

Title (en)
COMBUSTION HEATER

Title (de)
VERBRENNUNGSHEIZGERÄT

Title (fr)
RÉCHAUFFEUR À COMBUSTION

Publication
EP 2244012 A4 20121024 (EN)

Application
EP 09705985 A 20090130

Priority
• JP 2009051642 W 20090130
• JP 2008022976 A 20080201

Abstract (en)
[origin: EP2244012A1] The combustion heater (1) includes an inner tube (20) having a supply passage (21) for combustion gas (G) in an inner portion, and an outer tube (10) disposed to provide a separated combustion space (30) in an outer periphery of the inner tube. A hole part (24) for ejecting the combustion gas being formed on a tube wall of the inner tube and a radiation promoting surface (20B) is disposed on an outer periphery of the inner tube. This structure suppresses excess temperature increase in the inner tube and improves heating efficiency in the combustion heater.

IPC 8 full level
F23C 3/00 (2006.01); **F23D 14/12** (2006.01)

CPC (source: EP KR US)
F23C 3/002 (2013.01 - EP KR US); **F23D 14/12** (2013.01 - EP US); **F23D 14/125** (2013.01 - EP KR US); **F24C 3/06** (2013.01 - US);
F24H 3/006 (2013.01 - US); **F23D 2203/005** (2013.01 - EP KR US); **F23D 2212/10** (2013.01 - EP KR US)

Citation (search report)
• [X] US 4519770 A 19850528 - KESSELRING JOHN P [US], et al
• [Y] JP H0590119 U 19931207
• [Y] EP 1701092 A1 20060913 - CRAMER SR S R O [SK]
• [Y] US 3437415 A 19690408 - DAVIS JAMES H, et al
• [A] US 2002015670 A1 20020207 - SHAH RASHMI K [US], et al
• See also references of WO 2009096554A1

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 MK MT NL NO PL PT RO SE SI SK TR

DOCDB simple family (publication)
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KR 20100102694 A 20100924; RU 2010133446 A 20120320; RU 2454603 C2 20120627; TW 200940907 A 20091001; TW I374997 B 20121021;
US 2011041837 A1 20110224; US 2016003482 A1 20160107; WO 2009096554 A1 20090806

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