A Innovative Idea by Kovi Sai Ganesh and Katta Narasimha Prasad

"Pressure-Induced Footstep Power Generator for Biometric Security"

Gap Analysis :

The missing gap or lacuna in the market that the product aims to fulfill is the need for sustainable and self-sufficient power sources for biometric sensors. Currently, many biometric sensors rely on traditional battery power or wired connections for electricity. However, these methods are often limited by battery life, require frequent maintenance, or are not feasible in remote or harsh environments. The product seeks to address this gap by harnessing pressure-induced energy transduction to provide a renewable power source for biometric sensors.

Product Description:

This product operates by harnessing the pressure from a person stepping on a spring stand, which generates electricity through a mechanical system. The generated electricity is stored in a battery and used to power a fingerprint sensor. When the user steps on the stand, the stored electricity activates the fingerprint sensor, which then scans and verifies the user's fingerprint. This system ensures sustainable and on-demand power for biometric security.

Comparison:

Battery-Powered Biometric Sensors: These sensors rely on disposable or rechargeable batteries for power.

Wired Biometric Sensor Systems: These systems are powered through wired connections to a central power source.

Solar-Powered Biometric Sensors: Some biometric sensors utilize solar panels to generate electricity from sunlight.

Uniqueness:

- Self-sustainability: Harnesses ambient mechanical energy for biometric sensor power, eliminating the need for external power or frequent battery changes or solar panel

- Versatility: Adaptable pressure-induced energy transduction fits indoor, outdoor, and wearable scenarios.

- Environmental friendliness: Reduces waste and carbon footprint by eliminating disposable batteries and reducing reliance on traditional power sources.