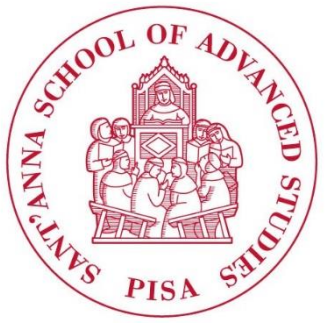


WEARABLE ASSISTED- WALKING DEVICE



University of Colorado **Boulder**



INVENTORS: Ettore Etenzi,
Alena Grabowsky,
Vito Monaco,
Silvestro Micera

CO-OWNERS: University of Colorado Boulder

PATENT STATUS: Granted

N° PRIORITY: 102017000084346

DATE OF PRIORITY: 16/10/2019

PUBLISHED AS: EP, USA

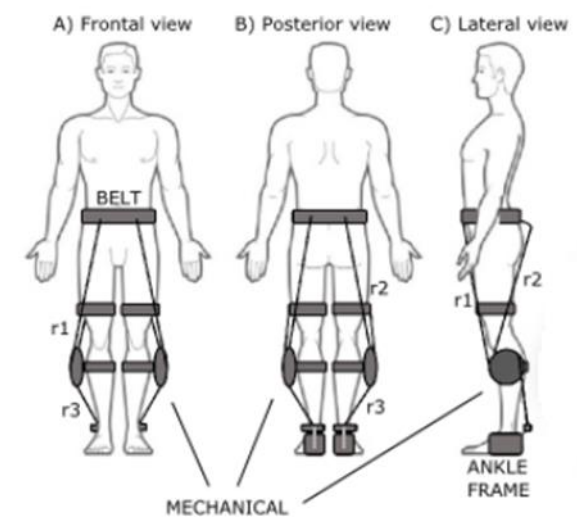
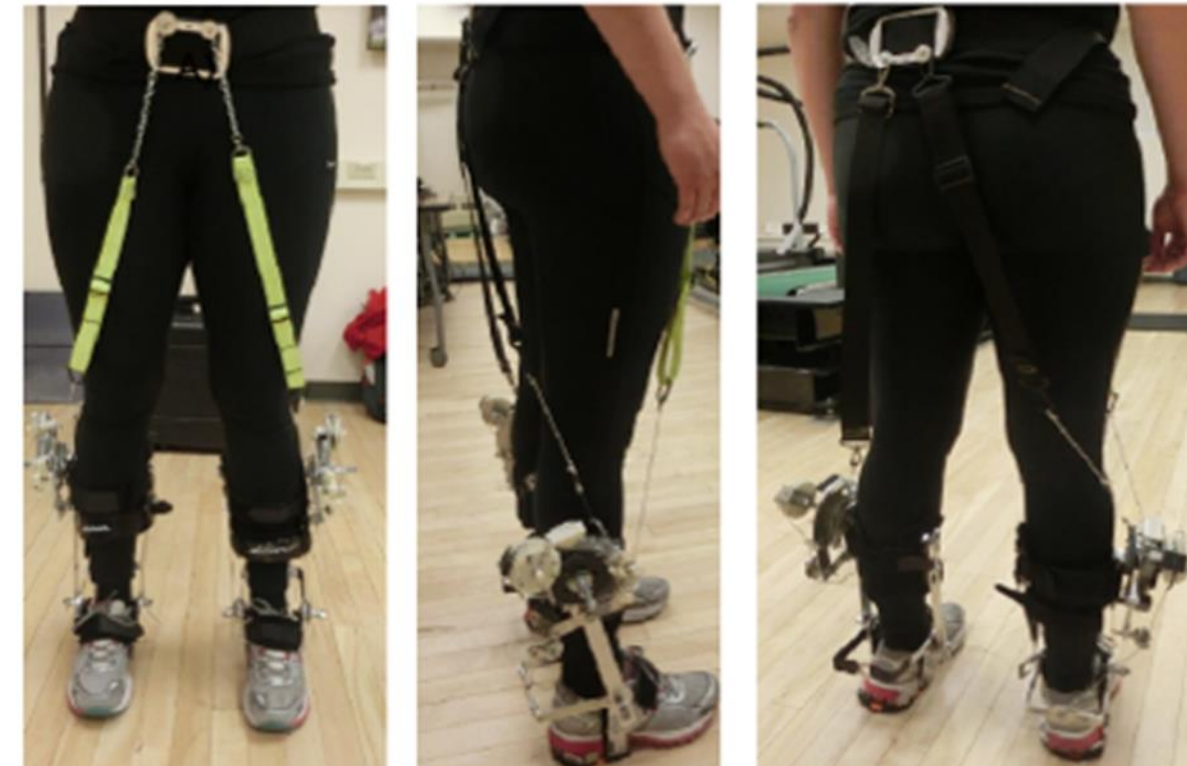
Invention



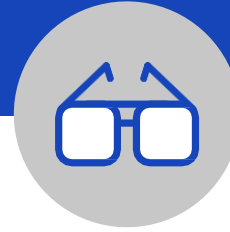
Walking is a periodic sequence of muscle activations generating and absorbing mechanical energy.

The human body generates, absorbs and dissipates energy during walking. In particular, in correspondence with the knee joint extension, an important energy dissipation event occurs. In this phase, the hamstrings act as a brake to slow the foot down. Thanks to a system of ropes and ratchets, the proposed device is able to reduce the speed of the foot and store its energy in a group of springs. In this way, the body can freely continue its movements without further interaction with the exoskeleton. Only at the next detachment of the same leg, these springs will release the accumulated energy to help the ankle in plantar flexion. This results in a reduction in fatigue and in the metabolic cost of walking. This wearable device is entirely rope controlled and requires no electronics or motors or mechanical drive.

Drawings & pictures



Industrial Applications



- Military applications;
- Medical and service robotics;
- Physical therapy / rehabilitation;
- Elderly populations and assisted life.

Possible
developments



The research group is open for discussions with industrial partners interested in licensing the technology covered by this patent.

For more information:



Scuola Superiore Sant'Anna – Technology Transfer Office

Headquarters: Piazza Martiri della Libertà 33, 56127, Pisa

Web site: www.santannapisa.it

E-mail: uvr@santannapisa.it

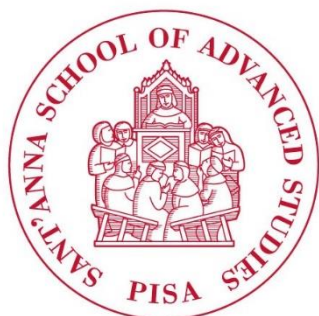
For more information:



Ufficio Regionale di Trasferimento Tecnologico

Headquarters: Via Luigi Carlo Farini, 8 50121 Firenze (FI)

E-mail: urtt@regione.toscana.it



University of Colorado **Boulder**

REGIONE
TOSCANA

