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Datasheet for the decision of 12 December 2008

Case Number: T 0455/07 - 3.2.01

Application Number: 99927362.6

Publication Number: 1085987

IPC: B60B 3/04

Language of the proceedings: EN

Title of invention:
Wheel support assembly and method

Patentee:
Kuhl Wheels, Llc

Opponent:
Hayes Lemmerz Holding GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 123(2)

Relevant legal provisions (EPC 1973):
EPC Art. 84

Keyword:
"Clarity (main request: no)"
"Admissibility (auxiliary requests 1 to 5: no)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0455/07 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 12 December 2008

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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 12 January 2007 revoking European patent No. 1085987 pursuant to Article 102(1) EPC 1973.

Composition of the Board:

Chairman: S. Crane
Members: C. Narcisi
S. Hoffmann

Summary of Facts and Submissions

I. The European patent No. 1 085 987 was revoked with the decision of the Opposition Division posted on 12 January 2007. Against this decision an appeal was lodged by the Patentee on 12 March 2007 and the appeal fee was paid at the same time. The statement of grounds of appeal was filed on 18 May 2007 and it included sets of claims according to a main request and to auxiliary requests 1 to 5.

II. In the annex to the summons to the oral proceedings the Board informed the parties that it would have to be considered whether the subject-matter of claim 1 of the main request, which is identical with that of claim 1 of the main request in the contested decision, meets the requirements of Article 123(2) and Article 84 EPC, particularly having regard to the issues mentioned in point 2 of the annex. Further, it was set out that the question of admissibility of auxiliary requests 1 to 5 in view of Article 123(2) EPC and Article 84 EPC would also have to be addressed, having particular regard to the points raised in the contested decision. The Appellant made no substantive reply to this communication.

III. Oral proceedings were held on 12 December 2008. The Appellant did not attend the oral proceedings, as already previously advised with letter dated 16 October 2008. Its requests, as presented with the statement of grounds of appeal, were that the patent be maintained in amended form on the basis of claim 1 of the main request or of one of auxiliary requests 1 to 5. The Respondent requested that the appeal be dismissed.

Claim 1 of the main request reads as follows:

"A wheel support assembly (24) adapted to bolt to an axle (20) of a vehicle for supporting a tire, said assembly comprising:
an outer annular rim (26; 56) having an outer annular surface configured to support a tire and an inner annular surface;
a plurality of spoke arrangements (28; 58), each of which includes (i) at least two elongated spokes (32a, 32b; 62a, 62b) respectively including inner ends and outer ends and (ii) a cross-bar (34; 63) connecting together the inner ends of the spokes (32a, 32b; 62a, 62b) and configured to bolt to said axle (20) for connecting the inner ends of said spokes (32a; 32b; 62a; 62b) to said axle (20), whereby said cross-bars (34; 63) serve as part of a hub of said wheel support assembly (24), said spokes (32a, 32b; 62a; 62b) and said cross bars being integrally stamp formed from a piece of sheet metal; and
means for connecting the outer ends of said spokes (32a, 32b; 62a, 62b) to said rim (26, 56);
characterized in that
said cross-bars (34; 63) present a resting surface against a connecting end (18) of said axle (20) and the depths (D) of said spokes (32a, 32b; 62a, 62b) extend normal to said resting surface in a direction axially outward from said resting surface and away from said axle (20);
wherein said at least two spokes (32a, 32b; 62a, 62b) of said spoke arrangements (28) extend inwardly from said rim (26; 56) along a path that does not coincide

with a radius of the rim (26; 56) and that straddles a radius of the rim."

Claim of the first auxiliary request differs from claim 1 of the main request in that the wording "wherein said at least two spokes (32a, 32b; 62a, 62b) of said spoke arrangements .... and that straddles a radius of the rim" is replaced by the wording "said at least two spokes (32a, 32b; 62a, 62b)of said spoke arrangements (28) extend inwardly from said rim (26; 56) along a path that does not coincide with a radius of the rim (26; 56) and that straddles a radius of the rim; and between the spoke arrangements no part of the assembly extends radially from the rim by more than substantially the thickness of said sheet metal".

Claim 1 of the second auxiliary request differs from claim 1 of the main request in that the wording "wherein said at least two spokes (32a, 32b; 62a, 62b) ...and that straddles a radius of the rim" is replaced by the wording "all of the spokes (32a, 32b; 62a, 62b) of said spoke arrangements (28) extend inwardly from said rim (26; 56) along a path which does not coincide with a radius of said rim (26; 56), wherein each spoke arrangement (28) includes a pair of spokes (32a, 32b; 62a, 62b) and wherein each of the spokes (32a, 32b; 62a, 62b) of each pair extends inwardly and on opposite sides of a particular radius of said rim (26; 56); the spokes (32a, 32b; 62a, 62b) of said spoke arrangements (28) extending inwardly in an approximate parallel relationship or in a diverging relationship; each spoke being substantially straight in a plane parallel to the axle and the pair of spokes being substantially symmetrical with regard to a radius

passing through a bolt hole in the cross-bar (34; 63) connecting together the inner ends of the pair of spokes (32a; 32b; 62a, 62b) and configured to bolt to said axle; and between the spoke arrangements no part of the assembly extends axially from the rim by more than substantially the thickness of said sheet metal".

Claim 1 of the third auxiliary request differs from claim 1 of the main request in that the wording "wherein said at least two spokes (32a, 32b; 62a, 62b) ...and that straddles a radius of the rim" is replaced by the wording "and the spokes (32a, 32b; 62a, 62b) have a width (W) equal to the thickness of said sheet metal".

Claim 1 of the fourth auxiliary request differs from claim 1 of the main request in that the wording "wherein said at least two spokes (32a, 32b; 62a, 62b) ...and that straddles a radius of the rim" is replaced by the wording "all of the spokes (32a, 32b; 62a, 62b) of said spoke arrangements (28) extend inwardly from said rim (26; 56) along a path which does not coincide with a radius of said rim (26; 56), wherein each spoke arrangement (28) includes a pair of spokes (32a, 32b; 62a, 62b) and wherein each of the spokes (32a, 32b; 62a, 62b) of each pair extends inwardly and on opposite sides of a particular radius of said rim (26; 56); and the spokes (32a, 32b; 62a, 62b) have a width (W) equal to the thickness of said sheet metal."

Claim 1 of the fifth auxiliary request differs from claim 1 of the main request in that the wording "wherein said at least two spokes (32a, 32b; 62a, 62b) ...and that straddles a radius of the rim" is replaced

by the wording "all of the spokes (32a, 32b; 62a, 62b) of said spoke arrangements (28) extend inwardly from said rim (26; 56) along a path which does not coincide with a radius of said rim (26; 56), wherein each spoke arrangement (28) includes a pair of spokes (32a, 32b; 62a, 62b) and wherein each of the spokes (32a, 32b; 62a, 62b) of each pair extends inwardly and on opposite sides of a particular radius of said rim (26; 56); the spokes (32a, 32b; 62a, 62b) of said spoke arrangements (28) extending inwardly in an approximately parallel relationship or in a diverging relationship; each spoke being straight in a plane parallel to the axle and the pair of spokes being symmetrical with regard to a radius passing through a bolt hole in the cross-bar (34; 63) connecting together the inner ends of the pair of spokes (32a, 32b; 62a, 62b) and configured to bolt to said axle; and the spokes (32a, 32b; 62a, 62b) have a width (W) equal to the thickness of said sheet metal".

IV. The Appellant's arguments may be summarized as follows:

The subject-matter of claim 1 of the main request meets all the requirements of patentability under the EPC and particularly the requirements of Article 123(2) EPC. The directions "axially outwards" and "away from the axle" are not only disclosed in figures 2 to 5 since they are likewise unequivocally inferable from the folding process of the wheel support assembly described in the original description, for example page 7, line 28 - page 8, line 5. The skilled person would understand that the only face of the connecting section that can act as a resting face "configured to bolt" to an axle, as recited in claim 1, is the face of the

connecting section opposite the direction in which the spokes extend. This is for example because the spokes prevent the other surface from being brought into contact with the axle head. Since the resting surface is configured to bolt to the axle, it is turned axially inward. It follows that the spokes must extend in a direction axially outward. The spokes must also extend in a direction away from the axle due to the U shaped blank from which they are made. Therefore, the features "axially outwards" and "away from the axle" are clearly disclosed in the original application and there is no necessity to introduce into the claim further features "relating to the shape of the spokes, disclosed in the drawings", given that these further features are not essential features of the invention. Also, a support is provided in the original application for the feature "wherein said at least two spokes of said spoke arrangements extend inwardly from said rim along a path that does not coincide with a radius of said rim and that straddles a radius of the rim". This wording, whilst defining essential features of the spokes, does not introduce any new subject-matter by way of generalization, such that there is no need to add that "at the same time, they straddle the axis of rotation of the rim". In fact, the latter feature is already implied by the aforesaid feature presently included in claim 1.

The subject-matter of claim 1 of the first auxiliary request meets all the requirements of patentability under the EPC and particularly those under Article 123(2) EPC. This applies to the features included in the characterizing portion of the claim which were already discussed above in conjunction with

the main request and likewise to the further feature that "between the spoke arrangements no part of the assembly extends radially from the rim by more than substantially the thickness of said sheet metal". In fact, the description as filed teaches that the sheet metal has a thickness equal to the width W of the spokes 32a and 32b (page 7, lines 25-27) and that the legs of the U-shaped spoke are bent outward to produce flanges (page 8, lines 5-7). The skilled person would thus understand that said flanges, which according to figures 2 and 3 are the only parts of the wheel disposed on the rim between the spoke arrangements, extend radially from the rim by only the thickness of the sheet metal. Moreover, since the spoke arrangements 28 are "welded or otherwise fixedly connected with the rim 26" (description as filed, page 8, lines 21-24), the skilled person would know that the thickness of the welding will not cause flanges 38a and 38b to extend radially by more than substantially the thickness of said sheet metal. The embodiment of figures 4 and 5, being devoid of any parts extending radially from the rim between the spoke arrangements, likewise constitutes a disclosure in the application as filed of the feature under discussion.

The contested decision asserts that it is "conceivable" that the spokes are attached to the rim by bolts passing through the flange. However, it would not be reasonable to regard a restrictive feature, unequivocally supported by the description, as introducing new matter on the grounds that it excludes "conceivable" embodiments from the scope of the claim.

The subject-matter of claim 1 of the second auxiliary request meets all the requirements of patentability under the EPC. Specifically, as to the requirements of Article 123(2) EPC, concerning that part of the characterizing features which are not already present in claim 1 of one of the foregoing requests the following reasons apply. The wording reciting that "all of the spokes of said spoke arrangements extend inwardly from said rim along a path which does not coincide with a radius of said rim, wherein each spoke arrangement includes a pair of spokes and wherein each of the spokes of each pair extends inwardly and on opposite sides of a particular radius of said rim" is unambiguously supported by claims 4 and 5 of the original application. The feature implying "each spoke being substantially straight in a plane parallel to the axle and the pair of spokes being symmetrical with regard to a radius passing through a bolt hole in the cross bar connecting together the inner ends of the pair of spokes and configured to bolt to said axle" is supported by figures 2 to 5 of the application as filed and is introduced into claim 1 with a view to defining all the features of the invention, specifically "relating to the shape of the spokes", which were considered as essential in the contested decision. Finally, the feature stating "the spokes of said spoke arrangements extending inwardly in an approximate parallel relationship or in a diverging relationship" is supported by figures 4 and 5 and this wording clearly excludes the case of spokes diverging in a direction away from the rotation axis.

The subject-matter of claim 1 of the third, fourth and fifth auxiliary request meets all the requirements of

patentability under the EPC and in particular those under Article 123(2) EPC. The characterizing feature included in claim 1 of the mentioned auxiliary requests which has not been discussed above in connection with the previous requests recites that "the spokes have a width equal to the thickness of said sheet metal". This is disclosed explicitly in the description as filed on page 7, lines 25-27 and on page 9, lines 21-22.

V. The Respondent's arguments may be summarized as follows:

The subject-matter of claim 1 of the Appellant's main request as well as of each of the auxiliary requests fails to meet the requirements of patentability under Articles 123(2) EPC and/or Article 84 EPC. As to claim 1 of the main request it appears that the feature implying that "said spokes extend normal to said resting surface" constitutes a generalization of the content of the original subject-matter of the application as filed since in claim 1 it has been omitted that "the connecting section is stamped away from the legs and the latter are bent around". Indeed, this further feature is disclosed in the same context and in the same sentence (see description as filed, page 8, lines 3-5) as said "normal" direction included in the claim and it is essential to the claimed subject-matter in that it implies that a connecting portion between the spokes has been cut away. The further feature "in a direction axially outward from said resting surface and away from said axle" likewise contravenes the requirements of Article 123(2) EPC since this feature can be derived only from the figures of the application as filed and it cannot be considered in isolation from the further features illustrated in

these embodiments. Finally, the feature stating that "said at least two spokes of said spoke arrangements extend inwardly from said rim along a path that does not coincide with a radius of the rim and that straddles a radius of the rim" was not originally disclosed since in this context the description as filed also discloses that the spokes of each pair constituting a spoke arrangement "straddle the axis of rotation of the rim" (description as filed, page 7, line 6). However this feature has been omitted in claim 1.

The first two reasons given above for non-compliance of the subject-matter of claim 1 of the main request with Article 123(2) EPC also apply to all auxiliary requests since they all include the mentioned features, whereas the last reason given above applies in an identical way to claim 1 of the first auxiliary request.

Moreover, claim 1 of the first and second auxiliary requests includes the amendment reciting that "between the spoke arrangements no part of the assembly extends radially from the rim by more than substantially the thickness of said sheet metal", said amendment extending beyond the content of the application as filed. This feature is undoubtedly illustrated in the figures but the application as filed does not include any explicit mention of this feature, nor does it include any suggestion that such a feature is essential or let alone of any importance to the invention. The skilled person would therefore not consider this feature at all as being part of the technical teaching of the invention. For these same reasons the feature in claim 1 of auxiliary request 2 and 5 relating to the spokes "extending inwardly ... in a diverging

relationship" is to be regarded as infringing Article 123(2) EPC.

As to claim 1 of the third, fourth and fifth auxiliary requests the feature implying that "the spokes have a width equal to the thickness of said sheet metal" was not disclosed in the original application as filed. Indeed, the "width" of said spokes acquires a well defined meaning only within the context of the bending forming process as described in the paragraph bridging pages 7 and 8 of the description in connection with lines 21-24 of page 9 of the description and claim 6 (or claim 9) as filed. These passages of the description and of claim 6 define the width of the spokes in relation to their length and to their depth and omission of these features in claim 1 leads to a generalization of the originally filed subject-matter and to a lack of clarity concerning the definition of the term "width".

In view of some of the introduced amendments which were already discussed in connection with the former auxiliary requests the subject-matter of claim 1 of the fifth auxiliary request does not fulfil the requirements of Article 123 (2) EPC and Article 84 EPC either.

Reasons for the Decision

1. The appeal is admissible.

2. Amended claim 1 according to the main request defines the two spokes as extending "inwardly from said rim

along a path that does not coincide with a radius of the rim and that straddles a radius of the rim". As pointed out by the annex to the summons to oral proceedings, it is apparent that the path of each spoke considered individually does not "straddle" a radius of the rim. What is actually unambiguously derivable from the disclosure of the invention, see for example original claim 5, is that each of the spokes of a pair extends on opposite sides of a particular radius of the rim. However, this unambiguously disclosed feature is by no means implied by or derivable from the foregoing feature included in claim 1. Therefore as the wording of this latter feature is unclear and undefined claim 1 of the main request does not fulfil the requirements of Article 84 EPC 1973.

3. On account of the reasons given under point 2 above claim 1 of the first auxiliary request is also not admissible since it does not comply with Article 84 EPC 1973.

4. The feature stating that "between said spoke arrangements no part of the assembly extends radially from the rim by more than substantially the thickness of said sheet metal" and included in claim 1 of the second auxiliary request is based solely on figures 2, 4 and 6 as filed. According to established case law of the Boards of appeal (see for instance T 523/88, T 818/93) the introduction of such features into the claims complies with the requirements of Article 123(2) EPC only if their structure and function is clearly and unambiguously derivable from the drawings and is not at odds with other parts of the disclosure. In the present case the feature under discussion cannot be seen to

possibly define any function whatsoever. In fact, this feature bears no direct relationship to the overall technical teaching of the application as filed, particularly considering the description and the claims, such that it does not unequivocally and unambiguously result from this technical teaching. In particular, it is for instance immaterial to the present invention whether or not, and by what amount, any part of the outer annular rim may radially extend from the rim itself since the present invention does not deal at all with the configuration of the outer annular rim. For these reasons none of the figures as filed can be regarded as a disclosure of the above mentioned feature and therefore the subject-matter of claim 1 of the second auxiliary request is not admissible given that it infringes Article 123(2) EPC.

5. Claim 1 of the third, fourth and fifth auxiliary request states that "the spokes have a width equal to the thickness of said sheet metal". In the Appellant's view this feature is based on page 7, lines 25-27 of the application as filed. However, as it appears from page 9, lines 21-24 and from claim 6 of the application as filed, this feature is defined in the more specific context of the particular geometrical shape of the spokes, implying that "each spoke has generally rectangular cross-section defined by front and back edges and opposing side walls, the latter extending approximately parallel with the axis of said rim, and wherein each side wall is substantially deeper than the edges are wide". Consequently, the isolation of the "width" of said spokes from the further features defining the spokes, and the omission of these features from claim 1, constitutes a generalization of the

originally disclosed subject-matter and as such contravenes Article 123(2) EPC. Moreover, this generalization also leads to a lack of clarity, since the definition of said "width" in present claim 1 of these auxiliary requests is entirely arbitrary, given that it is not related to any other direction defined in the claim. Claim 1 of the third, fourth and fifth auxiliary request therefore likewise lacks clarity (Article 84 EPC 1973).

6. It is finally noted that the feature indicating that the spoke arrangements extend "inwardly in an approximate parallel relationship or in a diverging relationship", in claim 1 of the fifth auxiliary request, extends beyond the content of the application as filed. Indeed, a "diverging relationship" of the spokes can be inferred, if at all, exclusively from figures 4 and 5 of the application as filed. Due to the absence in the original application of any unequivocal and unambiguous technical teaching in this respect, analogous reasons apply as already given under point 4.

Order

For these reasons it is decided that:

The appeal is dismissed

The Registrar: The Chairman:

A. Vottner S. Crane