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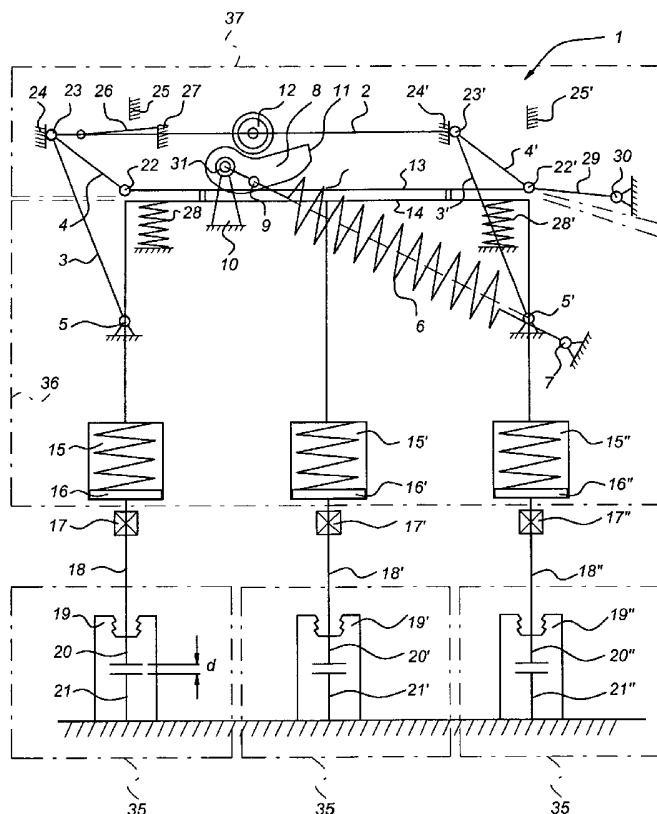
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[Continued on next page]

(54) Title: DRIVE MECHANISM FOR SWITCHING INSTALLATION AND METHOD FOR OPERATING IT



(57) Abstract: Drive mechanism for the synchronous operation of a plurality of vacuum circuit breakers (35). It comprises energy storage means (6), conversion means (37) for converting energy stored in the energy storage means (6) into an operation of switching off the vacuum circuit breakers (35) and for switching on the vacuum circuit breakers (35), in which latter process energy is simultaneously stored in the energy storage means (6). The conversion means (37) comprise first transfer means which can move substantially in a first direction and second transfer means which can move substantially in a second direction. The conversion means also comprise at least one connecting rod (4, 4'), which on one side (23, 23') is rotatably secured to the first transfer means and on a second side (22, 22') is rotatably secured to the second transfer means. The drive mechanism also comprises a trip mechanism which interacts with the drive mechanism and a disconnector drive mechanism (70) for the simultaneous operation of disconnectors (73).



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10 June 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/NL 03/00587

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01H33/66

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)

IPC 7 H01H

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 practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 349 208 A (KUSSY FRANK W ET AL) 24 October 1967 (1967-10-24)	1,2,4-12
Y	the whole document	3,27
Y	DE 31 47 016 A (CALOR EMAG ELEKTRIZITAETS AG) 1 June 1983 (1983-06-01) the whole document	1-3,27
Y	DE 299 17 860 U (SIEMENS AG) 17 February 2000 (2000-02-17) cited in the application the whole document	1-3,27
Y	GB 2 253 305 A (GOLD STAR INSTR & ELECTRICS) 2 September 1992 (1992-09-02) the whole document	1-3,27
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

° Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search

5 March 2004

Date of mailing of the international search report

19. 03. 2004

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INTERNATIONAL SEARCH REPORT

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PCT/NL 03/00587

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 587 390 A (GRAY KEITH I) 6 May 1986 (1986-05-06) the whole document ----	1-3,27
A	EP 0 450 194 A (HOLEC SYST & COMPONENTEN) 9 October 1991 (1991-10-09) the whole document ----	1,15,21
A	US 4 253 003 A (EVANS DAVID M ET AL) 24 February 1981 (1981-02-24) column 9, line 25 -column 10, line 26 ----	1,15-20
A	DE 12 21 338 B (CALOR EMAG ELEK ZITAETS AG) 21 July 1966 (1966-07-21) ----	
A	US 3 214 550 A (EASLEY GILBERT J) 26 October 1965 (1965-10-26) -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NL 03/00587

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-14, 27
2. Claims: 15-20
3. Claims: 21-26, 28, 29

INTERNATIONAL SEARCH REPORT

information on patent family members

In tional Application No

PCT/NL 03/00587

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3349208	A	24-10-1967	US 3217130 A US 3293392 A	09-11-1965 20-12-1966
DE 3147016	A	01-06-1983	DE 3147016 A1	01-06-1983
DE 29917860	U	17-02-2000	DE 29917860 U1 CN 1378695 T WO 0124210 A2 DE 50003669 D1 EP 1218904 A1	17-02-2000 06-11-2002 05-04-2001 16-10-2003 03-07-2002
GB 2253305	A	02-09-1992	US 5140117 A CA 2049211 C DE 4138333 A1 HK 1007630 A1 JP 2688587 B2 JP 6089641 A KR 9309105 B1	18-08-1992 01-08-1995 03-09-1992 16-04-1999 10-12-1997 29-03-1994 22-09-1993
US 4587390	A	06-05-1986	NONE	
EP 0450194	A	09-10-1991	NL 8803018 A EP 0450194 A1 AU 619666 B2 AU 5206090 A	02-07-1990 09-10-1991 30-01-1992 03-10-1991
US 4253003	A	24-02-1981	CA 1119224 A1	02-03-1982
DE 1221338	B	21-07-1966	NONE	
US 3214550	A	26-10-1965	FR 1355316 A	13-03-1964