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D E C I S I O N
of 24 September 1997

Case Number: T 0568/95 - 3.5.2

Application Number: 86307574.3

Publication Number: 0218470

IPC: H01H 71/24

Language of the proceedings: EN

Title of invention:
Circuit breaker with blow open latch

Patentee:
WESTINGHOUSE ELECTRIC CORPORATION

Opponent:
Klöckner - Moeller GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 54

Keyword:
"Novelty - no (on proper construction of prior art document)"
"Constructive partial incorporation by reference"

Decisions cited:
T 0153/85

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0568/95 - 3.5.2

D E C I S I O N
of the Technical Board of Appeal 3.5.2
of 24 September 1997

Appellant: (Opponent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office dated 26 June 1995 rejecting the opposition filed against European patent No. 0 218 470 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: A. G. Hagenbucher
Members: R. G. O'Connell
B. J. Schachenmann

Summary of Facts and Submissions

I. The appellant (opponent) contests the decision of the opposition division to reject its opposition to European patent No. EP 0 218 470.

II. The patent was granted with a single claim which was amended on appeal to correct an obvious mistake and now reads as follows:

"1. A circuit breaker with blow open contact arm, comprising a circuit breaker unit having a pair of separable contacts (18,20) operable between open and closed positions and a releasable member, the contacts sustaining a repulsion magnetic force which force is proportional to the square of the current load flowing through the contacts and which is operable to separate the contacts upon the occurrence of a predetermined current overload, a trip mechanism (58,60,62,66,86,90) movable in response to the occurrence of a predetermined electric current overload to release the releasable member, the circuit breaker unit including a contact arm carrying one of the contacts, mounting means (108) mounting the contact arm for pivotal movement upon actuation of the trip mechanism, the mounting means including one of a cam and cam follower means for retaining the contact arm in either open or closed positions, the contact arm including the other of the cam and cam follower means, characterized in that the cam follower means (112,114,116,120) moves from a first cam position to a second cam position when the contact arm is propelled to the open contact position in response to a repulsion magnetic force occurring when the current exceeds the predetermined value, the trip mechanism actuating the circuit breaker unit to the open contact position causing the mounting means to rotate and causing the cam follower means to move from the second cam position to the first cam

position, the cam follower means comprising a cam follower and spring means (118) for holding the cam follower against the cam, the assembly of the cam and cam follower means is disposed on the side of the pivot opposite the contact, the cam is on the contact arm and the cam follower means is on the mounting means, and the cam follower means comprising a pin (120) slidable in slot means (122) and the coil spring (118) connected to the cam follower means for holding the pin against the cam."

III. In the notice of opposition the opponent requested revocation of the patent on the grounds that the subject-matter of the single claim of the patent was not new and did not involve an inventive step having regard to the following documents:

D1: DE-A-3 208 009 and

D2: GB-A-2 137 815.

On appeal the opponent, now appellant, relied additionally on:

D3: DE-A-2 928 823.

D3 was referred to in D1 and represented the state of the art from which the invention disclosed in the latter started out.

IV. In a communication accompanying a summons to oral proceedings appointed for 24 September 1997 the board indicated that there was a residual doubt as to whether a particular feature in the claim of the opposed patent was derivable from D1 even when supplemented by reference to D3 and invited the parties to elucidate their differing viewpoints on this.

V. The appellant (opponent) argued essentially as follows:

On its proper construction D1 had to be read in conjunction with D3, to which it expressly referred; cf T 153/85 OJ EPO 1988, 1. D1 taught an improvement to the contact subsystem of a circuit breaker of the kind described in D3 and accordingly the description and drawings of the exemplificative embodiment in D1 showed only the details which were essential to this improvement. The other components which were required to make a complete circuit breaker, ie over-current trip with its lever mechanism, trigger, latch, etc, were not described in detail in D1 since they were already known from D3. Similarly, the mention in claim 1 of D1 of the latch switch (Schaltschloß) was a reference to parts of the circuit breaker which were not shown in the drawings.

The appellant presented an analysis of the patent claim into 15 features and indicated where in D1 and D3 each of these features was, in his view, disclosed. He admitted that as far as the last part of feature No. 11 of this analysis - "the trip mechanism actuating the circuit breaker unit to the open contact position causing the mounting means to rotate and causing the cam follower means to move from the second cam position to the first cam position" - was concerned, there was a gap in the description of the operation of the D1/D3 circuit breaker but contended that the person skilled in the art would inevitably fill that gap in the detail of the description of the operation of D1/D3 precisely as specified in the claim since no other practical alternative was reasonably conceivable. Common sense dictated that the switch had to be resettable after a blowing open of the contacts by a current surge and the actuation of the (persistent)over-current trip. Since the member released by the trip mechanism (reference 3 in D3) necessarily rotated the common crossbar of the

switch block, shown as a square cross-section within the contact member 2 in D3 and referenced 8 (Schaltwelle) in D1, which in turn necessarily rotated the mounting means, referenced 6 in D1, in a direction which would cause closed contacts to be opened, it followed that the mounting means was caused to rotate and cause the cam follower means (22 in D1) to move from the second (bent) position towards the first (aligned) position. The conclusion - closing the gap in reading the claim onto the circuit breaker disclosed in D1/D3 - that the cam follower was caused to move to the first (aligned) position was impossible to resist as the proper interpretation of the prior art disclosure since it represented the most natural and straightforward way of facilitating reset. Other interpretations were so technically unrealistic that they had to be rejected.

VI. The respondent's arguments can be summarised as follows:

The appellant's feature analysis of the patent claim and its reading onto D1/D3 was accepted except for feature No. 11 (cf point V above). In D1 there was no trip mechanism disclosed. The crossbar (Schaltwelle 8) was described as being connected to a "Schaltschloß" which did not necessarily imply a trip mechanism; it could, and in the appellant's view did, refer simply to a switch block, eg other phase modules comprising a complete circuit breaker without any implications of a linkage to an over-current trip mechanism. D3 disclosed a trip mechanism but there was no indication in D1/D3 of how this trip mechanism engages with the mounting means 6 in D1. In D3 the trip mechanism acted on arm 2

but there was no equivalent in D1. It was a matter of speculation how the trip mechanism of D3 interacted with the mounting means 6 in D1 given that the latter had no equivalent of the releasable member 3 which provided the linkage in D3.

VII. The appellant requested that the decision under appeal be set aside and that the patent be revoked.

VIII. The respondent requested that the appeal be dismissed and the patent be maintained in amended form on the basis of claim 1 filed during the oral proceedings.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty*

2.1 Given that the feature analysis of the claim of the opposed patent and the manner in which it can be read onto the disclosure of prior art document D1 read in conjunction with D3 - with the exception of the feature "the trip mechanism actuating the circuit breaker unit to the open contact position causing the mounting means to rotate and causing the cam follower means to move from the second cam position to the first cam position" (feature No. 11) - is common ground between the parties, and accords also with the judgement of the board, the issue of novelty of the subject-matter of the claim reduces to the question of whether this disputed feature is disclosed in D1 on a proper construction of the latter.

2.2 The respondent does not contest the appellant's submission that D1 is to be read in conjunction with D3 when considering novelty. It is also the judgement of the board that at least that part of D3 specified below is constructively incorporated by reference into D1. This does not follow merely because D1 refers to D3, nor from the mere use of any special formula, but from the particular relationship between the disclosure of D3 which describes a circuit breaker and that of D1 which relates to an improved electrical contact subsystem suitable for embedding in a circuit breaker of the kind specified in D1 as being known from D3. In the interests of perspicuousness D1 relies on express reference to D3 for details of the rest of the circuit breaker; in particular the details of the interface between the contact subsystem and the rest of the circuit breaker can only be understood by considering both documents.

The established jurisprudence of the EPO Boards of Appeal on this point was set out in T 153/85 OJ EPO 1988, 1 at point 4.2:

"When assessing novelty, the disclosure of a particular prior document must always be considered in isolation; in other words it is only the actual content of a document (as understood by a skilled man) which destroys novelty. It is not permissible to "combine" separate items of prior art together. However, in a case such as the present, where there is a specific reference in one prior document (the "primary document") to a second prior document, when construing the primary document (i.e. determining its meaning to the skilled man) the presence of such specific reference may necessitate that part or all of the disclosure of the second document be considered as part of the disclosure of the primary document."

2.3 The introductory part of D1, in the paragraph bridging pages 4 and 5 (handwritten pagination), summarises the structure and function of the D3 circuit breaker referring to the lever arrangement (Hebelmechanismus) which is linked to the crossbar (Schaltwelle) and also to the releasable member which is connected with a trip mechanism (Überstromauslösevorrichtung) operable in response to the occurrence of a (persistent) current overload. Thereafter D1 focusses on the problem of the conflicting requirements of adequate contact force in normal operation and quick contact separation in response to electrodynamic repulsion caused by a large current surge - corresponding to the subjective problem referred to in the opposed patent at column 1, lines 17 to 22 - and details the solution shown in figures 1 to 2 of D1 (main embodiment). This solution is based on a spring-biased cam follower pin co-operating with cam surfaces forming an integral part of the contact arm 4 enabling the latter to pivot independently in the mounting means (6 in D1) in response to "blow-open" forces - an operation which corresponds to the teaching in the passage at column 4, lines 32 to 35 of the opposed patent: "Latching means are provided between the switch arm and the bracket far (sic) releasably maintaining them together for simultaneous or separate movement."

2.4 It is common ground that D1 describes explicitly only the "blow-open" action; it does not describe explicitly how the blown-open contact arm 4 is returned to the closed or reset position shown in Figure 1 of D1 nor how the crossbar (Schaltwelle 8) which is described (in the sentence bridging pages 4 and 5) as connecting the mounting means 6 to a latch switch (Schaltschloß) cooperates with the contact assembly. The board is persuaded however that the skilled person would nevertheless find the teaching complete and understandable. In the judgement of the board,

Figures 1 and 2 of D1 do not allow any other interpretation but that rotation of crossbar 8 in a contact-opening direction would cause the mounting means 6 to pivot in the same direction since the bar 8 is a square-section shaft keyed in a square hole in mounting means 6. It is an equally inevitable consequence that this pivoting of the mounting means 6 would bear on the spring-biased cam follower pin 22 so as to drive the latter back along the cam surfaces of contact arm 4 towards the initial aligned position of contact arm and mounting means. This much is directly and unambiguously derivable from D1 alone.

2.5 In order to complete this partial disclosure the skilled person would refer to D3. There, in Figures 1 and 2 he would see how, in the circuit breaker whose contact subsystem is to be improved by D1, the crossbar (Schaltwelle) is linked to the lever arrangement (Hebelmechanismus) which is in turn linked to the releasable member connected to a trip mechanism (Überstromauslösevorrichtung) operable in response to the occurrence of a (persistent) current overload, ie the details corresponding to the summary in the introductory part of D1 referred to at 2.3 above. In the judgement of the board Figure 1 of D3 admits of no other interpretation but that following the first immediate blow-open response the (persistent) overcurrent trip mechanism is triggered, releasing the releasable member and actuating the lever arrangement to turn contact arm 2 clockwise (Figure 1 of D3), and thus, necessarily - by virtue of a square section hole in the contact arm 2 accommodating a square section shaft - rotating the crossbar (Schaltwelle). This much is directly and unambiguously derivable from D3.

2.6 To complete the proper interpretation of the disclosure in D1 it only remains to identify the square section shaft (Schaltwelle 8) in Figure 1 of D1 with the (unreferenced) square section shaft in Figure 1 of D3. The board deems this identification to be beyond reasonable doubt in view of the undisputedly notorious construction of multipole circuit breakers having transverse square section crossbars of this type and function.

2.7 Given this link between the circuit breaker of D3 and its improved contact subsystem described in D1 the inference is, in the judgement of the board, irresistible that the disputed feature No. 11 of claim 1 of the opposed patent is disclosed in D1 when properly read in conjunction with D3. The skilled person would appreciate directly and unambiguously that the rotation of the crossbar (Schaltwelle) resulting from the (persistent) overcurrent trip (cf 2.6 above) would cause the mounting means 6 to rotate, causing the cam follower means to move from the second cam position towards the first cam position (2.4 above); he would further understand the operation to be such that this rotation continues to the first cam position, since that would reset the contact arm and mounting means assembly in its original aligned position. This, although not described *expressis verbis* in D1, is the natural technical interpretation of the disclosure.

3. The respondent's arguments resisting the above interpretation amount to limiting the disclosure of D1 to what is explicitly described and illustrated therein. Such an interpretation is not in accord with established jurisprudence on the interpretation of documents for the purposes of determining novelty, which is to establish what technical teaching the person skilled in the art would derive directly and

unambiguously from the document, including those elements which the skilled person would directly and unambiguously understand as implicitly required to make technical sense of the document.

4. The board concludes therefore that the circuit breaker of amended claim 1 of the opposed patent is not new within the meaning of Article 54 EPC having regard to prior art document D1 and prior art document D3 constructively partially incorporated by reference in the former.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

N. Maslin A. G. Hagenbucher