Title (en)
METHOD FOR HEATING OR COOLING A FLUID MEDIUM

Title (de)
VERFAHREN ZUM ERHITZEN ODER VERKÜHLEN EINES FLUIDMEDIUMS

Title (fr)
PROCEDE DE RECHAUFFEMENT OU DE REFROIDISSEMENT D'UN MILIEU FLUIDE

Publication
EP 1630509 A4 20080730 (DE)

Application
EP 04736021 A 20040603

Priority
• RU 2004000222 W 20040603
• RU 2003116180 A 20030603

Abstract (en)
[origin: RU2232952C1] FIELD: heating engineering, particularly combined heating and refrigeration systems. ^ SUBSTANCE: method involves introducing fluid medium to be cooled or heated in through channel, successively cooling or heating fluid medium into through channel in at least two stages. Through channel is divided into cooling or heating stages having equal lengths. Temperature of each stage increases rapidly from the first stage to following stage in proportion to medium heating or decreases rapidly in proportion to medium cooling. Fluid medium to be cooled or heated is fed in through channel tangentially at the angle of 45o - 90o to generator of inner through channel surface in point of fluid medium introduction. ^ EFFECT: increased efficiency of medium heating or cooling processes, reduced power consumption, usage of two or more multistage heat or cold generators. ^ 2 dwg

IPC 8 full level
F25B 29/00 (2006.01); **F28D 1/04** (2006.01); **F28D 7/00** (2006.01); **F28F 27/02** (2006.01)

CPC (source: EP US)
F28D 7/0066 (2013.01 - EP US); **F28F 9/0263** (2013.01 - EP US)

Citation (search report)
• [A] EP 0394758 A2 19901031 - LINDE AG [DE]
• [A] FR 2526137 A1 19831104 - CARRIER CORP [US]
• [A] US 5901572 A 19990511 - PEIFFER LARRY [US], et al
• [A] US 5540826 A 19960730 - BIER MILAN [US], et al
• See references of WO 2004105909A2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
EP 1630509 A2 20060301; **EP 1630509 A4 20080730**; **EP 1630509 B1 20091223**; AT E453094 T1 20100115; CN 100390485 C 20080528; CN 1802546 A 20060712; DE 502004010551 D1 20100204; DK 1630509 T3 20100419; EA 008050 B1 20070227; EA 200501795 A1 20060428; ES 2338424 T3 20100507; JP 2006526756 A 20061124; NO 20055583 D0 20051125; NO 20055583 L 20051212; NO 331897 B1 20120430; RU 2232952 C1 20040720; US 2006113067 A1 20060601; US 7201000 B2 20070410; WO 2004105909 A2 20041209; WO 2004105909 A3 20050217

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