

Title (en)  
BOILER

Title (de)  
KESSEL

Title (fr)  
CHAUDIÈRE

Publication  
**EP 3789691 A4 20210623 (EN)**

Application  
**EP 19796904 A 20190503**

Priority  

- KR 20180051974 A 20180504
- KR 20190050850 A 20190430
- KR 2019005331 W 20190503

Abstract (en)  
[origin: EP3789691A1] The present invention provides a boiler. The boiler comprises: a main heat exchanger for heating return water, which is introduced water, by means of the combustion heat of a burner; a hot water supply heat exchanger which is supplied with heating water, which is water generated by heating the return water in the main heat exchanger, and which heats direct water by means of heat exchange with the heating water to generate warm water; and an indoor heating water storage tank which is provided on a return passage through which the heating water discharged from the hot water supply heat exchanger returns to the main heat exchanger as at least a portion of the return water, and which, in order to increase the temperature of the return water supplied to the main heat exchanger, stores therein high-temperature water having a higher temperature than the heating water discharged from the hot water supply heat exchanger when the warm water is generated by the hot water supply heat exchanger.

IPC 8 full level  
**F24D 17/00** (2006.01); **F24D 3/08** (2006.01)

CPC (source: EP KR)  
**F24D 3/08** (2013.01 - EP); **F24D 17/0031** (2013.01 - EP); **F24D 19/1069** (2013.01 - KR); **F24H 1/50** (2013.01 - KR); **F24H 1/523** (2013.01 - KR);  
**F24H 9/146** (2013.01 - KR); **F24H 9/2007** (2013.01 - KR); **F24D 2220/042** (2013.01 - KR)

Citation (search report)  

- [XAI] EP 2578951 A2 20130410 - KYUNG DONG NAVIEN CO LTD [KR]
- [XA] US 2015090199 A1 20150402 - MIN TAE-SIK [KR]
- [X] EP 0674140 A2 19950927 - VAILLANT JOH GMBH & CO [DE]
- [A] DE 1679677 A1 19711230 - JUNKERS & CO
- [A] WO 2017039174 A1 20170309 - KYUNG DONG NAVIEN CO LTD [KR]
- [A] WO 2009142004 A1 20091126 - DAIKIN IND LTD [JP], et al
- See also references of WO 2019212291A1

Cited by  
CN116202217A; CN114688600A

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 3789691 A1 20210310; EP 3789691 A4 20210623; KR 102645554 B1 20240311; KR 20190127567 A 20191113**

DOCDB simple family (application)  
**EP 19796904 A 20190503; KR 20190050850 A 20190430**