

Title (en)

A WASHING MACHINE WITH IMPROVED LONGTERM RELIABILITY AND SAFETY

Title (de)

WASCHMASCHINE MIT VERBESSERTER LANGZEITZUVERLÄSSIGKEIT UND SICHERHEIT

Title (fr)

MACHINE À LAVER AYANT UNE MEILLEURE SÉCURITÉ ET UNE MEILLEURE FIABILITÉ À LONG TERME

Publication

**EP 3238599 A1 20171101 (EN)**

Application

**EP 17167558 A 20170421**

Priority

EP 2016059327 W 20160426

Abstract (en)

The invention relates to a heating unit (8) for a washing machine (1) comprising a casing (22), a pump (20) for pumping a washing liquid through the casing (22), a fuse (36), a thermally conductive element (30) for transferring heat to the washing liquid in the casing (22) and a temperature regulator (34) capable of supplying energy in the form of heat to the thermally conductive element (30), if a target temperature of the thermally conductive element (30) is below a first temperature limit. The fuse (36) and the temperature regulator (34) are arranged thermally conductive with the thermally conductive element (30), the fuse (36) being electrically connected to the temperature regulator (34) and configured to trigger and stop the energy supply to the temperature regulator (34), if a trigger temperature of the fuse (36) is reached by the thermally conductive element (30). The heating unit (8) comprises an electronic temperature sensing device (38) being electrically connected to the fuse (36) and the temperature regulator (34), said electronic temperature sensing device (38) being arranged thermally conductive with the thermally conductive element (30) and to detect and record the temperature of the thermally conductive element (30) over time in order to provide information about the operating condition of the washing machine.

IPC 8 full level

**A47L 15/00** (2006.01); **A47L 15/42** (2006.01); **D06F 39/04** (2006.01)

CPC (source: EP US)

**A47L 15/0049** (2013.01 - EP US); **A47L 15/4287** (2013.01 - EP); **D06F 39/04** (2013.01 - EP US); **A47L 15/4225** (2013.01 - EP); **A47L 15/4285** (2013.01 - EP); **A47L 2401/12** (2013.01 - EP); **A47L 2501/06** (2013.01 - EP); **D06F 33/30** (2020.02 - EP US); **D06F 37/42** (2013.01 - EP US); **D06F 39/085** (2013.01 - EP US); **D06F 2103/16** (2020.02 - EP US); **D06F 2105/10** (2020.02 - EP US); **D06F 2105/58** (2020.02 - EP US)

Citation (applicant)

DE 102013217276 A1 20150305 - BSH BOSCH & SIEMENS HAUSGERÄTE GMBH [DE]

Citation (search report)

- [Y] DE 10142525 A1 20030327 - MIELE & CIE [DE]
- [Y] JP H11206684 A 19990803 - ZOJIRUSHI CORP
- [Y] US 5347610 A 19940913 - LEE HONG Y [KR]
- [Y] US 2002048513 A1 20020425 - KLEEMANN MARTIN [DE], et al
- [A] WO 2014008442 A1 20140109 - ILLINOIS TOOL WORKS [US]
- [A] WO 2008007278 A1 20080117 - KONINKL PHILIPS ELECTRONICS NV [NL], et al
- [A] US 2412737 A 19461217 - KERCHER ARTHUR J

Cited by

CN111676652A; EP3561381A1

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)

**EP 3238599 A1 20171101**; **EP 3238599 B1 20181226**; AU 2016405231 A1 20180913; AU 2016405231 B2 20221222; AU 2017202646 A1 20171109; AU 2017202646 B2 20221027; CN 109068931 A 20181221; CN 109068931 B 20210928; EP 3448221 A1 20190306; EP 3448221 B1 20201111; PL 3238599 T3 20190731; PL 3448221 T3 20210419; TR 201904090 T4 20190521; WO 2017186279 A1 20171102

DOCDB simple family (application)

**EP 17167558 A 20170421**; AU 2016405231 A 20160426; AU 2017202646 A 20170421; CN 201680084904 A 20160426; EP 16723670 A 20160426; EP 2016059327 W 20160426; PL 16723670 T 20160426; PL 17167558 T 20170421; TR 201904090 T 20170421