

Title (en)

Tubular heating element with shape-changing, pretensioned protection element.

Title (de)

Rohrheizkörper mit formänderndem, vorgespanntem Sicherungselement.

Title (fr)

Élément chauffant tubulaire avec élément de protection à changement de forme prétensionné.

Publication

EP 0613325 A3 19941123 (DE)

Application

EP 94108393 A 19881128

Priority

- DE 8715851 U 19871130
- EP 88119802 A 19881128

Abstract (en)

[origin: US5020128A] A tubular electric resistance heater includes a tubular sheath enclosing an electric heater coil. As protective overheat safety device is provided at an end of the sheath and includes an electrically conductive tube disposed in a cavity in the end of the sheath and having a closed end electrically connected to the heater coil. A rod-shaped member made of a thermally deformable material extends through the tube from the closed end and projects out of the other end of the tube into activating engagement with a normally closed switch located externally of the tubular sheath and electrically connected in series with the tube and thereby the heater coil. Excessive heater coil temperatures cause the rod-shaped member to deform and actuate the switch to its open position to deenergize the heater coil. The rod-shaped member may be made to a memory-alloy or a plastic which changes its structure, e.g., shrinks, or melts at a certain temperature.

IPC 1-7

H05B 3/48; **H05B 1/02**

IPC 8 full level

H01H 37/76 (2006.01); **H05B 1/02** (2006.01); **H05B 3/48** (2006.01); **H01H 37/32** (2006.01); **H01H 37/36** (2006.01); **H01H 37/54** (2006.01)

CPC (source: EP US)

H01H 37/48 (2013.01 - EP US); **H01H 37/761** (2013.01 - EP US); **H05B 1/0205** (2013.01 - EP US); **H05B 3/48** (2013.01 - EP US); **H01H 37/323** (2013.01 - EP US); **H01H 37/36** (2013.01 - EP US); **H01H 37/54** (2013.01 - EP US); **H01H 2037/762** (2013.01 - EP US)

Citation (search report)

- [X] GB 2098436 A 19821117 - TI RUSSELL HOBBS LTD
- [X] DE 2101062 A1 19720727 - TUERK & HILLINGER KG
- [A] DE 3433688 A1 19860320 - SIEMENS AG [DE]
- [A] DE 2340070 A1 19740221 - TOYODA CHUO KENKYUSHO KK [JP], et al
- [A] DE 445059 C 19270528 - ERNST NOSKE DIPL ING
- [A] US 1646835 A 19271025 - PLETSCHER JR OTTO

Cited by

EP0793248A3; EP0318895A2

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

US 5020128 A 19910528; AT E127309 T1 19950915; DE 3854378 D1 19951005; DE 8715851 U1 19880218; EP 0318895 A2 19890607; EP 0318895 A3 19900808; EP 0318895 B1 19950830; EP 0613325 A2 19940831; EP 0613325 A3 19941123

DOCDB simple family (application)

US 27811488 A 19881130; AT 88119802 T 19881128; DE 3854378 T 19881128; DE 8715851 U 19871130; EP 88119802 A 19881128; EP 94108393 A 19881128