International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 05 Issue: 07 | July - 2021 ISSN: 2582-3930

AUTOMATIC STAND SLIDER FOR TWO WHEELERS

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Abstract - As we know Two wheelers are most prone to accidents . One of the issues of two wheelers accidents is that people forget to slide their side stands back in place on starting the bike. So here we propose an automatic side stand slider system that will automatically slide the side stand back in position when user starts his/her bike.

In this system we made a model with a demo starter for bike and a frame used to hold starter, demo bike and side stand in position. Thus we have a fully automated side stand system for motor bikes.

1.INTRODUCTION *(Size 11, Times New roman)*

As is is clear from the components mentioned in the abstract that the project is based on a field of mechatronics

And is to be used in automobile sectors mainly in two wheelers , and as we know there is a big persentage of people who use two wheeler in day to day life and the number of accident is too a lot in the case of two wheelers ,so our this project could help to reduce the number of accident occur due to misposition of stand .so in our project the frame is used to mount bike upright using frame. The starter consists of a micro-developer circuit used to monitor the starter and then operate the stand sliding function. The stand has a motorized system used to operate the stand. The circuit monitors the starter, on starting the bike the side stand is operated by the motor using a shaft to slide from a vertical position to a horizontal position. On turning off the key in other direction to lock bike the system moves the motorized stand shaft in opposite direction so as to move the stand in a direction perpendicular to the bottom frame rod which rests the motor bike on side stand.

2. Body of Paper

The modern two wheelers do not require a kick-start to ignite their engines; rather they are installed with auto start or auto-ignition to perform this task as and when the key is turned on. For this installation to work, it is powered by a battery. We noticed and studied the working of the key ignition powered by the battery and used it to our advantage to automate the side-stand actuation.

The "Automatic Side-Stand Slider Assembly" is an assembly designed for minimizing the accidents caused due to forgetting to retrieve the side-stand when the rider starts the two-wheeler. It works such that, as soon as the vehicle rider switches on the ignition key of the two-wheeler the side-stand of the two- wheeler gets retrieved and when the ignition key is turned off the side-stand gets into upright position automatically.

I. MODELING AND ANALYSIS

After analysis of torque the required torque to raise the side stand is 6076 N-m. So after calculation of torque we determined the power required to raise the side stand which is 19.078 Watt. So we design automatic side stand for maximum frictional torque. Hence we used 12V DC geared motor which draws 2 amp current and 24W power.

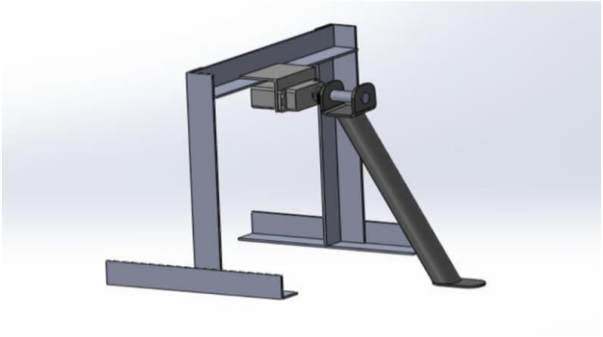

Fig -1: Block diagram

COMPONENT OF SYSTEM

1) Battery

2) DC motor

3) Switch

4)Micro-controller

5) Side stand

II. RESULTS AND DISCUSSION

The design and analysis of D.C motor and other component like micro-controller and switch occupies less space and this space is easily available into the mechanical frame of the motorcycle. The automatic stand is presently in use and quite successful. In future, it could be applicable to all type of vehicle whether it is costly or cheaper it dosen't matter. In future some advanced modification is also possible on the basis of the sensor. In this project, we operated mechanism of lifting off the stand in the very smooth way.

3. CONCLUSIONS

We have concluded by an observation that the side stand removal by mechanical arrangement is much better and efficient than the electronic based automatic side stand. The system is not dependent to the any factor like moisture and external power supply. The system can be maintained by a little maintenance

ACKNOWLEDGEMENT

Our group have got the help of a professor name Ms.R.R.Kapase who is also the guide and mentor for our this project ,she is the the lecturer in sharad institute of techonology polytechnic and have helped us to pull this project successfully

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