**

We use the chassis of cycle to make REV-B (Regenerative electric vehicle Bicycle.). it has the main frame of the vehicle. It has from made Nickel ion or steel.



Fig.4 Chassis

2)Battery:

We using two battery one is to drive battery and one is to get Charging from Generator.



Fig.5 Battery

Features:

Z-Power Tubular Batteries are also uniquely designed which contains 30% more electrolyte which acts as a coolant, controls rising temperature of battery and in presence of carbon canister fitted in water level indicator reverts water into the battery which comes out due to vaporization enhancing ultra-low maintenance.

3)Motor:

It has use to drive bicycle from battery. The coil is wound on a soft cor. This increases the strength of magnetic field, which makes the motor more powerful. The coil contains a large number of turns of insulated copper wire. A powerful electromagnet is used in place of permanent magnet



Fig.6 Motor

4)Generator:

It has Use to generate Current From driven bicycle for charge battery.



Fig.7 Generator

Features:

Portable. Whether you enjoy camping or require power at a remote job site, a portable generator provides power where you need it. ...

CO shutoff. A generator will burn fuel, and this fuel can generate carbon monoxide. ...

Automatic start. ...

Outlets. ...

Inverter. ...

Displays.

5)Transformer:

It has using two transformer one is step up to make a lower Voltage to convert high voltage and second is voltage to Convert high voltage to lower voltage get efficiency to vehicle.



Fig.8 Transformer

Features:

Constant Period. A transformer operates at a steady frequency. Both the input voltage and the output voltage have the same frequency.

Varying Voltage. A transformer's input and output voltages are adjustable. ...

Changing Current.

Continuous Power.

6)Controller:

It has use to maintain the speed of motor to drive vehicle.



Fig.9 Controller

Features:

It's more comfortable. Simply put, everything on a controller is ergonomically designed to be right where you need it for easy access. ...

It's more convenient. ...

7)Pulley:

Using two pullies for One is Motor and one is generator to drive it.



Fig.10 Pulley

Features:

A pulley is a wheel that carries a flexible rope, cord, cable, chain, or belt on its rim. Pulleys are used singly or in combination to transmit energy and motion. Pulleys with grooved rims are called sheaves.

8)Chain:

Using two chains make running speed and of motor generate the meter and Connection and generator wheels pully crust generator.

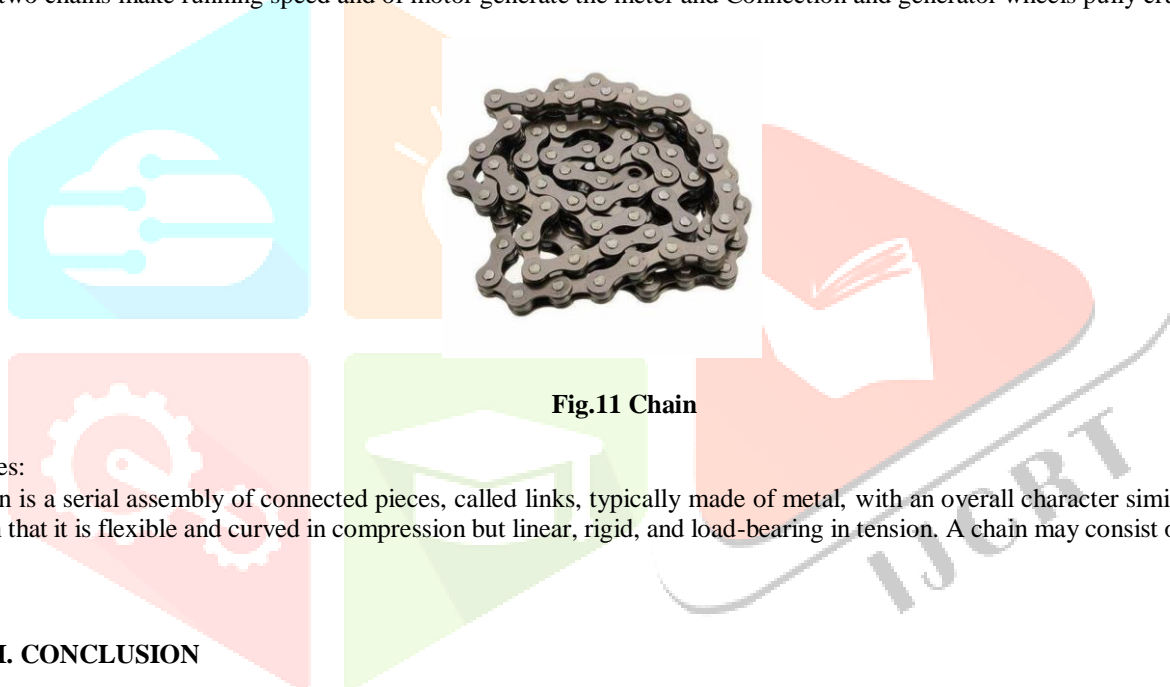


Fig.11 Chain

Features:

A chain is a serial assembly of connected pieces, called links, typically made of metal, with an overall character similar to that of a rope in that it is flexible and curved in compression but linear, rigid, and load-bearing in tension. A chain may consist of two or more links

VII. CONCLUSION

In this project model we try to the development of new type of electric vehicles other than normal electric vehicles and hybrid electric vehicles in this model we have using two battery setups first one battery power is to drive the electric vehicles and second battery is to charging form generator. In this bicycle model we get back to power energy approximately 80% -90%

VIII. REFERENCE

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