

Title (en)

SKI POLE WITH INTEGRATED SENSORS FOR FORCE AND POWER MEASUREMENT

Title (de)

SKISTOCK MIT INTEGRIERTEN SENSOREN FÜR KRAFT- UND LEISTUNGSMESSUNG

Title (fr)

BÂTON DE SKI AVEC CAPTEURS INTÉGRÉS POUR LA MESURE DE FORCE ET DE PUISSANCE

Publication

**EP 3416559 A1 20181226 (EN)**

Application

**EP 17752611 A 20170217**

Priority

- US 201662297460 P 20160219
- CA 2017050209 W 20170217

Abstract (en)

[origin: WO2017139897A1] The present disclosure discloses a ski pole having a set of integrated sensors that support the calculation of force expended by a skier. The sensors include a computer processor embedded in the ski pole handle and a force sensor, connected to the processor, for sensing the axial force which is mounted on the ski. In order to calculate the force applied tangentially by the skier in the direction parallel to the surface over which the skier is moving, the angle that the pole section is at during applied force needs to be detected and this may be achieved with various sensors, one non-limiting example being IMU sensors integrated in the computer processor in the handle. In order to calculate the power output by the skier, there is included a sensor for determining speed (e.g. a GPS of a mobile device wirelessly connected to the ski pole sensors and hardware), and sensors suitable for determining the terrain slope. In one example embodiment, the terrain slope is determined by assuming a constant angle of the ski pole relative to the ground, and using the change in orientation of the ski pole to determine and map the corresponding change in terrain. The known speed, terrain slope, orientation of the ski pole relative to gravity, and axial pole force may be employed to compute time- dependent power.

IPC 8 full level

**A61B 5/22** (2006.01); **A63B 71/06** (2006.01); **A63C 11/22** (2006.01); **G01L 1/04** (2006.01); **G01L 1/26** (2006.01); **G01L 5/00** (2006.01); **G01S 19/19** (2010.01); **G01S 19/52** (2010.01)

CPC (source: EP)

**A61B 5/1121** (2013.01); **A61B 5/22** (2013.01); **A61B 5/221** (2013.01); **A61B 5/6825** (2013.01); **A61B 5/6895** (2013.01); **A61B 5/7246** (2013.01); **G01L 5/0095** (2013.01); **G01S 19/19** (2013.01); **G01S 19/52** (2013.01); **A61B 2503/10** (2013.01); **A61B 2562/0219** (2013.01); **A63C 11/224** (2013.01); **A63C 2203/12** (2013.01); **A63C 2203/18** (2013.01); **A63C 2203/22** (2013.01); **A63C 2203/24** (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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**WO 2017139897 A1 20170824**; CA 3014959 A1 20170824; EP 3416559 A1 20181226; EP 3416559 A4 20190925

DOCDB simple family (application)

**CA 2017050209 W 20170217**; CA 3014959 A 20170217; EP 17752611 A 20170217