

Title (en)  
Concentric tubes, in particular for a heat exchanger

Title (de)  
Koaxial oder Rohr-in-Rohr-Anordnung, insbesondere für einen Wärmetauscher

Title (fr)  
Tubes Coaxiales, en particulier pour un échangeur de chaleur

Publication  
**EP 1790933 A1 20070530 (DE)**

Application  
**EP 06022999 A 20061106**

Priority  
DE 102005056650 A 20051125

Abstract (en)  
The arrangement has maximally sixteen turbulence generators (11) in a cross sectional area. The turbulence generators are arranged in an area of inner pipes (3). Each turbulence generator is formed through a coil running in a longitudinal direction of the coaxial pipe or pipe in pipe arrangement. The turbulence generator has four and maximally twelve inner fins within the inner pipe. The fins have thickness of 0.1 to 0.2 millimeters.

IPC 8 full level  
**F28D 7/10** (2006.01); **F28F 1/40** (2006.01); **F28F 13/12** (2006.01)

CPC (source: EP)  
**F28D 7/106** (2013.01); **F28F 1/40** (2013.01); **F28F 13/12** (2013.01)

Citation (search report)

- [X] EP 0550845 A1 19930714 - KOBE STEEL LTD [JP]
- [X] BE 386945 A
- [X] DE 3209207 A1 19830915 - STIEBEL ELTRON GMBH & CO KG [DE]
- [X] JP H063075 A 19940111 - RINNAI KK
- [X] JP 2000111277 A 20000418 - TOYOTA MOTOR CORP
- [X] JP 2000161873 A 20000616 - TOYOTA MOTOR CORP
- [X] DE 20011545 U1 20001012 - HOECKER HANS PETER [DE]
- [X] GB 2078927 A 19820113 - GRUMMAN ENERGY SYSTEMS INC
- [X] JP H06174384 A 19940624 - SHOWA ALUMINUM CORP

Cited by

DE102011012577A1; ES2335953A1; RU2502930C2; DE102017222349A1; CN110873542A; JPWO2017159542A1; WO2016081483A1;  
WO2014026176A1; US11698198B2; US9772122B2; US10222096B2; US11255578B2; WO2009021826A1; WO2016081481A1

Designated contracting state (EPC)  
DE FR GB

Designated extension state (EPC)  
AL BA HR MK YU

DOCDB simple family (publication)  
**EP 1790933 A1 20070530; EP 1790933 B1 20110119**; DE 102005056650 A1 20070531; DE 502006008755 D1 20110303

DOCDB simple family (application)  
**EP 06022999 A 20061106**; DE 102005056650 A 20051125; DE 502006008755 T 20061106