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"Automatic Side Stand Retrieval Mechanism"

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ABSTRACT: In now a day two wheeler plays a important role in transport. Due to humans carelessness accident happening. In that most important in due to forget to hold this side stand in two wheeler.

In earlier days buzzer method in used or remedy in this case and next gear pedal method. But two method are not efficient. In now a day's people are most of them want simple operation

So we design fully automatic self side stand method. Its most efficient compare to other while we switch on the bike. By self start method is used start this vehicle. By using this method we can relieve this side stand from its position easily.

I. INTRODUCTION

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.

As far as two-wheelers are concerned they play a very important role because it saves the time of traveler by reaching the target place very fast. Although it saves the time it does not safe the life of rider if rider is careless, there are some sad facts on them such as accidents.

While the two-wheelers are concerned, accidents occur due to riding the vehicle in high speed, ignores to use helmets, does not maintain the speed limit and forgets to lift the side stand while riding the vehicles. These are the major causes source for accidents.

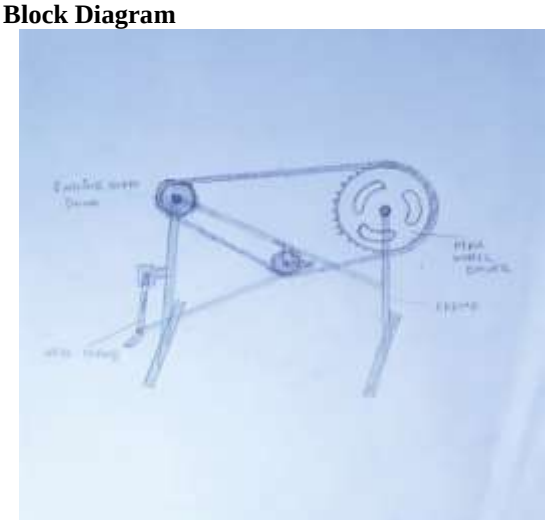
A kick stand is usually a piece of metal that flips down from the frame and makes contact with the ground. It's generally located in middle of the bike. A side stand style kick stand is a single leg that simply flips out to one side, usually the non-drive side, and the bike then leans against it.

Side stand can be mounted to the chain stays right behind the bottom bracket and seat stay near the rear hub. Side stand mounted right behind the bottom bracket can be bolted on, either clamping the chain stays in to the place as an integral part of the frame.

Forgetting to lift the side stand causes large number of accidents in rural areas partly in urban areas too, 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.

Automatic side stand will give the solution of the problem caused due to uplifting of stand before driving.

Block Diagram



Design and Fabrication
Method

Based on the working principle of two wheeler the power is generated in the engine and it transmits the power to the pinion and makes it to rotate. The pinion transmits power to the Rear wheel pinion and makes the vehicle to move.

This is the basic principle followed in all Type of two - wheelers, based Automatic - side stand retrieve system is designed.

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This system transmits power from engine rear wheel by chain drive. This system consists of four components, which would be explained briefly in construction and working part of this paper.

a. Objective of the method

- To find the method of automatic lifting of the side stand.
- To fabricate according to selected method.
-To study the future implementation on the system.

Design

a. Axle

Axle is the metallic rod made up of mild steel. It connects the pushing lever and sprocket centrally. The axle is welded centrally to the sprocket. The axle is hold by a holder.

The holder is welded with the frame. The holder is used to prevent vibration and to provide support to the axle. The holder has small metallic tube and a rectangular metal plate.

The metal plate is welded perpendicular to the tube.

The diameter of tube is slightly greater than the axle diameter about 2 to 4mm. This is for allowing the axle to rotate freely without friction with the tube. The other end of the metal plate is welded at the frame.

The whole metallic members of holder are of mild steel. The one end of axle is welded with sprocket and other end with pushing lever and thus the power is transmitted from sprocket to pushing lever.

b. Sprocket pinion

Sprocket is the major component of this system because it is power transmitting device. It gets power from the chain drive and makes this system to work.

It is the device which transmits the linear motion of meshing chain drive into rotary motion by means of the tooth found on it. The sprocket with ball bearings is said to be FREE WHEEL.

Rotate free this type of transmission.

Since it is a free wheel it allows the toothed part to free from central portion in a direction. Hence this type of sprocket is used as the rear power transmission device in by cycle that makes the wheel to rotate and also allows toothed area to rotate in anticlockwise when pedaled anticlockwise direction.

This action of sprocket allows attached pushing a lever to adjust freely automatically or manually when it does not engages with pushing lever properly.

Since the sprocket transmits the power from chain drive, it should have the capability to withstand the heavy loads of engine. So to withstand those effects on toothed area, it is made of high carbon steel.

c. Inciter Assembly-

Inciter assembly consists of axle, sprocket and pushing lever. The Sprocket is mounted on the center of the axle and the pushing lever is welded at the front side of axle.

d. Sliding Rod-

Sliding rod is a set - up. That is placed near by the sprocket pinion. That is engage with sprocket pinion, during the rest - condition. If the vehicle is moving that engage pull the side stand by using the clutch cable. The sliding rod set - up .

e. Clutch Cable

The clutch cable is stronger than other that 's connecting the sliding rod and side and. That connection is done by inner link without of the vehicle.

f. PUSHING LEVER-

Pushing lever is the third major component of the system. The pushing lever is the Rectangular rod made of MS - rod, which consists of two Pushing leaves which is mounted with the edge of axle. The Pushing leaves should be parallel to the sprocket pinion.

The Pushing lever is composed of two metal rods, where both are welded at either sides of the axle. The free ends of the Pushing leaves are tapered well. The ends are machined well for tapered shape for smooth engaging with pushing sliding setup. This smooth engagement leads proper retrieving of side - stand. This tapered surface makes the pushing lever as capable to withstand engine impact.

When stand is moved vertical in position, the sliding lever engages with pushing leaves. This may not possible in all time, since the lever may be any degree. So due to effect of free heel and tapered surface of the pushing lever can adjust itself.

Stand is a single leg that simply flips out to one side, usually the non-drive side, and the bike then leans against it.

Side stand can be mounted to the chain stays right behind the bottom bracket and seat stay near the rear hub. Side stand mounted right behind the bottom bracket can be bolted on, either clamping the chain stays in to the place as an integral part of the frame

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Working

Automatic Side stand retrieve system is up lift side stand of the two wheeler vehicle automatically by this mechanism system. If the rider forget to left the side stand while moving the bike.

Ever bike transmit power from engine pinion to rear wheels. The linear motion of the chain observed by rear wheel sprocket and convert rotary motion.

The rotary motion of the rear wheel makes the like to move based on this sprocket side stand retrieve system is design. The sliding setup and assembly are in engaged position in vehicle rest condition.

The sliding setup and assembly are engaged position in vehicle running condition. So the vehicle is move without power loss.

Advantages

- It's Cost is less.
- It's cost wise less than other method.
- This method is does not affect the engine vehicle
- It's easily does not affect the structure of a method.
- It's easily fitted in the vehicle than other method.
- It's light weight method.
- Electrical supply not required.

Applications

This method reduces the side stand accidents two wheelers. This method is also used for with gear and without gear of two wheelers.

Cost Estimation

Estimating is a main or particular special action for site a industry. It is the technique of calculation or the completing the quantities of various or on a particular work are object. In case of estimating we calculate the number of component that used in industry

S No.	Component	Approximate Cost (Rs)
1	Chain	70
2	Axels	20
3	Driver Gear	20
4	Driven Gear	50
5	Frame	200

Fabrication;-

S.N.	Component	Approximate Cost (Rs)
1	Welding cost	400
2	Colour	150
3	Lubrication	40

II. CONCLUSION;-

Automatic side retrieve system good for safety purpose. Since this setup is compact is does not affect the performance of the vehicle because of the power obtain from the chain drive.

This system could be used in all type of two vehicle example like TVS-XL, Hero Splendor plus, Bajaj Pulsar etc.

This system can be implemented in all types of bikes by changing small variation in size and cost of the system is also very low so it will not affect the economic level also, while compare to others system.

"Automatic Side Stand Retrieval system will be life Saver"

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