

# SEMI-PASSIVE ASSISTIVE DEVICES FOR THE UPPER LIMBS

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## PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,729,610	08/04/2020	2015-106

## BRIEF DESCRIPTION

Assistive exoskeletons are designed to enable humans to perform tasks otherwise beyond their capacities. One area of particular interest is the upper limb. Existing devices for upper limb assistance are powered by active or passive methods. Active devices use motors, but require complicated controllers and consistent power to perform tasks. Passive devices do not require power, but often have fixed parameters meaning that they are not especially versatile. Moreover, the devices that currently exist tend to be bulky, costly, and inefficient.

To address those deficiencies, UC Berkeley researchers have developed a semi-passive assistive device for upper limbs. The Berkeley device is lightweight, reduces user fatigue, and increases load carrying capacity. The device is highly versatile, and is able to increase the mobility and functionality of a user's arm.

## SUGGESTED USES

- » Assistance in industrial and rehabilitative settings
- » Increased independence for individuals with physical limitations
- » Disaster relief and first response teams

## ADVANTAGES

- » Semi-passive and extremely efficient
- » Low or no power consumption during long periods of usage
- » Lightweight and compact
- » Simple to take on and off
- » Reduced risk of atrophy

## RELATED MATERIALS

## CONTACT

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## INVENTORS

- » Bajcsy, Ruzena

## OTHER INFORMATION

### CATEGORIZED AS

- » **Medical**
  - » Disease: Musculoskeletal Disorders
  - » Rehabilitation
- » **Transportation**
  - » Personal
- » **Engineering**
  - » Robotics and Automation

### RELATED CASES

2015-106-0

