

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11) Publication number:

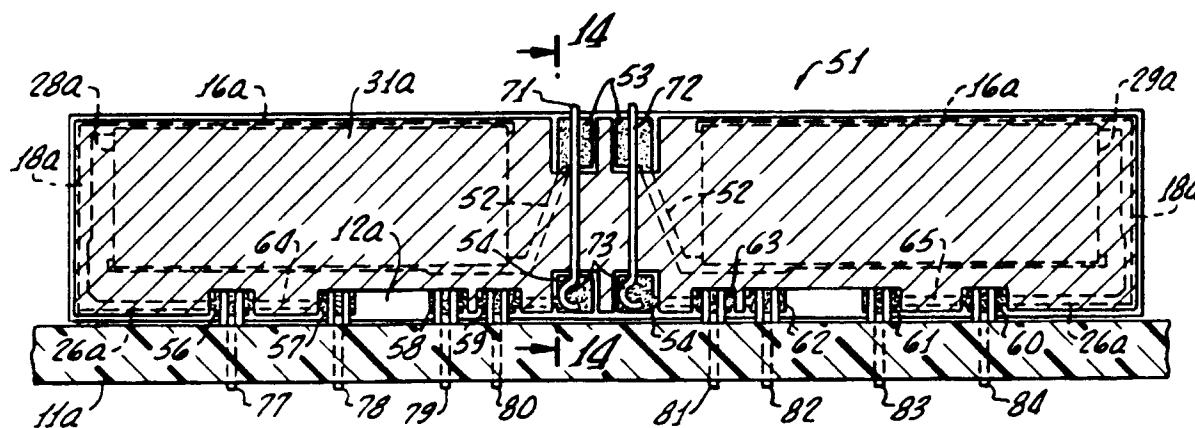
**0 507 465 A3**

(12)

**EUROPEAN PATENT APPLICATION**(21) Application number: **92302250.3**(51) Int. Cl.<sup>5</sup>: **H01H 85/046, H01C 7/12**(22) Date of filing: **16.03.92**(30) Priority: **02.04.91 US 679603**(43) Date of publication of application:  
**07.10.92 Bulletin 92/41**(84) Designated Contracting States:  
**AT BE CH DE DK ES FR GB GR IT LI LU MC  
NL PT SE**(88) Date of deferred publication of the search report:  
**03.02.93 Bulletin 93/05**(71) Applicant: **CADDOCK ELECTRONICS, INC.**  
**1717 Chicago Avenue**  
**Riverside, California 92507(US)**(72) Inventor: **Caddock, Richard E., Jr.**  
**300 Thora Circle**  
**Winchester, Oregon 97495(US)**(74) Representative: **Rackham, Stephen Neil et al**  
**GILL JENNINGS & EVERY, Broadgate House,**  
**7 Eldon Street**  
**London EC2M 7LH(GB)**(54) **A resistor capable of acting as a circuit breaker.**

(57) An apparatus and method by which a flat film-type resistor (10) is intentionally caused to thermal-shock fracture (Fig. 1) in response to a predetermined high-voltage overload condition. The resistor includes flat film-type resistor coatings (28,29) connected to traces (16,18,52). A stressed spring wire (71,72) is mounted on such film-type resistor and

connected in circuit with it. A predetermined solder (76) and temperature gradient are employed to hold the spring wire in bent condition until the solder (76) melts, whereupon the spring (71,72) flexes and the circuit breaks. Heatsink portions (43-46) are provided in the circuit board for such resistor and receive pins (33-40) thereof.

**Fig. 10.****EP 0 507 465 A3**



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 92302250.3
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	EP - A - 0 395 231 (GEC PLESSEY TELECOMMUNICATIONS) * Totality * --	1-9	H 01 H 85/046 H 01 C 7/12
A	GB - A - 2 163 307 (CRYSTALATE ELECTRONICS) * Totality * --	1,2	
A	DE - A - 2 109 760 (TELEFONAKTIEBOLAGET LM ERICSSON) * Claim 1 * --	1,2	
A	DE - A - 3 245 629 (TELEFUNKEN ELECTRONIC) * Claims 1,3,4; fig. 1 * ----	1,2,10	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			H 01 H 85/00 H 01 C 7/00
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
VIENNA		20-11-1992	ZUGAREK
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	