

Title (en)

INPUT DEVICE IN ACCORDANCE WITH THE PARALLEL KINEMATIC PRINCIPLE AND WITH HAPTIC FEEDBACK

Title (de)

EINGABEGERÄT NACH PARALLELKINEMATISCHEM PRINZIP UND MIT HAPTISCHER RÜCKKOPPLUNG

Title (fr)

DISPOSITIF D'ENTREE SELON LE PRINCIPE CINEMATIQUE PARALLELE ET A RETOUR HAPTIQUE

Publication

**EP 1440363 B1 20081217 (DE)**

Application

**EP 02787352 A 20021029**

Priority

- DE 0204037 W 20021029
- DE 10152779 A 20011029

Abstract (en)

[origin: WO03038541A2] The invention concerns an input device operating according to the parallel kinematic principle and with haptic feedback, in particular for medical teleoperation with instruments. The inventive input device comprises a frame (10), as well as a support element (30) mobile relative to the frame (10), and including a grip member (70), the frame (10) and the support element (30) being coupled with several linear force-sensitive actuators (20, 21) articulated on both sides to the frame and to the support element. The invention is characterized in that the support element (30) includes a grip member (71) mobile relative to the first grip member (70) and at least one grip member (70, 71) is coupled with a force-sensitive grip actuator (90). According to a preferred embodiment of the invention, six linear actuators (20, 21) form two interlaced tripods whereof the tips are articulated to the support element (30) and are further mobile relative to each other in the direction of the support element, such that the grip actuator (90) is replaced by all six linear actuators (20, 21). In another embodiment, an additional degree of rotational freedom is provided by means of a step motor (80).

IPC 8 full level

**G06F 1/00** (2006.01); **G05G 9/047** (2006.01)

CPC (source: EP US)

**G05G 9/04737** (2013.01 - EP US); **G05G 2009/04766** (2013.01 - EP US)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

DOCDB simple family (publication)

**WO 03038541 A2 20030508**; **WO 03038541 A3 20031030**; AT E418096 T1 20090115; AU 2002351663 A1 20030512; DE 10250496 A1 20030605; DE 10295032 D2 20040923; DE 50213135 D1 20090129; EP 1440363 A2 20040728; EP 1440363 B1 20081217; US 2005156877 A1 20050721; US 7356448 B2 20080408

DOCDB simple family (application)

**DE 0204037 W 20021029**; AT 02787352 T 20021029; AU 2002351663 A 20021029; DE 10250496 A 20021029; DE 10295032 T 20021029; DE 50213135 T 20021029; EP 02787352 A 20021029; US 91078204 A 20040802