

Title (en)  
Heat exchanger for cooling cracking gases.

Title (de)  
Wärmetauscher zum Kühlen von Spaltgas.

Title (fr)  
Echangeur pour le refroidissement de gaz de craquage.

Publication  
**EP 0396868 A1 19901114 (DE)**

Application  
**EP 90104494 A 19900309**

Priority  
DE 3913731 A 19890426

Abstract (en)  
[origin: JPH031092A] PURPOSE: To obtain a heat exchanger in which current velocity can be varied while sustaining simpleness of single step cooler by a structure wherein each bundle of tubes has two tube sections of different diameter coupled through a cone and the tube section having larger diameter is located at the end of the tube bundle on the gas outlet side. CONSTITUTION: The heat exchanger has a large number of tube bundles 1 having opposite ends secured to bottom plates 2, 3 which are connected with a jacket 4 while surrounding the tube bundles 1. The tube bundles 1 interconnect gas inlet and outlet chambers 7, 8. Each tube bundle 1 has two tube sections 10, 11 coupled through a cone 12. Diameter of the tube section 10 on the side facing the gas inlet chamber 7 is set smaller than that of the tube section 11 on the side facing the gas outlet chamber 8.

Abstract (de)  
Ein Wärmetauscher zum Kühlen von Spaltgas ist mit einem Bündel von Wärmetauscherrohren (1) versehen. Jedes Wärmetauscherrohr (1) weist zwei Rohrabschnitte (10, 11) unterschiedlichen Durchmessers auf, die über einen Konus (12) ineinander übergehen. Der Rohrabschnitt (11) mit dem größeren Durchmesser ist am gasaustrittsseitigen Ende des Wärmetauscherrohres (1) vorgesehen.

IPC 1-7  
**F28D 7/00**; **F28F 13/08**

IPC 8 full level  
**F28D 7/00** (2006.01); **F28D 7/16** (2006.01); **F28F 13/08** (2006.01)

CPC (source: EP US)  
**F28D 7/16** (2013.01 - EP US); **F28F 13/08** (2013.01 - EP US); **F28D 2021/0075** (2013.01 - EP US); **Y10S 165/903** (2013.01 - EP US); **Y10S 585/95** (2013.01 - EP US)

Citation (search report)

- [YD] DE 3715713 C1 19880721 - BORSIG GMBH
- [Y] DE 1929474 A1 19700917 - STONE & WEBSTER ENG CORP
- [A] EP 0002687 A1 19790711 - KUEPPERSBUSCH [DE]
- [A] DE 1501484 A1 19691023 - CHRISTIAN CARL FA

Cited by  
EP2463610A1; FR2968388A1; EP2063207B1

Designated contracting state (EPC)  
DE ES FR GB IT

DOCDB simple family (publication)  
**EP 0396868 A1 19901114**; **EP 0396868 B1 19921223**; DE 3913731 A1 19901031; DE 59000631 D1 19930204; ES 2038008 T3 19930701; JP H031092 A 19910107; US 5031692 A 19910716

DOCDB simple family (application)  
**EP 90104494 A 19900309**; DE 3913731 A 19890426; DE 59000631 T 19900309; ES 90104494 T 19900309; JP 9006090 A 19900404; US 51415590 A 19900425