

Title (en)

A MOVEMENT ASSISTIVE DEVICE FOR THE ELBOW JOINT

Title (de)

BEWEGUNGSUNTERSTÜTZUNGSVORRICHTUNG FÜR DAS ELLENBOGENGELENK

Title (fr)

DISPOSITIF D'AIDE AU MOUVEMENT POUR ARTICULATION DU COUDE

Publication

EP 4144331 B1 20240320 (EN)

Application

EP 22194044 A 20220906

Priority

IT 202100023081 A 20210907

Abstract (en)

[origin: EP4144331A1] A movement assistive device (1) for the elbow joint, comprising: an actuation unit (20) provided with a motor (2); at least two arm garments (3,4,3',4') removably attachable to an arm of the wearer; at least one transmission cable (5, 5'); wherein the actuation unit (20) comprises: at least one elastic element (6) coupled with the motor (2) and configured to generate, under tension, an elastic force, the at least one transmission cable (5, 5') connecting the at least one elastic element (6) to the at least two arm garments (3,4,3',4') to apply the assistive torque to the wearer arm; at least one cam-spool mechanism (7,7') configured to elongate the at least one elastic element (6) as a function of human elbow torque/angle profile, wherein each cam-spool mechanism (7,7') comprises: a cam curve (8) with rotatable camshaft (9) to move a respective transmission cable (5, 5') around the cam curve (8); a roller (10) and a spool (11) provided with a slot (12), the spool (11) being coupled with the camshaft (9) through a roller (10) that can slide inside the slot (12); wherein the rotation axis of the camshaft (9) is decoupled and offset from the rotation axis of the spool (11).

IPC 8 full level

A61H 1/02 (2006.01)

CPC (source: EP)

A61H 1/0277 (2013.01); **A61H 2201/1215** (2013.01); **A61H 2201/1418** (2013.01); **A61H 2201/1614** (2013.01); **A61H 2201/1635** (2013.01); **A61H 2201/165** (2013.01)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 4144331 A1 20230308; EP 4144331 B1 20240320; EP 4144331 C0 20240320; IT 202100023081 A1 20230307

DOCDB simple family (application)

EP 22194044 A 20220906; IT 202100023081 A 20210907