

# **“DESIGN & FABRICATION OF 90° STEERING SYSTEM ALONG WITH CONVENTIONAL STEERING SYSTEM”**

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## **ABSTRACT**

Modern development and economical progression of Indian society resulted in increase of cars on roads. Due to space constraints, car parking is the major problem faced in most parts of the country. Conventional steering mechanism involves either the use of Ackerman or Davis steering systems. The disadvantage associated with these systems is the minimum turning radius that is possible for the steering action.

This difficulty that is associated with the conventional methods of steering is eliminated by employing a four wheel 90 degree steering system with conventional steering system. In this system at first vehicle is stopped and front wheels are then turned in the required direction with the help of steering system and rear wheels are turned with the help of DC geared motor for parallel parking purpose.

This innovation promises to ease the task of parking on narrow Cambridge streets. The most striking elements of the car are wheels that incorporate with DC motors and the suspension inside their circumference. By working through the problem so logically and indeed unemotionally we will anticipate discovering new possibilities.

## **STATEMENT OF THE PROBLEM**

In this world, the cities are not built for cars. Even though new cities are well planned, day by day increase in the automobile keeps traffic and parking in cities unpredictable. It is only the automobiles, which can be built to suit traffic and parking condition of cities. All people find it difficult to drive or park their car in a highly populated urban city. Car companies around the globe are bringing new concepts which are least polluting, which will minimize drivers effort to drive in traffic and to easily park the vehicles in congested city area. As parking is being one of the major problem in cities, this project is focused to reduce the efforts made by car drivers to park the car in city area. Here an easy parking mechanism is developed for city cars. As mentioned, it is difficult to park a car in city area where the roads are narrow and no parking loads are available. In many places parking on one side and both sides of the roads is commonly permitted. Depending upon the arrangement of the vehicles, the

street car parking is classified as parallel parking, angle parking, perpendicular parking and Anderson parking. Among these parallel parking is considered the difficult, tedious and annoying task for many drivers.

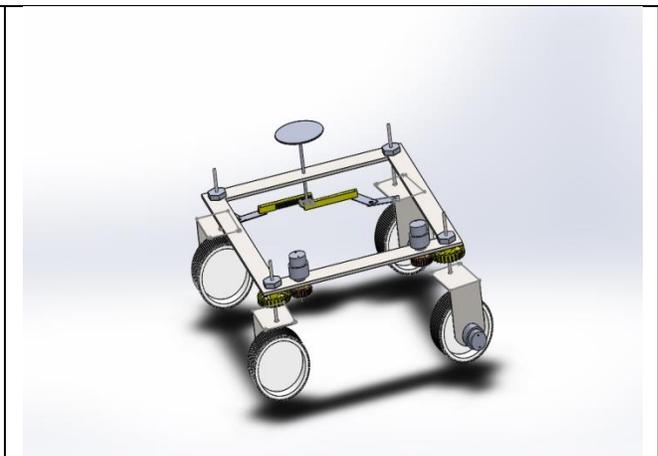
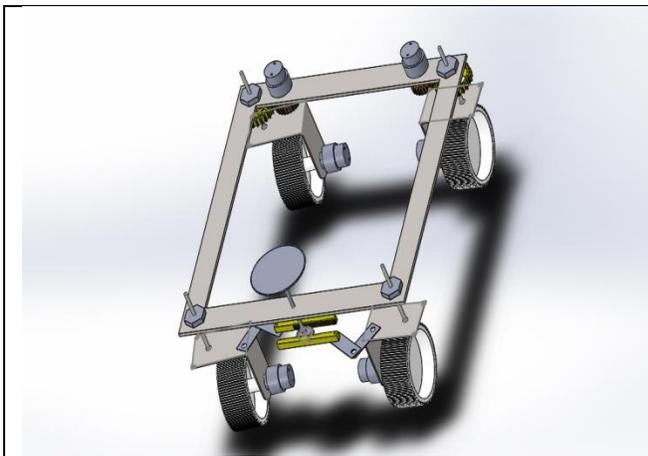
Few concepts to facilitate parallel parking have been developed and discussed. An Indian city car was bench marked for sizing and developing different parking mechanism concepts one of the conceptual design was selected using Pugh's selection method the selected mechanism was further developed and simulated on computer software. In highly populated areas it can be difficult to find available parking spots. Frequently parking spots are located on the side of the road, leaving the driver with no choice but to attempt parallel parking. In general it is considered to be a rather challenging maneuver. Since parallel parking requires driving backwards it becomes difficult to coordinate the correct motion of the car. Some drivers have to perform multiple corrections before they park the car properly. In the worst case an accident can occur.

### ❖ VISION OF PROJECT

A car that can perform parallel parking smoothly would save driver's time, especially those that are not very good with parallel parking. In addition cars that can parallel park would most probably reduce the number of accidents related to parking. Using our model we present a solution to the parallel parking problem.

## DESIGN OF PROJECT IN SOLID WORKS

- **Solid works Model of the vehicle from front wheel side:-**



- **Solid works Model of the vehicle from rear wheel side:-**



				
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