

Title (en)

ANTENNA RADIATION HEATER FOR HEATING A MATERIAL BY USING RESONANCE

Title (de)

ANTENNENSTRAHLUNGS-HEIZUNG ZUR ERWÄRMUNG EINER MATERIE MITTELS RESONANZ

Title (fr)

DISPOSITIF DE CHAUFFAGE A RAYONNEMENT D'ANTENNE DESTINE A CHAUFFER UNE MATIERE PAR RESONANCE

Publication

EP 1305554 A1 20030502 (DE)

Application

EP 01957819 A 20010601

Priority

- DE 10037027 A 20000729
- EP 0106239 W 20010601

Abstract (en)

[origin: WO0210650A1] The invention relates to an antenna radiation heater (2) for heating a material by using resonance. Said heater comprises a number of planar antenna elements (3) each consisting of a supporting planar material (11) and of a radiation coating (10) applied thereto. The radiation coating is delimited by two interspaced parallel electrical conductors (14, 15) having electrical contact and being provided as antenna delimiters, and electromagnetic high-frequency radiation can be emitted by said radiation coating. The inventive antenna radiation heater (2) additionally comprises a harmonic generator, which is coupled to both electrical conductors (14, 15) of a planar antenna element (3) and which is provided for exciting the radiation coating (10) in order to radiate a vibrational spectrum in the range of the molecular natural frequencies of the material to be heated. According to the invention, the radiation coating (10) is applied to one side of the supporting planar material (11) and forms a front side of the element that faces the material to be heated. In addition, a layer (12), which protects against accidental contact, is applied to the radiation coating (10). Said layer (12) electrically insulates the radiation coating (10) against contact, and enables the radiation of the vibrational spectrum without or at least only with slight attenuation.

IPC 1-7

F24D 13/02

IPC 8 full level

F24D 13/00 (2006.01); **H05B 6/72** (2006.01)

CPC (source: EP US)

F24D 13/00 (2013.01 - EP US); **H05B 6/72** (2013.01 - EP US)

Citation (search report)

See references of WO 0210650A1

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

WO 0210650 A1 20020207; AT E303563 T1 20050915; AU 7964001 A 20020213; CA 2412105 A1 20021212; CN 1185444 C 20050119; CN 1444714 A 20030924; DE 10037027 A1 20020221; DE 50107305 D1 20051006; EA 004126 B1 20031225; EA 200300200 A1 20030626; EP 1305554 A1 20030502; EP 1305554 B1 20050831; HK 1056766 A1 20040227; JP 2004505425 A 20040219; US 2003155348 A1 20030821; US 6689994 B2 20040210

DOCDB simple family (application)

EP 0106239 W 20010601; AT 01957819 T 20010601; AU 7964001 A 20010601; CA 2412105 A 20010601; CN 01813249 A 20010601; DE 10037027 A 20000729; DE 50107305 T 20010601; EA 200300200 A 20010601; EP 01957819 A 20010601; HK 03109019 A 20031211; JP 2002516541 A 20010601; US 33355803 A 20030122