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Bezeichnung der Erfindung:
Title of invention:
Titre de l'invention : Parallel arm windscreen wiper with through-the-pane drive

Klassifikation / Classification / Classement : B60S 1/34

## ENTSCHEIDUNG / DECISION

vom / of / du 6 March 1990

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent / Titulaire du brevet : DEERE & COMPANY

Einsprechender / Opponent / Opposant : OI SWF Auto-Electric GmbH
OII Dr.-Ing. h.c. F. Porsche AG

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 56 EPC

Schlagwort / Keyword / Mot clé : "Inventive step (affirmed after amendment)"

**Leitsatz / Headnote / Sommaire**

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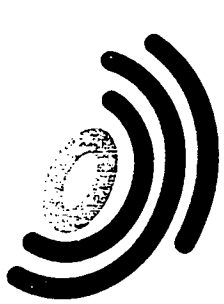

Case Number : T 545/88-3.2.1

# D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 6 March 1990

Appellant : (Proprietor of the patent)
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Representative :
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Decision under appeal :
Decision of Opposition Division of the European Patent Office dated 9 September 1988 revoking European patent No. 0 065 041 pursuant to Article 102(1) EPC.

Composition of the Board :

Chairman : F. Gumbel
Members : P. Alting v. Geusau
W. Moser

## Summary of Facts and Submissions

I. The Appellant is proprietor of European patent No. 0 065 041 which was granted on the basis of European patent application No. 81 302 130.0.

II. The Respondents (Opponents I and II) having separately filed notices of opposition against the European patent, the Opposition Division revoked the patent on 9 September, 1988 on the grounds that the subject-matter, according to both the Appellants main and auxiliary requests, did not involve an inventive step having regard to the following documents:

D1 : DE-U-1 758 507
D2 : DE-A-2 632 186
D3 : DE-U-7 426 221
D4 : Drawing of construction - SWF No. 104 071-1976
D8 : FR-A-1 138 725
D9 : GB-A-1 234 040

(The numbering of documents used by the Opposition Division is maintained).

Further documents mentioned in the decision under appeal are:

D5 : Abstract of Catalogue SWF-Edition 1977/78
D6 : CH-A-244 749
D7 : DE-A-2 250 509

III. The Appellant lodged an appeal against this decision on 31 October 1988, paying the appeal fee on the same date. The Statement of Grounds was submitted on 29 December, 1988.

IV. Following a communication setting out a preliminary opinion of the Board the Appellant filed new Claims 1 to 3 and an adapted description (columns 1 and 2) of the patent on 20 October 1989.

In view of the indications in the accompanying letter, the Appellant obviously requests maintenance of the patent in amended form whereby the new Claims 1 to 3 are to replace all four of the granted claims.

Furthermore, a subsidiary request for oral proceedings only in the case an adverse decision should be made was filed by the Appellant on 20 October 1989.

On the other hand, no requests for oral proceedings have been submitted by the Respondents.

V. The Appellant's arguments in support of the allowability of his request can be summarised as follows:

In the patent the problem to be solved relates to mounting of a parallel arm windscreen wiper through a single aperture in the windscreen while avoiding clamping pressure being exerted on the windscreen.

In D2 and D4, solid sealing washers are used whereby, regardless of the elasticity of these washers, the pressure applied to the windscreen will depend upon the position of the nuts and can be substantial. According to the invention defined in Claim 1 of the patent, the windscreen is not in any way involved in this clamping.

D4 relied upon in the decision is concerned with the problem of sealing the window hole of a one arm wiper by clamping the window between two sealing rings on a spacer tube surrounding the drive shaft.

Not only would such a single arm wiper not be expected by the skilled man in the art to teach a solution to the problem relating to a parallel arm wiper but the construction shown in D4 may neither be regarded as pertinent because of the fact that the spacer tube is unsuitable for use as a fixing point for the bracket of the drag link in the parallel arm wiper arrangement.

The teaching of D4 does not supply a solution to the deficiencies of the other references, in particular D9, which relate to a parallel arm wiper, without further adaptations to which no lead can be derived from the cited documents.

VI. In their counterstatements the Respondents essentially argued as follows:

The formulation of the wiper arrangement being solely supported by the motor is not sufficiently clear to set out that no pressure is exerted on the window as contended by the Appellant, in particular when taking into account the features of Claim 3 which show that a sealing arrangement may be incorporated in the claimed arrangement. Such a sealing arrangement is not different from the known sealing arrangements of D4 or D2 thus leading to the conclusion that no appreciable difference with respect to the support of the wiper arrangement is present. Further, Claim 1 does also not clearly specify that the spacer tube is fixed. In this respect there is thus also no difference to the spacer tube shown in D4. The skilled man would arrive at the arrangement of Claim 1 in an obvious way when adapting the parallel wiper arrangement of D9 in accordance with the teachings of D4.

The Respondents therefore requested that the appeal be dismissed.

VII. The valid Claim 1 reads as follows:

"1. A parallel arm windscreen wiper with through-the-pane drive, comprising a wiper arm (14) attached to a drive spindle (26) extending through the windscreen pane (24), a parallel control arm (15) pivoted at one end (16) near the drive spindle on a bracket (33) fixed by a nut (32) relative to a sleeve (28) around the drive spindle and a blade support (19) pivoted to the distal ends (17,18) of the two arms to form a parallelogram causing the blade (20) itself to assume a constant orientation throughout its oscillatory sweep, characterised in that the bracket (33) is clamped by the nut (32) against a spacer tube (29) which extends with clearance through a hole in the windscreen pane (24) around the sleeve (28) to the motor (10,35), with the drive spindle (26), the sleeve (28), the spacer tube (29) and hence the bracket (33) supported solely by the motor (10)".

Reasons for the Decision

1. The appeal is admissible.

2. **Amendments**

2.1 There are no formal objections under Article 123 EPC to the present amended text of the patent in suit, since the proposed amendments in the claims and in the description are adequately supported by the original disclosure and do not extend the protection conferred.

Since this has not been contested, it is not necessary to substantiate this matter further.

3. **Novelty**

3.1 The nearest prior art is considered to be disclosed in CH-A-244 749 (D6) which shows a "through-the-pane drive" arrangement with "two-hole" mounting.

The Board notes that in the Opposition Division's decision D9 was considered to represent the nearest prior art. However, even though D9 also relates to a parallel arm windscreen wiper (but with "one-hole" mounting), there is no disclosure that this known arrangement is of a "through-the-pane drive" type. Since the present patent particularly deals with the problems encountered with "through-the-pane" constructions, D6 is considered more relevant as a starting point. Moreover, D9 does not actually show the feature that the blade support is arranged in parallel to the pivot points of the two arms at the bracket such as to form a parallelogram.

3.2 There is disclosed in D6 (see Figs. 1 and 2):

A parallel arm windscreen wiper with through-the-pane drive, comprising a wiper arm (3,5,6) attached to a drive spindle (1) extending through the windscreen pane (2), a parallel control arm (17) pivoted at one end near the drive spindle on a bracket (21) fixed by a nut (24) relative to a sleeve (23) around the drive spindle (see page 2, lines 25 to 43) and a blade support (13) pivoted to the distal ends (8, 16) of the two arms to form a parallelogram causing the blade (12) itself to assume a constant orientation throughout its oscillatory sweep.

D6 thus shows all the features contained in the pre-characterising part of Claim 1. Claim 1 is therefore correctly drafted in accordance with Rule 29(1) EPC. Since

no other available document comes any closer, D6 being in fact the sole disclosure of a "through-the-pane" drive of a parallel arm windscreen wiper, the subject-matter of Claim 1 is novel.

The issue of novelty has not been raised in the present proceedings and it is therefore not considered necessary to discuss this matter in detail with respect to all the other cited documents.

4. **Inventive Step**

4.1 The characterising features of valid Claim 1 define

(a) that the bracket (33) is clamped by the nut (32) against a spacer tube (29) which extends with clearance through a hole in the windscreen pane (24) around the sleeve (28) to the motor (10, 35), with the drive spindle (26), and that (b) the sleeve (28), the spacer tube (29) and hence the bracket (33) are supported solely by the motor (10).

When compared to the wiper drive arrangement disclosed in D6 these features provide the possibility of a "one-hole" mounting (feature a) which avoids the problems of two hole mounting (see the description of the patent as amended in column 1, lines 10-18) while at the same time avoiding mounting forces to press on the weakened part in the area of the hole in the window (feature b).

The problem to be solved by the subject-matter of Claim 1 thus relates to a further development of a "through-the-pane" drive avoiding these disadvantages of the prior art.

4.2 No contribution to inventive step can be seen in the mere recognition by the skilled person of the need to improve the known wiper drive arrangement

However, for reasons set out below, the skilled man could, in the Board's opinion, not find an indication or encouragement in the cited documents to adopt the solution proposed in Claim 1.

4.3 Considering the documents D9, D4 and D2, which are particularly relied upon by the Respondents and Opposition Division, the following is to be noted.

D9 discloses an example of a "one-hole" mounting of a parallel arm wiper. The wiper arm 2 is mounted on an oscillatory wiper shaft 4 which is journalled in a fixed bush 6 to which a bracket 20 for the drag link 12 of the wiper is mounted.

However, there is no disclosure in D9 that this wiper arrangement is intended for use in a "through-the-pane" drive, and in view of the details of construction shown in Fig. 2 it is apparent that the bush 6 is fixed by clamping it to the area around the hole through which the bush extends.

Therefore, in the Board's view, D9 cannot give the man skilled in the art a lead to a solution in which pressure on the area around the hole is avoided by supporting the wiper arrangement solely by the wiper motor.

In the drawing 104.071 of D4, which has been cited in connection with an alleged prior use the Appellant has not contested, a "through-the-pane" construction is shown of a single arm wiper. A spacer tube is used when clamping two seals against the window pane between two nuts (one of which is nut 5), obviously to limit the pressure exerted on the window pane. In this construction the arrangement is not

supported solely by the motor such as defined in Claim 1, but to some extent the arrangement is also carried by the window and therefore includes the disadvantages the present patent wants to overcome.

The Respondents argued that the arrangement defined in Claim 1 may include a sealing according to new Claim 3, whereby, since the seal must exert some pressure to the pane in order to properly seal, it would help in supporting the wiper arrangement. Therefore, the formulation solely "supported by the motor" is not clear and in this respect also no difference would exist between the support of the wiper arrangement according to Claim 1 or the arrangement of D4 (or D2 which concerns a similar support of a one-arm "through-the-pane" drive).

However, in the Board's opinion, there exists a substantial difference in the degree of pressure exerted on the window by using the hole as a mounting point for the wiper arrangement or providing a resilient skirt on one side of the hole for sealing purposes only. The fact that in D4 (and D2) the window hole is used as a mounting point is considered to be apparent to the skilled man when taking into account the detail of the left hand drawing in D4 (and Fig. 2 of D2).

Further, although it is true that for proper sealing some contact pressure is necessary, the sealing arrangement defined in new Claim 3 and shown in Fig. 2 and 3 of the patent in suit is of a type which, contrary to a sealing arrangement using two rubber rings between which the pane is clamped such as shown in D4 (and D2), exerts a minimal pressure, the influence of which may be neglected.

Therefore, the Respondent's arguments are not considered convincing in this respect.

The Respondents also argued that it is not clearly set out in Claim 1 that the spacer tube is fixed and contended that the spacer tube in D4 is not different from the spacer tube in the claims.

However, in the Board's judgement, the spacer tube in D4 cannot be considered to "extend to the motor" in the sense used in the claim for the fact that the nut (5) is itself rotatable whereas the motor is not. For this reason this known spacer tube is not considered to be a stable mounting support and therefore cannot be regarded as giving the man skilled in the art a lead to securing a bracket of a parallel arm wiper to a spacer tube extending to the motor which, in the Board's view, in the context of Claim 1 is sufficiently clear to set out that the spacer tube is held against rotation at least by friction against the support of the motor.

Summarising, it can be said that although D9 shows a "one-hole" mounting instead of the "two-hole" mounting used in the nearest prior art document D6, neither D9 nor D4 and D2 give an indication how to avoid mounting forces being exerted on the hole in the window pane, by adapting the known "one-hole" mounting arrangement of D9 in such a way that the wiper arrangement is supported solely by the motor.

The contentions that the features of Claim 1 with respect to the support "solely by the motor" and the "spacer tube being fixed" are unclear are not considered convincing since, as shown above, in the context of the claims the skilled man is, in the opinion of the Board, very well capable of understanding the specific meaning of these features.

4.4 The other documents cited by the Opposition Division in their decision concern essentially equivalents of constructions shown in the documents already cited hereabove: D1 discloses a similar "one-hole" mounting as shown in D2 of a one arm wiper, D3 and DE-A-2 250 509 (D7 which is the corresponding document to US-A-3 893 204 cited in the European search report) discloses a similar "one-hole" mounting of a parallel arm wiper as shown in D9. FR-A-1 138 725 (D8) discloses a similar construction as shown in D6. D5, which concerns an abstract of an SWF catalogue, shows the wiper arrangement of D4.

In the above documents showing spacer tubes (D1 and D2), the tubes are used as mere distance defining elements. These distance pieces do not protrude through the pane far enough such as to be suited to provide a support against rotation of the bracket arm situated on the other side of the window pane.

Thus, a person skilled in the art cannot find in the available documents, a suggestion how to solve the technical problem underlying the present invention, in a manner indicated in Claim 1.

To sum up it can be said that none of the cited documents, even in combination with each other, provides the skilled person with all the steps specified in Claim 1. Therefore, the subject-matter of Claim 1 involves an inventive step within the meaning of Article 56 EPC.

5. Consequently, Claim 1 as well as dependent Claims 2 and 3, which concern preferred embodiments of the wiper arrangement according to Claim 1, are allowable under Article 52(1) EPC. The description and the drawings are in agreement with the actual wording and scope of the claims. The description essentially complies with Rule 27(1)(c) and 27(1)(d) EPC.

Hence, with the additional amendment to delete "the characterising part of" in column 1, line 48 these documents appear to be suitable for the maintenance of the patent.

6. In these circumstances, the Appellant's auxiliary request for oral proceedings is meaningless.

Order

**For these reasons, it is decided that:**

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to maintain the patent on the basis of the claims filed on 20 October 1989, description and drawings of the patent as published with the amendments filed on 20 October 1989 and deletion of "the characterising part of" on line 48 of column 1.

The Registrar

F. Fabiani

The Chairman

F. Gumbel

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C. Moser 21.3.90