

# Anti-Accident Ignition System

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**Abstract**— Side stand in two wheeler support the entire weight of the vehicle when it is parked. They are perfect on quick stops when one needs to leave the vehicle for a short while. They are provided with a spring that pulls it back into position to ensure extra safety. Sometimes the person who drives the two wheeler may forget to release the side stand. This will tend to unwanted danger and lack of concentration while driving. Nowadays sensors are used to ensure that the stand is in released condition or not by indicating it using small lights in dash board. There is also a possibility to forget to see the light. This project concentrates on to completely reduce the possibility of driving two wheelers without releasing the side stand. The side stand alarm for Two wheelers is the one of the lifesaving electrical mechanisms which provide the rider about the negligence to release the side stand while riding. The additional circuit uses the tensional spring, which contacts or closes circuit and thereby connects and disconnects the ignition with the battery and makes the rider aware about the unreleased position of the side stand or side stand in use. This prevents the rider as well the vehicle to lose the centre of gravity by imbalance or surface hindrance and thereby saves life of the rider. The Anti-Accident Ignition System is cheap, rugged and easier to install without additional installations. Better circuit provided in the vehicle will support the configuration of the present project.

## INTRODUCTION

The present project relates to the field of automobiles industry, especially for two-wheeler vehicles using side stand apart from the Main center stand provided there in for the resting of the vehicle. Thus the present project provides an anti-accident ignition system for the vehicle handler or rider about the ignorance to release the side stand under vehicle movement.

### *Prior Art and Technical know-how:*

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 in 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. Some touring bikes have two: one at the rear, and a second in the front.

The two stands being:

1. Center Stand
2. Side Stand

A center stand kickstand is a pair of legs or a bracket that flips straight down and lifts the rear wheel off the ground when in use. Center stands can be mounted to the chain stays right behind the bottom bracket or to the rear dropouts. Many motorcycles feature center stands in addition to side stands. The center stand is advantageous because it takes most of the motorcycle's weight off its tires for long-term parking, and it allows the user to perform maintenance such as chain adjustments without the need for an external stand.

A side stand style kickstand is a single leg that simply flips out to one side, usually the non-drive side, and the bike then leans against it. Side stands can be mounted to the chain stays right behind the bottom bracket or to a chain and seat stay near the rear hub. Side stands mounted right behind the bottom bracket can be bolted on, either clamping the chain stays, or to the bracket between them, or welded into place as an integral part of the frame.

The center stand is used to give proper control on the center of point of the vehicle. The center stand is located below the base of the engine with center of gravity of the vehicle been passing through the center stand axis, thereby

having a more stable equilibrium position of the vehicle is achieved.

The side stand is been provided along with the center stand that is to place the center of point of the vehicle to lie within the vehicle. Side stand is used whenever there is neither stable nor rigid surface for laying center stand, or slippery surfaces, or slopes, or less space to park etc in such cases side stand is used predominantly. Hence all the two wheelers especially bikes and Mopeds now a days are placed with this accessory to ascertain easy service to the vehicle handler.

One of the most common problems that are encountered in using the side stand is negligence or carelessness to kick back the side stand. The negligence may be due to absence of mind, urgency, divergence in concentration and few other reasons, which may prevent the rider to kick back the side stand to its original position.

Failure to kick back the side stand for any of the reasons stated above may hit the side stand and there by affect the stability of the vehicle and lead to accident of the vehicle and riders involve in the accident, sometimes fatal. To ensure security or safety of the rider, during absence of mind or negligence or urgency or carelessness the automobile industry have developed in bikes.

### OVERVIEW

Side stand in two wheelers function the entire weight of the vehicle when it is parked. They are perfect on quick stops when one needs to leave the vehicle for a short while. They are provided with a spring that pulls it back into position to ensure extra safety. Sometimes the person who drives the two wheeler may forget to release the side stand. This will tend to unwanted danger and lack of concentration while driving. Now a day's sensors are used for ensure that the stand is in released condition or not by indicating it using small lights in stash board.

There is also a possibility to forget to see the light. This research paper focuses on to completely reduce the possibility of driving two wheelers without releasing the side stand. This may appropriate for all kind of two wheelers which are driven in gear system with low cost. In this project we are proposing an idea to overcome one of those accidents which take place due to the non-folding of the bike stand.

### PROBLEM IDENTIFICATION

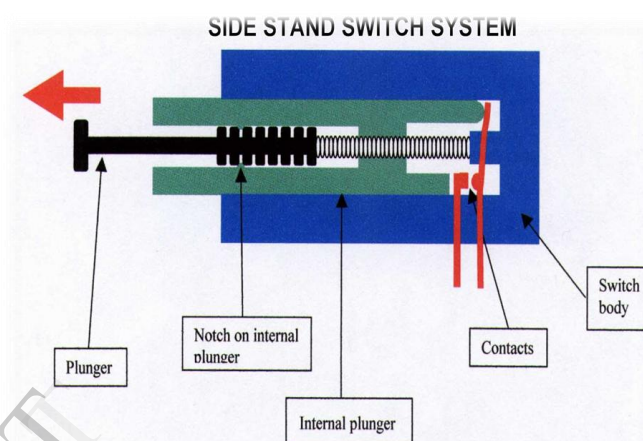
Today, Motor cycles are used everywhere in all over the world. In motor cycles, the side stand plays major roll while the vehicle is in rest condition. While the driver starting the motor cycle, there may be a possibility of forget to release the side stand. This will tend to unwanted troubles. To avoid the driver has to ensure that the side stand is released. Side stand in two wheelers function the entire weight of the vehicle when it is parked.

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into place as an integral part of the frame. A center stand kickstand is a pair of legs or a bracket that flips straight down and lifts the rear wheel off the ground when in use. Center stands can be mounted to the chain stays right behind the bottom bracket or to the rear dropouts.

Many motorcycles feature center stands in addition to side stands. The center stand is advantageous because it takes most of the motorcycle's weight off its tires for long-term parking, and it allows the user to perform maintenance such as chain adjustments without the need for an external stand.

### METHODOLOGY



When the side stand is in ON position the plunger is pulled out due to the tension in coil spring attached to the stand. In this position the contact switch in the plunger gets attach and the circuit breaks due to the earthing provided by the plunger with the help of chassis. So the rider needs to pull up the side stand, now when he does this the side stand come in upright position bring the plunger in original position, due to which the current will not flow through the plunger because the contact switch in the plunger get detached due to which the current will not be grounded. As a result the current will flow towards the ignition coil.

#### A. Side-Stand OFF position



The main function in the mechanism which has been implemented in the two wheeler is that when the stand is at

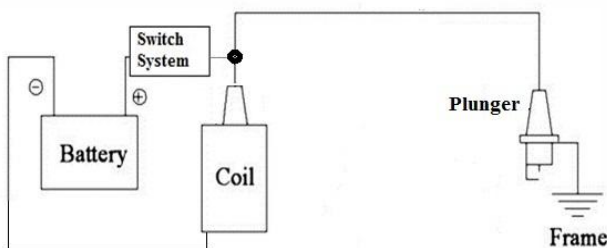
OFF position the circuit will not get braked and the current from the battery directly flow through it . In this condition the earth provided to it will not work. The whole current just flow from the main circuit created and hence the current flows from battery to the ignition coil. This flow of current helps the vehicle to get starts.

#### B. Side-Stand ON position



The main function in the mechanism which has been implemented in the two wheeler is that when the stand is at ON position the circuit get break and the current from the battery doesn't flow through ignition coil rather than current passes through the earthling which is provided by the plunger with the help of chassis. This will pass the voltage current to the rubber parts of the vehicle where the current gets absorbed as well as by the help of side stand current will flow into the earth surface.

#### CONSTRUCTION



The Anti-accident Ignition System connected is to Battery, Ignition Coil, Plunger. The switch system is connected to the battery at one end to the other end it is connected to ignition coil as well as to the plunger with the help of node . The plunger is earthed with the help of frame.

The Battery which is used is a 12V standard battery. The plunger system is connected to side stand through the coiled spring. The connection between the switch system to the plunger is through wires. All the equipments used are standard equipments which are used in two wheelers.

#### ADVANTAGE

- It will reduce accidents.
- It will increase driver safety.
- It will reduce the maintenance expenditure.
- It will reduce the cost of sensor replacement.
- It will reduce the chances of misbalancing.

#### RESULT

From the project we find that the bike will not start until and unless we lift the side stand. And from safety point of view we observe that it is better system then the existing one. It is also cost efficient and can be mass production without effecting the design aspect of rest components of the bike.

Particular	Existing Side Stand Indicators	Invented Side Stand System
Retraction	Manual	Manual
Maintenance	Low	Low
Human error	High	Low
Cost	Average	Below Average
Risk factor	High	Eliminated
Technology	Custom	Unique
Comfort in usage	Comfortable	Highly comfortable

#### CONCLUSION

From the above study over the topic that Anti-Accident Ignition System is very useful and advantageous application for two wheelers. It will help over the two-wheelers for safe riding and prevents accidents. This side stand is not a very complicated setup and it does not require expert knowledge to install when fitted from local shops. It does not affect the overall running cost and weight of the two wheelers .hence it can be inferred that this side stand is a very flexible system to operate, remarkably support the better stability.

#### FUTURE SCOPE

The proposed model can prove to be of great help in keeping the driver safe and free from the accidents caused due to side stand. It will be very efficient, effective and can be made very easily so it minimize the cause of accidents. It will also help in increasing the standards of the two wheeler automobile and also one of the great source to reduce the accident and one of the best safety feature can any two wheeler vehicles can have.

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