ESR FOOT PROSTHESIS

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The invention regards a foot prosthesis with non-linear stiffness and high rotation of the ankle, equipped with a mechanism able to vary the stiffness manually or automatically, allowing to adapt to the specific tasks of use required by the user.

Protection: Italy, with the possibility to extend internationally

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INVENTION

Prosthesis with variable stiffness are already existing, with different configurations. A prosthetic foot exploits the variation of the position of a pivot on which the elastic element in composite material; the elastic element works flexurally and the variation of the pivot's position generate a variation of the bending behavior of the elastic element, increasing or decreasing the stiffness of the entire system.
The proposed invention is applied to a foot prosthesis originally passive, composed by three elastic elements (blades) in composite materials and by two rigid elements. The device allows the translational motion of some components in order to modify (increase or decrease) the system stiffness.The translational motion occurs to a ballscrew system and it can occur manually, therefore passively, or actively by means of an actuator.

ADVANTAGES

- Stiffness variation as a function of the activity performed
- Simplified design and production process, with lower environmental impact
- Customizable prosthesis (usable for weight ranges)

APPLICATIONS

- Foot prosthesis

CONTACTS

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