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**Datasheet for the decision  
of 10 January 2023**

**Case Number:** T 0668/19 - 3.5.02

**Application Number:** 06742565.2

**Publication Number:** 1872442

**IPC:** H01R13/422

**Language of the proceedings:** EN

**Title of invention:**  
Electrical Connector

**Patent Proprietor:**  
Aptiv Technologies Limited

**Opponent:**  
Yazaki Europe Ltd.

**Relevant legal provisions:**  
EPC Art. 54

**Keyword:**  
Novelty - Sole request (no)



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Case Number: T 0668/19 - 3.5.02

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.02**  
**of 10 January 2023**

**Appellant:** Yazaki Europe Ltd.  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
21 December 2018 concerning maintenance of the  
European Patent No. 1872442 in amended form.**

**Composition of the Board:**

**Chairman** R. Lord  
**Members:** C.D. Vassoille  
A. Bacchin

## Summary of Facts and Submissions

I. The opponent filed an appeal against the interlocutory decision of the opposition division concerning maintenance of the European patent no. 1 872 442 in amended form.

II. The following document is relevant for the present decision:

D9: US 6,679,729 B2

III. The parties were summoned to oral proceedings before the board. In a communication under Article 15(1) RPBA 2020 annexed to the summons, the board set out their preliminary observations on the appeal, concluding *inter alia* that the subject-matter of claim 1 of the patent proprietor's sole request, underlying the decision under appeal, appeared to be new in view of document D9. It was further held that, if feature 1.6.3.2 was considered to be the only distinguishing feature over D9, this could not result in the subject-matter of the claim involving an inventive step if the feature in question lacked a technical effect.

IV. Oral proceedings before the board took place on 10 January 2023.

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

The respondent (patent proprietor) requested that the appeal be dismissed.

V. Claim 1 of the respondent's sole request, on which the decision under appeal is based, has the following wording (feature numbering added by the board in bold brackets):

"Electrical connector comprising:

**(1.1)** - an electrical terminal (16),

**(1.2)** - a housing (12) delimiting a chamber (14) for receiving the terminal (16) along a reception direction (X), successively at a reception position and at a retained position,

**(1.2.1)** said housing (12) comprising a guiding wall (42) and a first short wall (38) between which the terminal (16) is inserted with a clearance ( $G_{\text{reception}}$ ),

**(1.2.2)** the guiding wall (42) comprising a flat reception stage (60) and a flat retained stage (62) connected by a raising slope (64) inclined toward the inside of the chamber (14) along the reception direction (X),

**(1.3)** a pawl (44)

**(1.3.1)** hinged, at a hinge end (66), to the first short wall (38) of the housing opposite the guiding wall (42), and

**(1.3.2)** which takes an oblique course both in the reception direction (X) and toward the inside of the chamber 14 [**sic**], and

**(1.4)** - a stop (50) fixed on the terminal (16),

**(1.4.1)** the stop (50) being constituted by a back face (50) of the terminal (16), according to the reception direction (X), wherein:

**(1.5)** - said pawl (44) and stop (50) cooperate for retaining the terminal (16) in its retained position,

**(1.5.1)** and said pawl (44) and the raising slope (64) are located relative to each other such that the terminal (16) comes first in touch with the pawl when it is at its reception position and the raising slope

(64) is located to be subsequently touched and climbed on by the terminal (16) when the terminal (16) is pushed from its reception position toward its retained position,

characterised in that

**(1.6)** the guiding wall (42) comprises a guiding surface

**(1.6.1)** comprising the raising slope (64) and

**(1.6.2)** extending from a point (A),

**(1.6.2.1)** where the terminal (16) is first pushed back by the pawl (44) being elastically pushed back against the guiding surface,

**(1.6.3)** to a point (B)

**(1.6.3.1)** where a contact surface (48) of the pawl (44) cooperates with the stop back face (50) for retaining the terminal on the retained stage (62),

**(1.6.3.2)** where the terminal lies between the guiding wall (42) and a second short wall (40),

**(1.7)** the raising slope (64) ending, according to the reception direction (X), before or at a point of the guiding wall (42) opposite a free end (46) of the pawl (44)

**(1.7.1)** so that the distance perpendicular to the reception direction (X) between any point of the contact surface (48) and the retained stage (62) is smaller than or the same as the size of the terminal (16) perpendicularly to the reception direction (X)."

VI. The arguments of the appellant as far as they are relevant for the present decision can be summarised as follows:

The subject-matter of claim 1 of the sole request was not new in view of document D9. Document D9 in the lower part of figure 4 (female connector) disclosed features 1.6.3.2, 1.7 and 1.7.1. As regards feature

1.6.3.2, reference was particularly made to figure 4 in connection with figure 3 and column 3, lines 31 to 33 and 54 to 57 of D9. As regards feature 1.7.1, figure 2 of D9 disclosed the second alternative of it, i.e. that the raising slope ends at a point of the guiding wall opposite the free end of the pawl. Furthermore, feature 1.7.1 did not require the retained stage to face the pawl. Rather, the wording of feature 1.7.1: "perpendicular to the reception direction" clearly was to be understood in the sense that the distance was measured in the projection direction of the reception direction X.

VII. The arguments of the respondent as far as they are relevant for the present decision can be summarised as follows:

The subject-matter of claim 1 of the sole request was new in view of document D9. Document D9 did not disclose features 1.6.3.2, 1.7 and 1.7.1. From figure 3 in connection with figure 4 of D9, a second short wall in the sense of feature 1.6.3.2 could not be directly and unambiguously derived. The figures of D9 were only schematic in nature and as such could not demonstrate without ambiguity that D9 discloses a second short wall. Similarly, the figures could not demonstrate without ambiguity that document D9 disclosed that the raising slope ended, according to the reception direction, at a point of the guiding wall opposite a free end of the pawl (feature 1.7). It was clear from the description of the patent on page 4, lines 27 to 29 that the free end delimited a contact surface of the pawl. Hence, the free end had to be understood as a region or a portion at the end of the pawl. Furthermore, feature 1.7 was linked to feature 1.7.1 so that the skilled person would understand that the

function of these features was to have the region of the pawl where the terminal is blocked positioned so as to face the planar surface of the retained stage. It followed that feature 1.7.1 was also not disclosed in D9.

## **Reasons for the Decision**

1. The appeal is admissible.

2. *Novelty (Article 54 EPC)*

2.1 The subject-matter of claim 1 of the sole request is not new in view of document D9.

The respondent contested that document D9 discloses features 1.6.3.2, 1.7 and 1.7.1 of claim 1 of their sole request, but did not dispute that this document disclosed the remaining features of that claim.

2.2 *Feature 1.6.3.2*

2.2.1 Document D9 discloses feature 1.6.3.2 of claim 1. This feature defines that the terminal lies between the guiding wall and a second short wall. As the appellant has correctly pointed out, the feature in question does not require that the second short wall support the terminal. Rather, it only requires that there be a second short wall positioned so that the terminal was located between it and the guiding wall.

The board is further persuaded by the appellant's argument that the person skilled in the art can derive the feature in question directly and unambiguously from

figures 3 and 4 in conjunction with the description in column 3, lines 53 to 57 of document D9.

In particular, there can be no doubt that the skilled person understands the reference sign 38 ("open part") to designate a wall surface (see figures 3 and 4) delimiting an opening used to draw a die forward when the lance 37 is moulded (see D9 in column 3, lines 56 to 57). Consequently, the opening to draw the die corresponds to a slit in a wall. In other words: When the die is pulled out, two surfaces remain to the left and right of the opening.

The front view of the housing according to figure 3 in conjunction with the corresponding description also makes it clear that the width of the pawl is smaller than the cavity 32A. The opening to draw the die is therefore necessarily smaller than the width of the cavity (see figure 3). Furthermore, the insertion opening 35 is necessarily smaller than the terminal, as it constitutes a stop for the terminal (see in particular figures 3, 4 and 5).

The board is also convinced by the appellant's argument that the skilled person would readily understand that the terminal, when inserted into the cavity, must necessarily be surrounded by walls in all four directions perpendicular to the insertion direction. Although a clearance must be provided between the terminal and the surrounding walls so that the terminal can be inserted into the cavity (see feature 1.2.1 of claim 1), the terminal must lie between these walls so that it aligns correctly with the insertion opening 35.

It follows that there is undoubtedly a wall in the female part of the electrical connector of D9 (see in



particular the lower part of figure 4) which comprises the opening to draw the die. The corresponding remaining wall thus constitutes a second short wall within the meaning of feature 1.6.3.2.

2.2.2 The respondent's counter-argument essentially centred on the fact that the drawings of D9 were not accurate and in particular not to scale. In particular, the respondent saw a conflict between the different sectional views according to figures 3 and 4, which prevented the skilled person from unambiguously inferring the presence of a short wall from the figures.

The appellant did not contest that the drawings of document D9 are not precise technical drawings. However, they were right to argue that in the present case, the drawings have to be considered in combination with the description in column 3, lines 53 to 57.

Moreover, as set out above, feature 1.6.3.2 merely requires that a second short wall is present at a suitable location. In particular, claim 1 does not define the exact position of the second short wall, its dimensions or specific function (e.g. support) in relation to the terminal. Consequently, there was no need for the person skilled in the art to derive this information from the figures of D9. Rather, it is sufficient if the person skilled in the art could recognise the presence of a second short wall at a position such that the terminal would lie between it and the guiding wall. This is clearly the case, as the board explained in section 2.2.1.

2.2.3 Consequently, feature 1.6.3.2 is directly and unambiguously derivable from document D9, in particular

in view of figures 3 and 4 in connection with the relevant description in column 3.

2.3 *Features 1.7 and 1.7.1*

2.3.1 According to feature 1.7 the raising slope ends, according to the reception direction, before or at a point of the guiding wall opposite a free end of the pawl.

Furthermore, according to feature 1.7.1, the distance perpendicular to the reception direction between any point of the contact surface and the retained stage is smaller than or the same as the size of the terminal perpendicularly to the reception direction.

2.3.2 Contrary to the respondent's argument, the board does not recognise a link between features 1.7 and 1.7.1 that would change the skilled person's understanding of the clear wording of feature 1.7.

More specifically, the board does not agree with the respondent that the skilled person would attribute a restricted meaning to the preceding feature 1.7 in view of feature 1.7.1 and the wording "so that" between the two features. The wording of feature 1.7 is clear in that the raising slope ends before or at the point of the guiding wall opposite a free end of the pawl and not opposite the contact surface of the pawl.

With regard to the definition of the "free end", the parties were in agreement that it is a portion of the pawl which includes the tip end of it.

Feature 1.7.1 defines a specific distance between any point of the contact surface and the retained stage. In

this context, the appellant has correctly argued that feature 1.7.1 explicitly refers to a distance perpendicular to the reception direction. The skilled person understands that the distance between any point of the contact surface and the retained stage, as defined in feature 1.7.1, can also be measured if the raising slope ends after the contact surface and the contact surface is consequently not positioned opposite the retained stage (see the "Configuration C" in the drawings submitted by the respondent during the oral proceedings before the board and attached to the minutes as Annex 2).

Feature 1.7.1 therefore does not imply that the contact surface must necessarily be opposite the retained stage. The express reference in feature 1.7.1 to the direction of measurement perpendicular to the reception direction rather leads the skilled person to the understanding that the distance can be measured by projecting a point of the contact surface or the retained stage in the reception direction. This is obviously not only possible but also technically reasonable in view of the wording of feature 1.7.1, namely that the distance is to be measured in a direction perpendicular to the receiving direction. This definition therefore does not provide any further information about the concrete relative positioning of the contact surface and the retained stage to each other in the reception direction. It refers exclusively to a distance in a direction perpendicular to the reception direction.

Furthermore, the skilled person, contrary to the respondent's assumption, would not interpret feature 1.7.1 such that it conflicts with the clear wording of feature 1.7. Rather, they would look for a technically

meaningful interpretation, which is in line with the technical teaching of the whole of feature 1.7. Against this background, the only technically sensible interpretation of feature 1.7.1 is that the distance between a point of the contact surface and the retained stage can be measured by projection of the respective points in the reception direction. All configurations A to C, presented by the respondent during the oral proceedings before the board, are therefore covered by claim 1. This is also not changed by the wording "so that" which bridges the two features 1.7 and 1.7.1.

In conclusion, the board agrees with the appellant that feature 1.7.1 does not motivate the skilled person to interpret feature 1.7 more narrowly than is justified by the wording "free end (46) of the pawl (44)". The corresponding features 1.7 and 1.7.1 are therefore not linked in such a way as to give a restrictive meaning beyond their literal wording.

- 2.3.3 Feature 1.7 defines as one alternative that the raising slope ends opposite the free end of the pawl. It is to be noted that claim 1 does not contain a more precise definition of the term "opposite".

The respondent essentially argued that none of the figures of D9 disclosed that the raising slope ended opposite the free end of the pawl. In support of this argument they submitted modified versions of figures 2, 4, 6 and 7 of D9 during the oral proceedings before the board, in which a clearance was made visible between two lines perpendicular to the reception direction, wherein one line intersects the free end of the pawl at its tip end and the other line intersects the end of the raising slope.

The appellant has also submitted a modified version of figure 2 of document D9, which shows a line perpendicular to the reception direction, intersecting the end of the raising slope on the one hand and the free end of the pawl at its tip end on the other hand (see the illustration 5 on page 7 of the statement of grounds of appeal).

The board notes that the figures of document D9 do not correspond to precise technical drawings, which was not disputed by any of the parties. A patent drawing, unlike a construction drawing, is schematic and not to scale and therefore cannot be used to derive precise dimensions or proportions (see e.g. T 451/88, Reasons 2.4 and T 1943/15, reasons 4, particularly reasons 4.3). Against this background, it is not decisive that the skilled person can derive from the figures a positioning of the free end relative to the end of the raising slope such that they lie exactly on a line extending in a direction perpendicular to the reception direction to disclose an arrangement of the end of the raising slope at a point of the guiding wall opposite a free end of the pawl, which as noted in 2.3.2 above is a portion of the pawl including its tip end, not just the tip end itself.

A corresponding precise positioning of the free end of the pawl and the end of the raising slope is not the subject of claim 1. Feature 1.7 only requires that the raising slope ends, according to the reception direction, before or at a point of the guiding wall, opposite a free end of the pawl.

It is readily apparent from the figures of document D9, in particular from figures 2 and 4, that the raising slope does not end before the free end of the pawl. On

the other hand, figures 2 and 4 of D9 disclose at first sight, in particular without the necessity to carry out any further inspection such as measurements, that the raising slope ends at a point of the guiding wall, opposite the free end of the pawl, namely at the tip end of it. As stated above, a closer inspection of the figures is not necessary, because claim 1 is not limited to an arrangement in which the two points in question are required to lie exactly on one line perpendicular to the reception direction in order to establish an "opposite" arrangement in the sense of claim 1.

Therefore, the fact that the figures of D9 do not constitute technical drawings to scale is irrelevant, because feature 1.7, on a reasonable interpretation, is in any case directly and unambiguously derivable from figure 2 and figure 4 (female part) of D9. Consequently, document D9 discloses feature 1.7.

- 2.3.4 As was further argued by the appellant, document D9 in figure 4 discloses a locking projection 37A of the lance 37 ("pawl"). It is readily apparent from figure 4 (see the female connector in the lower part of figure 4) that the locking projection is fully inserted in the terminal. It follows directly from this arrangement that a distance between any point of the contact surface of the locking projection 37A and the retained stage is necessarily smaller than or the same as the size of the terminal within the meaning of feature 1.7.1.

The respondent has not put forward any further arguments in this regard, apart from those mentioned in the above point 2.3.2.

The board has therefore come to the conclusion that document D9 discloses feature 1.7.1.

2.4 *Result*

Given that document D9 discloses all features of claim 1, the subject-matter of claim 1 of the sole request is not new and the board had to accede to the appellant's request.

**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:



U. Bultmann

R. Lord

Decision electronically authenticated