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**Datasheet for the decision  
of 6 June 2014**

**Case Number:** T 1907/11 - 3.2.01

**Application Number:** 05075660.0

**Publication Number:** 1577159

**IPC:** B60P3/06, B62D53/06

**Language of the proceedings:** EN

**Title of invention:**

Trailer having pivoted axles and a central recess

**Patent Proprietor:**

Nooteboom Group B.V.

**Opponents:**

FAYMONVILLE AG  
MEUSBURGER Fahrzeugbau GmbH  
Scheuerle Fahrzeugfabrik GmbH

**Headword:**

**Relevant legal provisions:**

EPC 1973 Art. 100(b)

**Keyword:**

Sufficiency of disclosure - (yes)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern  
Boards of Appeal  
Chambres de recours**

European Patent Office  
D-80298 MUNICH  
GERMANY  
Tel. +49 (0) 89 2399-0  
Fax +49 (0) 89 2399-4465

Case Number: T 1907/11 - 3.2.01

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.01**  
**of 6 June 2014**

**Appellant:**  
(Patent Proprietor)

Nooteboom Group B.V.  
Nieuweweg 190  
6603 BV Wijchen (NL)

**Representative:**

Bartelds, Erik  
Arnold & Siedsma  
Sweelinckplein 1  
2517 GK Den Haag (NL)

**Respondent:**  
(Opponent 1)

FAYMONVILLE AG  
Am Schwarzbach 12  
4760 Büllingen (BE)

**Representative:**

Diehl & Partner GbR  
Patentanwälte  
Erika-Mann-Strasse 9  
80636 München (DE)

**Respondent:**  
(Opponent 2)

MEUSBURGER Fahrzeugbau GmbH  
Kollmering 7  
94535 Eging am See (DE)

**Representative:**

Winter, Brandl, Fürniss, Hübner,  
Röss, Kaiser, Polte - Partnerschaft  
Patent- und Rechtsanwaltskanzlei  
Alois-Steinecker-Strasse 22  
85354 Freising (DE)

**Respondent:**  
(Opponent 3)

Scheuerle Fahrzeugfabrik GmbH  
Öhringer Str. 16  
74629 Pfedelbach (DE)

**Representative:**

Leitner, Waldemar  
Leitner Zeiher  
Patent- und Rechtsanwälte  
Zerrennerstrasse 23-25  
75172 Pforzheim (DE)

**Decision under appeal:**      **Decision of the Opposition Division of the  
European Patent Office posted on 1 July 2011  
revoking European patent No. 1577159 pursuant to  
Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman:**            G. Pricolo  
**Members:**            Y. Lemblé  
                          P. Guntz

## **Summary of Facts and Submissions**

- I. The appeal of the Patent Proprietor is directed against the decision of the opposition division to revoke the European patent No. 1 577 159.
- II. In its decision the Opposition Division held that the contested patent did not disclose the invention 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).
- III. In the oral proceedings, held 6 June 2014, the Appellant (Patent Proprietor) requested that the decision under appeal be set aside and that the patent be maintained as granted or, in the alternative, that the patent be maintained in amended form according to the auxiliary request as filed with the statement setting out the grounds of appeal or, in the alternative, according to the auxiliary request as filed during oral proceedings in first instance on 21 June 2011 or, in the alternative, according to one of the four auxiliary requests as filed during first instance proceedings with letter of 21 April 2011 or, in the alternative, that the case be remitted to the department of first instance.

The Respondents (Opponents) requested that the appeal be dismissed or, in the alternative, that the case be remitted to the department of first instance, should the board be minded not to dismiss the appeal.

- IV. Claim 1 as granted (main request) reads as follows (delimitation of features as proposed by the Opposition Division):

- (O1) Trailer (1), comprising a chassis (2) and an undercarriage (3) having one or more wheel lines (8),
- (O2) wherein each wheel line (8) comprises at least two sets (9) of wheels placed on either side of the trailer (1), and
- (O3) wherein at the position of the undercarriage (3) the chassis (2) has a central recess (11) running in longitudinal direction and open at the top for accommodating part of the load to be transported on the trailer, in particular an arm of an excavator,
- (O4) which recess (11) extends in both longitudinal and height direction at least partially between the mutually opposite sets (9) of wheels of one or more of the wheel lines (8),
- (O5) wherein each wheel set (9) has an axle body (18) on which are mounted two wheels (20),
- (O6) wherein at least some of the wheel sets (9) are steerable, and
- (O7) wherein at least some of the wheel sets (9) on either side of the trailer (1) are mechanically coupled to each other by means of a steering element (34) which extends in transverse direction of the trailer (1),

characterized in that:

- (K1) the wheel sets (9) have pivoted axles (10), each wheel set (9) has an axle body (18) on which are mounted two flat wheel hubs (19),
- (K2) a wheel (20) consisting of a rim (21) and a pneumatic tyre (22) being mounted on each wheel hub (19) such that the wheel hub (19) lies substantially in the plane of the wheel (20),
- (K3) each axle body (18) is pivotable about a pivoted axle (10) running substantially in longitudinal direction,

- (K4) said pivoted axle (10) being arranged between the wheels (20) below the axles (14) of the wheel set (9), so that the axle body (18) can execute a pivoting movement so that the wheels (20) of the wheel set (9) lie flat on a road surface (R) in all conditions,
- (K5) each wheel set (9) comprises at least one brake cylinder (32) placed between the wheels (20) thereof,
- (K6) the space between the wheels (20) is smaller than 1.5 times the width of each wheel (20), preferably even smaller than the width of each wheel (20) and substantially corresponds to the diameter of the at least one brake cylinder (32), and
- (K7) the steering element (34) extends in the vicinity of a bottom (12) of the recess (11).

V. The submissions of the Appellant can be summarized as follows:

The decision under appeal was incorrect and must be set aside because the patent as granted disclosed the invention as defined in claim 1 in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art. It was a well-established principle that an invention was sufficiently disclosed if at least one way was clearly indicated enabling the skilled person to carry out the invention. This must be assessed on the basis of the patent as a whole, including the description and the drawings.

In the present case, the decision explicitly mentioned (see page 9 of the contested decision) that the Opposition Division was "in no doubt that the skilled person in trailer construction would have no difficulty in constructing a trailer as disclosed in the figures

and description of the patent". This was a clear acknowledgement that the claimed trailer had been sufficiently disclosed in the sense of Article 83 EPC. The Opposition Division then stated that such trailer would not form part of the subject-matter defined by the claims. That statement was the result of an incorrect interpretation of the claims.

When trying to interpret the wording "the wheels of the wheel set lie flat on a road surface in all conditions" (see feature K4 of claim 1), the skilled person, reverting to Figure 6 and the relevant part of the description, would immediately understand that the purpose of the claimed pivoted axle was to allow the wheels to assume a position that conforms to the camber of the road. More particularly, the introductory part of the description stated that the use of pivoted axles allowed a higher axle load to be achieved (paragraph [0006]). The skilled person, being familiar with the legal regulations relating to axle loads, would understand that these higher loads were made possible by the fact that the wheels lay flat on the road surface, thus leading to a uniform load distribution and relatively low loading of the road surface. Thus, the skilled person will understand that the wording "in all conditions" should not be taken literally as meaning any conceivable condition, but rather all conditions that a trailer of the type to which the patent relates could reasonably be expected to encounter during normal use. When claim 1 was properly interpreted, its subject-matter was sufficiently disclosed.

As concerns the further sufficiency objections raised in opposition proceedings and relating to the concept of "flat wheel hub" and to the compatibility of features K5, K6 with feature K4, the positive decision of the Opposition Division was to be confirmed.



VI. The Respondents essentially replied as follows:

The patent did not disclose the invention 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).

On the basis of the teachings of the patent it was not possible for the skilled person to construct a trailer which would keep the wheels of the wheel set lying flat on a road surface in all conditions, as required by feature K4. In other words, the trailer disclosed in the patent was not a trailer having all the features of claim 1 and especially not a trailer having a "pivoted axle arranged between the wheels below the axle of the wheel set, so that the axle body can execute a pivoting movement so that the wheels of the wheel set lie flat on a road surface in all conditions" (feature K4).

Although it was nearly impossible to maintain the wheels flat on the road surface in any conceivable conditions, the term "all conditions" was chosen by the Appellant and was univocal. For reasons of legal certainty, there was no need here for interpretation of this term. But even if this term was interpreted, the arrangement of the pivoted axle 10 of the trailer of the patent was such that the pivoting of the axle body reached a limit when the wheel 20 hit the spring/damper unit 30 (see Fig. 6 of the patent specification). Thus, the maximal amount of pivoting obtainable by this construction was too limited to allow the wheels to lie flat on road conditions which were even encountered on normal roads.

Document E34, a piece of evidence filed in the appeal proceedings by the Respondent Opponent 1, was a report dealing with the behaviour of a trailer built by the Appellant in accordance with the patent, when

confronted to various road conditions. This report disclosed that an unevenness of a height between 15,0 and 17,0 cm caused one wheel of the wheel set to clear off the ground, thus confirming that the maximal amount of pivoting obtainable by this construction could not achieve the requirements of feature K4, that the wheels lay flat in all road conditions.

Furthermore, the skilled person was not able to carry out an arrangement which comprised the features K5 and K6 and simultaneously fulfilled the conditions laid down by feature K4. According to features K5 and K6 each wheel set comprised at least one brake cylinder placed between the wheels thereof, whereby the space between the wheels was smaller than 1.5 times the width of each wheel. No minimum value was defined for the space between the wheels. This skilled person would have to be inventive in trying to construct such an arrangement, in particular as space is needed between the wheels to conform to the conditions laid down by feature K4.

Finally, the concept of "flat wheel hubs" (see feature K1 of claim 1) was not sufficiently disclosed in the patent to be put into practice by a person skilled in the art. Such a concept was not known to the skilled person. According to feature K2, the flat wheel hubs were supposed to "lie substantially in the plane of the wheel", a requirement impossible to achieve, since a plane was, by definition, two-dimensional.

## **Reasons for the Decision**

1. The appeal is admissible.

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

2.1 The Respondents and the Opposition Division hold that it was not possible for the skilled person to construct a trailer which would keep the wheels of the wheel set lying flat on a road surface in all conditions, as required by feature K4, on the basis of the teachings of the patent. In other words, the trailer disclosed in the patent was not a trailer having a "pivoted axle arranged between the wheels below the axle of the wheel set, so that the axle body can execute a pivoting movement so that the wheels of the wheel set lie flat on a road surface in all conditions" (feature K4). The main reason therefore being that the amount of pivoting disclosed in the embodiments of the trailer of the patent was too limited to allow the wheels to lie flat on the road in all conditions.

2.1.1 Considering a wheel mounted on an axle body which is pivotable about a pivoted axis running substantially in the longitudinal direction of a vehicle -a context similar to that defined by features K3) and K4) of claim 1- but in which it is assumed that the amount of pivoting of the axle body is not in any way limited, it is obvious to a skilled person that such a wheel cannot lie flat on the road when it runs over a pot-hole or along an abrupt kerbstone and that the cause for the wheel to clear off the ground does not lie in the arrangement of the pivoted axle. This also applies to the wheels of the wheel set having the pivoted axle according to feature (K4). The expression "under all conditions" cannot therefore be taken literally.

2.1.2 The wording "so that the wheels of the wheel set lie flat on a road surface in all conditions" does not in itself constitute a technical feature but, as

formulated by feature K4, describes an effect which results from the arrangement of the pivoted axle between the wheels below the axle of the wheel set. Since it is obvious that the expression "in all conditions" should not be understood in absolute terms, it has to be interpreted on the basis of the description and drawings and from the perspective of the skilled person, as provided by case law in such circumstances (see e.g. T 23/86 OJ 1987, 316).

- 2.1.3 As indicated by the parties, the relevant passage for interpreting this expression is to be found in paragraph [0027] of the patent specification: "Through torsion of the tubular rubber body 24 the axle body 18 can execute a pivoting movement so that the wheels 20 of wheel sets 9 on either side of trailer 1 lie flat on the road surface R in all conditions, even when it is convex or otherwise uneven (fig. 6)". This wording primarily indicates that there is a causal link between the possibility for the axle body 18 to execute a pivoting movement and the fact that the wheels of the wheel set should lie flat on a road surface in all conditions. It is within this context that the skilled person will interpret feature K4: the purpose of the pivoted axle is to let the wheels pivot to assume a position that conforms the camber of the road surface or any unevenness typically caused by the camber R, as illustrated in figure 6 of the patent specification. When trying to understand the relevance of this feature, the skilled person will revert to the object of the invention (see paragraphs [0006] and [0007] of the patent specification), where it is stated that the use of pivoted axles allows a higher axle load to be achieved. The skilled person, being familiar with the legal regulations relating to axle loads, will understand that higher axle loads are made possible by

the pivoting movement and that the fact that the wheels lie flat on the road surface leads to a more uniform load distribution and reduces their destructive impact on the road surface. Within this context, the skilled person will understand that the term "all conditions" refers to all conditions normally encountered on the road, whereby extreme road conditions are not included under this expression.

2.1.4 All parties agreed that the trailer shown in the report E34 was built according to the teachings of the patent. Respondent I cited report E34 in an attempt to demonstrate that the claimed construction does not provide for the conditions mentioned in feature K4. Taking into account the considerations mentioned above, this demonstration can only fail. As shown in photograph 24 and drawing 25 of E34, when the trailer runs on a kerbstone, the pivoting of the axle body reaches a limit when the wheel hits the spring/damper unit and this limited amount of pivoting causes the wheel to no longer lie flat on the ground. Drawing 20 shows that when the height of the kerbstone is 11,3 cm over the road surface, the maximal amount of pivoting is reached because the gap between the top of the wheel and the damper is reduced to zero. On page 28 of its notice of opposition dated 19 May 2009, Respondent Opponent 1 asserted that a ratio of 30% for the pivoting gap versus the width of a wheel would just be acceptable to allow the pivoting to compensate for unevenness when driving the trailer on difficult terrain. Based on the calculations made by Respondent Opponent 1 on page 28, the ratio corresponding to a vertical travel of 11,3 cm for the wheel of the trailer of E34 would be about 40% (113 mm / 280 mm). This is clearly sufficient for the pivoted axle to cope with

even unusual lane grooves and with road conditions which are not extreme.

2.2 The Board does not agree with the Respondents when they contend that the skilled person is not able to carry out the arrangement defined by features K5 and K6 whereby such an arrangement would simultaneously be able to fulfil the conditions laid down by feature K4. The Respondents argued that, according to features K5, K6, each wheel set comprised at least one brake cylinder placed between the wheels thereof, whereby the space between the wheels was smaller than 1.5 times the width of each wheel. However, no minimum value was defined for the space between the wheels. This would give the skilled person problems in trying to construct such an arrangement, in particular as it would have to conform to the conditions laid down by feature (K4).

2.3 Concerning the objection of the Respondents relative to the compatibility of the feature K5, K6 on the one hand with those of feature K4 on the other hand, the Board also shares the view of the Opposition Division. That no minimum value for the width of the space between the wheels of a wheel set is mentioned in the claim, presents, in itself, no barrier for the skilled person to construct the wheel set. The fact that the brake cylinder is placed between the wheels of the wheel set (feature K5) sets automatically a lower limit to the minimal space between the wheels (see also paragraph [0031] of the patent specification). If the pivotal movement of the wheels may foul the wheel support structure, then the skilled person, on the basis of the teaching of the patent, would be able to slightly modify the claimed arrangement on the basis of the construction shown in the patent, e.g. by optimising the geometry of the elements 26-30 of the wheel support

structure (see Fig. 12), such that these elements will not come into contact with the top of the wheel but with a part that is further forward and below the top. In the Board's view, it is possible to reproduce the claimed invention on the basis of the patent specification without any inventive effort or undue burden.

2.4 As convincingly explained by the Opposition Division in point 2.2.1 of its decision, the term "flat wheel hub" must be interpreted, since a purely bidimensional "flat wheel hub" cannot exist in practice. The skilled person can derive from the content of the patent application (see paragraph [0013] of the patent application on which the patent is based as well as paragraphs [0008] and [0031] of the patent specification) that a "flat wheel hub" is a hub which is accommodated within the wheel and which has a greater extension in its radial direction than in its axial direction. Such hub units, including the brake, are well known in the art (see e.g. document E6 cited by Respondent Opponent III in opposition proceedings or document E32B cited by Respondent Opponent I in appeal).

3. Since the Board comes to the conclusion that the patent meets the requirements of Article 83 EPC 1973 and in view of the request of the three Respondents to remit the case to the first instance, the Board makes use of its power under Article 111(2) EPC to remit the case to the Opposition Division for further examination.

**Order**

**For these reasons it is decided that:**

1. The contested decision is set aside.
2. The case is remitted to the department of the first instance for further prosecution.

The Registrar:

The Chairman:



A. Vottner

G. Pricolo

Decision electronically authenticated