

Title (en)
HEAT EXCHANGER

Title (de)
WÄRMETAUSCHER

Title (fr)
ÉCHANGEUR THERMIQUE

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Application
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Abstract (en)

[origin: WO2008153273A1] The present invention relates to a heat exchanger applied to a boiler, and an object of the present invention is to provide a heat exchanger that can improve heat transfer efficiency by reducing distance between the heat exchange pipes while making a heating water passage passing through heat exchange pipes be long, and can be easily manufactured. In order to achieve the heat exchanger, according to the present invention, heat exchanger includes a heat exchange device, first and second subsidiary plates, and first and second end plates. The heat exchange device includes a plurality of heat exchange pipe units through which heating water passes and which are spaced apart from each other at regular intervals, and the heat exchange pipe units are provided between a heating water inlet and a heating water outlet, and are formed of pipes having a rectangular cross-section of which a side coming in contact with the combustion gas has a width large than the height. The first and second subsidiary plates are fixed to both ends of the heat exchange pipe units in order to maintain a distance between the plurality of heat exchange pipe units constant. The first and second end plates are fixed to the outer surfaces of the first and second subsidiary plates, respectively.

IPC 8 full level

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Citation (search report)

- [XY] US 5241839 A 19930907 - HUGHES GREGORY G [US]
- [X] US 2005235691 A1 20051027 - KATOH YOSHIKI [JP], et al
- [Y] GB 991914 A 19650512 - FOSTER WHEELER LTD
- [Y] US 2002066554 A1 20020606 - OH SAI KEE [KR], et al
- [X] WO 2005088225 A1 20050922 - SHOWA DENKO KK [JP], et al
- [A] JP H04129663 U 19921127
- [A] US 2005039901 A1 20050224 - DEMUTH WALTER [DE], et al
- [A] US 2003188857 A1 20031009 - KAWAKUBO MASAAKI [JP], et al
- See references of WO 2008153273A1

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