



Innovative Science Research Foundation

Circulation may please be restricted
to prospective companies only

About ISRF

- Innovative Science Research Foundation (ISRF) is a partnership firm registered in India
- ISRF creates simple innovative solutions to improve day to day life
- ISRF has innovations ranging from simple kitchenware to aerospace products.
- We at ISRF generate and incubate ideas, claim IPR and share with prospective companies
- ISRF has more than 30 potential ideas which include new designs, products, business structure etc.
- The team ISRF consists of well qualified engineers, scientists, academicians and students to think out of the box.
- ISRF provides a complete package solution considering requirements, marketability and cost thus ensuring potential business growth of ISRF customers

Mechanism for Instantaneous Adjustment of Stand for Two Wheelers

Provisional Patent Application 3009/CHE/2015

Why Height Adjustable Side Stand Mechanism?

- Narrow, muddy, sandy, pot holes congestion in parking zones, Irregular road conditions leads to difficulty in parking two wheelers.
- This problems will be intensified in the following cases:
 - Heavy two wheelers (eg. Royal Enfield bikes etc)
 - Two wheelers without main stand (eg. Yamaha R15, KTM Duke etc)
 - Two wheelers driven by women



Why Height Adjustable Side Stand Mechanism?

- At low ground conditions, two wheeler will bank more leading to reduced stability and increased effort to handle the two wheeler.
- At high ground conditions, two wheeler bank angle will reduce which again will lead in reduced stability.



Normal Parking Ground
(Plain Surface)



Low Ground Parking
Surface



High Ground Parking
Surface

Why Height Adjustable Side Stand Mechanism?

Efforts with existing non-height adjustable side stands:

- ❖ Parking away from destination due to poor road conditions
- ❖ Searching for stone support
- ❖ Repeated attempts in muddy and sandy roads



Muddy

Stone



Pot hole

Irregular



Height Adjustable Side Stand Mechanism

“This invention introduces an instantaneous length or angle adjustable side stand mechanism for enhancing vehicle stability whose length or angle will increase or decrease depending on the ground parking condition”

“This invention also readily allows customization for modifications in two wheeler and user requirement”

“This can be an universal side stand for different two wheelers”

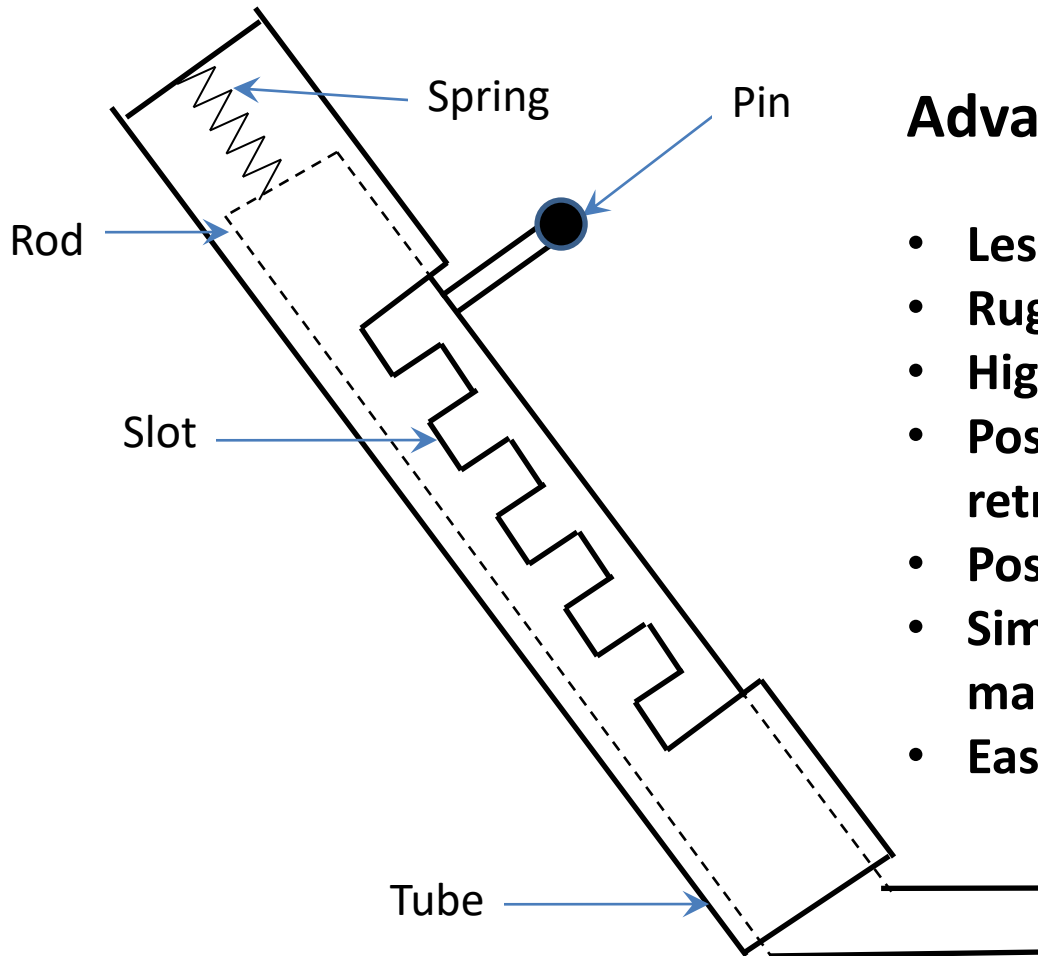
“Unique in market”

Possible Mechanisms

- Rack and wedge mechanism
- Threaded mechanisms
- Slotted telescope with pin
- Double angle mechanism
- Ratchet mechanisms
- Power assisted versions of the above mechanism with
Hydraulics and Electricals.

Slotted Telescope with Pin

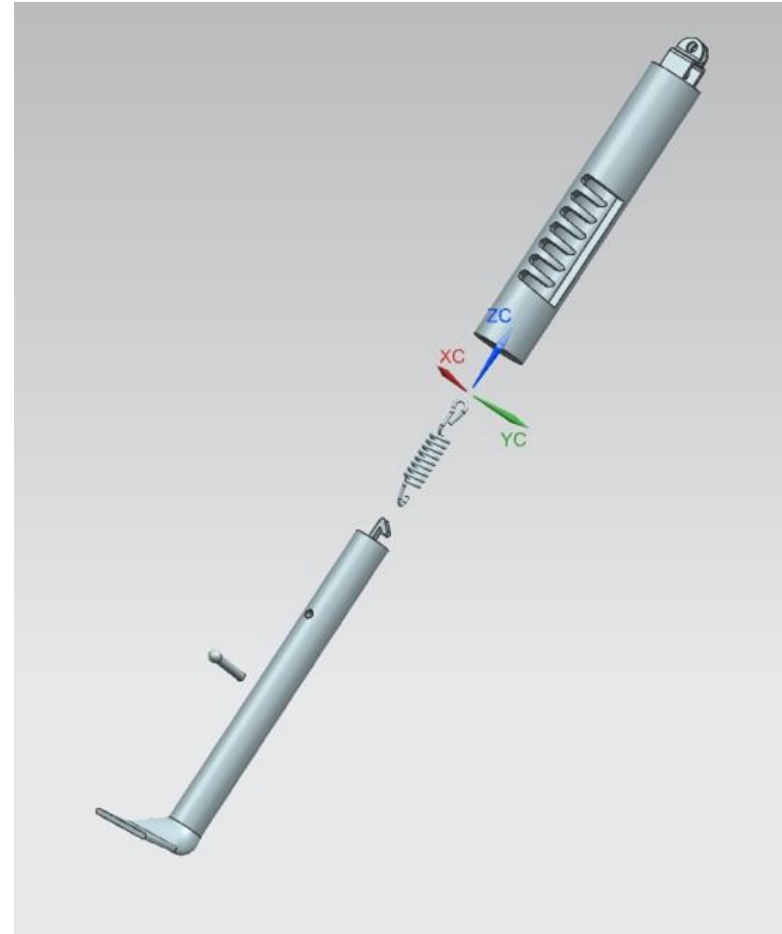
Stand height can be increased or reduced by moving the pin into the appropriate slot.



Advantages:

- Less part count
- Rugged construction
- Higher life
- Positive deployment and retraction
- Positive locking
- Simple mechanism no maintenance
- Easy operation

Slotted Telescope with Pin



Automatic Deployment of side-stand

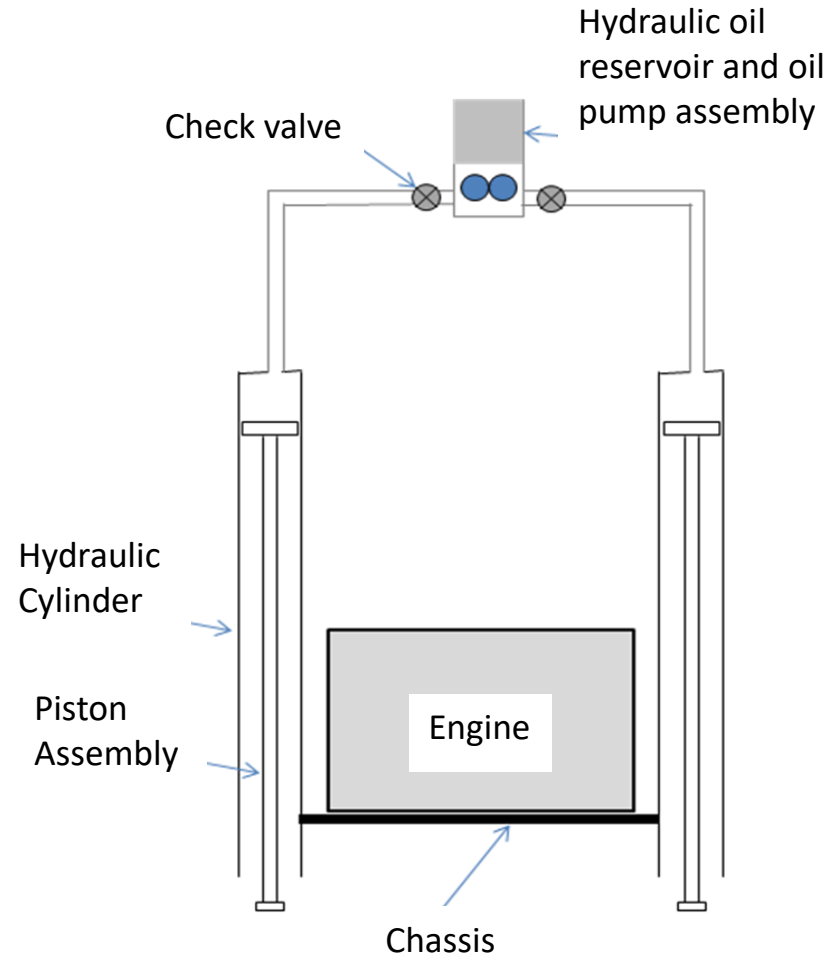
- **Deployment of side-stands by press of a button using solenoid**
- **Retraction by conventional method – hitting the side stand by leg**
- **Very convenient for ladies in particular**
- **Power supply required only during deployment**
- **Fail-safe Operation**
- **Mechanical/manual override possible**
- **Simple and easily realisable.**

Power Assisted Stand

Provisional Patent Application 3009/CHE/2015

Power Assisted Main stand

- The conventional center stand is replaced in this mechanism by two hydraulic cylinders with piston.
- The hydraulic cylinders receive pressurized fluid from hydraulic fluid reservoir pressurized by pump.
- Towards extension of stand, the hydraulic fluid is pumped into cylinders and the pistons extend downwards,
- Towards retracting the stand, the fluid in cylinders will be pumped back to the reservoir.
- The center stand deployment or retraction is governed by the hydraulic pump which may be driven by electrical motor.
- The motor operation switch can have three positions; viz. retracted position, parked position and lifted position.



Business Potential

- Necessity Driven innovation for parking comfort
- Implementation in short time to gain competitive advantage
- Huge Indian two wheeler market – More than 13 Million new vehicles registered in 2014.
- Retro fitment is possible on Existing two wheelers
- Mass production will reduce the product cost