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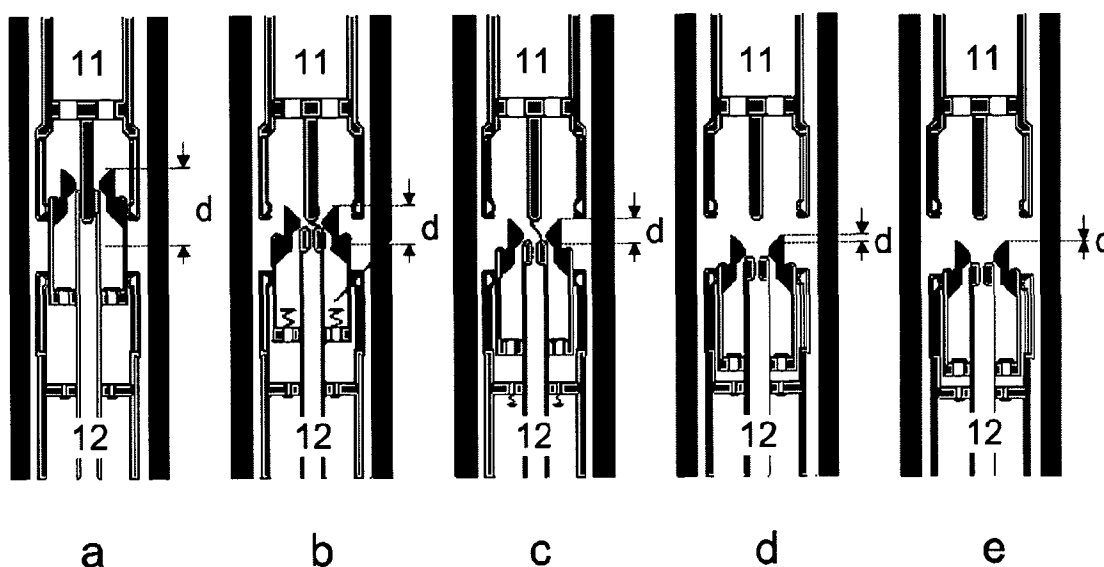
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(54) Title: HIGH-VOLTAGE DISCONNECTING CIRCUIT BREAKER AND METHOD OF OPERATING THE SAME



(57) Abstract: A high-voltage disconnecting circuit breaker comprises a first and a second contact; means provided for moving the contacts to a first mutual distance; and means provided for quenching any arc appearing between the contacts during said movement to thereby provide the functionality of a high-voltage circuit breaker, wherein the means provided for moving is further provided for moving the contacts to a second mutual distance larger than the first mutual distance after quenching of any arc to thereby provide the voltage withstand functionality of a high-voltage disconnecter.

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INTERNATIONAL SEARCH REPORT

International application No

PCT/EP2007/064629

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01H33/12

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)
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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 327 076 A (LINDELL SIGURD I) 20 June 1967 (1967-06-20) column 9, lines 18-21; figure 7	1, 3, 6, 11, 12; 14, 15, 19
Y		2, 4, 5, 13, 16, 17
X	US 2 399 485 A (HARLOW WINTON G ET AL) 30 April 1946 (1946-04-30) column 2, lines 20-25	1, 12, 19
X	GB 537 302 A (REYROLLE A & CO LTD; ARCHIBALD ALLAN; JOHN CHRISTIE) 17 June 1941 (1941-06-17) column 2, lines 95-110 ----- -/--	1, 12, 19

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
- *E* earlier document but published on or after the international filing date
- *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)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *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
- *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
- *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.
- * & * document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2007/064629

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 268 811 A (EVANS DAVID M ET AL) 19 May 1981 (1981-05-19) abstract	1,12,19
Y	GB 882 817 A (ASS ELECT IND) 22 November 1961 (1961-11-22) column 3, line 82	17
Y	US 3 134 875 A (HAAKON FORWALD) 26 May 1964 (1964-05-26) figure 2	5,16,17
Y	EP 0 519 343 A1 (ASEA BROWN BOVERI [SE]) 23 December 1992 (1992-12-23) abstract	2,4,13

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 7-10,18

The subject matter of claim 7 is not defined, as the first mutual distance is claimed as depending on when the arc is extinguished, but this in turn depends on the strength of the arc, if any.

Claims 8-10 and 18 are worded as a result to be achieved. Art.6 PCT.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2)PCT declaration be overcome.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2007/064629

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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.: 7-10, 18
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:
see FURTHER INFORMATION sheet PCT/ISA/210

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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2007/064629

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 3327076	A	20-06-1967	AU 3252171 A GB 1177543 A GB 1177544 A	20-01-1972 14-01-1970 14-01-1970
US 2399485	A	30-04-1946	GB 586717 A	28-03-1947
GB 537302	A	17-06-1941	NONE	
US 4268811	A	19-05-1981	CA 1065929 A1	06-11-1979
GB 882817	A	22-11-1961	NONE	
US 3134875	A	26-05-1964	CH 383467 A DE 1203855 B GB 924613 A	31-10-1964 28-10-1965 24-04-1963
EP 0519343	A1	23-12-1992	CA 2071155 A1 DE 69221675 D1 DE 69221675 T2 ES 2111012 T3 SE 9101831 A US 5296662 A	15-12-1992 25-09-1997 23-07-1998 01-03-1998 10-03-1993 22-03-1994