

New orthotic glove designed to amplify hand strength

An actuated hand exoskeleton useful for old or disabled people who have not enough strength in their hands has been patented and developed. This new technology allows amplification of hand-grasping force. Partners to further develop the device and/or to establish commercial agreements along with technical cooperation are sought.

The Challenge

Partial hand disability represents a serious problem for many people, who although they have mobility and sensitivity in their hands, are not strong enough to hold a simple mug. For example, people with diseases, elderly or people who have suffered a traffic accident. In order to improve their quality of life, the design of devices such as the exoskeleton presented is so important. Currently, there are some similar devices nevertheless most of them need external energy and sophisticated drive mechanisms, complicating their use and maintenance.

The Technology

The innovative nature of this actuated hand exoskeleton is that it is designed in such a way that does not require any external energy for its operation, as it works only by the movement of the person's wrist. This new device is useful for people that have mobility and sensitivity in their fingertips and consists of an exoskeleton that creates an external structure which is able to support the strength that is needed to hold an object.

The exoskeleton consists of a glove base with a rocker, support, and beams. This system, with a single movement of the wrist, creates a kinematic movement of fingers that permits the person to grasp any object. An aesthetic glove covers the exoskeleton.

Innovative advantages

- Amplification of grasping force.
- Any external power (neither batteries nor electromyography) is required for its operation, as it operates with minimal movement of the wrist.
- Easy to manufacture and cost competitive as you can implement it without any complex mechanical components.
- The patient's quality of life is highly improved, as they are able to manage their daily activities easily.

Current stage of development

Prototype available ready for testing on patients.

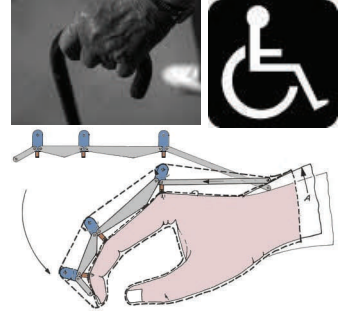
Applications and Target Market

This technology could be of interest for companies devoted to manufacturing orthopedic devices.

Reference number

MKT2010/0014_H

New smart technology for aging and disability.



Easy, light and power-free hand exoskeleton for grasping force amplification.

Easy to manufacture and cost competitive.

Business Opportunity
Technology available for licensing with technical cooperation

Patent Status
PCT application

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