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DESIGN AND DEVELOPEMENT OF ADAPTIVE HEAD LAMP WITH WING MIRROR SYSTEM

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Abstract: The project basically deals with the use of various linkages arrangement for the easy tilting of the head lamp and the mirror as the road accident are increases day by day. The project is demonstrational model with the actual one. The various linkages arrangement such as spring, frame are used for the construction. The fabricated model is quite differing from the actual.

Keywords: Head Lamp, Wing Mirror



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INTRODUCTION

The project work the dark ages of vehicle lighting are coming to an end, with state-of-the-art lighting technologies offering bright ideas to automobile engineers and owners. Advances in Lighting Technology illuminates these possibilities by presenting 40 papers that focus on innovative lighting breakthroughs. Advances in Lighting Technology is an essential resource for anyone involved or interested in vehicle lighting. The highway network in the country is growing by the day, making it more and more convenient to take the road for travelling between cities. However, driving on the highway at night is still fraught with danger and is affected by issues ranging from reckless and/ or drunk drivers to the blinding dazzle of high-beam headlights. And to make matters worse, most of the highways in India don't have medians or dividers and are also bereft of street lighting; so, poor night-time visibility heightens the risk associated with driving after sundown. There are a few new-age technologies that enable car manufacturers to offer features to improve the driver's visibility during night. These include automatic headlamp leveling, automatic high-beam throw control and dynamic headlight cornering and control.

Methodology: The project work entitled "Adaptive Head Lamps" for four wheeler has been manufactured using various material like MDF(700-720 kg/m³) sheet (12mm, 8mm), 600 mm diameter bearing, 3/16 meters bolts, studs, LED, rubber bands, 3 pin toggle switch, battery, battery socket etc.

First of all a base of sum thick MDF of size 42x25 cm has been constructed to the under beneath of which four 12m thick rests are mounted on this base 28cms (center to center) front side in made up of 12mm thick MDF sheet is mounted at a height of 63mm. On the both end of which wheel mounting hub is fitted to the outer end of which a 600 mm diameter bearing is fitted. This bearing supported runs wheel of 14 cm diameter to the wheel hub assembly a wink is connected which is 60m having on one side and 7cms having on the other side. The outer side of both of the hub is connected using connected rod / tie rod so as to stew both the wheels at a turn. While the other side of the lever is for connections of the head lamp strings.

Now, on the dummy axle a steering column is mounted that supports a 9 inches long stud at the end of which a steering wheel is mounted. The steering mechanism is very simple and uses strings to steer the wheel.

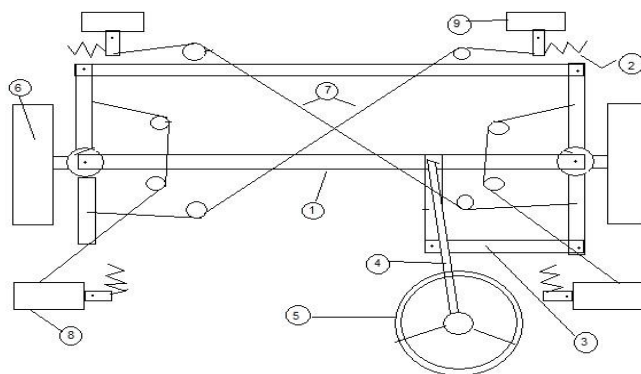
Now with this steering assembly the steering of the wheel is made. This steering motion is to be used further to move the headlamp in the direction of further of the vehicle. The head lamp assembly is fitted meanly 4" ahead of the during axle at a height of 7cms from the bare plate,

this mounting is done using master bolt. These head lamp assembly supports two foams LED each. The head lamp assembly rests on a stopped that allowed the headlamp assembly to swivel on outside but not on inside. To the inner side of the headlamp and wheel hub assembly pulley is mounted.

Connection of wheel hub is made with the headlamp. The left hub like is connected to the right headlamp and the connection are made using string i.e. multithread pulley turned. Whenever the vehicle is turned right the left lever pulls thread that is wrapped round pulley and turn passé don't he another pulley manner to the right head lamp, whenever the string is done in right hand side the steering get stretched and then the right hand side lamp is resolved outside to glow the road on right side. Then the operation is exhibited and the project adaptive headlamps for two wheelers only.

Actual Fabricated model:

Adaptive Headlamp with wing mirror (Top View)



Observation table:

Sr No.	Particular	Ray of Incident Of head lamp. (Degree θ)	Inclination of Mirror (Degree θ)
1	When steering turn to left	45 θ	30
2	When steering turn to right	45	30

CONCLUSION:

- The project work demonstrated that the working principle as expected and this project may find its way in automotive-wise as BMW has done.
- After few modifications on robust means this system can be used in India too.

This project is life saving and can losing the figure of accidents to minimum level by optimizing the illumination in the front area of the vehicle.

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