



Electric Handicapped Vehicle (Sanjivaani)

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Abstract — In today's consequence people travel to the moon but somethings that we forgot is about the people who is not even proficient to travel by themselves which is shameless thing that we don't think about disable people. Disable people who don't even walk by their legs is our effort area to resolve their problems. we refer a different papers in which they are solve their many problems by made a tricycle but by surveying we found that they have a lot of problems still in there cycles. So further with updating in our old model with some more comfortness and resolve some errors we are going to resolve their problems by making motorized vehicle, change in steering mechanism, brakes, seating arrangement, emergency siren, vehicle accessories etc. Through this facilities they feel comfort driving.

Keywords- Handicapped, Tricycle, Motorized, Shelter, Emergency Siren.

I. INTRODUCTION

Handicap is the "loss or limitation of opportunities to take part in the life of the community on an equal level with others encounter a person with disability and social, physical environment. Is an inability to accomplish something one might want to do? The term emphasizes the focus on shortcomings in the environment and in many tasks and activities."

There are mainly two types of disable people, one who is mentally disable and the other which we are focusing is physically disabled. Further people disabled by many body parts like by eyes (blind), ears (deaf), mouth (dumb), hands, legs etc., and the one who's body don't grow. We are working on the disable people who can't walk by their legs or lower body cant response from their born or by incidentally. Some people's legs not working 20-30% who can walk with some support by using wheelchairs which is mostly use for inside places but some people's body are totally not working. They can travel by self-drive vehicle, tricycle. For transportation this tricycle is effectible for them but it consumes more energy and also need more efforts to drive it.



Fig. 1 Wheelchair



Fig. 2 Tricycle

1.1 Disabled Tricycle

It is a human-powered three wheeled vehicle for disable people through which they can ride. It is a single chain drive hand operated tricycle which has three wheel for self-balancing. The structure of tricycle is made from mild steel for

robustness. It also contain mild steel seat for sitting as well as resting. It has a single handed steering mechanism and the breaking system is by a spring loaded rubber break. The tricycle includes a tube tire. And it is sufficient to travel.

2.1 Problem Definition

The problems occurs in this tricycle are as below:

- a. Problems occurs during heavy wind flow on roof at more speed.
- b. More friction due to air tires.
- c. Breakage of welding joints and bending of chassis occurs due to unviability of smooth road and poor welding.
- d. Cannot carry heavy load.



Fig. 3 Problems in Tricycle

Due to motorized vehicle the problems can be resolve with motor and battery which consumes less human power to travel. So implementing the proper designed vehicle with motorization can improve the travelling experience of disabled people and aged people. That vehicle has many problems as stated that's why we develop a vehicle with facilities of large storage unit, sensor base control, unique steering, improve breaking system, heavy load capacity etc.

II. DISCRIPTION OF VEHICLE

The motorized vehicle improved by balancing through tat vibration avoids. Sensor base controlling arrangements. Unique and comfortable steering system. Remove spring seating system for comfortable smooth experience. Includes large storage system for people to save their utilities at vehicle. To avoid accident we improve a breaking system of the vehicle. Increase efficiency of the vehicle by light weight and by increasing motor rated power and smooth connections with controller. By updating motor capacity vehicles capacity to carry load also increases. Acrylic sheets roof removed because of the misbalancing due to wind. Smooth operating by uses of controllers, sensors etc. we also design chassis

fully customized for better load carrying capacity and comfortness. So by this all mechanisms the disabled people can easily travel their journey either its long or short also by disabled people or alder person both smoothly.

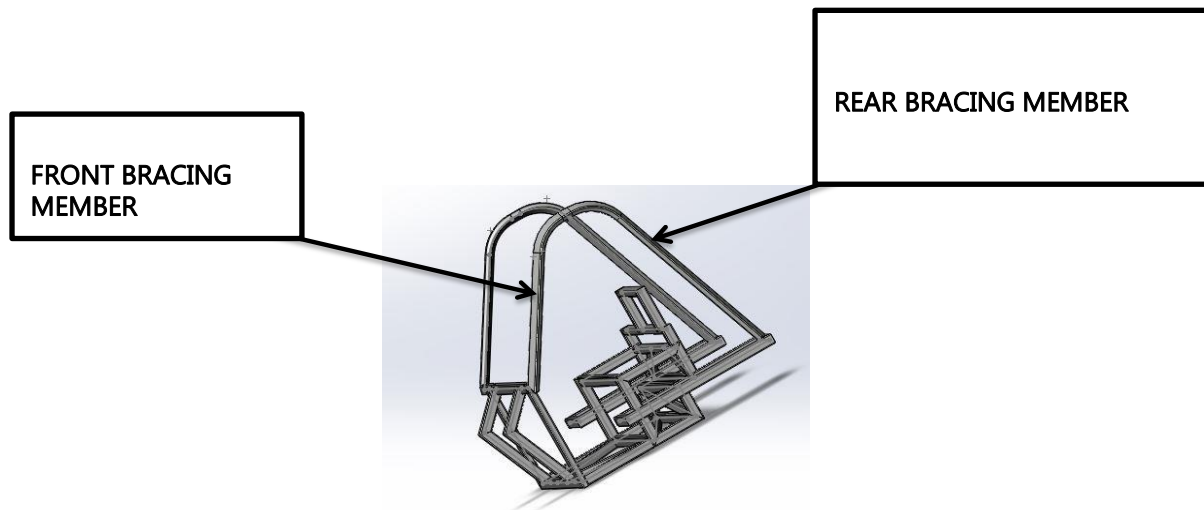


Fig.4 Customized chassis

2.1 Working Principles

Working principle is almost same as our earlier model except added sensors in controllers which is as Power supply form battery get into the controller as per the accelerated by handicapped. As they increase the voltage the dc controller increase their rpm of motor. That moment the ampere of the motor is steady and the voltage is changeable. DC controller Controls motor rpm as per requirement by voltage. Motor connected with up gear through belt drive. Up gear is larger than motor gear so it increases rpm at lower load. As same that up gear parallel with another gear and that gear connected with free wheel by chain mechanism. That free wheel is paralleled with 4th wheel. That wheel is operated by hand & spring mechanism which is spring loaded lever. So when it requires lever ups it touches road and downs lever unmount. When motor rotates clockwise the vehicle go front and at anticlockwise vehicle turns reversed.

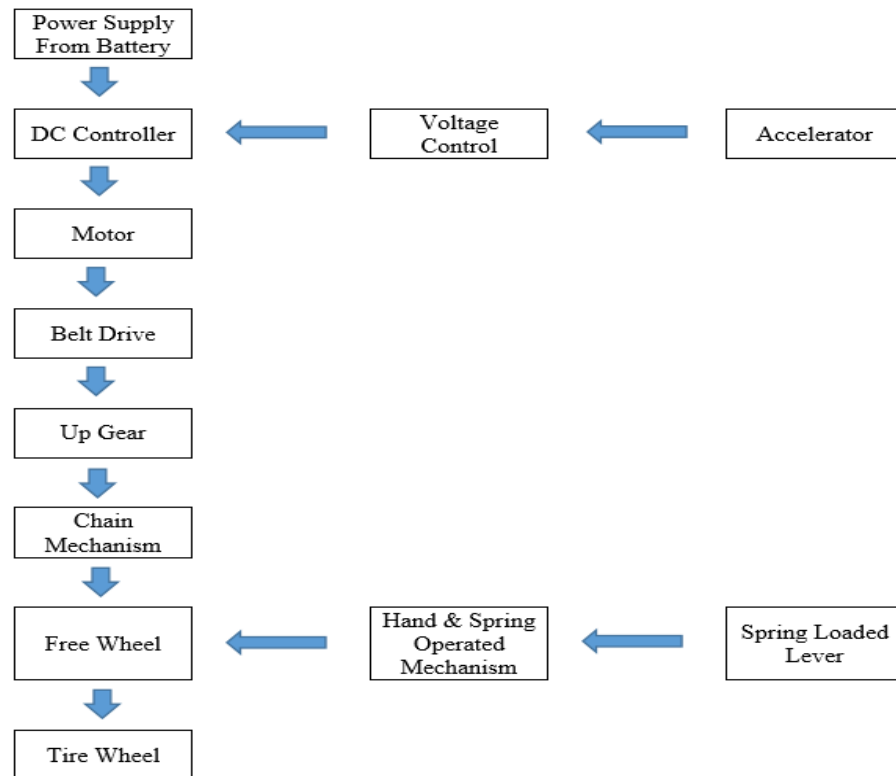


Fig.5 Process Diagram

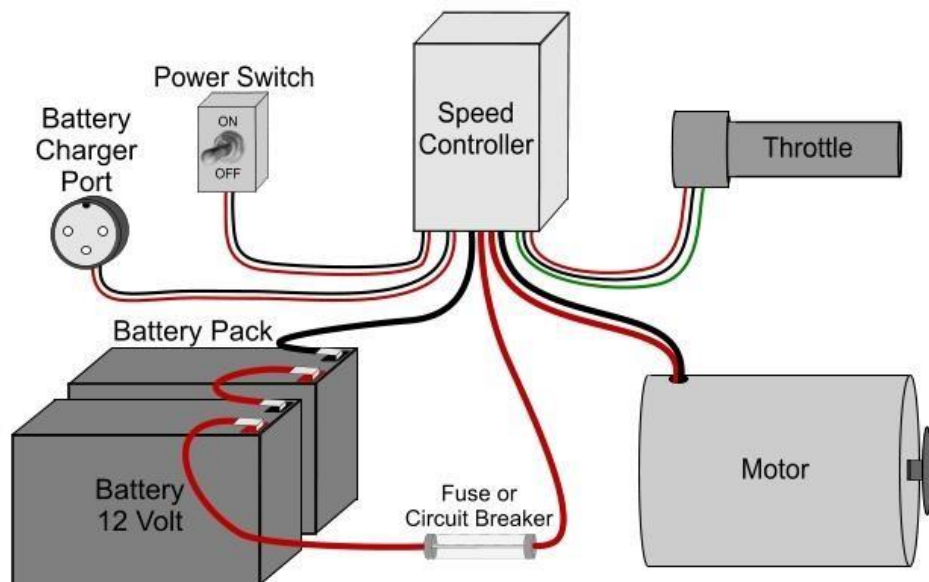


Fig.6 Model Working Diagram

2.2 Unique Parts

A. Disc brake system

It is for breaking effectively to avoid accidents.

B. Customized Steering

Customized steering for their frequent use for taking turns. Handling of vehicle is also smooth, easy, and lighter for moving.

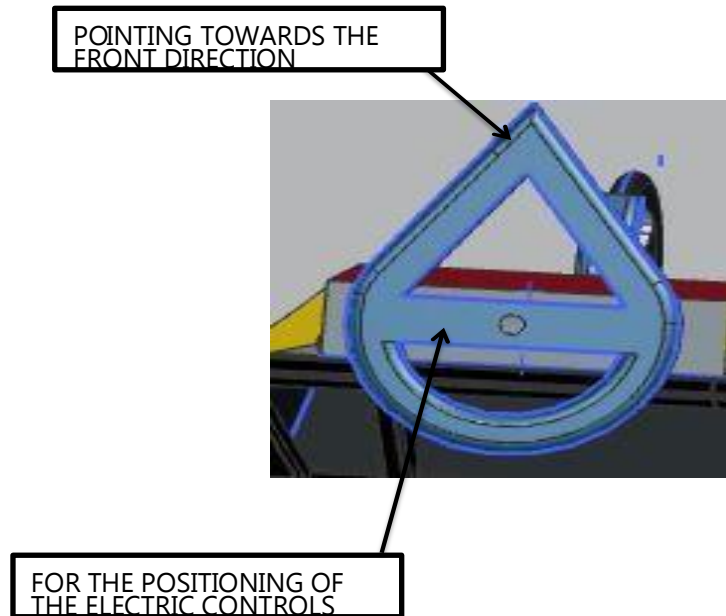


Fig.7 Customized steering design

C. Seating arrangement back support

At some moment due to damage road or because of long driving there are chances for back pain, to avoid that seating arrangement is made with back side support.

D. The speed controlling device to the D.C. motor

Whatever amount of output voltage is obtained from the speed controlling device is transmitted to the D.C. Motor. It is understood that greater the amount of output voltage from the speed controlling device greater are the rpm in the motor. The motor is then coupled to the gearbox whose function and specifications are already explained above.



Fig. 8 Actual Model of Vehicle

III. CONCLUSION

As stock in vehicle we are changing the system for better driving experience we feel that by hand & spring operated mechanism. That gave person comfort till some distance by motorization. By sponge seat they feel comfort without jerk and vibration. Vehicle have two drive system one is electric and another is manual so if any person go to long distance then they can use motor after the finish charging they don't have to suffer they can drive it manually as they drive earlier. We provide centered customized steering system which don't move normally so by this the operation is single handed. And with the help of side light, head light, horn, emergency siren etc. they can drive better and easily. Further we provide back side seat for resting and also customized the chassis design for strength.

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