

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 May 2006 (11.05.2006)

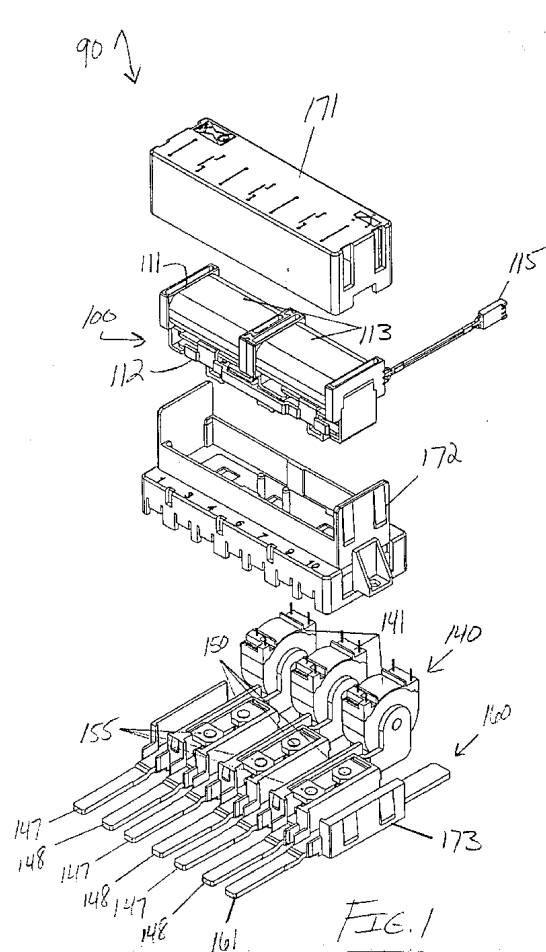
PCT

(10) International Publication Number
WO 2006/049769 A3

- (51) International Patent Classification:
H01H 67/02 (2006.01) H01H 51/22 (2006.01)
H01H 63/02 (2006.01)
- (21) International Application Number:
PCT/US2005/035135
- (22) International Filing Date:
28 September 2005 (28.09.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/614,218 29 September 2004 (29.09.2004) US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- (88) Date of publication of the international search report:
4 June 2009

(54) Title: MULTI-PHASE ELECTROMAGNETIC LATCHING RELAY AND MOTOR ASSEMBLY



(57) Abstract: An electromagnetic relay assembly (90) enables multi-phase switching as achieved by a certain novel assemblies, including a motor assembly (100) and a union transformer assembly (140), as cooperatively assembled within a housing assembly (171, 172, 173). The motor assembly comprises a union coil assembly (111) cooperatively assembled with an actuator assembly (112). The union coil assembly comprises two tandemly-oriented unit coil assemblies (113) as separated by certain stator-guiding structure. The actuator assembly comprises an actuator carriage (121), two sets of stator assemblies (114) and a plurality of drive bridge assemblies (123). The stator-guiding structure guides the stator assemblies during actuation and the drive bridge assemblies cooperate with the union transformer assembly to selectively set and/or reset the rel assembly. The union transformer assembly (140) comprises a plurality of unit transformer assemblies (141), each of which comprises a contact bridge assembly (144). The drive bridge assemblies (123) are equal in number to the contact bridge assemblies (144) and contact therewith to selectively set and/or rest the relay assembly.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/35135

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **H01H 67/02**(2006.01),**63/02**(2006.01),**51/22**(2006.01)

USPC: 335/78,128,129,130

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 335/78,128,129,130

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,949,313 (Aoki et al.) 7 September 1999 (07.09.1999), entire document	1-21
A	US 5,694,099 (Connell et al.) 2 December 1997 (02.12.1997), figures 1-3	1-21
A	US 4,959,627 (Iizumi et al.) 25 September 1990 (25.09.1990), entire document	1-21
A	US 5,264,812 (Tomono et al.) 23 November 1993 (23.11.1993), entire document	1-21

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:

"A"	document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

23 June 2008 (23.06.2008)

Date of mailing of the international search report

02 JUL 2008

Name and mailing address of the ISA/US

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Commissioner for Patents
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Alexandria, Virginia 22313-1450

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