

Two wheeler side stand indicator

Poovendran C

¹(Mechanical Engineering, Sri Krishna Polytechnic College, Coimbatore, India, cpoovendran@gmail.com)

Abstract—Two wheelers are most easy for accidents due to their balancing in nature. One of the issues of motorbike accidents is that people forget to lift their side stands back in place on starting the bike. So here we propose an automated side stand slider lifting indication system that will indicate the person to make the side stand back in position when user starts his/her bike. In this system we use a reed switch as a sensor to find the position of the side stand and the a buzzer for indication of the position of side stand and a circuit designed using relay logic were as the ignition system starts only when the stand is lifted.

Keywords—Side stand; Reed switch; relaylogic.

1. INTRODUCTION

This concept is basically to improve the safety of the driver as like the system available in four wheelers like an indication of passenger and driver to wear the seat belt, this concept is to indicate the person to lift the side stand to its original position.

Because of this simple and basic technology many lives could be saved and the design and fabrication cost of this system is an affordable one and this system can be installed in existing two wheelers at very affordable cost.

2. SCOPE OF THE PROJECT

In future, it is applicable to all type of vehicle whether it is costly or cheaper bike. In future there is also some advanced modification is possible to like on the basis of the sensor. In this project, we operated mechanism of lifting off the stand in the very smooth way.

3. COMPONENTS

A. Side stand

The side stand is used for supporting a parked motorcycle. If the rider may forget to retract the side stands before riding, then the undistracted stand hitting the ground and affected the riders control during the turn.

Now a day's sensor are used for ensure that the stand is in released condition.



Fig. 1. Side stand

B. Reed switch

A reed switch is an electromagnetic switch used to control the flow of electricity in a circuit. They are made from two or more ferrous reeds encased within a small glass tube-like envelope, which become magnetized and move together or separate when a magnetic field is moved towards the switch.

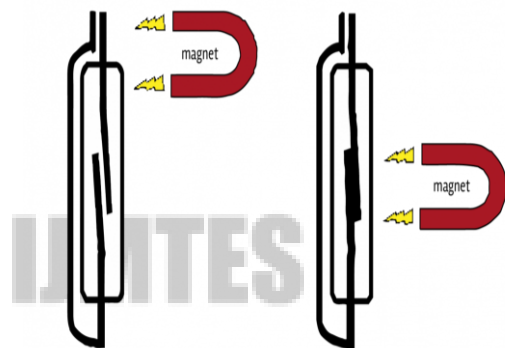


Fig. 2. Reed Switch

C. Relay

Relays are the switches which aim at closing and opening the circuits electronically as well as electromechanically. It controls the opening and closing of the circuit contacts of an electronic circuit.

When the relay contact is open (NO), the relay isn't energizing with the open contact.

It works on the principle of an electromagnetic attraction. When the circuit of the relay senses the fault current, it energises the electromagnetic field which produces the temporary magnetic field.

This magnetic field moves the relay armature for opening or closing the connections.

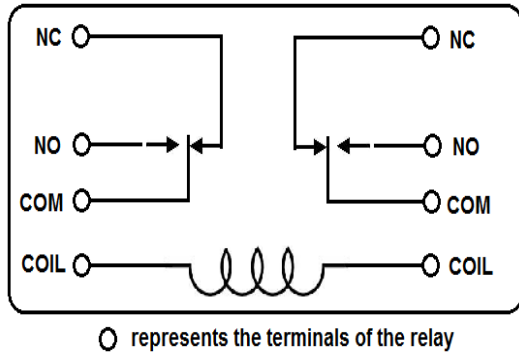


Fig. 3. Relay

D. Buzzer

A buzzer or beeper is an audio signalling device, which may be mechanical, electromechanical, or piezoelectric (piezo for short). Typical uses of buzzers and beepers include alarm devices, timers, and confirmation of user input such as a mouse click or keystroke.

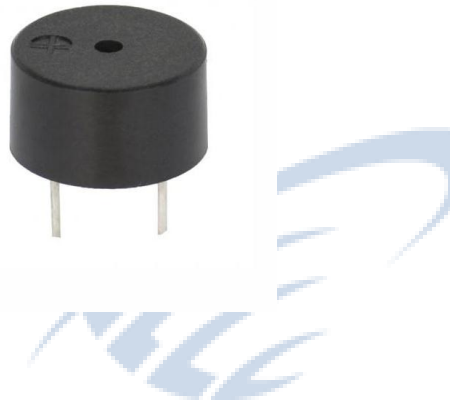


Fig. 4. Buzzer

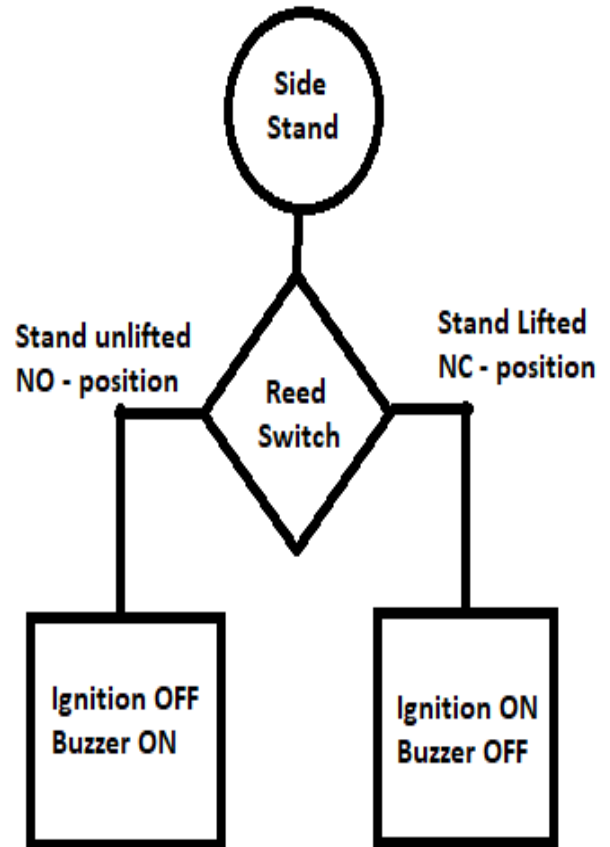
4. WORKING

The entire concept works on the basis of relay logic and the supply is taken from the primary battery source. The ignition supply will be taken direct and will be sent through the relay. The reed switch has two positions NO and NC contact when the Stand is in lifted position the Reed switch will be in NO – Normally Open contact and there won't be any supply sent to the relay to energize, at this position the relay will be in NC-Normally Closed condition were the supply from battery will be sent to the ignition system.

When the stand is in uplifted position the reed switch will be in closed condition were the supply is sent to the relay and the relay gets energized and the relay changes the position from Normally Closed to Normally open contact at this position the supply from battery will be cut-off at the relay and the ignition system will be in OFF condition.

At the mean while there will be a buzzer indication connected to the relay which indicates the driver to uplift the side stand once the stand is lifted the entire circuit changes the position and the ignition system will be in ON condition.

5. FLOW CHART



6. FABBRICATED PICTURE



7. CONCLUSION

This concept has designed and fabricated successfully it functioned well and the construction and working is very simple in future the scope of e-Concepts in automobile will play a vital role.

REFERENCES

[1] Vishal Srivastava, Tejasvi Gupta, Sourabh Kumar, Vinay Kumar, Javed Rafiq, Satish Kumar Dwivedi, "Automatic Side Stand", International Journal Of Engineering and Advanced Technology (IJEAT), ISSN: 2249-8958, Volume- 3, Issue-4, April 2014



- [2] Pintoo Prajapati, Vipul kr. Srivastav, Rahul kr. Yadav, Ramapukar Gon, Pintu Singh, Mr. Sandeep, "Sprocket Side Stand Retrieve System", ISSN: 2320-8163, Volume3, Issue-3, May-June-2015.
- [3] Sanjeev N K,"Bike Side Stand Unfolded Ride Lock Link", International Journal of Engineering Science and Research", ISSN: 2277-9655, Volume- 2, Issue-9, September-2013.
- [4] Bharaneedharan Muralidharan, Ranjeet Pokharel, "Automatic Side Stand Retrieve System", Indian Journal of Research (IJR), ISSN: 2250-1991, Volume 3, Issue 2, Feb 2014
- [5] Suresh. K, Afrin Hewitt, Mohammed Salman " International Journal of Advanced Research in Management", Architecture, Technology and Engineering (IJARMATE) Vol. 2,Special Issue 6, March 2016
- [6] B Sivashankar, Pradeep, K., & Asfaq Ahamed, N. (2019). Low Low cost Automation on headlamp control for vehicles. International Research Journal of Multidisciplinary Technovation.



IJMTES