

Title (en)

PROPORTIONAL VALVE FOR CONTROLLING A GASEOUS MEDIUM AND FUEL CELL ARRANGEMENT

Title (de)

PROPORTIONALVENTIL ZUM STEUERN EINES GASFÖRMIGEN MEDIUMS UND BRENNSTOFFZELLENANORDNUNG

Title (fr)

SOUPAPE PROPORTIONNELLE POUR LA COMMANDE D'UN MILIEU GAZEUX ET AGENCEMENT DE PILES À COMBUSTIBLE

Publication

EP 3642517 A1 20200429 (DE)

Application

EP 18722427 A 20180425

Priority

- DE 102017210351 A 20170621
- EP 2018060581 W 20180425

Abstract (en)

[origin: WO2018233912A1] The invention relates to a proportional valve (100) for controlling a gaseous medium, in particular hydrogen, comprising a movable closure element (301) and a first spring (302) arranged on the closure element (301), the first spring (302) being configured in order to exert a first spring force on the closure element (301) in a closing direction, and an actuator (200), the actuator (200) being configured in order to provide an adjustable force in the opposite direction to the first spring force, the closure element (301) being configured in order to close and to open a through opening (102) by the movement, the proportional valve (100) comprising a closure element (305) which is arranged at an end of the closure element (301) remote from the first spring (302), and a second spring (304), the second spring (304) being arranged on the closure element (305) and the second spring (304) being configured in order to exert a second spring force on the closure element (305), the second spring force counteracting the first spring force.

IPC 8 full level

F16K 1/36 (2006.01); **F16K 31/06** (2006.01)

CPC (source: EP US)

F16K 1/36 (2013.01 - EP US); **F16K 1/42** (2013.01 - US); **F16K 31/0655** (2013.01 - EP US); **H01M 8/04089** (2013.01 - EP US); **H01M 8/04201** (2013.01 - EP); **Y02E 60/50** (2013.01 - EP)

Citation (search report)

See references of WO 2018233912A1

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)

DE 102017210351 A1 20181227; CN 110770485 A 20200207; CN 110770485 B 20230110; EP 3642517 A1 20200429; JP 2020522657 A 20200730; JP 7149966 B2 20221007; US 11268626 B2 20220308; US 2021148484 A1 20210520; WO 2018233912 A1 20181227

DOCDB simple family (application)

DE 102017210351 A 20170621; CN 201880041907 A 20180425; EP 18722427 A 20180425; EP 2018060581 W 20180425; JP 2019568006 A 20180425; US 201816625742 A 20180425