

Title (en)
DEVICE FOR INDIRECTLY HEATING FLUIDS.

Title (de)
VORRICHTUNG ZUR INDIREKTEN BEHEIZUNG VON FLUIDEN.

Title (fr)
DISPOSITIF DE CHAUFFAGE INDIRECT DE FLUIDES.

Publication
EP 0518880 B1 19940921

Application
EP 91904137 A 19910227

Priority
• DE 9100183 W 19910227
• IT 4772090 A 19900305

Abstract (en)
[origin: WO9114139A1] A device for indirectly heating fluids, in particular for high-temperature processes, comprises a heating space (14) containing at least one thermal radiator (1) and at least one planar serpentine pipe (4) through which the fluid to be heated flows and which can be heated externally by the radiant heat from the thermal radiator. To obtain a device for indirectly heating fluids in which the heat flux is distributed uniformly in the heat exchanger, each serpentine pipe (4) is associated with a pair of thermal radiators (1) which have a heat-radiating surface (3) shaped to match the planar extension of the serpentine pipe (4), the thermal radiators (1) are arranged on opposite sides of the serpentine pipe (4), and longitudinal ribs (5, 5a, 5b) are provided on the outside of the serpentine pipe (4) on opposite sides of the pipe cross-section. The longitudinal ribs (5, 5a, 5b) extend over the entire length or most of the length of the serpentine pipe (4) in the space between the coils of the serpentine pipe (4).

IPC 1-7
F24H 1/40

IPC 8 full level
F24H 1/40 (2006.01); **F24H 1/41** (2006.01); **F28D 1/047** (2006.01); **F28F 1/14** (2006.01); **F28F 21/04** (2006.01)

CPC (source: EP US)
F24H 1/40 (2013.01 - EP US); **F28D 1/0477** (2013.01 - EP US); **F28F 1/14** (2013.01 - EP US); **F28F 21/045** (2013.01 - EP US)

Designated contracting state (EPC)
AT BE CH DE DK ES FR GB IT LI LU NL SE

DOCDB simple family (publication)
WO 9114139 A1 19910919; AT E112040 T1 19941015; CA 2077675 A1 19910906; DE 59103050 D1 19941027; DK 0518880 T3 19941017; EP 0518880 A1 19921223; EP 0518880 B1 19940921; ES 2060367 T3 19941116; IT 1240789 B 19931217; IT 9047720 A0 19900305; IT 9047720 A1 19910905; JP H05506709 A 19930930; NO 177653 B 19950717; NO 177653 C 19951025; NO 923440 D0 19920903; NO 923440 L 19920903; US 5320071 A 19940614

DOCDB simple family (application)
DE 9100183 W 19910227; AT 91904137 T 19910227; CA 2077675 A 19910227; DE 59103050 T 19910227; DK 91904137 T 19910227; EP 91904137 A 19910227; ES 91904137 T 19910227; IT 4772090 A 19900305; JP 50418991 A 19910227; NO 923440 A 19920903; US 93467792 A 19921109