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(54) Current-limiting device

(57) A current-limiting device includes a current-limiting material having first and second sides, and first and second electrodes structured for carrying current through the current-limiting material. Each of the electrodes has first and second sides, with the second side of the first electrode engaging the first side of the current-limiting material, and with the first side of the second electrode engaging the second side of the current-limiting material. The current-limiting device also includes first and second insulators, each of which has

first and second sides. The second side of the first insulator engages the first side of the first electrode, and the first side of the second insulator engages the second side of the second electrode. The current-limiting device further includes first and second clips which engage different portions of the first side of the first insulator and the second side of the second insulator, and which compress the first insulator, the first electrode, the current-limiting material, the second electrode and the second insulator.

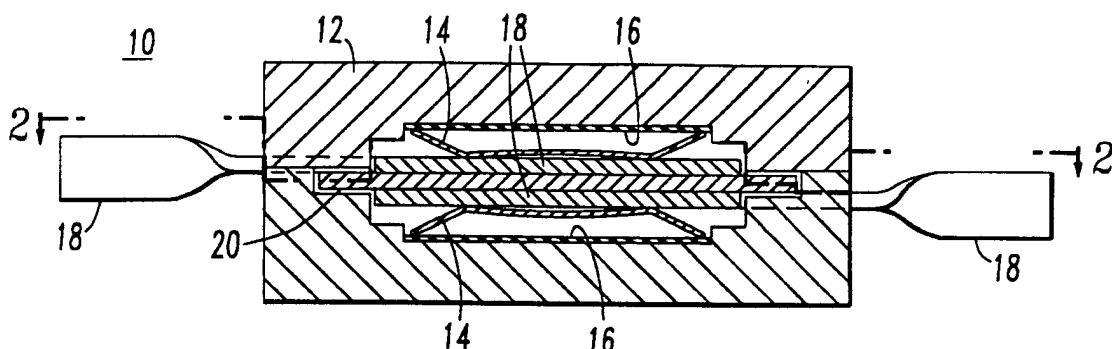


FIG.1



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	US 4 698 614 A (WELCH ET AL) 6 October 1987 (1987-10-06) * column 5, lines 30-60; figure 9 *	1	H01C7/02 H01C7/13
X	* figures 4,6 *	1	
Y	-----	2-6, 15-25	
Y	EP 0 853 322 A (EATON CORPORATION) 15 July 1998 (1998-07-15) * pages 12,20; figures 1,2 *	1,2	
Y	* the whole document *	1-7, 18-25	
Y	* claims 19-21; figure 1 *	15-17	
A	US 5 644 283 A (GROSSE-WILDE ET AL) 1 July 1997 (1997-07-01) * claims 1,10,22,23; figure 4 *	1-7, 15-25	
A	-----		
A	US 5 565 826 A (KARLSTR+E, UML O+EE M ET AL) 15 October 1996 (1996-10-15) * the whole document *	1-7, 15-25	
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A	EP 0 487 920 A (ASEA BROWN BOVERI AB) 3 June 1992 (1992-06-03) * claims 2,4; figures 2-4 *	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
Y	* the whole document *	4-7,18, 19,21	H01C H01H
A	-----	1-3, 15-17, 20,22-25	H02H H05B
A	US 4 331 861 A (MEIXNER ET AL) 25 May 1982 (1982-05-25) * the whole document *	1-7, 15-25	
The present search report has been drawn up for all claims			
2	Place of search	Date of completion of the search	Examiner
EPO FORM 1503 03 82 (P04C01)	Munich	23 June 2005	Dessaux, C
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone	T : theory or principle underlying the invention		
Y : particularly relevant if combined with another document of the same category	E : earlier patent document, but published on, or after the filing date		
A : technological background	D : document cited in the application		
O : non-written disclosure	L : document cited for other reasons		
P : intermediate document	& : member of the same patent family, corresponding document		

**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing more than ten claims.

Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-7, 15-25



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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 01 12 8172

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-7,15-25

A current limiting device comprises clips which engage different portion of the insulators sheets and compresse the first insulator, the first electrode, the current limiting material, the second electrode and the second insulator.

2. claims: 8-14

A shunt is associate to a current limiting device to protect it from overcurrent.

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 01 12 8172

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

23-06-2005

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