

SIDE STAND ENGINE LOCK SYSTEM

¹K.SATHISH,²B.ARCHANA,³K.RAVIKIRAN,⁴K.RAVI TEJA,⁵R.SIDDHARTH

¹, Assoc. Prof, Dept. of MECH, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

², Asst. Prof, Dept. of CSE, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

³, Asst. Prof, Dept. of ECE, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

⁴⁻⁵B-TECH, Dept. of AIML, CMR COLLEGE OF ENGINEERING & TECHNOLOGY

Abstract

In our day to day life transportation is the most important provision used by maximum of the population because of the efficiency to reach their destinations is high. While using this provision there is chance of accidents because of the many reasons like clashing of two vehicles, overspeeding, drunk driving, distractions to driver, red light jumping etc. many accidents occur because of the small mistakes which are very silly such as picking up side stand etc. we can reduce some causes of accidents by making any instrumental or devices which gives us the remainder so that we can react to that. Focusing on the accidents occurred due to picking up the side stand we can make a device by which the accidents will be reduced because of the side stand.

1. INTRODUCTION

Road accident is most unwanted thing to happen to a road user, though they happen quite often. The most unfortunate thing is that we don't learn from our mistakes on road. Most of the road users are quite well aware of the general rules and safety measures while using roads but it is only the laxity on part of road users, which cause accidents and crashes. Main cause of accidents and crashes are due to human errors. We are elaborating some of the common behaviour of humans which results in accident.

1. Over Speeding
2. Drunken Driving

3. Distractions to Driver

4. Red Light Jumping

5. Avoiding Safety Gears like Seat belts and Helmets

6. Non-adherence to lane driving and overtaking in a wrong manner

Various national and international researches have found these as most common behavior of Road drivers, which leads to accidents.

Over Speeding:

Most of the fatal accidents occur due to over speeding. It is a natural psyche of humans to excel. If given a chance man is sure to achieve infinity in speed. But when we are sharing the road with other users

we will always remain behind some or other vehicle. Increase in speed multiplies the risk of accident and severity of injury during accident. Faster vehicles are more prone to accident than the slower one and the severity of accident will also be more in case of faster the severity of accident will also be more in case of faster vehicles. Higher the speed, greater the risk. At high speed the vehicle needs greater distance to stop i.e. braking distance. A slower vehicle comes to halt immediately while faster one takes long way to stop and also skids a long distance due to law of motion. A vehicle moving on high speed will have greater impact during the crash and hence will cause more injuries. The ability to judge the forthcoming events also gets reduced while driving at faster speed which causes error in judgment and finally a crash.

2. RELATED WORK

Side stand indicator in this kind of indicators we get a led notification on our dash board of the bike, such that once we see that light we come to know that our side stand is opened. But the main con of this system is most of the times we are in a hurry and we miss that indication in these types of cases accidents occurs. Side stand alarm in this type of system we get an alarm if our stand is open and ignition is on such that we are alerted and we take the

pre-requisite action. But the main con of this solution is that, we are living in a developing country and due to our population we are not having a good financial state such that in most of the cases we buy a bike but we do not take care of servicing of the bike in those cases alarm does not work because battery gets diffused. So, accidents occur due to this reason. These are the existing solutions available in the present market. Sustained economic growth has led to rapidly increasing motorized vehicles in India. There were 210 million registered vehicles in India as on 31st March 2018. Vehicular composition and pattern of category wise growth rates have revealed the preferences of road users for personalized means of transport over public road transport. Vehicular penetration in India, measured by number of vehicles per 1000 persons, as seen substantially increased from 1980's; From 8 in 1981 to 167 by 2015. The increase in personalized means of transport and declined in share of public transport have significant implication on traffic congestion and safety. Many accidents in case of two wheelers will be caused because of forgetting of lifting of the side stand without interference of the another vehicle. It is the small mistake which is made in hurry. This problem can be easily sorted out by giving the remainder (or) indicating that the stand is not lifted up to

the rider of two wheelers. we can't stop the accidents caused by collision of two vehicles, dashing the dividers or any walls etc., but, atleast these type of accidents can be reduced.

3. IMPLEMENTATION

Now the steps for implementing the side stand engine lock system are as follows: .

For setting up this system, wiring connections have to be made between the reed switch and ignition.

Our module works on the principle of magnetic to connect with Arduino so that the code can also included hence we have connected the dc motor to Arduino.

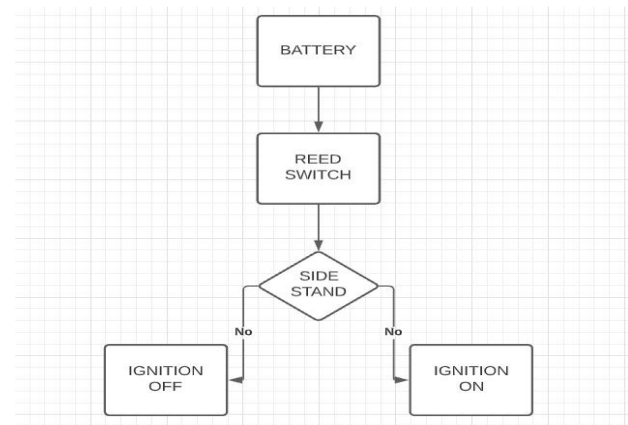
Hardware Description

- BIKE STAND
- MAGNETIC REED SWITCH
- MAGNET
- CONNECTING WIRES
- SHRINK TUBE
- RELAY SWITCH
- ARDUINO
- LIMIT SWITCH
- ADAPTOR
- DC MOTOR

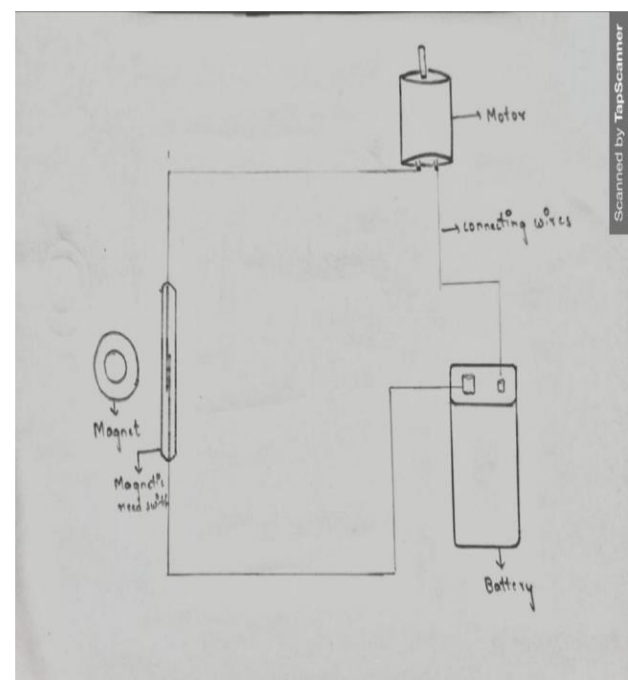
Methodology

The main objective of our project and the idea behind it, is to improve the safety of the user or driver of the vehicle and reduce the sudden mal-function of the sliding system involved in it, which is present in the conventional automatic side stand

system. Based on the detailed study of the references and conventional system, the parameters chosen for our project are based on Two-wheeler accidentals and occurrences, side stand and frame design, drive and power aspect of the system.

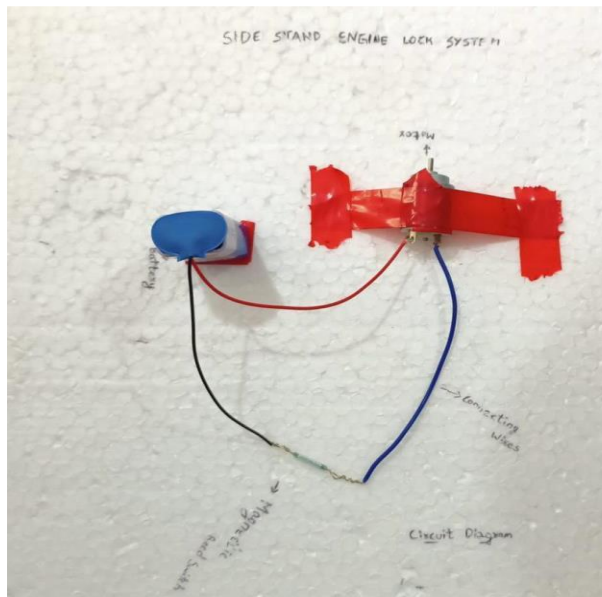


Block Diagram



Circuit Diagram:

RESULTS AND DISCUSSIONS



Now a day's accidents related to side stand slider are more often reported. The integration of "SIDE-STAND ENGINE LOCK SYSTEM" in any existing two-wheeler improve the safety of the user (driver), design and aesthetics of the system, drive system and overall efficiency. This system will of greater convenience for the user, as it is having lesser chance of mal-function and the cost as well as maintenance of this system is cheap compared to other conventional systems. Also, the design and drive for this system is independent of the main engine and transmission system, unlike other system this will not interfere in the working of the two-wheelers. This system will surely be an economical and safe system in all aspects for all class of vehicle. This technology can be further

developed into a sophisticated one, if electronic circuiting and design ergonomics of the system is improvised respectively

4. CONCLUSION

The need for human to move from a place to place to cater his essential needs have led to the development in automobile industry. To have independent movement, two-wheeler vehicles are been used more frequently by the individuals besides other common or four-wheeler or three-wheeler vehicles. So it becomes essential for the two-wheeler vehicle holder to ensure his personal safety by having a safe drive or Journey. The personal safety is considered to be the most important factor not only to safeguard him but also to ensure security on others who depend on him. The stability of the vehicle is represented by the Centre of Gravity (CG) of the vehicle and rider/s combined together. This is the point through which all forces act. In case of Two-wheeled vehicles, the vehicle is provided with two stands for resting or parking the vehicle when not is use. A kickstand is a device on a bicycle or motorcycle that allows the bike to be kept upright without leaning against another object or the aid of a person. The kickstand was invented by Joseph Paul Treen, the father of former Louisiana Governor, Dave Treen. A kickstand is usually a piece of metal that flips down from the frame and

makes contact with the ground. It is generally located in the middle of the bike or towards the rear.

5. REFERENCES

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