

Power Generating Through Shock Absorber

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ABSTRACT: We have built a mechanism which is a regenerative shock absorber. When a vehicle undergoes a jerk, the shock absorber comes into play and produce or generate electricity. By using this technique we have generated electricity by using mechanical energy from shock absorber. Before this the shock absorber was just absorbing the shocks and jerks but now it generates electricity which can us very useful in coming future. This technique will surely help electrical vehicle in saving electricity approximate up to 10%, increase the battery life and we can provide electricity to operate AC, dashboard and braking light. This technique is helpful in both electrical and non electrical vehicle. This technique is very helpful for electric vehicle as we know that in our country the electric stations are very less due to which we need more electricity so that our vehicle needs less charging and it can reach the destination. We can't make a battery too big to increase the capacity, this technique is a very good alternative by which our capacity will increase without increasing the size of the battery as we know that by increasing the size of battery beyond a limit it will increase the overall weight of the vehicle which won't be efficient for us. This technique can be used in most of the vehicles and in most of the shock absorber.

I. INTRODUCTON

In modern times we all know that energy consumption is very high and resources are limited and today automobile engineering or automobile sector is getting advanced because we are facing many difficulties and to solve that difficulties we are finding new solutions and due to which we are

getting advanced. One of the problems we are facing in vehicles is power generation and more consumption with limited resources. So we are introducing a concept of increasing efficiency of engine and battery and the method is Power Generation through Shock Absorber. This method works while vehicle runs. We got our idea from vibrations in the shock absorber, so we decided to make some mechanism which can generate or produce electricity with the help of shock absorber, generator, gear mechanism etc. and can be used in vehicles which increases engine and battery efficiency.

This mechanism can be fit or the device can be used in a four wheeler as well as two wheeler vehicle. It is a simple mechanism, if any modification is needed, we would like to work on it. We are describing in some words the work of this device in the introduction. The working movement of the parts of the shock absorber is helpful in creating a mechanism that produces or generates electricity. When the shock absorber is in use or the vehicle is running, the shock absorber act as the working piston, moves up and down and with that piston we have attached a bevel gear mechanism which provides the necessary motion to the dynamo, which is used for generating electricity. Therefore shock absorbers can be used to convert mechanical energy into electricity.

II. REQUIREMENTS

MECHANICAL COMPONENTS

* CHASSIS: - A vehicle frame also called as vehicle chassis. It's the frame of the vehicle where all the components are mounted. To support the

chassis components and the all other main frame components.

*SHOCK ABSORBER: - a shock absorber is a mechanical device which control the jerk or damper shock impulse. It provide the comfortable ride.

* DC GEAR MOTOR: - A DC motor or DC gear motor rotary electrical motor that converts direct current energy into mechanical work energy. A DC motor can work like a motor or us a generator

ELECTICAL COMPONENTS

*BATTERY: - A battery is a device where the electrochemical energy are storage. Battery storage the DC current and then its convert chemical energy to the electrical energy.

*DYNAMO: - A dynamo and the generator convert into the mechanical work into electric power .dynamo and generator are alternator used which produce the AC power current using electromagnetism.

*LED: - A LIGHT-EMITTING Diode (LED) .led is a semi-conductor light source .LED use the electrical energy convert into the light source.LED work on the principle of Electroluminescence. It's basically work on the PN junction diode that also work on the colour of the light is determined by the power or current required for the light diode.

III. SHOCK ABSORBER

Shock absorber is a mechanical device which absorbs the jerk and damp. A shock absorber or spring is device which help to compromise between the flexibility and stiffness. Shock absorber also know as suspension system, its convert the kinetic energy into another form of energy (heatenergy).

The shock absorbersare basically of two types friction and hydraulic.

POWER GENERATING THROUGH SHOCK ABSORBER:-

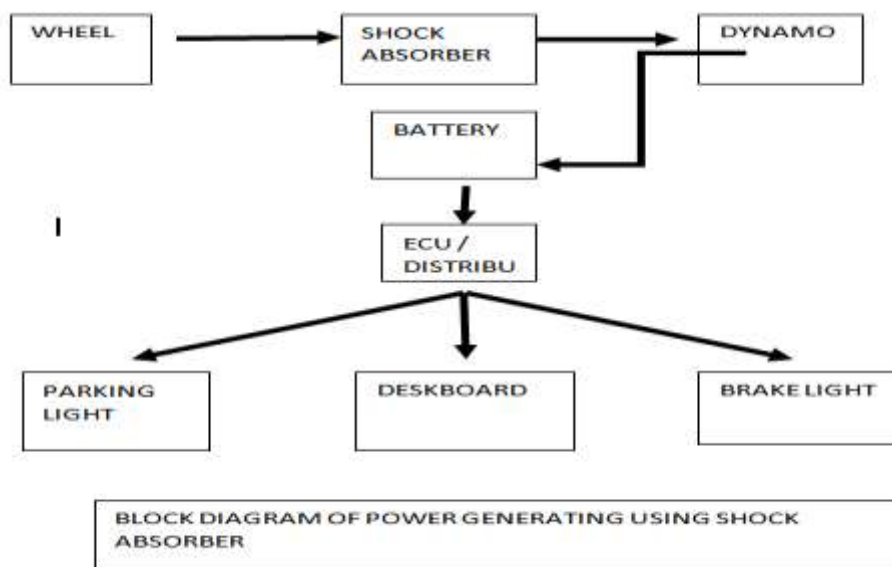
Before our concept or technique, the shock absorber just absorbing shocks and dams and releasing the energy in another form but now with our concept or technique we can generate or produce

Electricity from shock absorbers.

Shock absorbers has two eyes one is connected to chassis another is connected to wheel hub. Our model works when a telescopic suspension undergoes the shock or jerk. When the suspension undergoes jerk or shock it gets compress and release the jerk or motion which then received by dynamo. Dynamo converts the motion into electrical energy and transfers to the battery where the electricity get stored. The power received in the battery from the dynamo can be used to operate parking light, braking light and dashboard.



Figure 3.1: Power Generating Shock Absorber



IV. CONCLUSION

Regenerative power is one of the major problems faced by the peoples in a routine life. Our project, electric system will be very effective to reduce this problem in a cheaper way.

Electric is greener alternative than other fuels so during our study we appreciated the importance of electric conversion and found that it is really helpful in controlling the pollution and also less expensive than the petrol.

We faced a few problems while converting an electric system into the petrol system but were able to find a final solution to them with proper guidance of our guide and references.

REFERENCE

Kirpal Singh automobile engineering vol.1 suspension page no.180