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Datasheet for the decision of 27 October 2014

Case Number: T 0259/12 - 3.2.01

Application Number: 05749329.8

Publication Number: 1765612

IPC: B60D1/54, B60D1/06

Language of the proceedings: EN

Title of invention:
ROTATABLE TOW HITCH FOR A VEHICLE

Patent Proprietor:
Thule Towing Systems B.V.

Opponent:
Westfalia-Automotive GmbH

Headword:

Relevant legal provisions:
EPC Art. 123(2)
EPC 1973 Art. 100(b), 54(2), 56

Keyword:
Amendments - extension beyond the content of the application as filed (no)
Sufficiency of disclosure - (yes)
Novelty - (yes)
Inventive step - (yes)

Decisions cited:

Catchword:

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Case Number: T 0259/12 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 27 October 2014

Appellant: (Opponent)	Westfalia-Automotive GmbH Am Sandberg 45 33378 Rheda-Wiedenbrück (DE)
Representative:	Bregenzer, Michael Patentanwalt Neckarstraße 47 73728 Esslingen (DE)
Respondent: (Patent Proprietor)	Thule Towing Systems B.V. Industrieweg 5 7951 CX Staphorst (NL)
Representative:	Hammond, Andrew David Valea AB Box 1098 405 23 Gothenburg (SE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 9 December 2011 concerning maintenance of the European Patent No. 1765612 in amended form.**

Composition of the Board:

Chairman	G. Pricolo
Members:	W. Marx
	D. T. Keeling

Summary of Facts and Submissions

I. The appeal of the opponent is directed against the interlocutory decision of the Opposition Division posted on 9 December 2011 to maintain European patent No. 1 765 612 in amended form on the basis of the Main Request filed during the oral proceedings.

II. In its decision the Opposition Division held that the invention was disclosed in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 100(b) EPC 1973) and that the subject-matter of claim 1 was new and inventive (Article 100(a) EPC 1973) with respect to, *inter alia*, the following documents:
D4: DE 202 03 270 U1;
D5: DE 102 43 433 A1.

III. In response to the Board's communication pursuant to Article 15(1) RPBA (Rules of Procedure of the Boards of Appeal, OJ EPO, 2007, 536), the respondent (patent proprietor) filed by letter of 23 September 2014 First to Third Auxiliary Requests.

IV. Oral proceedings took place on 27 October 2014.

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 decision under appeal be set aside and that the patent be maintained on the basis of Claim 1 of the First Auxiliary Request filed by letter of 23 September 2014 and Claims 2 to 34 of the patent as maintained by the decision under appeal, the description as in the

decision under appeal, and Figures 1 to 15K of the patent as granted (presented at the end of the oral proceedings as the Main and sole Request).

V. Claim 1, broken into a feature analysis adopted by the parties, reads as follows (words added in comparison to claim 1 as maintained in first-instance proceedings underlined by the board):

Tow hitch assembly for a vehicle,

1a) having a tow hitch member (1; 101) which at a distal end portion is provided with a neck part (3; 103) having a hitch ball (4; 104) at its end and

1b) which with a proximal end portion (2; 102) is connected to a holder member to be attached to the vehicle,

1c) wherein the holder member and the proximal end portion form a hinge connection with each other for rotation of the tow hitch member about at least two rotation axes including an angle with each other,

1d) in a movement between an extended position and a stowed-away inoperative position,

1e) the proximal end portion being provided with a drive cam (8; 108)

1f) that is in engagement with drive means for the drive cam,

characterized in that

1g) the rotation takes place about a second rotation axis (F) and a third rotation axis (G),

1h) that are horizontal or at a small angle to the horizontal,

1i) and may be perpendicular to each other,

1j) and in that the holder member comprises a bearing housing (20; 120) forming a first cam track for guiding the drive cam in its movement,

1k) and the drive means comprise a drive sleeve (140) provided with an accommodation space for driving engagement of the drive cam

1l) by means of rotation of the drive sleeve.

VI. The appellant (opponent) argued essentially as follows:

The addition of feature **1l)** contravened Article 123(2) EPC because in the application as filed the rotation of the drive sleeve was specified either about a vertical axis of rotation (page 8, lines 9 to 10; claim 34, also dependent from claims 33 and 32) or about the first hinge axis (see claim 28; the "first rotational axis" being defined in claim 3 as vertical or at a small angle to vertical). Moreover, the two embodiments described (see Figure 4 or Figures 7, 9B) only showed a rotation about a vertical axis. There was no other axis which allowed a movement between an extended position and a stowed-away position of the tow hitch member.

Taking into account features **1c)** and **1g)**, it was unclear whether claim 1 defined a rotation about two or three axes. In the event that claim 1 should only define a rotation about two axes, not only clarity but also reproducibility was an issue, because the contested patent did not teach how to realise the inventive drive concept in this case.

The holder member in D5 comprised a bearing housing (upper housing part 10) comprising a first cam track for guiding the drive cam, i.e. for guiding the curved surfaces of the swiveling cam body 9. The guiding cam body 8 was rotatably supported in the upper housing

part 10 for driving the swiveling cam body 9 and comprised a cam track on its inner side (feature **1j)**), controlling rotation and upward or downward movement of the tow hitch member. In particular, the cam track provided on guiding cam body 8 formed a bearing for the drive cam, i.e. component 8 was considered to be a bearing housing. Due to the engagement of at least one cam of the swiveling cam body 9 with the cam track of the guiding cam body 8, an accommodation space for driving engagement of the drive cam was provided. A sleeve was characterised by an enveloping wall or outer wall that delimited an interior, however, the term "sleeve" did not define an exact geometry. Since the swiveling cam body 9, engaging guiding cam body 8, was surrounded by the guiding cam body 8, guiding cam body 8 - which (see Figure 5) was open at the top - represented a drive sleeve (feature **1k)**). Moreover, D5 explicitly mentioned (paragraph [0006]) an embodiment having a ring-type guiding cam body. Although the contested patent showed a bearing housing and a drive sleeve formed by different components, the subject-matter of claim 1 - due to its unclear definition - did not necessarily require two separate parts. Finally, the observations of the Opposition Division with regard to features **1g)** and **1h)** not being disclosed in D5 were not valid.

Even if novelty were acknowledged due to the unclear representation in D5, the subject-matter of claim 1 lacked an inventive step over D5. Since according to D5 the curved surfaces of the guiding cam body 8 and the swiveling cam body 9 were interacting (see page 3, paragraph [0024]), the curved surface provided on guiding cam body 8 had to guide the cam provided on swiveling cam body 9 in a predetermined direction. If the bearing housing and the drive sleeve were to be

understood as two different parts and the guiding cam body 8 represented a drive sleeve, then a separate bearing housing was required for bearing the drive cam, as achieved by the upper housing part 10. If the guiding cam body 8 did not provide both the drive and guiding function, then the guiding function had to be provided by the bearing housing 10. As a result, the drive cam was guided by components 8 and 10.

Since feature **11)** specified a rotation of the drive sleeve, novelty of the subject-matter of claim 1 over D4 (Figures 12, 13) was not in question. Feature **1e)** was formulated rather generally, not requiring that the drive cam was formed integrally with the proximal end portion. Therefore, a drive cam was shown in D4 by the toothed bar 26 which engaged a curved track 30 - i.e. a cam track within the meaning of feature **1j)** - provided on toothed ring 25 or support ring 30. In D4, a single motor controlled all the movements. The toothed bar 26, by its lateral movement, provided - due to its limited stroke - a rather limited rotation of the tow hitch member about the vertical axis. If the person skilled in the art, recognising a problem in controlling all the movements, wanted more freedom in movement control, he would provide a further motor (see page 9, lines 24 to 30). Since stationary mounting of the motor with respect to the vehicle was easier, he would - without encountering serious obstacles - choose to drive the curved track 30 by driving the support ring 31, leaving toothed ring 25 stationary.

VII. The respondent's arguments regarding the present decision can be summarised as follows:

The addition of feature **11)** did not amount to an intermediate generalisation because it did not provide

any new information to the skilled reader. The term "drive sleeve" itself required an active movement of the drive sleeve, i.e. the amendment just made explicit what was inherently present in claim 1. Moreover, it was mentioned many times in the specification that the drive sleeve was "rotatable", and claim 27 specified a motor "for driving the drive sleeve" (also claim 33: "drivingly engages"). The application as filed stated on page 8, lines 9 to 10, just a preferable feature, and claim 28 was dependent from claims 13, 12 to 10, 1 only, wherein no hint to a vertical axis was found.

The patent did not contravene Article 100(b) EPC because the patent as a whole provided a detailed disclosure of two embodiments for carrying out the invention.

There was no direct and unambiguous disclosure in document D5 of a bearing housing for housing a bearing as required by feature **1j)** or of a drive means comprising a drive sleeve, less still of a sleeve provided with an accommodation space for driving engagement of a drive cam as required by feature **1k)**. The term "sleeve" should not be denied its proper technical meaning. Since according to claim 1 the holder member was attached to the vehicle, the holder member as claimed and also the bearing housing itself were represented by housing 10 in D5, which did not form a cam track. In D5, a cam track was formed on the guiding cam body 8, which was not considered to be a housing. Since the guiding cam body 8 of D5 was pressed towards the swiveling cam body 9 in a face-to-face relationship to hold the cam of cam body 9 against the guiding surface of cam body 8, the guiding cam body did not constitute a sleeve, even if both parts were to be ring-shaped.

As to the distinguishing features over D5, the effect was described in the patent specification in paragraph [0027] ("easily be adjusted to the desired movement and can simply be engaged for drive"), i.e. the tow hitch assembly should be easily adapted for different installations. The point was whether the skilled person would (not: could) have arrived at the present invention by modifying the prior art because of promptings in the prior art. D5 did not provide any indications with regard to features **1j)** and **1k).** Moreover, since it was quite speculative to work out the differences between D5 and the claimed subject-matter, D5 was a non-enabling disclosure which could not be used for assessing inventive step.

Assuming that the stationary gear of D4 was to be regarded as corresponding to the claimed bearing housing and the toothed bar 26 represented a drive cam, the track 30 would correspond to the first cam track. However, starting from document D4 as closest prior art, there was no prompting for the skilled person to modify the tow hitch assembly of D4 so that it fell within the ambit of claim 1. The only prompting to be found in D4 was on page 9, but it was doubtful that the skilled person would rely on the limited stroke of the bar 26. He would instead be tempted to let an additional motor directly act on the pinion 29, i.e. directly on the rotational axis, without further need for a drive sleeve or cam tracks. Moreover, the object of D4 was to provide a very compact assembly based on a single mechanical drive (see page 3, lines 17 to 25). Taking into account the prompting on page 9 would lead to a worse design and even a complete redesign of the embodiment according to Figure 12, not yet showing space available for driving the support ring 30.

Reasons for the Decision

1. Amendments (Article 123(2) EPC)

1.1 Claim 1 was amended, in comparison to the version which was found allowable in first-instance proceedings and which was not objected to in appeal proceedings, by the addition of feature **1l)** which further specifies a rotation of the drive sleeve.

According to the established case law, the test for an amendment must be "that after the amendment the skilled person may not be presented with new technical information" (see G 2/10, OJ EPO 2012, 376, point 4.5.1 of the Reasons). With regard to a positive feature introduced into a claim, "it can be examined whether the subject-matter of that feature was disclosed in the application as filed. With respect to the new combination of features which is claimed after the introduction of that feature, it can be examined whether that combination was disclosed in the application as filed" (G 2/10, point 4.5.2 of the Reasons). The skilled person is presented with new technical information if he would not derive it directly and unambiguously, using common general knowledge, from the application as filed.

In the present case, the embodiments in the application as filed (see description and drawings) only show a rotating drive sleeve. Moreover, in claims 1, 10 and 13 of the application as filed, forming the basis for the present claim including features **1a)** to **1k)**, the adjective "drive" is used to characterise a "drive cam", "drive means" or "drive sleeve" or to describe a "driving engagement of the drive cam". In this context,

in the Board's judgment the wording of claim 1 ("the drive means comprise a drive sleeve") does not exclude that the drive sleeve might be a stationary component (e.g. a supporting part) of the drive means which - as a whole - provided the driving function, so the limitation provided by the amendment was not yet inherently present in claim 1 as argued by the respondent. However, as the skilled person can derive directly and unambiguously from the application as filed, the intended meaning was always that the drive sleeve was a rotating part driving the drive cam. Therefore, the Board finds that the skilled person is not presented with new technical information by the addition of feature **11)**.

1.2 The appellant considered the amendment to constitute an intermediate generalisation, arguing that a rotation of the drive sleeve was disclosed in the application as filed only in combination with a definition of the rotational axis as being a vertical axis or the first hinge axis. However, the Board finds that the amendment provided does not constitute an intermediate generalisation with regard to the passages in the application as filed cited by the appellant:

- Dependent claim 34 as filed (and correspondingly page 8, lines 9 to 10 and the previous passages) relates to a separate embodiment as defined by the combination of features of independent claim 32 with dependent claims 33 and 34 of the application as filed, not specifying any rotational axes as in claim 1. These passages in the application as filed are therefore not necessarily related - in function or structure - to the embodiment defined by claim 1 so that they must be considered as the basis for the amendment provided.

- Claim 28 as filed is directly dependent only on claims 13, 10 and 1 and specifies that "the drive sleeve is rotatable about the first hinge axis". In the Board's judgement, an explicit mentioning of a first hinge axis in feature **1l)** is not required. Present claim 1 already comprises the feature that "the holder member and the proximal end portion form a hinge connection ... for rotation of the tow hitch member about at least two rotational axes", i.e. claim 1 implicitly specifies a rotation of the proximal end portion about a first and second hinge axis. Moreover, since due to features **1k)**, **1l)** and **1e)** the drive cam provided at the proximal end portion is driven by rotation of the drive sleeve, a rotation of the drive sleeve about a first hinge axis is already implicitly claimed. A vertical axis of rotation is only defined in claim 3, which is not necessarily included in the embodiment defined by claim 28.

Finally, the Board notes that the two embodiments of a tow hitch assembly for a vehicle as described in the contested patent are not exclusively related to a drive sleeve rotating about a vertical axis. As can be clearly seen in the figures of the second embodiment (e.g. see Figure 7D), the rotation axis S of drive sleeve 140 is inclined with respect to the vertical axis V (as explicitly mentioned in column 12, lines 5 to 6 of the patent specification), also allowing a movement between an extended position and a stowed-away position.

1.3 For the above reasons, the Board judges that claim 1 does not contain subject-matter which extends beyond the content of the application as filed (Article 123(2) EPC).

2. Sufficiency of disclosure (Article 100(b) EPC 1973)

The objection under Article 100(b) EPC 1973 was raised by the appellant "in the event that claim 1 should only define a rotation about two axes", taking into account features **1c)** and **1g)**.

Analysing the subject-matter of claim 1, feature **1c)** specifies a rotation "about at least two axes", i.e. does not contain any limitation to only two rotational axes, and implicitly defines, in the Board's view, already a first and a second rotational axis. The characterising portion of claim 1 specifies a rotation "about a second rotation axis (F) and a third rotation axis (G)" (feature **1g)**) "that are horizontal or at a small angle to the horizontal" (feature **1h)**), i.e. a second and a third approximately horizontal axis are defined. It is acknowledged that the definition of the rotational axes in claim 1 is rather broad because the corresponding reference system - e.g. whether the axes are defined relative to the vehicle or relative to the tow hitch member - is left open. However, this would be an issue of clarity which has not to be decided in the present case. What matters is that claim 1 contains, implicitly and explicitly as explained above, a counting or numbering of rotational axes, which in the Board's view excludes an interpretation of the claimed subject-matter limited to only two rotational axes.

In accordance with the established case law of the Boards of Appeal, the patent should be construed by a mind willing to understand, not a mind desirous of misunderstanding, in order to to arrive at an interpretation of the claim which is technically sensible and takes into account the whole disclosure of

the patent. In the present case, when considering the patent as a whole, the description and drawings disclose embodiments where the tow hitch member always rotates about three rotational axes. Therefore, also in light of the whole disclosure of the patent, an interpretation of the claimed tow hitch assembly defining only two rotational axes, as argued by the appellant, must be ruled out.

For the above reasons, the appellant's objection under Article 100(b) EPC 1973 with regard to insufficiency of disclosure is unfounded.

3. Novelty (Article 54(2) EPC 1973)

3.1 With regard to the features under discussion, in particular feature **1j)** and **1k)**, it is noted that the holder member is previously defined in claim 1 (see feature **1b)**) as a part to be attached to the vehicle, so it should be a stationary part. A holder member within this meaning is represented in D5 by the housing comprising an upper and lower part 10 and 11.

According to feature **1j)** the holder member comprises a bearing housing forming a first cam track for guiding the drive cam. The Board follows the appellant in that this wording of claim 1 does not require the holder member and the bearing housing to be separate parts.

Assuming an interpretation where the bearing housing forms part of the holder member, such bearing housing is represented in D5 by the upper housing part 10. The Board finds that a rotating part, like the guiding cam body 8 in D5, cannot be associated with a holder member attached to the vehicle within the meaning of claim 1. There is no direct and unambiguous disclosure in D5

that the upper housing part 10 forms a first cam track for guiding the drive cam as required by feature **1j)**. The only drawing in D5 which shows some details in this respect (Figure 5) is so badly sketched that no details can be derived from it. Moreover, according to paragraph [0024] of the description, a cam track is provided on the lower surface of guiding cam body 8, i.e. on a separate part supported by housing part 10.

On the other hand, assuming that the bearing housing might be a separate part different from the holder member, then it is allegedly represented in D5 by guiding cam body 8, while the holder member is still represented by the upper housing part 10. The guiding cam body 8 is then found to comprise a first cam track. However, the Board judges that the term "bearing housing", in its true understanding, requires at least a "housing", i.e. a casing enclosing another component at least partly. Document D5, in particular Figure 5 as already stated above, does not show any concrete details on the shape of guiding cam body 8. According to the description in D5 (paragraph [0024]), it can only be deduced that a curved track of guiding cam body 8 engages a curved track on the swiveling cam body 9. Two tracks or surfaces of two components interacting with each other in a face-to-face relationship cannot, in the Board's view, lead to the conclusion that one component forms a housing for the other component. Therefore, guiding cam body 8 forming a cam track cannot be considered to be a bearing housing as required by feature **1j)**.

The Board concludes based on these considerations, no matter how the skilled reader would understand the subject-matter of claim 1, that document D5 does not disclose directly and unambiguously, without any

speculative attempt, a holder member comprising a bearing housing forming a first track for guiding the drive cam in its movement as required by feature **1j)**. Irrespective of whether the guiding cam body 8 might represent a drive sleeve according to feature **1k)**, the subject-matter of claim 1 is therefore considered new over D5 (Article 54(2) EPC 1973).

3.2 Due to the introduction of feature **1l)** in claim 1, the subject-matter of claim 1 is also new with regard to document D4. The Board cannot see that D4 shows a rotating drive sleeve for driving engagement of the drive cam as required by the combination of features **1k)** and **1l)**. In fact, this was not contested by the appellant.

4. Inventive step (Article 56 EPC 1973)

4.1 Starting from document D5 as closest prior art, the appellant argued that the drive cam on swiveling cam body 9, interacting with the curved surface on guiding cam body 8, had to be driven and at the same time be guided in a predetermined direction. Such functionality follows from the wording of features **1j)** and **1k)** ("for guiding the drive cam in its movement", "for driving engagement of the drive cam"). Following the appellant in that the guiding cam body 8 in D5 represents a drive sleeve which would at least provide the drive function needed, it has to be assessed whether and how a guiding function for the drive cam is realised in D5.

As can be derived from Figures 5 and 6 and also paragraph [0024], swiveling cam body 9 and guiding cam body 8 are mounted relative to each other via a spherical joint formed by the spherical tip of guiding stud 12 and the spherical recess 13, representing a

spherical pivot or bearing. Moreover, the guiding cam body 8 is rotatably supported in upper housing part 10 and the swiveling cam body 9 is rotatably and pivotably supported in lower housing part 11 so that, due to the interacting surfaces of cam bodies 8 and 9, the movement of swiveling cam body 9 and therefore also the movement of the drive cam is well guided.

As indicated above, the guiding cam body 8 known from D5 cannot be considered to represent the bearing housing as claimed. If the bearing housing and the drive sleeve were to be understood as two different parts and the guiding cam body 8 represented a drive sleeve, as argued by the appellant, the only part which can be identified in D5 as bearing housing is the upper housing part 10, i.e. in this case the bearing housing forms one part with the holder member. As explained above in the assessment of novelty, a first cam track for guiding the drive cam is then missing as required by feature **1j)**. However, since a guiding function for guiding the drive cam in its movement is already realised in D5 as explained above, the Board cannot see any reason why the skilled person would consider providing a further guiding means or "cam track" on upper housing part 10. There is no motivation for the skilled person to modify the assembly of D5 in a way which would lead to the subject-matter of claim 1.

For sake of completeness also considering that the bearing housing and the drive sleeve might be represented by one piece, the only component corresponding in D5 to a drive sleeve within the meaning of feature **1k)** would be the guiding cam body 8, as argued by the appellant when assessing novelty. However, as argued above, guiding cam body 8 forming a cam track cannot be considered to be a bearing housing

as required by feature **1j)**. In the Board's view, there is no motivation for the skilled person to modify the guiding cam body 8 so that it becomes a "housing" which houses or encloses e.g. the swiveling cam body 9.

4.2 Since claim 1 specifies a driving engagement of the drive cam by means of rotation of the drive sleeve (features **1k)** and **1l)**), a stationary ring - as toothed ring 25 or support ring 31 in D4 - cannot be considered to be a drive sleeve within the meaning of claim 1. Assuming that the toothed bar 26 in D4 represents a drive cam, the lateral movement of which was controlled by a curved track 30 on ring 25 or 31, the Board was not convinced by the appellant's argumentation that the person skilled in the art, when solving the problem of having more freedom in controlling the movement of the tow hitch member in D4, would choose to drive track 30 by driving support ring 31 with a separate motor. Such modification would run counter the object achieved by the compact design of the tow hitch assembly according to D4. Moreover, the Board agrees with the respondent in that the easier and therefore obvious solution would be to drive the pinion 29 in D4 directly, which would eliminate the complicated and limited control of rotation about the pinion's axis realised by the lateral movement of toothed bar 26 engaging track 30. This would lead to an arrangement without any cam track as required by feature **1j)**, so the skilled person would not arrive at the subject-matter of claim 1.

4.3 For the above reasons, the Board concludes that the subject-matter of claim 1 involves an inventive step (Article 56 EPC 1973). Dependent claims 2 to 34 concern particular embodiments of claim 1 and are therefore likewise allowable. Together with the duly revised description according to the decision under appeal and

the drawings as granted, claims 1 to 34 can, therefore, form the basis for maintaining the patent in amended form.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the Opposition Division with instructions to maintain the patent on the basis of the following documents:
   - Claim 1 of the First Auxiliary Request filed by letter of 23 September 2014 and Claims 2 to 34 of the patent as maintained by the decision under appeal;
   - Description as in the decision under appeal;
   - Figures 1 to 15K of the patent as granted.

The Registrar: The Chairman:

A. Vottner G. Pricolo

Decision electronically authenticated