

Title (en)

LONG-RANGE OPTICAL DEVICE HAVING IMAGE STABILIZATION

Title (de)

FERNOPTISCHE VORRICHTUNG MIT BILDSTABILISIERUNG

Title (fr)

DISPOSITIF TÉLÉOPTIQUE À STABILISATION D'IMAGE

Publication

**EP 2802930 A1 20141119 (DE)**

Application

**EP 13700037 A 20130108**

Priority

- DE 102012000857 A 20120113
- US 201261586321 P 20120113
- EP 2013050175 W 20130108

Abstract (en)

[origin: WO2013104593A1] The invention relates to a long-range optical device (10) having at least one optical channel (12) which has a housing (14) and an assembly of optical elements (16, 18, 20), wherein at least one of the optical elements (16, 18, 20) is movable relative to the housing (14) for image stabilization during disturbing movements of the housing (14), and a first passive, inertia-based stabilization system (26) for the at least one movable optical element (18) which generates a first restoring force upon excursion of the at least one optical element (18) relative to the housing (14), proportionally to the excursion, and generates a second restoring force, proportionally to the excursion velocity, the first stabilization system (26) being designed for image stabilization during disturbing movements in a first frequency range. The long-range optical device (10) has at least one second stabilization system (28) which is coupled to the first stabilization system (26) and is designed for image stabilization against disturbing movements in at least one second frequency range, wherein the first and the at least one second frequency range are at least partially different.

IPC 8 full level

**G02B 27/64** (2006.01)

CPC (source: EP US)

**G02B 23/18** (2013.01 - US); **G02B 27/644** (2013.01 - EP US); **G02B 27/646** (2013.01 - EP US); **G02B 23/02** (2013.01 - EP US)

Citation (search report)

See references of WO 2013104593A1

Citation (examination)

- US 2829557 A 19580408 - HOMER JENSEN
- US 2688456 A 19540907 - HOMER JENSEN
- DE 2336867 A1 19750206 - OPTICAL RES & DEV CORP
- DE 2244694 A1 19730329 - DYNASCIENCE CORP
- US 6369946 B1 20020409 - ISHIJIMA TOSHIHISA [JP], et al

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)

**WO 2013104593 A1 20130718**; DE 102012000857 A1 20130718; DE 102012000857 B4 20210805; EP 2802930 A1 20141119;  
US 2014368911 A1 20141218; US 9618769 B2 20170411

DOCDB simple family (application)

**EP 2013050175 W 20130108**; DE 102012000857 A 20120113; EP 13700037 A 20130108; US 201414330665 A 20140714