

Title (en)

AIR HEATER AND HUMIDIFIER USING DIRECT CONTACT HEATING PRINCIPLES AND METHOD OF OPERATION

Title (de)

LUFTHEIZER UND BEFEUCHTER MIT DIREKTER BERÜHRUNG UND BETRIEBSVERFAHREN DAFÜR

Title (fr)

SYSTEME DE RECHAUFFAGE ET D'HUMIDIFICATION D'AIR ET PROCEDE FAISANT APPEL A DES PRINCIPES DE CHAUFFAGE PAR CONTACT DIRECT ET SON MODE DE FONCTIONNEMENT

Publication

EP 0928403 A1 19990714 (EN)

Application

EP 97918855 A 19970916

Priority

- CA 9700678 W 19970916
- CA 2185857 A 19960918
- US 72404196 A 19960923

Abstract (en)

[origin: WO9812485A1] An air heating and humidifying system (30) and method using direct contact heating principles. The system consists in providing a source of hot water by feeding hot flue gases in a direct contact water heater (40) and wherein the water sprayed over a packing (41) in the water heater is heated as it percolates through the packing (41) and is in contact with the hot rising flue gases. This hot water from the direct contact water heater (40) is used in a direct contact air treating chamber (50) wherein it is sprayed over a further packing (52) whereby to heat and humidify fresh air which is pushed through the packing (52) by a fan (54) and exits at an outlet flue (59) of the treating chamber to supply hot moist fresh air in a building air conditioning system. The cooled water in the direct contact air treating chamber (50) is collected and supplies the spray nozzle (45) of the direct contact water heater (40) to cool the hot flue gases which are rising therein and thereby enhances considerably the efficiency of the direct contact water heater.

IPC 1-7

F24H 1/10; **F24F 6/04**

IPC 8 full level

F24F 6/04 (2006.01); **F24H 1/10** (2006.01)

CPC (source: EP)

F24F 6/04 (2013.01); **F24H 1/107** (2013.01); **F24H 8/003** (2013.01); **Y02B 30/00** (2013.01)

Designated contracting state (EPC)

BE CH DE DK FI FR GB LI SE

DOCDB simple family (publication)

WO 9812485 A1 19980326; AU 4291797 A 19980414; EP 0928403 A1 19990714; HU P0000293 A2 20000628; HU P0000293 A3 20020228

DOCDB simple family (application)

CA 9700678 W 19970916; AU 4291797 A 19970916; EP 97918855 A 19970916; HU P0000293 A 19970916