

Title (en)

Tube and process for compression-fitting of functional elements in such a tube

Title (de)

Rohr und Verfahren zum Verspannen von Funktionselementen in einem solchen

Title (fr)

Tube et procédé pour haubanner des éléments fonctionnels dans un tel tube

Publication

EP 1545157 B1 20061122 (DE)

Application

EP 04029778 A 20041216

Priority

DE 10360159 A 20031220

Abstract (en)

[origin: EP1545157A2] Method for clamping PTC heating elements etc. in hollow holder (1), such as tube, with two concave ceiling wall region (1.5,1.6) opposite to each other and to flat sides of PTC heating elements (2). PTC heating elements are clamped by pressure application to further side walls, orthogonally to ceiling wall regions. Preferably side walls are pressurised in direction of their surface normal. Pressure application typically reduces spacing of side walls in application direction, with regions of side walls providing clamping of PTC elements. Independent claims are included for tube holding PTC heating elements and its use and heater.

IPC 8 full level

H05B 3/52 (2006.01); **H01C 1/01** (2006.01); **H01C 7/02** (2006.01); **H05B 3/50** (2006.01)

CPC (source: EP US)

F24H 9/1872 (2013.01 - EP); **H01C 1/01** (2013.01 - EP US); **H01C 7/02** (2013.01 - EP US); **H05B 3/50** (2013.01 - EP US); **H05B 2203/017** (2013.01 - EP US); **H05B 2203/02** (2013.01 - EP US)

Cited by

FR3083300A1; FR3104881A1; FR3073035A1; EP3647676A1; US9863663B2; WO2020002797A1; WO2012175488A3; WO2019086801A1; WO2017020622A1; WO2021116581A1; FR3073036A1; EP3731595A1; CN111867159A; US11913676B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 1545157 A2 20050622; **EP 1545157 A3 20051012**; **EP 1545157 B1 20061122**; AT E346475 T1 20061215; DE 10360159 A1 20050721; DE 502004002082 D1 20070104; US 2005144896 A1 20050707; US 7332693 B2 20080219

DOCDB simple family (application)

EP 04029778 A 20041216; AT 04029778 T 20041216; DE 10360159 A 20031220; DE 502004002082 T 20041216; US 1499004 A 20041220