

Title (en)  
High manufacturable and high performance structure of electric heater

Title (de)  
Effizient herstellbares Hochleistungs-Heizelement

Title (fr)  
Corps de chauffe électrique à haute performance et de fabrication efficace

Publication  
**EP 1515588 B1 20150812 (EN)**

Application  
**EP 04021604 A 20040910**

Priority

- JP 2003318830 A 20030910
- JP 2003318828 A 20030910
- JP 2003318831 A 20030910
- JP 2003318832 A 20030910
- JP 2004193538 A 20040630
- JP 2004193537 A 20040630

Abstract (en)  
[origin: EP1515588A1] A highly manufacturable and high performance structure of an electric heater is provided which includes a heater assembly, retainer frames, and spring clampers. The retainer frames are placed on an upper and a lower end surfaces of the heater assembly. The spring clampers are fitted in the retainer frames to produce compression pressures which clamp the heater assembly firmly to complete the structure of the electric heater. The use of the spring clamber facilitate ease of assembling of the electric heater without sacrificing the performance of the electric heater. <IMAGE>

IPC 8 full level  
**H05B 3/14** (2006.01); **F24H 3/04** (2006.01); **H05B 3/50** (2006.01)

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Cited by  
DE102009025474C5; EP1972474A1; DE102009025474B4; FR3062898A1; EP2428746A1; CN102434968A; FR3101510A1; FR3032588A1; CN107208930A; US7777161B2; US7576305B2; EP2109345A1; WO2016128400A1; WO2018150126A1; CN104640246A; CN106545913A; EP3557155A1; US7676144B2; EP1916874A2; US9915441B2; EP2428746B1

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DE FR GB

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