

Title (en)  
TUBE BUNDLE HEAT EXCHANGER

Publication  
**EP 0417428 B1 19930929 (DE)**

Application  
**EP 90113566 A 19900716**

Priority  
DE 3930205 A 19890909

Abstract (en)  
[origin: JPH03113295A] PURPOSE: To control a temperature of a gas in a nested-tube heat exchanger even at a high temperature of 1,000 deg.C or more, by providing a tube plate equipped with cooling channels disposed at the gas-intake side of the heat exchanger and tubes arranged in rows, each row of the tubes extending through each cooling channel, which tube plate has a base of uniform thickness at the side where the gas is flowing, so that cooling medium is uniformly dispersed. CONSTITUTION: A tube plate 3 has large-diameter bores 15 in a thicker bottom portion 9, and the large-diameter bores 15 open into the interior of a jacket 2 and also they open into cooling channels 7 to be perpendicular to the longitudinal extension thereof. Nested tubes 1 are respectively inserted into the large- diameter bores 15 each with an annular gap around it. Tubes 1 arranged in a row pass through each cooling channel 7 and are welded to a thinner bottom portion 8 of the tube plate 3 with no play therebetween by way of completely welded welding seams. Each width of the cooling channels 7 thus formed is substantially equal to one to two times of diameter of each tube 1.

IPC 1-7  
**F28D 7/16; F28F 9/02**

IPC 8 full level  
**F28D 7/00** (2006.01); **F28D 7/16** (2006.01); **F28F 9/00** (2006.01); **F28F 9/02** (2006.01)

CPC (source: EP KR US)  
**F28D 7/00** (2013.01 - KR); **F28D 7/16** (2013.01 - EP US); **F28F 9/0229** (2013.01 - EP US); **F28D 2021/0075** (2013.01 - EP US)

Cited by  
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