



Chain Tightening Mechanism For Two Wheelers

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ABSTRACT

Chain tightening in a conventional way requires more manual effort. It takes more time to tighten the chain. Our project deals with tightening the chain by use of external sprocket which acts as a external tightening agent. The external sprocket is adjusted in such a way the chain is tighten as per requirement.

KEYWORDS : chain tightening, sprocket, chain.

I. Problem Identification:

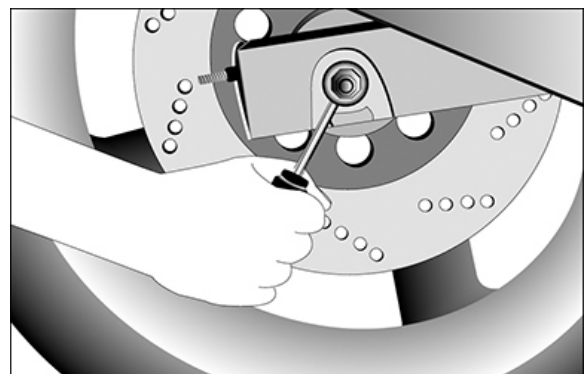
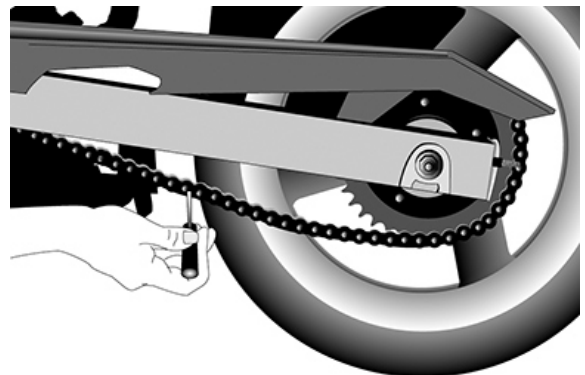


Currently in all chain driven two wheelers the mode of chain tighten is by aliening the wheel backwards by its original position. This will pull the chain & tighten it. The problem in this method is misalignment of wheel and only skilled person can work on this. Our project deals in such a way a person who has a no mechanical knowledge

can also tighten the chain without misalignment the wheel.

II. CHAIN TIGHTENING:

What is chain tightening?



1. When the chain get loosen in bike we have to tight the chain for the smooth reaction.
2. There having a some procedure to tight the chain.

These procedures are given below:

1. Place the bike on the center stand and check the chain tension.. Once on the center stand, your chain's tension may vary from when you first checked it because the bike's weight is now off the suspension[1]. Take this difference into account when adjusting the chain. If you adjust the chain to its proper tension on the center stand, it may become too tight when off the center stand, and a too-tight chain can break and shoot off your bike like a slinky missile[3].
2. Loosen the axle nut (or nuts, if there is more than one). You will have to remove a security pin on most bikes when undoing the axle nut[2].
3. Once the nut is loose, adjust the chain by adjusting some bolts on the very end of the swing arm, one on either side of the wheel. Usually, there will be two hex-heads on each bolt—an inner nut to move the axle, and an outer nut to lock the other in place when finished. Loosen the outer nuts and then carefully adjust the inner nuts, moving the nuts on either side of the wheel an equal amount.
4. When you have tightened your chain by the desired amount, tighten down the outside nuts. Retighten the axle nut, and insert a new security pin[4].

III CHAINS:



1. Chain drive is a way of transmitting mechanical power from one place to another. It is often used to convey power to the wheels of a vehicle[5], particularly bicycles and motorcycles. It is also used in a wide variety of machines besides vehicles.
2. Most often, the power is conveyed by a roller chain, known as the drive chain or transmission chain passing over a sprocket gear, with the teeth of the gear meshing with the holes in the links of the chain[6]. The gear is turned, and this pulls the chain putting mechanical force into the system. Another type of drive chain is the Morse chain, invented by the Morse Chain Company of Ithaca, New York, USA. This has inverted teeth[4].
3. Sometimes the power is output by simply rotating the chain, which can be used to lift or drag objects. In other situations, a second gear is placed and the power is recovered by attaching

shafts or hubs to this gear[5]. Though drive chains are often simple oval loops, they can also go around corners by placing more than two gears along the chain; gears that do not put power into the system or transmit it out are generally known as idler-wheels[3]. By varying the diameter of the input and output gears with respect to each other, the gear ratio can be altered, so that, for example, the pedals of a bicycle can spin all the way around more than once for every rotation of the gear that drives the wheels.

IV Working:



When the chain get loosen in motorcycles, our project will helpfully to tight the chain in easy way.

We are using an external sprocket and fix it as center. It has an up, down movement.

There is key way designed for the sprocket to change its position.

Through the key way the sprocket is pushed down and tightens the chain, which can be done by even any unskilled person, without disturbing the wheel alignment. This method can be used for motor cycles which are used for speed limit between 40 – 50 kmph. Beyond this speed while checking we found the chain slip from the sprocket teeth.



Top View



Front View

V Specifications:

	No. of Teeth	Diameter	Pitch
Driver sprocket	44	22	1.5
Driven sprocket	18	10	1.2
External sprocket	18	10	1.2

Cost Estimation:

Details	Cost in rupess
Diver sprocket	150
Driven sprocket	100
External sprocket	100
Chain	150
Frame	150
Total	600

Conclusion:

Any unskilled person can now tighten the chain of a motor bike without dismantling the wheel. This mechanism can be implemented to any motor cycles irrespective of the make and the cost of implementing the same will also be very less. As of now, the project is designed only for low speed bikes which are not driven beyond 50 kmph. This project can further be improved for trans-road bikes and high speed bikes. On a whole many problems by loosening of chain can be overcome by this simple method of chain tightening.

REFERENCES

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