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**Datasheet for the decision
of 2 May 2019**

Case Number: T 1112/16 - 3.2.01

Application Number: 07719732.5

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B60R21/02, E05F11/48

Language of the proceedings: EN

Title of invention:
INNER PANEL FOR A DOOR ASSEMBLY HAVING AN INTEGRATED INTRUSION
BEAM

Patent Proprietor:
Magna Closures Inc.

Opponent:
Brose Fahrzeugteile GmbH & Co. KG, Hallstadt

Headword:

Relevant legal provisions:
EPC Art. 54(1), 100(a)

Keyword:
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Catchword:



Beschwerdekammern

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Case Number: T 1112/16 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 2 May 2019

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 8 March 2016
rejecting the opposition filed against European
patent No. 2021198 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman G. Pricolo
Members: W. Marx
P. Guntz

Summary of Facts and Submissions

- I. The appeal is directed against the decision rejecting the opposition against European patent No. 2 021 198.
- II. The appellant relied, *inter alia*, on the following evidence filed during the opposition procedure:
D7: DE 100 60 632 A1.
- III. The opposition division came to the conclusion that the subject-matter of claim 1 of the contested patent was new and inventive with regard to document D7.
- IV. With its letter in reply to the grounds of appeal dated 18 November 2016, the respondent filed auxiliary requests 1 to 8. In reaction to the appellant alleging a violation of Article 123(3) EPC, the respondent filed with letter dated 2 April 2019 auxiliary requests 1a to 4a, as a replacement of auxiliary requests 1 to 4 should the board not be able to agree therewith.
- V. Oral proceedings before the board took place on 2 May 2019.

The appellant (opponent) requested that the decision under appeal be set aside and the patent revoked.

The respondent (patent proprietor) requested that the appeal be dismissed or, in the alternative, that the patent be maintained in amended form on the basis of one of auxiliary requests 1 to 4 as submitted with the letter dated 18 November 2016 or auxiliary requests 1a to 4a as submitted with the letter dated 2 April 2019 or auxiliary requests 5 or 6 as submitted during the oral proceedings. Former auxiliary requests 5 to 8 were withdrawn.

VI. Claim 1 as granted reads as follows (broken into a feature analysis adopted by the parties):

A door assembly (10) for a motor vehicle, including:

- F1** an outer panel (12) forming at least a portion of the exterior surface of the vehicle door;
- F2** an inner panel (14) operably connected to the outer panel (12)
- F3** so that a compartment is formed therebetween,
- F4** the inner panel (14) having a wet side surface forming a wall of said compartment and an opposing dry side surface facing a passenger cabin,
- F5** wherein the inner panel (14) includes integrally formed corrugations for resisting deformation caused by a side impact;
- F6** and a window at least partially mounted in the compartment between the inner panel (14) and the outer panel (12);

characterized in that

- F7** the inner panel (14) substantially seals the passenger cabin from the external environment,
- F8** and **in that** at least one hardware mounting surface (48, 52, 56) is integrally formed from the inner panel (14) and extends towards the outer panel (12), each of the hardware mounting surfaces being operable to mount a hardware component between the inner and outer panels.

Claim 1 according to auxiliary request 1 was amended by adding the following feature [further additions in auxiliary requests 1a to 4a are set in brackets]:

- F9** "wherein the inner panel (14) includes multiple impact regions (58) [, wherein each impact region (58) is a corrugated portion of the inner panel (14) comprising a series of ridges and troughs]"

Claim 1 according to auxiliary request 2 specifies the multiple impact regions further as follows:

F10 "running non-parallel to each other to provide the maximum intrusion resistance from differing impact angles"

In claim 1 of auxiliary request 2a (but not in claims 1 of auxiliary requests 3a, 4a, 5 and 6), the term "the maximum intrusion resistance" in feature **F10** was replaced by "a maximum intrusion resistance".

In claim 1 according to auxiliary request 3, the impact regions of feature **F10** were further specified [further additions provided solely in auxiliary request 3a are set in brackets]:

F11 "the impact regions (58) extending across a substantial length of [an] inboard panel region (32[, 34]) without interruption"

Feature **F11** was supplemented in claim 1 according to auxiliary request 4 as follows:

F12 "and bisecting each other in a region (60) to provide the maximum intrusion resistance at the preferred sitting position of the vehicle occupant"

In claim 1 of auxiliary request 4a (but not in claims 1 of auxiliary requests 5 and 6), the term "the maximum intrusion resistance" in feature **F12** was replaced by "a maximum intrusion resistance".

Claim 1 according to auxiliary request 5 comprises the following additional feature:

F13 "and wherein the plurality of corrugations make up at least one impact region that is displaced at least as far away from the outer panel as the at least one hardware mounting surface"

Feature **F13** was supplemented in claim 1 according to auxiliary request 6 as follows:

F14 "and at least as far away from the outer panel as the remainder of the inner panel that does not constitute the at least one impact region"

Reasons for the Decision

1. *Novelty - claim 1 as granted (Article 100(a) EPC)*

1.1 The subject-matter of claim 1 as granted is not new with regard to document D7 (Article 54(1) EPC).

1.2 D7 discloses (see Figure 1) a door assembly (5) for a motor vehicle comprising an outer panel (4) forming at least a portion of the exterior surface of the vehicle door according to feature **F1**. The board agrees with the appellant that the wording of claim 1 does not exclude a multi-part inner panel, such as the functional carrier (3) shown in D7 composed of two shell bodies (1, 2) which are bonded together in a sandwich-like manner. Therefore, D7 also shows an inner panel (function carrier 3) operably connected to the outer panel (4) so that a compartment is formed therebetween (see Figure 9), in which a window is at least partially mounted, as specified by features **F2**, **F3** and **F6**.

The board cannot see that none of these features **F1** to **F3** and **F6** should be known from D7, as argued by the respondent on the basis of differences in wording used in D7 (e.g. outer skin instead of outer panel; first and second shell body instead of inner panel) and the contested patent describing the door design.

As argued by the respondent itself by referring to paragraphs [0028] and [0040] of D7, the sealing function of the vehicle door of D7 is such that water can penetrate from the outside into the structural space between the outer skin and the outer shell body of the two-part function carrier, but not into the region of the door trim. The inner panel formed by the two-part function carrier of D7 therefore substantially seals the passenger cabin from the external environment and has a wet side surface forming a wall of the compartment and an opposing dry side surface facing the passenger cabin, as required by features **F4** and **F7**.

The respondent also argued that D7 taught away from an inner (single) panel configuration by disclosing a multi-panel configuration, i.e. two panels formed by the shell bodies 1, 2, and that therefore an "*opposing dry side [of the inner panel] facing a passenger cabin*" as recited by feature **F4** was not disclosed in D7. However, this was not found convincing, as the wording of claim 1 does not exclude a multi-part inner panel, even if extra assembly steps and extra seals were required.

1.3 So far, the board's view concurs with the analysis in the contested decision that also the assembled function carrier (3) in D7 could be considered as an inner panel. In this case, the opposition division held that features **F5** and **F8** were not known from D7. However, the board takes a different view.

1.3.1 The board does not follow the interpretation of the opposition division that feature **F5** required both the inner and the outer surface of the panel to be formed as wave-like elements which conformed with each other. On the contrary, and also contrary to the respondent's

view, the wording of feature **F5** ("*the inner panel includes integrally formed corrugations*") does not exclude an inner panel composed of two parts, wherein each part has integrally formed corrugations as shown in D7, i.e. vertically running ribs on its outer side and horizontally running ribs on its inner side. In particular, the board cannot see why such a multi-part design should not be suitable to solve the problem underlying the invention, namely to increase the intrusion resistance while reducing weight of the door and its thickness, as argued by the respondent. Therefore, the board concludes that the function carrier 3 known from D7 comprising shell bodies 1 and 2 which are welded together (see paragraph [0035] of D7) represents an inner panel according to feature **F5**.

- 1.3.2 As regards feature **F8**, the board does not follow the opposition division (in particular when judging on inventive step) that feature **F8** required hardware mounting surfaces which were provided in addition to the corrugations. Feature **F8** only specifies that "*at least one hardware mounting surface is integrally formed from the inner panel*", i.e. it does not exclude a hardware mounting surface formed by a corrugation of the inner panel.
- 1.3.3 The respondent also argued that D7 taught away from providing a hardware mounting surface integrally formed from the inner panel that extended towards the outer panel, since D7 taught (paragraphs [0030] and [0040]) that this particular area between the outer shell 1 and the outer panel 4 was particularly narrow. However, when looking at Figures 1 and 9 of D7, a window 3' is shown in this particular area, and paragraph [0010] of D7 (see also claim 9) states that parts of the vertical parallel stiffening sections of the outer shell body

are used as guides for the window lifting system. A hardware mounting surface is formed by part of the corrugations integrally formed by the outer shell body. Since the outer shell body forms part of the two-part function carrier of D7 and provides an outer surface of this carrier module which extends towards the outer panel, the board finds that any part mounted to this outwardly extending surface of the outer shell body, such as the window guiding rails of D7, falls under the wording of feature **F8**, irrespective of whether it is mounted within grooves or on elevations of the corrugations of D7. The term "*to mount a hardware component*" does not require a hardware component to be fixed immovable to the inner panel, as derivable from a similar wording in feature **F6** ("a window at least partially mounted in the compartment"). Therefore, it can be left open whether D7 discloses window guiding rails 26, 27 (see Figure 1) which are fastened to the outer shell.

The board further notes that feature **F8** is only directed to hardware mounting surfaces which are "*operable to mount a hardware component between the inner and outer panel*", i.e. surfaces which are suitable for mounting a hardware component. Even if the term "*hardware mounting surface ... extends towards the outer panel*" referred to elevated parts of the outer shell body of D7, i.e. "*in the form of some sort of indentation*" as found by the opposition division (see point 2.3), the board holds that D7 shows corrugations (see e.g. horizontal cross section of the vehicle door shown in Figure 8) which are operable to provide a hardware mounting surface in an elevated region.

- 1.3.4 During the oral proceedings, the respondent further argued that features **F1** to **F8** had to be considered in

combination and interacted in a manner going beyond the disclosure of D7, thus achieving the object of the claimed invention, i.e. a high level of intrusion resistance and less mounting effort. In particular, the hardware mounting surface according to feature **F8** showed an interaction with the inner panel as specified in features **F7** and **F5**, thus defining pocket-like protrusions extending towards the outer panel and providing enough space for mounting a hardware component between the inner and outer panel. The invention allegedly concerned a one-piece inner panel sealing the passenger cabin and including integrally formed corrugations for occupant protection and surfaces for mounting hardware, whereas D7 proposed a different design. D7 provided at best additional stiffening and guiding rails in troughs, but no occupant protection and no protrusions. Hardware was mounted on the inner panel's side pointing to the interior trim.

Even considering that the features of claim 1 cannot be read in isolation and define together the claimed invention, the board follows the appellant in that the wording of claim 1 neither requires pocket-like protrusions, nor a one-piece inner panel, nor hardware mounting surfaces in addition to corrugations. Contrary to the respondent's allegation, the door assembly of D7 provides, as explicitly stated in paragraph [0043], high rigidity in case of a crash and thus protection for the occupant. Moreover, as argued already further above, the outer shell body of the two-part function carrier of D7 provides an outer surface extending towards the outer panel for mounting window guiding rails ("hardware") as required by feature **F8**, irrespective of whether these rails were mounted in troughs or on elevated portions.

2. *Novelty - auxiliary requests*

2.1 None of the subject-matter of claims 1 according to the auxiliary requests 1 to 4, auxiliary requests 1a to 4a, auxiliary request 5 and auxiliary request 6 can establish novelty over document D7 (Article 54(1) EPC).

2.2 Auxiliary requests 1 and 1a

The respondent argued that D7 did not disclose multiple integral impact regions as required by feature **F9**, but only one impact region (see e.g. Figure 3: vertical webs 23" directly adjacent to the transverse stiffeners 13 to 22 of outer shell) extending over the length and width of a middle portion of the shell body. The corrugations of the two body shells forming the inner panel provided a joint reinforcement and thus only one (single) impact region.

The board finds that the term "impact region" is rather vague and does not specify e.g. whether an upper, lower, forward, rearward, inner or outer region is meant. The definition given in the patent specification itself (and included in auxiliary request 1a) requires only that an "*impact region is a corrugated portion of the inner panel comprising a series of ridges and troughs*". In case of a two-part inner panel as known from D7, formed by an inner and an outer body shell, each body shell is to be regarded as a portion of the inner panel. Moreover, since the body shells of D7 are reinforced by corrugated portions (ridges and troughs), the inner panel of D7 shows e.g. two impact regions formed on the respective body shells 1 and 2, so that the additional feature **F9** according to claims 1 of auxiliary requests 1 and 1a is known from D7. Since the

terms "impact region" and "corrugated portion" are not further defined, it might even relate only to a portion or section of vertical corrugations or a portion of horizontal corrugations in D7.

2.3 Auxiliary requests 2 and 2a

The respondent again argued that D7 only showed a single impact region, and that D7 was silent on non-parallel running impact regions or providing better intrusion resistance from differing impact angles, as required by the additional feature **F10** of auxiliary requests 2 and 2a. In particular, the contested patent showed obliquely crossed impact regions which provided good occupant protection from different impact angles, whereas D7 showed a uniformly stiffened door assembly.

However, as argued already with regard to auxiliary requests 1 and 1a, D7 shows at least two impact regions formed by corrugated inner and outer shell bodies. The corrugations provided on both body shells (see e.g. Figure 1 in D1) are running perpendicular to each other and therefore non-parallel, as specified in feature **F10** of auxiliary requests 2 and 2a. Such arrangement of corrugations running non-parallel to each other already reinforces and stiffens the door assembly in different directions, so the impact regions known from D7 serve the purpose of providing maximum intrusion resistance from differing impact angles, as further required by feature **F10**.

2.4 The board can also not see which additional limitation over D7 should be provided by features **F11** and **F12**, as further specified in claims 1 of auxiliary requests 3, 3a, 4 and 4a. The impact regions provided on the two body shells of D7 (see Figures 1 to 5) extend across a

substantial length of an inboard panel region and are bisecting each other, since they are running crosswise to each other, as allegedly required by feature **F12** according to the respondent. Further specifying impact regions bisecting each other "*in a region to provide the/a maximum intrusion resistance at the preferred sitting position of the vehicle occupant*" again refers to the purpose of the reinforcement which is also implicitly met in D7, as the door region is the region of the preferred sitting position of the vehicle occupant, which cannot be localised exactly in view of the seating position being adjustable depending on the occupant's size. The fact that D7 might show a door assembly having a more or less uniform rigidity cannot distinguish the door assembly of D7 from what is specified in claim 1.

As regards feature **F11**, the respondent referred to paragraph [0024] of D7, according to which stiffeners were only provided in a middle portion of the shell body. However, in view of the drawings shown in D7, the term "middle portion" cannot be interpreted in such a restrictive manner that the vertical and horizontal reinforcements or stiffeners known from D7 would not provide impact regions without interruption across a substantial length of an inboard panel region.

The respondent argued that D7 did not show bisecting impact regions, as shown in the patent specification (see e.g. Figure 3A: region 60) and required by feature **F12**. As regards the respondent's argument in this respect that the two-part inner panel of D7 only showed (after assembly of body shells 1 and 2) one single impact region and D7 did not suggest to divide the single impact region into multiple impact regions, the board refers to point 2.2 further above.

Document D7 might be silent on providing an improved intrusion resistance with respect to a sitting position of the vehicle occupant. According to the respondent, the intrusion resistance remained unchanged over the whole area of the stiffeners in D7, whereas feature **F12** defined an objective criterion for a typical seating position as shown in the contested patent (impact regions bisecting approximately in a mid region of the door), which was the result from crash tests and simulation. However, the board cannot see where a specific sitting position should be localised when reading feature **F12**, so this feature has to be construed broadly and is not considered limiting over D7 as argued above.

- 2.5 The respondent argued that D7 only showed a continuous stiffening region comprising uniform corrugations, so it did not disclose an impact region displaced "*at least as far away from*" the outer panel as at least one hardware mounting surface, as required by feature **F13**. Moreover, as D7 did not distinguish between reinforced regions and regions without reinforcements (but only showed uniform corrugations), feature **F14** was not known from D1.

The board observes that the term "plurality of corrugations" has not been defined before in claim 1, but only in the context of feature **F13** ("*the plurality of corrugations make up at least one impact region*"), so it is clear that at least those corrugations are meant which belong to "one impact region", such as the corrugations formed on the outer body shell in D7. As found by the board when discussing novelty of granted claim 1, some of these corrugations on the outer body shell in D7 can provide a hardware mounting surface in the elevated region which is "*operable to mount a*

hardware component", whereas the remaining corrugations only make up an impact region. The board finds that the wording of claim 1 does not require corrugations and hardware mounting surfaces as distinct structural elements. As the corrugations in D7 can thus serve both purposes of providing a surface for mounting hardware components and a reinforcing structure of the impact region, the impact region and the hardware mounting surface in D7 are formed by the same structural elements and thus displaced at equal distance from the outer panel. Thus, D7 shows an embodiment which falls under the range "*at least as far away from*" as specified in feature **F13**.

Additional feature **F14** specifies the displacement of corrugations making up at least one impact region from the outer panel in comparison to the "*remainder of the inner panel that does not constitute the at least one impact region*", which is again said to be "*at least as far away from the outer panel*". In view of the patent specification itself (see e.g. Figure 3A: wet side of the outer panel), the "*remainder of the inner panel that does not constitute the at least one impact region*" might again refer to the hardware mounting surfaces, such as the motor mounting surface 52 shown in Figure 3A. In particular, it cannot be referred to the pocket regions situated between the corrugated portions and the hardware mounting surfaces, since they are displaced even farther away from the outer panel than the corrugations. However, then feature **F14** cannot add anything new over feature **F13**.

Therefore, the board comes to the conclusion that also the subject-matter of claim 1 according to auxiliary request 5 or auxiliary request 6 is not new with regard to D7.

3. Since none of the requests of the respondent is allowable, the patent in suit is to be revoked (Article 101(2) and (3) (b) EPC).

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:



A. Pinna

G. Pricolo

Decision electronically authenticated