360 ROTATING ELECTRIC VEHICLE

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ABSTRACT

The project is about a 360-degree rotating vehicle. This vehicle moves in all told directions. This makes the vehicle suitable for operation in narrow paths and sharp corners. Conventional wheel vehicles face a lot of problems like parking, U-turns and far more which consume longer. So, a 360-degree wheel rotating vehicle is intended to cut back and eliminate difficulties that occur when handling material within the industries. Accordingly, we'll use this 360-degree rotating vehicle for various perspectives wishing to move things overpowering bags and additionally in vehicles, which might help in decreasing hour gridlock and spare time.

INTRODUCTION

This project is about plan of 360 degree wheel turning vehicle. This vehicle moves every which way and this plan gives better solace and furthermore spares the season of clients, the overwhelming majority of the final population utilizing this vehicle to convey products, understanding then on. In any case, more often than not, they have to confront the problem like taking U turn so forth. So must structure a 360-degree wheel turning vehicle to reduce and eliminate issues within the business and at the railroad stage. Because it works on an electrical battery consequently no fuel is required. No additional room is required to show the vehicle. So vehicle is to be turned within the space adore the length of the vehicle itself. During this framework, controlling is related to sprocket and this sprocket is related to sprocket of front wheel by chain drive. Guiding is used to provide the course of front wheel. The DC engine is related to sprocket jolt at above of casing. At the purpose when control supply from battery to DC engine then revolving movement exchange from DC engine to the wheel. The headings are give beneath sprocket which allow to wheel turn 360 degree about vertical pivot. At that time this equivalent rotating movement is exchange to the rear wheels by sprockets and chain drive course of action. So accordingly this game plan of the vehicle wheels to show 90 degrees left and 90 degree directly from unique position, however front wheels of this vehicle pivot 360 degree by controlling, sprocket and chain drive game plan. Without moving from the spot, as an example the vehicle has zero turning span.

LITERATURE REVIEW

[1] Arunkumar S M, Chandan Kumar Sahu, Yubaraj G M, Jahangeer A B[18] Proposed a system of consist of steering, chain sprocket, DC motor, wheel, bearing, iron pipe, battery and chain drive. In this system first the vehicle is stopped and wheels are then turned within the required direction with

help of steering mechanism and DC motor. For the forward and backward movement of this vehicle, DC motors are used in wheel and a battery is used to provide electrical energy for the DC motor. It has turning radius nearly equivalent to negligible of length of the vehicle itself. This arrangement is to be helpful in hospitals, miniature industries and also on railway platforms.

[2] SudipKachhia Proposed the idea of all electric concept of vehicle is that if it becomes a reality would prove to be a lot of fun to drive in the city. The vehicle works on 8 electric motors, four motors attached uniquely to each wheels and it can rotate 360 degrees. The wheels of the car are magnetically coupled and it is controlled by magnetic fields. Hence the car is rotate fast and effectively

[3]. Jaishnu Moudgil 360 degree rotating car to beat the matter of parking zone. This car has zero degree turning radius of a vehicle implies the vehicle rotating about an axis passing through the axis of gravity of vehicle i.e. the vehicle turning at the similar place, where it's standing. No extra space is required to revolve the vehicle. So vehicle is to be turned within the space like to the length of the vehicle itself. during this presentation, so got idea of 360 degree wheel rotation vehicle and have plane to make 360 degree wheel rotation load carry vehicle, this vehicle is to be utilized in different area like industries, hospital, railway platform, etc.

[4] K. Lohith Presented a four wheel steering mechanism for a car. In four wheels steering the rear wheels revolve with the front wheels thus raising the effectiveness of the vehicle. The direction of steering the rear wheels comparative to the front wheels depends on the working circumstances.At low speed wheel movement is pronounced, in order that rear wheels are steered within the other way thereto of front wheels with the utilization of DC motor to show left and right. during this presentation, the utilization of DC motor is to rotate the wheels 90 degree left and 90 degree right from original position.

[5] Er. Amitesh Kumar presented zero turn four wheel steering mechanism, the a variety of functions of the steering wheel are to manage the angular motion the wheels, direction of motion of the vehicle, to supply directional stability of the vehicle while going straight ahead, to facilitate straight ahead condition of the vehicle after completing a turn, the road irregularities must be damped to the utmost possible extent. This project the utilization of steering is to rotate front wheels.

[6] Mr. Sharad P. Mali Presented zero turn four wheel mechanisms, in this project people have used DC motor and wheel to vehicle rotate 360 degree at a same position .So in this task, the initiative is to organize of DC motor and wheel

DESIGN

Design of 360 degree wheel rotation vehicle is adopted to easily move in required direction. The vehicle mainly consists of Dc Motor, sprocket, chain drive, iron pipe, wheels and bearings. The basic arrangement is shown in fig.

MAIN COMPONENTS

Sprocket, Chain drive, Wheel, Iron pipe, DC motor, Bearing, Fixed frame, Battery

Sprocket:- A sprocket could be a profiled wheel with teeth, gear-teeth, or perhaps sprockets that employment with a series. The sprockets are utilized for the facility transmission among controlling and wheel through the roller chain drive.

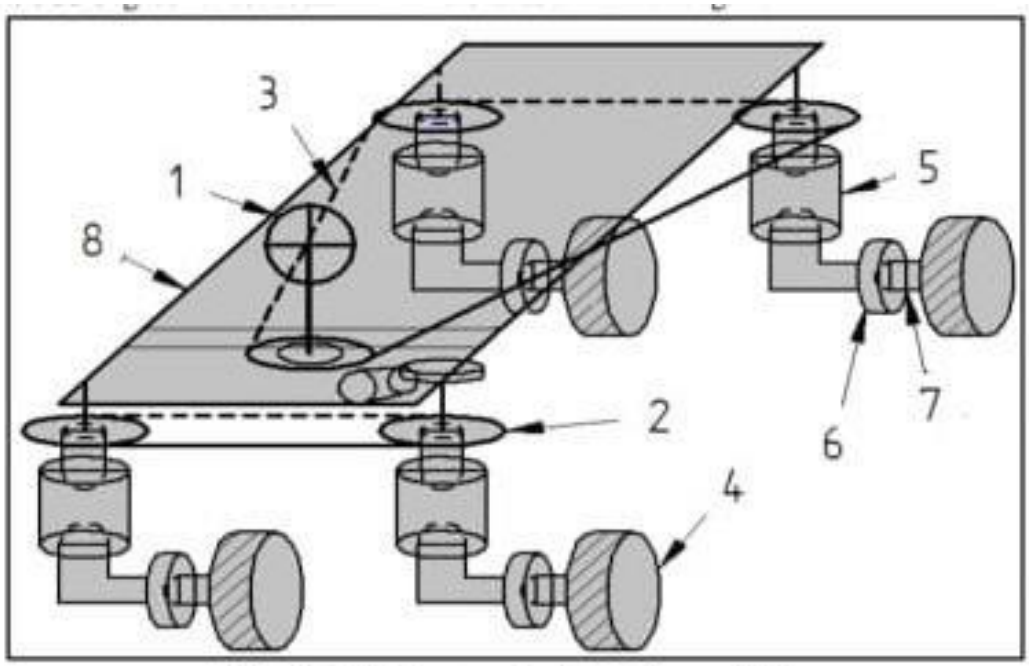


Fig. 1 360 degree wheel rotation vehicle

Wheel:- During this vehicle wheels are manufactured from plastic material. Wheels are interface with DC engine and front wheel turn 360 degree by help of controlling, chain sprocket, chain drive and bearing game plan. the rear wheels turn 90 degree left and 90 degree directly from unique situation by help of DC engine, sprocket and chain driver course of action, DC engine has given to every wheel to flexibly advance and in reverse development of wheel.

Iron pipe:- It's a 1 of great pieces of 360 degree wheel pivot vehicle. it's manufactured from mellow steel. Which is used to affix bearing and DC engine of every wheel

DC motor: - During this vehicle one DC engine are gives in each wheel to travel ahead and reverse way. The detail of engine utilized is 12 V, with 60 rpm. When power gracefully from battery to DC engine then DC engine turn clockwise way and when switch current flexibly from battery to DC engine then DC engine will anticlockwise course. which is able to advance and in reverse development of car.

Bearing:- During this vehicle bearing is utilize simple to move wheel from one heading to other course, each bearing is related to each wheel with the help of sprocket and iron pipe. Pipe. an effect could be a machine segment that obliges relative development to easily the right development, and lessens scouring between moving parts., and diminishes rubbing between moving parts.

SIDE SHAFT 12V JOHNSON MOTOR:- The Johnsons DC Gear motor offers custom engineering solutions supported a good range of low voltage DC and high voltage DC motor platforms.. The low voltage DC platform provides power density and compact packaging options. this can be the static magnet type DC motor with high torque.

Wireless EV Charging:- Wireless EV charging may be the catalyst for mass adoption of electric vehicles. With a high-powered wireless EV charging system, vehicles can automatically charge while parked in selected pick-up/drop-off locations - an ideal solution to keep taxis or autonomous vehicles perpetually charged. The system requires no physical charger-vehicle connection; it consists of multiple charging plates installed underground that engage automatically. No charging station is required, delivering more convenience and less clutter in the public space.

OBJECTIVES

- Designing model system
- Reduce in revolving time
- Overcome in parking difficulty
- To turn the vehicle with no leaving its centre of gravity

ADVANTAGES

- It consumes very less time to turn from one direction to other direction.
- It is more efficient compare to other type of load carry vehicle.
- This type of load carry vehicle is easily parked in any direction.
- It is less costly load carry vehicle.
- Eco friendly.
- Less noise operation.
- Battery operated thus no fuel required.
- More efficient.
- Battery is using in this 360 degree wheel rotation vehicle to move forward and backward, so it is a kind pollution free vehicle

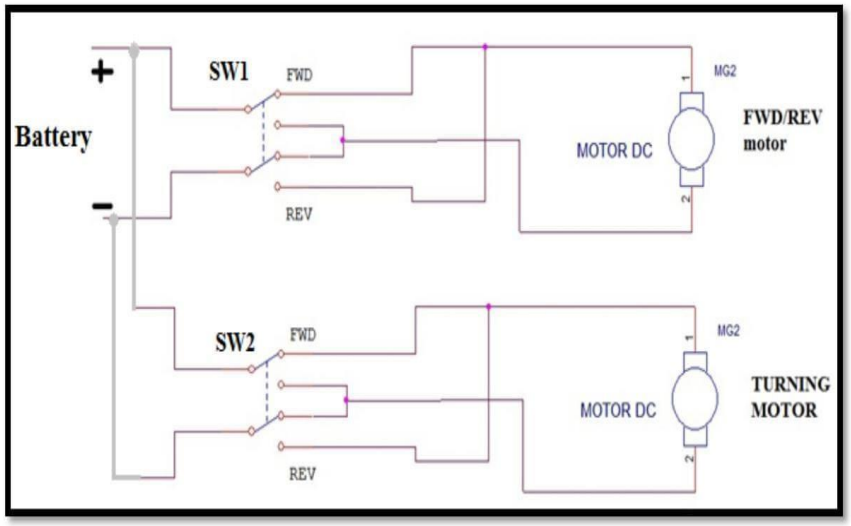
DISADVANTAGES

- This type of load carry vehicle is not applicable to carry more weight.
- Battery power is required to move the vehicle.

APPLICATIONS

- In Industries for automation of raw material like automated guided vehicle.
- In automobile sector there are so many types of vehicle are using to carry goods from one position to another position, there is space problem in the industry so this vehicle is used in automobile applications because this vehicle consumes very less space compare to other type of vehicle.
- This vehicle is used in small Industries for transportation of raw material from one position to another position.
- Modern development and economical progression of Indian society resulted in increase of vehicle in park so there are also problem. In park other vehicle are taking more space to move from one direction to other direction and 360 degree wheel rotation vehicle have capability to move parallel direction so this vehicle is easily move from one direction to other direction in park.
- Take easily U-turn because front wheel of this vehicle are rotating freely by steering, chain drive and sprocket arrangement.
- It is used in hospitals to carry the patient from one room to another room. Because there are lots of patients those are staying in one room.

CIRCUIT DIAGRAM



CONCLUSION

• In this project we have worked on 360° Rotating Electric Vehicle
• We have also added wireless EV charging.
• This EV design will be so compact and easy to use in every applications .
• This EV will also Overcome parking problems in compact places.

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