

## Fabrication Of Sprocket Side Stand Retrieving System

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### Abstract

As we see the world of automobile today as it the most important thing in our lives. We are basically depended on automobile for everything from morning to night, but as the use of automotive become regrous we see accidents. in two wheelers accidents happen a lot and one major reason is side stand. in hurry everyday me forget to lift it and accidents happen. Now what we are doing is making this problem correct we have made a sprocket side stand retrieving system which lifts the stand once the bike start moving.

**Keywords** – Chain Drive, Side Stand, Retrieve and Sprocket

### 1. INTRODUCTION

As the world develops its norms and we became more equipped in terms of everything, automobiles to is a major part of development specially two-wheelers because is in today fast and modern world the bikes is the most efficient source of travelling from a place to another but every Pros comes with cones due to the race of human civilization towards success many people tends to Hurry while riding and get involved into severe accident and majorly because they forget to live the sides stand so in this system the automatic side stand retrieving system with almost one third the cost of high and bikes system is discussed so that not only the expensive bikes and their rights Riders be safe but also the cheap bikes and their riders be safe too.

### 2. LITERATURE REVIEW

- **Pravin barapake, pushpakmanmode, prashantkhadakkar, Pratikdas, dhawalbante, saurabhdangore, saket bure.** The open stand can be really critical for the rider. in this paper the author have created a mechanism which consists of three sub mechanism mainly the spring which lifts up the stand automatically the second mechanism is locking system for locking and de-locking of stand and the last mechanism is locking system which operates the spring system simultaneously we observe that as this system is really efficient. It does not provide proper automation and sometimes the used mechanism does not work up to the par.
- **Sanjeev NK** has worked alone on this project and has worked on bike stand unfolded side lock link. In this particular system the lock link works in the contact of gear lever which there after indicates the rider the stand is not retracted. When the rider applies gear in the condition where the side stand is not retrieved the system prevents the upgrade on downgrades of gear. This is an efficient mechanism as we observe this is an efficient mechanism and is very easy to use.
- **Vishalshrivastava, tejasvigupta, sourabhkumar, vinaykumar, javedrafiq, satishkumardwivede** In their mechanism they have used a dc motor which is powered by a battery of two wheeler which is connected to worm gear mechanism for reduction of motor speed and to multiply the torque. Then with the sensor the motor is actuated the sensor is mounted on front wheel. as we observe the mechanism is complex and dependent too.

### 3. COMPONENTS

- (a) **Axle:** - A shudder or a shaft in fixed or rotating condition which passes through the centre of the wheel is called axle.

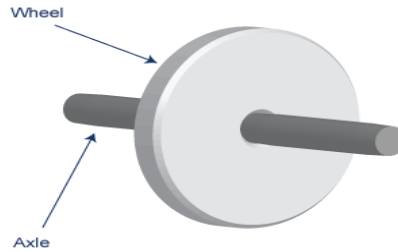


Figure 1 Axle

- (b) **Sprocket Pinion:** - A toothed wheel or also called cogs which basically helps in power transmission is called sprocket pinion.



Figure 2 Sprocket Pinion

- (c) **Lifting Lever:** As the name suggested a lifting lever is a device used to lift any amount of load with ease.

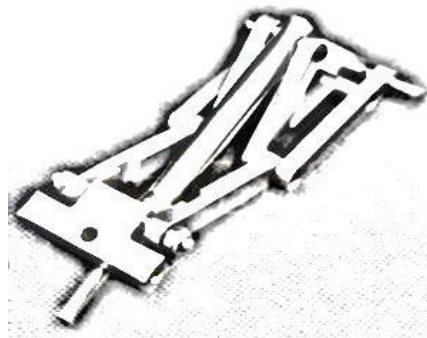


Figure 3 Lifting Lever

- (d) **Pushing Lever:** - It is a simple lever mechanism which is put or pivoted on a fixed point and helps in force transmitting.



Figure 4 Pushing Lever

#### 4. Specification of Components

Specifications are shown below:

**Table 1 Specifications of Sprocket**

<b>Material</b>	High Carbon Steel
<b>Pitch</b>	12.7mm
<b>Width</b>	30mm
<b>Teeth</b>	16
<b>Balls</b>	High carbon high chromium steel balls

**Table 2 Specification of axle**

<b>Material</b>	Mild Steel
<b>Shape</b>	Cylindrical rod
<b>Length</b>	50mm
<b>Diameter</b>	13mm
<b>Inner diameter of supporting axle</b>	15 mm
<b>Outer diameter of supporting axle</b>	17mm
<b>Length</b>	30mm
<b>Thickness</b>	3mm

**Table 3 Specification of lifting lever**

<b>Length of lever</b>	95mm
<b>Thickness</b>	10mm
<b>Tapered angle</b>	45deg
<b>Chamfered angle</b>	20deg
<b>Position</b>	Parallel to Sprocket
<b>Welded length</b>	13mm
<b>Material used</b>	Mild Steel

**Table 4 Specification of pushing lever**

<b>Material</b>	Mild Steel
<b>Length of lever</b>	180mm
<b>Thickness</b>	3mm
<b>Diameter of hole</b>	8mm
<b>Length</b>	30mm
<b>Thickness</b>	10mm
<b>Diameter of clamp</b>	28mm
<b>Diameter of stand</b>	25mm
<b>Pivoted angle</b>	55deg
<b>Bolt diameter</b>	8mm

#### 5. WORKING

This has a basic working principle to reduce the cost of the system. We have used the basic operation of a bike for this system. This system works accordingly with the functions of bike. The energy transfer from engine to tyre. The power comes from engine to the chain then with the help of sprocket the

power reaches the axle which indicates the lifting lever to work simultaneously with the pushing lever and the side stand is retrieved.

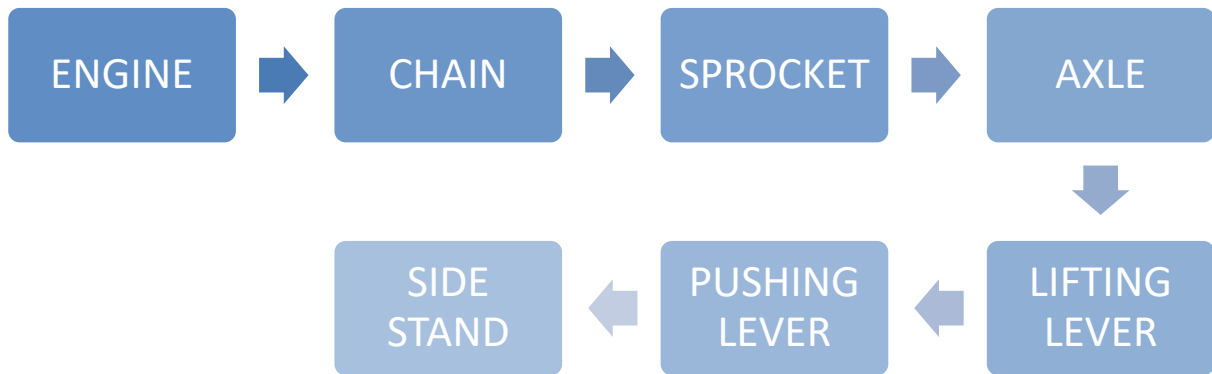


Figure 5 Power Flow for actuation of Side Stand

## 6. CONCLUSION

This system is definitely a very efficient system for avoiding accidents and safety of riders since this system setup which is compact and has no impact on how system performs in a bike. This can be used in all automotive. The sprocket side retrieving system plays a major role in safety measurement.

## REFERENCES

1. International journal of science, engineering and technology research (IJSETR), vol-5, Issue - 4, April 2016. ISSN:2278-7798
2. International journal of engineering science and research, ISSN:2277-9655, vol-2, Issue - 9, September-2013
3. International journal of engineering and advanced technology (IJEAT), ISSN:2249-8958, vol-3, issue-4, April 2014
4. SS Ratan, "Theory of Machines"
5. [www.designtools.com](http://www.designtools.com)
6. [www.bajajauto.com](http://www.bajajauto.com)

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