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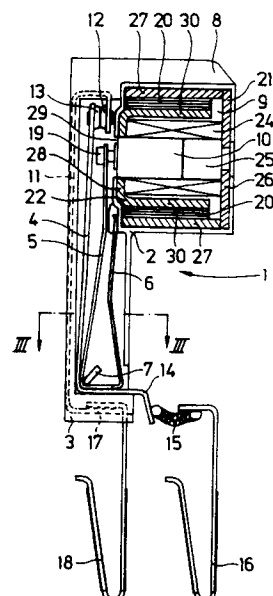
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(54) **Bistable electrical relay.**

(57) Bistable electrical relay (1) comprising a first contact (13), a movably mounted, essentially rigid arm (4) coupled thereto and provided with a first connecting point (14, 15, 16), and a second contact (12) coupled to an immovably mounted further arm (11) which is provided with a second connecting point (17, 18). To operate the contacts, electromagnetic drive means (9) are provided which act on the movable arm via spring means (5) for producing contact force. To keep the contacts closed, the drive means are provided with permanent magnets (20), while further spring means (6) act on the movable arm to keep the contacts open. Preferably, leaf springs are used, the two arms being mounted in close proximity in order to make use of the Lorentz force to produce additional contact force in the case of short-circuit currents. A switching module comprising bistable relays is also provided for switching group connecting points in an electrical power installation.

fig - 1





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EUROPEAN SEARCH REPORT

Application Number

EP 92 20 2963

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 5)
X	CH-A- 234 220 (LUFTFAHRTGERATEWERK HAKENFELDE)	1	H 01 H 51/22
Y	* the whole document *	8	H 01 H 50/58
A	---	4,5,7	H 01 H 1/54
A	GB-A-2 142 188 (STANDARD TELEPHONES)	1	H 01 H 73/00
Y	* the whole document *	8	H 01 H 1/58

X	US-A-3 014 103 (MORAN)	1	
A	* the whole document *	4	

X	US-A-4 099 151 (GRUNERT)	1	
	* the whole document *		

			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			H 01 H
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10-12-1992	Examiner DESMET W H G
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	



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CLAIMS INCURRING FEES

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

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees 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 claims:
- ☐ 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 requirement 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.
- ☐ 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 has 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, 4-8



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LACK OF UNITY OF INVENTION

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

1. Claims 1,4-8 : Drive means, acting via spring means on an essentially rigid contact arm
2. Claims 2,3,11: Disposition of the contact arms; mutually exerted magnetic forces
3. Claims 9,10 : Magnetic circuit with two U-shaped yokes and permanent magnets
4. Claims 12-18 : Switching module and signal terminals, fitted on a resiliently mounted support body