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**Datasheet for the decision
of 22 October 2009**

Case Number: T 1955/07 - 3.2.01

Application Number: 99963308.4

Publication Number: 1047569

IPC: B60J 7/047

Language of the proceedings: EN

Title of invention:
Retractable roof for vehicles

Patentee:
ArvinMeritor GmbH

Opponent:
Inalfa Roof Systems Group B.V.

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step - main request (yes)"

Decisions cited:
-

Catchword:
-



Case Number: T 1955/07 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 22 October 2009

Appellants:
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
2 October 2007 concerning maintenance of
European patent No. 1047569 in amended form.

Composition of the Board:

Chairman: S. Crane
Members: Y. Lemblé
S. Hoffmann

Summary of Facts and Submissions

I. The Opponents' appeal is directed against the interlocutory decision of the opposition division posted 2 October 2007 and according to which, account being taken of the amendments made by the Patent Proprietors during the opposition proceedings, European patent No. 1 047 569 and the invention to which it related were found to meet the requirements of the EPC.

II. In its decision, the opposition division held that the subject-matter of the amended claims met the requirements of novelty and of inventive step having regard, inter alia, to the following prior art documents

D1: WO-A-98/14 342

D3: US-A-5 197 779.

After the filing of the grounds of appeal the Appellants cited with letter dated 23 March 2009 the following document

D4: JP-U-2-90 124

and requested that it be introduced into the proceedings as it was *prima facie* relevant.

III. In the oral proceedings, held 22 October 2009, the Appellants requested that the decision under appeal be set aside and that the patent be revoked.

The Respondents (Patent Proprietors) requested that the decision under appeal be set aside and the patent be

maintained on the basis of claims 1 to 9 of the main request filed at the oral proceedings, or in the alternative, on the basis of one of the auxiliary requests 2 to 5 filed with letter dated 16 July 2007.

In the oral proceedings the Respondents agreed to the admissibility of the late-filed document D4 and made clear that this document should not be excluded from consideration for the question of inventive step.

IV. Claim 1 of the main request reads as follows:

"Retractable roof for vehicles,
- with a roof opening (12),
- with a fixed roof area (3) forming a separate cover panel, connecting to the rear edge (12A) of the roof opening (12) and forming a roof skin (14),
- with at least one cover panel (1, 2), selectively closing the roof opening (12) or at least partially exposing it again,
- with guide rails (16), fixedly attached to the vehicle, by means of which at least the one cover panel (1, 2) is guided and
- with a basic part, fastened at the vehicle or attachable to the vehicle, and delimiting the retractable roof at at least two opposite edges and forming or carrying the guide rails,
- wherein at least the one cover panel (1, 2) can be displaced along the guide rails (16), starting from a closed position can be moved into an open position located above the fixed roof area (3), and the guide rails (16) have extensions (16A) which, in the direction of displacement (T) of at least the one cover panel (1, 2), extend beyond the rear edge (12A) of the

roof opening (12) which [edge] delimits the fixed roof area (3),

- the extensions (16A) extend essentially below the roof skin (14) of the fixed roof area (3),
- the roof skin (14) has in the area of the extensions (16A) of the guide rails (16) recesses, respectively exposing one opening (18), as an extension of the lateral roof opening edges (12B, 12C), the opening (18) being formed between a lateral edge of the fixed roof area (3) and the remainder of the vehicle roof (11) and
- cover panel-supporting elements (20) for guiding at least the one cover panel (1, 2) along the guide rails are provided, and that at least in the completely open position of at least the one cover panel (1, 2) at least rear cover panel-supporting elements (20A) engage with the extensions (16A) of the guide rails (16) below the roof skin (14) and extend at least in the completely open position through the assigned opening (18),

characterized in that

- the cover panel-supporting elements (20) are tightly and non-movably connected to at least one cover panel (1, 2), and in that
- at least one flexible sealing strip (24A) is attached to the lateral edge of the fixed roof area (3) for closing the assigned opening (18), the sealing strip (24A) being pushed toward the side by the cover panel-supporting elements in order to locally expose the opening (18)."

V. The Appellants' submissions can be summarised as follows:

The following amendment introduced in the preamble of claim 1: "the opening (18) being formed between a lateral edge of the fixed roof area (3) and the remainder of the vehicle roof (11)" was not clear in that it did not define whether the "remainder of the vehicle roof" was part of the vehicle roof on which the retractable roof was mounted or part of the retractable roof itself. This amendment had also no clear basis in the original disclosure (Art. 123 (2) EPC).

Furthermore, the wording of the last paragraph of claim 1 "at least one flexible sealing strip is attached to the lateral edge of the fixed roof area for closing the assigned opening, the sealing strip being pushed toward the side by the cover panel-supporting elements in order to locally expose the opening" was unclear as concerned the number of sealing strips involved and as to whether the at least one sealing strip was arranged on one side only or on both sides of the fixed roof area. There was also doubtful whether this wording had a clear basis in the original disclosure (Art. 123 (2) EPC).

Claim 1 of the main request had been delimited with respect to document D1 which indeed had to be considered as the nearest prior art. The two distinguishing features, namely

- feature (i): "the cover panel-supporting elements are tightly and non-movably connected to at least one cover panel"

- and feature (ii): "at least one flexible sealing strip is attached to the lateral edge of the fixed roof area for closing the assigned opening, the sealing strip being pushed toward the side by the cover panel-supporting elements in order to locally expose the opening"

were derivable in an obvious manner from document D1 alone or from a combined consideration of the teachings of the documents D1 and D3.

Considering the teaching of D1 alone, it had first to be noted that claim 1 of the main request did not require that the moveable cover panel had to perform some kind of vertical lifting movement before it was displaced to expose the roof opening. In the mechanism according to document D1, the lifting movement of the movable panel was mainly obtained by means of a lifting lever 27 and by making the supporting lever 43 pivot to its active position in which it supported the movable panel 3 (see especially figures 5 and 6 of D1: sliding element 46 engaging guiding rail 42). The skilled person would notice that the retractable roof of document D1 could function without such a lifting mechanism for the movable panel. Thus, if the lifting mechanism including lever 27 was eliminated, it would be clear that the panel supporting lever 43 would be non-movable with respect to the panel 3 and that there was no need for a pivotal connection 47. Therefore feature (i) was derivable in an obvious manner from the content of document D1 alone and did not add anything inventive to the retractable roof as known from D1.

Regarding feature (ii), figure 5 of document D1 showed a flexible sealing strip 49 which was attached to a

lateral edge of the roof 6 for closing the opening associated with the cover panel 3 supporting element 43, the sealing strip 49 being pushed toward the side by the cover panel-supporting element 43 in order to locally expose the opening (D1: page 9 last paragraph and figure 5, reference numerals 49A and 49A'). Whether the sealing strip was attached to the side of the separate cover panel 3 or to the other side of the opening was only a matter of design choice and no inventive merit could be recognised in attaching the sealing strip to a particular side of the opening. Feature (ii) was therefore also obvious in view of D1.

Starting from the retractable roof of figures 1-6 of document D1 as nearest prior art, both missing features (i) and (ii) were also derivable from a combined consideration of the documents D1 and D3. As shown in figures 3B, 5 and 6 of D1, the known retractable roof had a structure including a mechanism 27-32 to lift up the cover panel 3 from the closed position and a cover panel supporting element 43 for supporting that panel when it was in a position above the fixed roof panel 4. Such a mechanism was delicate, used a great number of parts and was relatively expensive. If the man skilled in the art wanted to simplify that roof mechanism, he would come across document D3 which disclosed a similar retractable roof where the rear end of the sliding front panel 10 might be coupled to a guide track through a linkage adapted to tilt up the rear end of that panel 10, as did the lifting lever 27 of D1 (see D3: column 7, line 50-58). As an alternative to keep costs down, D3 proposed that the linkage not be incorporated and the front roof panel 10 be directly engaged with the guide tracks 14 through the guide pin

28 and the guide shoes 30a,30b which were tightly and non-movably connected to the panel (see column 7, lines 42-49 and column 7, line 59 to column 8, line 11). To this end, the guide track 14 was provided with a transitional guide section 14b' (see embodiment of figure 9 of D3) which corresponded to the guide bracket section 28A of the granted patent. In applying this teaching to the retractable roof of document D1, the skilled person would inevitably come to a panel supporting element according to feature (i). The complete guide rail for the roof panel supporting elements could remain below the roof skin, since, as shown in D1, the supporting element had simply to push the sealing element to the side. No technical difficulty would have to be overcome. On the contrary, keeping the complete guide rail below the roof skin avoided problems of corrosion, dirtiness and water management. Feature (ii) would also be obvious, since there was only a matter of choice to attach the sealing member to the side of the separate cover panel.

The Respondents had objected that there was no extension of the guide rails in D1, because D1 showed two separate guide rails: one guide 16 for the front panel supporting elements 27 and one guide 42 for the rear panel supporting elements 43, both guides 16,42 being located in two different longitudinal planes. In this respect, it was to be noted that the last paragraph on page 19 of D1 already indicated that the function of the lifting lever 27 and that of supporting lever 43 might be unified in a single unit to be arranged on a single guide rail 42.

Finally the subject-matter of claim 1 of the main request was also obvious from a combination of the documents D4 and D3. D4 disclosed a retractable roof which was provided with extensions 5 of the guide rails 10 which extended beyond the roof skin formed by a fixed roof area, with flexible sealing strips 91 attached to the lateral edge of the fixed roof area for closing a corresponding opening 4, the sealing strip being pushed toward the side by a cover panel-supporting element 7 in order to locally expose the opening (see especially figures 1 to 3). Thus, the roof of D4 was distinguished from that of claim 1 of the main request by feature (i) ("the cover panel-supporting elements are tightly and non-movably connected to at least one cover panel") and by the feature that the fixed roof area formed a separate cover panel. In view of the retractable roof of document D3, which showed panel supporting elements 24,28,30 which are rigidly connected to the sliding cover panel (see figure 3) and a fixed roof area formed as a separate cover panel (see figure 1: stationary roof portion 6), the distinguishing features represented an obvious design choice.

VI. The Respondents countered in essentially arguing that claim 1 of the main request was clear, did not contain subject-matter which extended beyond the content of the application as originally filed and that the subject-matter of the claim met the requirement of inventive step.

Reasons for the Decision

1. Main request; admissibility of the amendments

In order to overcome objections relative to the clarity of the amendments made in claim 1 during the opposition proceedings, the claim was further amended by the patent proprietors in the course of the oral proceedings before the Board. The term "seal (24A)" in the last paragraph of the claim was replaced by the term "sealing strip (24A)" and the second paragraph of the claim now specifies that the fixed roof area 3 forms a separate cover panel. That last feature has a clear basis in the application as originally filed: see claim 4 and page 8, lines 20-21 of WO-A-00/29235, hereinafter referred to as D0.

The Appellants objected to the feature: "the opening (18) being formed between a lateral edge of the fixed roof area (3) and the remainder of the vehicle roof (11)" as being unclear and not supported by the original disclosure. The feature in question simply defines that the lateral edge of the fixed roof area, i.e. the lateral edge of the separate cover panel 3, serves as a corresponding edge for the opening 18, the other edge thereof being formed by the remainder of the vehicle roof. This is clearly supported by the passage of page 8, lines 12-18 of the original disclosure D0. Within the context of the claim, the term the "remainder of the vehicle roof" is perfectly clear and no necessity arises to specify whether the remainder of the roof belongs to the vehicle roof which supports the retractable roof or to the retractable roof itself.

The last paragraph of claim 1 "at least one flexible sealing strip ... to locally expose the opening" is supported practically word for word by the passage of page 10, lines 29-36 of D0. The fact that the sealing strip 24A is attached "to" (instead of "at") the lateral edge of the fixed roof area is shown in figure 4 of D0. Thus, there is a clear basis in the original disclosure D0 for the features of the last paragraph of claim 1 (Art. 123 (2) EPC). The claim is also clear as to the function of the "at least one sealing strip": it has to close the associated ("assigned") opening respectively exposed by the corresponding recess of the roof skin in the area of the extensions 16A of the guide rails 16.

2. Main request; Novelty

The subject-matter of claim 1 of the main request is novel since none of the documents cited by the Appellants discloses in combination all the features of this claim. As novelty was not contested any more by the Appellants, it is not necessary to substantiate this in any detail.

3. Main request; Inventive step

3.1 Obviousness from document D1 alone

As mentioned in the paragraphs [0002] and [0003] of the patent, one of the main technical problems the invention had to solve was to design a retractable roof which does not present disruptive elements when the roof is in its closed position. According to the invention, this is obtained by aligning, in the closed

position of the roof, the at least one movable cover panel with the vehicle roof skin (column 2, lines 1-2). Thus, the roof skin and the surface of the at least one cover panel would be flush, which allows a reduction of drag and presents an aesthetic appearance.

The retractable roof of document D1, which according to the Appellants represents the nearest prior art, achieves the same object with a retractable roof having a lifting mechanism for the movable panel 3. The lifting mechanism mainly comprises a lifting lever 27 and a pivotal supporting lever 43, both being respectively mounted in guide rails 16 and 42, to lift the movable panel 3 out of alignment with the roof skin, such that it can be displaced into an open position located above the fixed rear panel 4.

In their attempt to demonstrate obviousness, the Appellants start from the retractable roof of document D1 and argue that the skilled man would recognize that he could dispense with the lifting movement of the movable panel, thus obtaining a simpler retractable roof having a disruptive appearance but having the claimed features.

The Board judges that this reasoning is based on hindsight. If the skilled man wanted to design a retractable roof mechanism of low cost, simple construction and could accept a disruptive appearance in the closed position, he would not take as a starting point the relatively complex and expensive roof mechanism of D1 which, with its lifting lever 27 and pivotal supporting lever 43, was especially conceived

for lifting/lowering the cover panel from/to the closed position (see the two last paragraphs of page 1 of D1).

3.2 Combination D1/D3

Regarding the two distinguishing features (i) and (ii) that the Appellants have identified when comparing the claimed retractable roof with the prior art shown in D1, the Board judges that their incorporation in the roof of D1 is not rendered obvious by document D3.

Although document D3 discloses feature (i), the cover panel-supporting elements 24,28,30 guided along a guide track 14 are namely tightly and non-movably connected to the movable cover panel 10 (see column 4, lines 28-39), such a tight connection is, however, intimately linked to the fact that the guide track 14 for guiding the front cover panel-supporting elements is arranged over the rear stationary roof portion 6 (see column 1, line 65 to column 2, line 2), that is above the roof skin formed by the stationary roof portion 6 which corresponds to the separate cover panel of the claim (see also figures 2, 5 and column 3, line 67 to column 4, line 2). This arrangement has been specially chosen in D3 in order to avoid the disadvantages of a sliding roof panel including a linkage which move the sliding cover panel on a pair of guide rails, which is the sort of linkage used in document D1 (see D3: "Background of the invention").

The Appellants see in the passage of column 7, line 42 to column 8, line 11 of D3 an incentive for the skilled person to suppress the pivotal connection between the linkage element 43 and the cover panel 3 of

D1, such that the supporting lever 43 would be tightly and non-movably connected to the panel.

The Board does not agree with this interpretation of this passage. Considering the retractable roof of figure 9 of D3, which does not incorporate a tilting linkage, and the retractable roof of figure 10, which incorporates the tilting linkage 210, both forms of realisation of the roof have panel-supporting elements which are tightly and non-movably connected to the cover panel 10 and they both show a guide track 14 provided with a special transitional guide track section 14b, 14b'. Thus, the skilled person would not infer from this passage of D3 that a special track section with a non-movable connection is an alternative to a pivotal connection.

Feature (ii) is shown neither by document D1 nor document D3. As shown in figure 5 of D1, the flexible sealing strip 49, which is pushed towards the side by the tilt lever 43, is attached to the basic frame 41 (page 9, last paragraph and page 10, first paragraph). As explained by the Respondents in the third paragraph of page 5/6 of their response to the appeal grounds, feature (ii) provides specific advantages in pre-assembling the retractable roof.

The claimed retractable roof is therefore not rendered obvious by a combination of the documents D1 and D3.

3.3 Combination D4/D3

As concerns the disclosure of a tight and non-movable connection between the cover panel supporting elements

and the movable cover panel (feature (i)), document D4 is not of greater relevancy than D1. As is apparent from the slanted orientation of the panel-supporting elements in the closed position of the movable cover panel 6 in figure 1 of D4, the connection between the movable cover panel 6 and the cover panel-supporting elements 7 guided in the rails 5,10 cannot be tight and non-movable.

Although the rear guide rails 5 shown in figure 3 of D4 are arranged below the roof skin, these guide rails 5 are not extensions of the front guide rails 10 extending beyond the rear edge of the roof opening. Figure 1 of D4 shows that the rear guide rails 5 are clearly distinct from the front guide rails 10. There is even a partial overlap between the end portion of the front rails 10 and the initial portion of the rear rails 5.

The retractable roof of document D4 does not comprise a fixed roof area formed as a separate cover panel. For this reason, there cannot be any flexible sealing strip attached to the lateral edge of the fixed cover panel. Therefore feature (ii) cannot result from a combined consideration of D4 and D3, since it is not disclosed in any of these two documents.

Finally, the guide rails 5,10 according to the figures of D4 are directly fastened to the vehicle. They are not formed on or carried by a basic part delimiting the retractable roof and attachable to the vehicle, as claimed.

It results from the above considerations that the differences in design, conception, structure and mounting of each of the retractable roofs shown in these two documents D4/D3 are such that the skilled person has absolutely no reason to contemplate a combination of the teaching of the documents D4/D3.

4. The Board concludes from the above that the subject-matter of claim 1 according to the main request is novel and involves an inventive step.

Dependent claims 2 to 9 relate to further developments of the inventive concept disclosed in claim 1 and contain all of the features of claim 1. The above conclusions regarding novelty and inventive step apply equally to these claims which likewise meet the requirements of the EPC. The description has been brought into conformity with the amendments made in the claims.

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 following documents:
 - claims 1 to 9 and columns 1 to 8 of the description, both presented at the oral proceedings,
 - drawings as granted.

The Registrar

The Chairman.

A. Vottner

S. Crane