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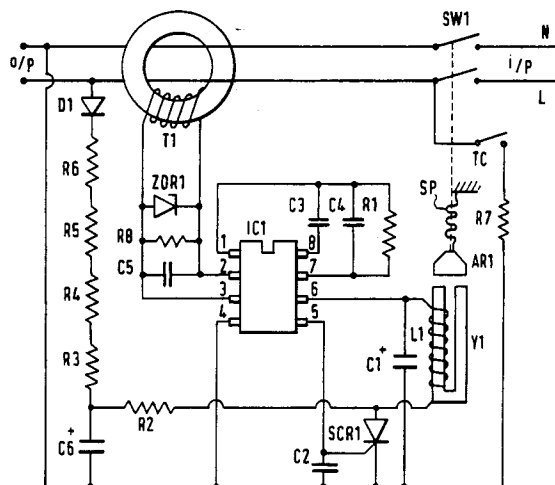
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EUROPEAN PATENT APPLICATION(21) Application number: **90306372.5**(51) Int. Cl.⁵: **H01H 71/24, H02H 3/33**(22) Date of filing: **12.06.90**(30) Priority: **14.06.89 GB 8913633**(43) Date of publication of application:
19.12.90 Bulletin 90/51(84) Designated Contracting States:
BE DE DK ES FR GB IT NL SE(88) Date of deferred publication of the search report:
08.07.92 Bulletin 92/28(71) Applicant: **ELECTROLUX NORTHERN LIMITED**
Preston Road Aycliffe Industrial Estate
Newton Aycliffe Co. Durham, DL5 6UP(GB)(72) Inventor: **Turner, Colin**
The Old Vicarage, Eldon
Bishop Auckland, Co. Durham(GB)(74) Representative: **Arthur, Bryan Edward et al**
Withers & Rogers 4 Dyer's Buildings Holborn
London EC1N 2JT(GB)(54) **Electromagnetic actuator arrangement.**

(57) An electromagnetic actuator arrangement comprising a switch (SW1) biased open by a biasing spring (SP) and operated by a yoke (Y1) which attracts an armature (AR1) when its winding (L1) is energised is provided with means (C1, SCR1) for instantaneously reversing the magnetising force acting on the armature when the winding (L1) is de-energised. As a result, the residual magnetism in the armature (AR1) is opposed by the reversed magnetic field from the winding (L1) and the tendency of the armature to stick to the yoke is avoided. Consequently the release time is reduced.

*Fig.1.***EP 0 403 216 A3**



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EUROPEAN SEARCH REPORT

Application Number

EP90306372

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	DE-C-532028 (SIEMENS-SCHUCKERT WERKE) * the whole document *	1 - 7	H01H71/24 H02H3/33
A	GB-A-2000379 (WEBER) * claim 1; figure 1 *	1	
A	US-A-3280375 (JENSEN) * column 2, line 47 - column 3, line 6; figure 2 *	1	
Y	US-A-4063299 (MUNROE) * column 9, lines 9-32; figure 1 *	8-10, 11	
Y	GB-A-2204199 (ASHLEY ACCESSORIES LTD.) * page 7, line 25 - page 8, line 22; figure *	8-10, 11	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	EP-A-0016458 (FUJI ELECTRIC LTD.) * page 2, line 34 - page 3, line 5; figure 1 *	8	H01H47/00 H01H71/00 H01H83/00 H02H3/00
The present search report has been drawn up for all claims			
Place of search Berlin		Date of completion of the search 15.04.1992	Examiner KEMPEN P.
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			



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.

X 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 1-7: Magnetic actuator
2. Claims 8-12: Residual current-breaker (GFCI)

- ☒ 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: