

Title (en)

Heating device with multifunctional protection agent

Title (de)

Heizvorrichtung mit Multifunktionsschutzmittel

Title (fr)

Dispositif de chauffage doté d'un moyen de protection multifonction

Publication

EP 2073602 A3 20091111 (DE)

Application

EP 08021639 A 20081212

Priority

DE 102007061837 A 20071220

Abstract (en)

[origin: DE102007061837B3] The heating unit (1) has a multi-function protection unit (6) that prevents scaling and corrosion of a heating element (2) e.g. electric cartridge heater, and is geometrically modified in relation to the element. The unit is formed as an expansion element, so that shape of the protection unit is changed corresponding to temperature, based on deformation, elongation, rotation, extension and/or contraction of the element (2). The expansion element encloses the element (2), and has a heat conductivity increasing material (9) e.g. graphite, and an infill (8) with a material e.g. paraffin.

IPC 8 full level

H05B 3/78 (2006.01); **F24H 1/10** (2006.01); **F24H 1/20** (2006.01)

CPC (source: EP)

H05B 3/78 (2013.01); **F24H 1/103** (2013.01); **F24H 1/142** (2013.01); **F24H 1/202** (2013.01)

Citation (search report)

- [X] EP 1156704 A1 20011121 - ACOVA [FR]
- [X] EP 0949846 A1 19991013 - ACOVA [FR]
- [X] WO 02101303 A1 20021219 - CORONA LOPEZ ROMULO [MX]
- [X] DE 20004518 U1 20000525 - TUERK & HILLINGER GMBH [DE]
- [X] KR 20030073283 A 20030919 - KIM YONG OK [KR]

Designated contracting state (EPC)

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

Designated extension state (EPC)

AL BA MK RS

DOCDB simple family (publication)

DE 102007061837 B3 20090129; EP 2073602 A2 20090624; EP 2073602 A3 20091111

DOCDB simple family (application)

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