Design and Fabrication of Electric Longboard For Easy Run

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ABSTRACT.

An electric longboard is an three wheeled vehicle.There electric longboard are for indoor and outdoor use. An electric longboard needs to be distinguished from a Vespa-like or Moped-like three wheel "Electric longboard." It is a battery-operated vehicle that is specially designed for people with low mobility. It is generally used by those who have difficulty walking for long periods of time. Some people are a little wary of purchasing an electric scooter because they fear it will be difficult to operate. The brake begins to engage as soon as the operator lets off the throttle, so there is little chance for abrupt or jarring stops. Most scooters also have a parking brake to keep the electric scooter from rolling when parked. Personal mobility is a vital part of daily life for all including many older adults and persons with disabilities and is the key to independent living. Losing the ability to get around independently has a detrimental effect on the quality of life of older adults.An electric longboard is a battery-operated one-person capacity vehicle. Usually, it used DC electric motor for its operation. The battery can be recharge and certain design can be foldable.

INTRODUCTION

The electric longboard was in three wheels these intended for indoor and outdoor use. It is different from a motorized wheelchair, in that the wheelchair is generally intended for indoor use and usually costs a great deal more. It have three wheels , Since it runs on battery power, it does not create pollution. A typical electric longboard requires a pair of batteries, but the batteries are rechargeable. The length of time an electric longboard can run on each charge depends significantly on its battery's type and capacity. The most common batteries are advertised to run for about eight hours, and between 20-30miles, before needs to be charged.As it is a electric operated vehicle, so naturally it is Eco-friendly. While we ride the vehicle, nothing poisonous emissions comes out. It is completely environment friendly scooter. This electric scooter runs on batteries and allows you to travel independently without effort, pollution and noise. This e-scooter is a power-assisted vehicle, it runs on an internal battery which is charged using an adapter connected to any 220V electric outlet. Once the battery is drained this e-longboard is plugged and recharged for next ride. As it is a electric operated vehicle, so naturally it is Eco-friendly. While we ride the vehicle, nothing poisonous emissions comes out. It is completely environment friendly vehicle. This electric longboard runs on batteries and allows you to travel independently without effort, pollution and noise.

LITREATURE REVIEW

The two wheel balancing robot is a very popular project in the fields of robotics and control engineering. Therefore is a lot of work that has been done and more work is still been done on balancing a two wheeled robot. The following section is a literature review on this particular topic. A literature review is part of a research project where a researcher researches on similar work to his or hers. This very important part of the research helps the researcher to find out how other researchers have tackled the problem he/she is attempting to solve. It gives insight on how to go about solving the problem at hand and provides information on available technologies and tools.

LIST OF COMPONENTS

- Hub motor
- Controller
- Battery
- Throttle
- Brake system
- Fork bearing
- Handle bar
- Chassis
- Rear wheels

HUB MOTOR

A 250W brushless dc hub motor is used . It have been selected over normal DC motor. It have a better power/weight ratio , greater efficiency and hence are more compact and reliable . The absence of a commutator and carbon brushes which are subjected mechanical wear and tear due to friction enables this type of motor to have a longer life.

CONTROLLER

The DC motor controller periodically read the throttle setting and adjust the current being supplied to the motor. It does this with a technique called pulse-width modulation(PWM).

BATTERY

The lead acid cell can be demonstrated using sheet lead plates for the two electrodes. However, such a construction produces only around one ampere for roughly postcard – sized plates, and for only a few minutes.

THROTTLE

Electronic throttle control (ETC) is an automobile technology which electronically connects the accelerator pedal to the throttle, replacing a mechanical linkage. An Electronic throttle control facilitates the integration of features such as cruise control, traction control, stability control and others that require torque .

WORKING

To overcome the existing model we have made some improvements on design and performance of vehicle. We have made some modification in designing the frame pattern in our electric longboard. It is fabricated by method of welding. It is a front wheel drive and operated by DC hub motor, which takes energy from rechargeable batteries. As it is a electric operated vehicle, so naturally it is Eco-friendly. While we ride the vehicle, nothing poisonous emissions comes out. It is completely environment friendly wehicle . This electric longboard runs on batteries and allows you to travel independently without effort, pollution and noise. This electric power-assisted vehicle, it runs on an internal battery which is charged using an adapter connected to any 220V electric outlet.Once charged, a small electric engine hidden in the front wheel hub powers the vehicle for about 30 kms. Once the battery is drained we can plugged and recharged for next ride

DIAGRAM.

Fig(1):Frame

Fig(2):Chassis

Fig(3):Side view of Vehicle

Fig(4):Back View of Vehicle

CONCLUSION

We would say our project has been a success considering the changes we had to make in the spring once we actually found out who the electric tricycle was for. We achieved four out of five of our objectives, and we believe that we have a system that will 30 be effective in providing mobility for persons in Burkina Faso who have disabilities. One of the major lessons we have learned is that designing an appropriate technology is a huge challenge. Appropriate is more than just availability for replication, it considers longevity, reliability, and efficiency. The main goal of this project was to build a functional Three wheeled transporter and this goal has been fulfilled. The overall functionality and performance of the vehicle has been evaluated thoroughly by a number of test drives. The vehicle has been tested by a number of different people, with and without previous experience of riding this kind of vehicle. All were able to ride the vehicle.

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