

## Review of Side Stand Retrieving System

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**Abstract**— in modern world the living status were developed and developing more equipped. The automobile takes a great part in the development, since it plays one of a major key in daily life. While automobile is concern two-wheeler i.e. (motorcycles and bike) it shows very important task because it saves the time of traveler by reaching the target place very faster .Motorcycles are generally provided with stand for supporting the motorcycles when they are not in use. A motorcycle side stand is a nearly universal method of allowing a motorcycle rider to park his vehicle unattended easily. If this stand is in the park position while the motorcycle is ridden through left turn a serious safety hazard exits. A new type side stand which is automatically retracting side stand is invented to prevent such type of accidents.

**Key words:** Side Stand Retrieving System, Side Stand Retrieving Mechanism

### I. INTRODUCTION

ECU methods are developing only in some bikes but it does not implemented in normal domestic bikes due to their cost. When we come across those mechanical engineering projects we could note some drawbacks like wear out of gears, making injuries in legs while actuating gears. Main disadvantage is it cannot use in all type of two-wheelers. So, in order to solve this we thought and designed “SPROCKET-SIDE STAND RETRIEVE SYSTEM” this system can be attached in all type of two-wheelers (mopeds, geared, non-geared, hand geared bikes).Based on the working principle of two-wheeler ( i.e the power is generated in the engine and it transmits power to the pinion and makes it to rotate. The pinion transmits power to the back wheel pinion and makes the vehicle to move). This is the basic principle followed in all type of two-wheelers, based on this “sprocket-side stand retrieve system” is designed because this system works by getting power from chain drive. This type of arrangement of sprocket assembly consists of four components, which is assembled as two set up which would be explained briefly in construction and working part of this paper.

### II. SOURCE FOR ACCIDENTS

While the two-wheelers is concerned accidents occurs due to riding the vehicle in high speed, ignores to use helmets, does not maintains the speed limit and forgets to lift the side stand while riding the vehicles. These are the major source for accidents. Lift the side stand causes huge accidents in rural areas partly in urban areas too, because all the other source of accident has preventive measure, but accident due to side stand do not have proper preventive measure. If you see the accident status 36% of the accidents occur due to this problem.

S. No	During the Year	Reason for the Accident	% of Accidents
1.	2002-2008	Forgetting to lift side-stand	36%

2.	2002-2008	Does not maintain speed limit	38%
3.	2002-2008	Does not obey traffic rules	22%
4.	2002-2008	Other problems	04%

Table 1: Accident records

### III. CONSTRUCTION

The whole construction of this system is simple and efficient. The arrangement and position of components makes the system to function. Each and every component has its own property and responsibility. The power gained from the chain drive is transmitted to the appropriate component without power loss. The systematic design of system is made in order to consume only very low amount of power initially for few seconds to retrieve the stand. The rate of power consumption does not occurs after retrieving the stand. Construction of the proposed “sprocket side stand retrieve system” consists of four major components.

### IV. SPECIFICATION OF COMPONENTS

#### A. Sprocket

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

Table 2: Sprocket

#### B. Axle

Material	Mild Steel
Shape	Cylindrical rod
Length	50mm
Diameter	13mm
Inner Diameter of Supporting Axle	15 mm
Outer Diameter of Supporting Axle	17mm
Length	30mm
Thickness	3mm

Table 3: Axle

#### C. Lifting Lever

Length of Lever	95mm
Thickness	10mm
Tapered Angle	45deg
Chamfered Angle	20deg
Position	Parallel to Sprocket
Welded Length	13mm
Material Used	Mild Steel

Table 4: Lifting Lever

#### D. Pushing Lever

Material	Mild Steel
Length of Lever	180mm
Thickness	3mm

Diameter of Hole	8mm
Length	30mm
Thickness	10mm
Diameter of Clamp	28mm
Diameter of Stand	25mm
Pivoted Angle	55deg
Bolt Diameter	8mm

Table 5: Pushing Lever

#### E. Spring

No. of Coil	32
Diameter of Coil	2mm
Diameter of Wire	15mm
Inner Diameter of Coil	12mm
Mean Coil Diameter	13.5mm
Type	Closed coil helical spring
Extension Length	17mm*2=34mm
Material	Stainless Steel

Table 6: Spring

#### V. WORKING PRINCIPLE

Sprocket side stand retrieve system retrieves the side stand automatically if the rider forgets to lift the side stand while moving the bike. It works based on the working principle of the two-wheelers. Every bikes transmit power from engine's pinion to the rear wheel i.e. Motion of the pinion makes the linear motion of the chain. That linear motion of the chain is absorbed by rear wheel's sprocket and converted into rotary motion. The rotary motion of the rear wheel makes the bikes to move. Based on this Sprocket side stand retrieve system is designed. These Sprocket is kept between the chain drive, it make the sprocket to rotate so, using the sprocket as the major component this system works. It gains the power from the chain and make specially designed component (lifting lever) to rotate. This types of rotation include engaged pushing lever to push the side stand to retrieve. When chain rotates anti-clockwise direction the inciter assembly's sprocket absorbs the power and rotates in clockwise direction. The working of "Sprocket-Side Stand Retrieve System is explained below in both condition.

#### VI. CONCLUSION

"Sprocket- side stand retrieve system" will definitely well retrieve system. Since the setup is compact it does not affect the performance of the vehicle. Because of the power is gate from chain drive. Definitely this system could be used in all type of two-wheelers (Tvs-XL, all front, back, hand geared) for retrieving the side stand, it will be the major system to control accidents due side stand problem and protect the careless rider. These system can be implemented in all types of bikes by changing small variation in size and cost of this system also very low and so it will not affect the economic level also. While compare to other system this Sprocket Side Stand Retrieve System will be the life saver.

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