



### Patent Search

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#### Abstract:

**ABSTRACT** NEXT-GEN AUTO-SLIDING SIDE STAND SYSTEM FOR TWO-WHEELED VEHICLES The invention provides a Next-Gen Auto-Sliding Side Stand System (100) for integrating motion and tilt sensors (102), a microcontroller unit (104), an electromechanical actuator (106), and an optional IoT connectivity module (108). The system vehicle motion and ground inclination, automatically retracting the stand when in motion and deploying it when stationary. The actuator (106) provides smooth, precise movement, while the MCU (104) processes sensor inputs. Optional IoT connectivity (108) notifies riders of stand status. The system (100) enhances safety, reduces accidents, ensures stability on uneven surfaces, minimizes wear, improves user convenience, and provides an intelligent, fully automated solution surpassing traditional side stands.

#### Complete Specification

Description: NEXT-GEN AUTO-SLIDING SIDE STAND SYSTEM FOR TWO-WHEELED VEHICLES

#### FIELD OF THE DISCLOSURE

[0001] The present invention relates to safety and convenience systems for two-wheeled vehicles, specifically an automated side stand system that extends and retracts the stand based on real-time vehicle status. The system integrates motion and tilt sensors, a microcontroller unit, an electromechanical actuator, and an optional IoT connectivity module to provide autonomous operation. This invention enhances rider safety, prevents accidents due to unrettracted stands, maintains vehicle stability on uneven surfaces, and offers IoT-based notifications, improving both convenience and reliability compared to traditional manual or spring-based side stands.

#### BACKGROUND

[0002] The subject matter discussed in the background section should not be assumed to be prior art merely as a result of its mention in the background section. Similarly, a problem mentioned in the background section or associated with the subject matter of the background section should not be assumed to have been previously recognized in the prior art. The subject matter in the background section merely represents different approaches, which in and of themselves may also correspond to implementations of the claimed technology.

[0003] Motorcycles and other two-wheeled vehicles rely on manually operated side stands to maintain stability when stationary. However, human error frequently causes riders to forget to retract the stand before motion, resulting in accidents, instability during turns, or damage to the vehicle. Additionally, uneven parking surfaces ex-

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