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D E C I S I O N
of 11 November 2003

Case Number: T 0233/02 - 3.2.3

Application Number: 91121092.0

Publication Number: 0478013

IPC: E05B 47/00

Language of the proceedings: EN

Title of invention:

Door lock assembly for automotive vehicles

Patentee:

AISIN SEIKI KABUSHIKI KAISHA

Opponent:

ROBERT BOSCH GmbH

Headword:

-

Relevant legal provisions:

EPC Art. 52, 54, 56, 69, 123

Keyword:

"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:

-

Catchword:

-



Case Number: T 0233/02 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 11 November 2003

Appellant: ROBERT BOSCH GmbH
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
1 February 2002 concerning maintenance of
European patent No. 0478013 in amended form.

Composition of the Board:

Chairman: C. T. Wilson
Members: J. du Pouget de Nadaillac
M. K. S. Aúz Castro

Summary of Facts and Submissions

I. The appeal is directed against the interlocutory decision of an opposition division posted on 1 February 2002 to maintain the European patent No. 0478013 in an amended form. The opponent, hereinafter the appellant, filed the appeal on 26 February 2002 and paid the appeal fee on the same date.

In the statement of grounds of appeal, which was received on 4 June 2002, the appellant:

- first contested the arguments of the first instance in respect of its objection under Article 123(2) EPC and its objection of lack of inventive step having regard to the following prior art documents:

E5: EP-A-0 064 602

E6: US-A-4 588 217,

and

- secondly submitted a new document, namely

E7: DE-A-33 19 354,

which in its opinion destroyed the novelty of the subject-matter of claim 1 as amended, or at least suggested said subject-matter to a person skilled in the art.

II. The proprietor of the patent, hereinafter the respondent, in its response received on 7 November 2002 to the statement of grounds of appeal, refuted the appellant's grounds, arguing in particular that E7 was not highly relevant.

In response to a communication issued as an annex to the summons to attend oral proceedings pursuant to Article 11(2) RPBA, in which the board of appeal in particular expressed the preliminary opinion that the objection under Article 123(2) EPC seemed to be justified, the respondent filed on 10 October 2003 a new claim 1 as main request.

III. Said claim reads as follows:

"A door lock assembly comprising a housing (2,102) having a base portion and a cover portion, an actuator (10,110) for driving a locking arm (4,104) freely rockably supported on said housing (2,102), and a door lock operating unit (20,120) making locked and unlocked positions by said locking arm (4,104), said actuator (10,110) being adapted to drive said locking arm (4,104) to a locked position and an unlocked position, respectively, via a shaft (14a,115b) axially supported by said housing (2,102) for rocking together with said locking arm (4,104), wherein said actuator (10,110) and a pawl (21), a latch (22) and a spring (23) of said door locking operating unit (20,120) are accommodated within said housing (2,102), wherein said shaft (14a, 115b) is rotatably mouted with respect to said base portion and extends to the outside of said cover portion, where it is directly connected to said locking arm (4,104)."

IV. During the oral proceedings, which took place on 11 November 2003, the respondent submitted a new description.

V. The arguments of the appellant can be summarized as follows:

a. During the oral proceedings

The wording of the new claim 1 leaves open whether the door lock operating unit comprises only the three elements as specified in said claim or comprises additional parts. In the detailed part of the patent description, having regard to the passages concerning the first embodiment, the door lock operating unit is only said to include said three elements, which are accommodated in the housing, whereas regarding the passages dealing with the second embodiment the door lock operating unit is described as comprising arms or levers which are outside the housing and further it is said to actuate the well known door lock actuating unit located in the housing, that is to say the unit containing the pawl, the latch and the spring. Thus, at least a contradiction appears between claim 1 and the description (Article 123(2) EPC).

"A housing" is mentioned in claim 1. However, the description of the patent in suit, see Figs.1 and 2, discloses two compartments which are clearly distinguishable from each other, one for the actuator and the other for the specified three elements of the door lock operating unit, namely the pawl, the latch, and the spring. This arrangement is well known in the

technical field of door lock assemblies for cars, since the electrical module of such a door lock assembly, that is to say essentially the actuator, has to be encapsulated against moisture, whereas an access to the outside is necessary for the mechanical elements of the assembly which are connected to the door key lock or to manually actuated buttons. E7 with its second embodiment shows a similar two-compartments arrangement, and the only difference is that the present invention discloses in fact a "unitary housing", when in E7 the housing is formed of two compartments which are screwed to each other. The reason for this apparent difference is well-known by the skilled person: in the 1980's it was first wished to have a basic module, namely the mechanical one, for door lock assemblies which are used in the cheaper car models, whereas for car models of higher standard an actuator unit was added to this basic module. Since now door lock assemblies comprising an actuator are standard products, it is technically obvious and economically advantageous to use a unitary housing instead of having two modules screwed to each other. Thus, if the term "a housing" of claim 1 is interpreted a meaning an unitary housing, then the subject-matter of claim 1 can be considered as being new, but this feature as such does not imply an inventive step.

Otherwise, E7 shows all the other features of claim 1. In particular, see Fig.21, it discloses an arm, namely the arm referenced 135, which is rockably supported on the actuator housing, extends through the cover portion of the housing from the inside to the outside and is driven via its own shaft by the actuator to a locked position and an unlocked position. This arm corresponds

to the locking arm as defined in claim 1. As this claim is silent about the transmission forces and the transmission means between the locking arm and the door lock operating unit, it is of no significance that further intermediate linkages or arms are shown in E7 between this locking arm and the door lock operating unit. Moreover, Fig.15 of E7 shows an embodiment comprising a single arm between the actuator and said unit.

b. In the written statement of grounds of appeal

In the door lock assembly shown in Figure 1 of E5, the locking arm according to the definition of claim 1 of the patent in suit is the arm which is directly connected to the output shaft of the actuator, and not the arm connected to the door lock mechanism as argued by the first instance, since said claim 1 does not define the door lock operating unit which can comprise several links, as is the case with the present invention. Thus, the only difference between the device known from this prior art and the lock assembly according to claim 1 is to be seen in the provision of a single housing for the actuator and the door lock operating unit. This idea is not new, as shown by E6, so that the person skilled in the art has only to apply this idea to the device of E5 and he reaches the subject-matter of claim 1.

VI. The respondent argued as follows:

Claim 1 clearly indicates that the door lock operating unit has two functions, since it includes the door lock actuating unit and it "makes" locked and unlocked

positions of the lock assembly. For the skilled person it is clear that, in order to realize the second function, external levers are necessary, so that the door lock operating unit cannot be reduced to the three internal elements mentioned in claim 1.

The technical problem solved in E6 has nothing to do with the subject-matter of the present invention and the problem to be solved, so that a skilled person would never combine this prior art document with either E5 or E7. Moreover, E7 discloses a locking arm which does not correspond to the lever mentioned by the appellant and the device according to this prior art also does not solve the whole problem underlying the present invention, since this problem is not only to be seen in the provision of a single housing, but also in a lock assembly which is structurally simple and can be easily mounted. In the present invention this is solved by having the locking arm directly connected to the output shaft of the actuator. In contrast thereto, E7 discloses a rather complicated structure by screwing two housings to each other and by providing several levers between the output shaft of the actuator and the true locking arm. Therefore, it cannot suggest the claimed lock assembly.

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

The respondent requested the appeal to be dismissed with the proviso that the patent be maintained in amended form on the basis of claim 1 filed on 10 October 2003 as main request and claims 2 to 4 according to the patent specification as well as the

description filed in oral proceedings and Figures 1 to 13 according to the patent specification.

Reasons for the decision

1. The appeal is admissible.
2. *Objection under Article 123(2) EPC*

Even if some discrepancies or contradictions concerning the definition of the door lock operating unit appear in the description of the patent in suit, the person skilled in the art, reading the whole description in combination with the drawings, would understand that the door lock operating unit not only comprises the pawl, the latch and the spring, which are located in the housing, but also other external arms, for example the locking arm and the release arm. This follows from a comparison between the two embodiments of the invention, which are respectively shown in Figures 1 to 9 and 10 to 13. The passages of the description relating to the first embodiment, see in particular column 6, lines 1 to 3 and lines 49 to 55, seem to limit the door lock operating unit to the elements shown in Figure 6, namely the pawl, the latch and a spring, said figure being given in the description as illustrating the construction of a door lock operating unit, but the description in a following passage, namely line 24 of column 7, mentions a door lock operating unit *having a locking arm and*, thus, brings doubts upon the above limited definition of the unit. These doubts are then confirmed by the description of the second embodiment, which begins (column 7, lines 43

to 53) with the indication that the "door lock operating unit is operated to actuate a well-known door lock actuating unit accommodated in the housing"; the passages of the description, which follow, mention several external arms, namely the locking arm, the opening lever and the release lever, as being parts of the door lock operating unit, whereas the pawl, the latch and the spring located in the housing are the elements of the door lock actuating unit (column 9, line 47). For a skilled person, the only possible logical interpretation, which follows when comparing these different passages of the description concerning the two embodiments, is that the door lock actuating unit is to be considered as a sub-unit of the door lock operating unit, which therefore includes not only the pawl, the latch and the spring of said sub-unit, but also the above mentioned external arms or levers and is, as a consequence, able to "make locked and unlocked positions by said locking arm" , as indicated in claim 1.

Thus, claim 1 does not infringe Article 123(2) EPC.

3. Since this claim further comprises all the features of claim 1 as granted, it also complies with Article 123(3) EPC.

During the oral proceedings before the board of appeal, the description was amended merely to acknowledge E7, which in these proceedings was considered to represent the nearest state of the art.

The new documents of the patent in suit are therefore admissible.

4. *Interpretation of claim 1*

Although the wording of this claim does not mention the shaft of the locking arm to be the output shaft of the actuator unit, this feature is implicitly disclosed by the claim, since the actuator is said to be adapted to drive the locking arm via a shaft, which is rotatably mounted with respect to the base portion of the housing and extends to the outside of the housing cover portion, where it is directly connected to the locking arm. In the description of the patent in suit, the shaft of the locking arm is explicitly said to be the output shaft of the actuator, see column 3 lines 3 to 7 (Article 69(1) EPC).

5. *Novelty of the subject-matter of claim 1*

5.1 This novelty was put into doubt vis-à-vis the disclosure of E7 with respect of two points:

- The appellant admits that E7 does not disclose an "unitary" housing, nevertheless it discloses a housing made of two compartments, as this is the case with the present invention; and
- the arm directly connected to the output shaft of the actuator of the lock assembly described in E7 makes locked and unlocked positions of said lock assembly and, thus, corresponds to the locking arm of claim 1.

5.2 According to claim 1 of the patent in suit, the housing has a base portion and a cover portion and, in the

description of the patent in suit, a housing having two distinct spaces or compartments, one for the actuator and the other for the door lock actuating unit, both separated by an inner wall, is disclosed. Even if this housing is divided into two compartments by an inner wall, it remains nevertheless "a housing", that is to say a single housing. In contrast thereto, E7 discloses two different housings for the actuator and the door lock actuating unit, each housing having its own base and its own cover, and the actuator housing is screwed onto the other housing by means of brackets. Thus, already a difference is to be seen in this respect between claim 1 and the disclosure of E7.

- 5.3 Several prior art documents cited by the appellant show that the expression "locking arm", at least in this technical field of door lock assemblies for automotive vehicles, is not used to design any arm or lever located between the actuator and the door lock actuating unit. It must be the arm which locks, regardless of the locking means used. Said means can indeed be an actuator, but can also, possibly simultaneously, be a manual button or a key cylinder of a vehicle door. In E5, the arm designated as being the "actuation arm" (2) corresponds to this function, being connected to a manual button of the door. In E7, it is said to be the "Verriegelungshebel", which can be manually actuated, being referenced 31 in the first embodiment and 100 in the second embodiment.

5.4 The arm, considered by the appellant, to be the locking arm in E7 according to the definition given in Claim 1, is in fact disclosed in this prior art as having another function. It belongs to a linkage system located between the above mentioned locking arm and the actuator and comprising two successive links, the aim of which is to create a wedging action ("Keilwirkungssystem") so as to increase the driving forces between the actuator and the locking arm, thereby allowing to reduce the size of the electrical motor of the actuator unit. Thus, even if the arm mentioned by the appellant seems to correspond to the definition of the locking arm according to claim 1, this is purely accidental and, more important, this arm is not disclosed as being the locking arm of the door assembly or as having the same function. It therefore cannot be equated to the locking arm of the present invention.

5.5 For these two reasons, the subject-matter of claim 1 is new having regard to the disclosure of E7. Among the other cited prior art documents, E6 is the only one which discloses an actuator located in the same housing as the door lock actuating unit. However, in this prior art, the actuator directly operates the latch of the door assembly and is only used to unlock, not to lock the door assembly. As a consequence, there is no locking arm in this prior art which links the actuator to the door lock actuating unit.

The subject-matter of claim 1 is therefore new (Articles 52 and 54 EPC).

6. Starting from the door lock assembly known from E7, the problem underlying the present invention remains the same as that disclosed in the patent in suit, namely to provide a door lock assembly which is structurally simple and compact and can, as a unit, easily be mounted into automotive vehicles.

This problem is solved by having a single housing for the actuator and the pawl, the latch and the spring of the door lock operating unit, and by having the output shaft of the actuator as shaft for the locking arm, which is located outside of the housing.

7. *Inventive step (Article 56 EPC)*

- 7.1 Having regard to respectively the aims and door lock assemblies of E7 and E6, which are different from each other, as shown above, the person skilled in the art would not combine the teachings of these two documents.

Supposing nevertheless that the general teaching of E6, namely to have a single housing for both the actuator and the door lock actuating unit, held the skilled person's interest so as to be applied to the door assembly of E7, the subject-matter of claim 1 would not be reached, since according to the teaching of E7 means for obtaining the wedging action are to be provided between the locking arm and the actuator and, therefore, it is not suggested to connect the locking arm directly to the output shaft of the actuator. The teaching of E7 on the contrary departs from this solution.

Figure 15 of E7 discloses a particular embodiment, in which the locking arm is directly connected to the actuator unit. However, in such a case, the shaft of the locking arm is not used as driving means between the actuator and the locking arm, since this function is realized by a prolonged arm of the locking arm, which has a pin running in a groove of a disc driven by the actuator motor; the function of this prolonged arm together with its pin is to realize the wedging action mentioned above, while simultaneously bringing the locking arm into the locked and unlocked positions. Therefore, E7 ,alone or in combination with E6, cannot suggest the subject-matter of claim 1.

7.2 As mentioned above, see point 5.3., the locking arm in the device known from E5 is not the arm directly connected to the actuator unit, as argued by the appellant, but the actuation arm of the door lock actuating unit, so that a direct connection between the actuator and the locking arm is not suggested by this prior art.

7.3 It follows that, in view of the cited prior art, the subject-matter of claim 1 involves an inventive step. The dependent claims 2 to 4, which correspond to the granted claims 2 to 4 and concern particular embodiments of the subject-matter of claim 1, can therefore be maintained.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of the first instance with the order to maintain the patent on the basis of claim 1 filed on 10 October 2003 as main request and claims 2 to 4 according to the patent specification as well as the description filed in oral proceedings and Figures 1 to 13 according to the patent specification.

The Registrar:

The Chairman:

A. Counillon

C. T. Wilson