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Datasheet for the decision of 12 September 2008

Case Number: T 0702/06 - 3.2.01

Application Number: 99114848.7

Publication Number: 0976591

IPC: B60G 15/07

Language of the proceedings: EN

Title of invention:
Vehicle wheel suspension

Patentee:
CHUO HATSUJO KABUSHIKI KAISHA

Opponent:
Verband der Deutschen Federnindustrie
Ikuo SAKAI

Headword:
-

Relevant legal provisions:
EPC Art. 123

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

Keyword:
"Extension (no)"
"Clarity (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0702/06 **-** 3.2.01

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

Appellant: (Patent Proprietor)	CHUO HATSUJO KABUSHIKI KAISHA 68, Kami-shioda Aza Narumi-cho Midori-ku Nagoya-shi, Aichi-ken, 458 (JP)
Representative:	TBK-Patent Bavariaring 4-6 D-80336 München (DE)
Respondents: (Opponent 01)	Verband der Deutschen Federnindustrie Goldene Pforte 1 D-58093 Hagen (DE)
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(Opponent 02)	Ikuo SAKAI 52-7-406, Aramotokita, Higashiosaka-shi Osaka 577-0011 (JP)
Representative:	Schwabe - Sandmair - Marx Patentanwälte Stuntzstraße 16 D-81677 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 20 February 2006 revoking European patent No. 0976591 pursuant to Article 102(1) EPC 1973.**

Composition of the Board:

Chairman: J. Osborne
Members: P. L. P. Weber
G. Weiss

Summary of Facts and Submissions

I. The appeal is against the decision of the opposition division dated 20 February 2006 by which it revoked the European Patent No. 0976591.
In the opposition proceedings the subject-matter of the claims 1 as granted and according to second and third auxiliary requests was found to extend beyond the content of the application as originally filed and the claim 1 according to the first auxiliary request was considered to have been amended in such a way as to extend the scope of protection conferred.

The patentee filed an appeal on 28 April 2006 and paid the appeal fee on the same date. The grounds of appeal were filed on 3 July 2006.

II. Oral proceedings were held on 12 September 2008.

The appellant requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of respective claims 1 as filed during the oral proceedings according to a main request and first and second auxiliary requests and the remaining specification as granted.

The respondents requested that the appeal be dismissed.

III. Claim 1 according to the main request reads as follows:

"A vehicle wheel suspension comprising:
a strut (2) mounted at the upper end thereof on a vehicle body (1) for supporting a wheel (8);
a lower seat (4) fixed to said strut (2);

an upper seat (3) mounted on said vehicle body (1); and a helical compression spring (5) mounted between said lower seat (4) and said upper seat (3), with said strut (2) enclosed in said spring (5), said spring (5) having a coil axis (CA) substantially curved at a predetermined radius of curvature in an unloaded state of said spring (5),
characterized in that
said lower seat (4) is tilted at a first predetermined angle in such a direction that the longitudinal length of said spring (5) at the outside of said vehicle body (1) is shortened when said spring (5) is mounted between said upper seat (3) and said lower seat (4), and/or said upper seat (3) is tilted at a second predetermined angle in such a direction that the longitudinal length of said spring (5) at the inside of said vehicle body (1) is shortened when said spring (5) is mounted between said upper seat (3) and said lower seat (4), wherein said spring (5) is held in such a state that the coil axis (CA) of said spring (5) is curved with the center of curvature being on an inner side of the vehicle with respect to said strut (2) so that the coil axis of the spring is curved to extend in the direction to the lateral outside of said vehicle body."

The final feature of the claim comprises two parts:

(a) "with the centre... to said strut (2)" which was in claim 1 as granted and replaced the following wording in claim 1 as originally filed: "to extend outside of said vehicle body"; and
(b) "so that... said vehicle body" which is additional to the wording of claim 1 as granted.

IV. The arguments of the appellant in respect of the main request can be summarised as follows:

The last feature of claim 1 is originally disclosed not only in e.g. figures 1/10/16/17 as filed but also at several places in the description as filed. It is self-evident that a coil axis is a continuous curve which is running over the whole length of the spring. In addition in column 13, lines 18 to 26 of the A-publication it is mentioned that the substantial radius of curvature of the helical spring 5y (of figure 17) is approximately the same in magnitude as the radius of curvature of the helical spring 5x (of figure 16), so that the radius of curvature cannot be as small as respondent II tries to present it.
The addition of the part (b) of the last feature is a limitation of scope and has to be understood in combination with the part (a) which already mentions that the centre of curvature is on the inner side. In this context it is clear for the skilled man what is the outside of a vehicle compared to the inner side of it. The skilled man knows that the coil axis cannot be outside of the vehicle body as this would be contrary to his general knowledge in the field of vehicle technology and also in contrast to figures 1 and 10 showing the wheel suspension within the outline of the vehicle.

Although the word "lateral" is not disclosed as such in the originally filed application it is clear from the originally filed figures 1,6,7 that the curvature is in the lateral direction of the vehicle. This is confirmed in several passages of the description as for example

column 11 lines 30 to 34 or column 9 lines 8 to 11 where it is disclosed that the reaction force extends in the direction of the initial curve. The description of figure 2 also mentions "the right side" which according to figure 1 clearly is towards the lateral outside of the vehicle. In addition, since the whole application is concerned with the removal of side forces created on the strut, it is clear to the skilled man that the orientation of the curvature is lateral. The last feature of claim 1 is thus clear and unambiguously disclosed in the originally filed application documents.

V. The arguments of respondent I can be summarised as follows:

A "centre of curvature" is not disclosed in the originally filed documents. The use of such a concept is a generalisation which extends beyond the content of the application as originally filed. The originally filed documents only speak of a radius of curvature, of an amount of curvature. In the embodiment of figure 17 no centre of curvature can be defined for the rectilinear parts of the coil axis. In addition the claim speaks of "the" centre of curvature. Here again nowhere in the originally filed documents is there a mention of a unique centre of curvature. In addition the amount of curvature is always disclosed only in combination with other features, in particular the eccentricity of the lower seat.
It is not clear what should be the meaning of the part (b), where the outside is, or what the sense of this wording is. In particular, if it were accepted that part (a) defines the direction of the curvature it is

not understandable what part (b) should then define in addition. There is no original disclosure of "lateral" or more precisely of the direction of the lateral outside. The patentee has patent applications for spring seats inclined in both longitudinal and lateral directions and it is not unambiguously disclosed that in the present case it only means an inclination in a lateral direction. In addition, several lateral directions are possible and it is not said that the figures do not each disclose different lateral directions.

VI. The arguments of respondent II can be summarised as follows:

The part (a) extends the subject-matter beyond the content of the application as originally filed since it covers the possibility of an embodiment as in figure 17 but in which the spring is offset towards the lateral centre of the vehicle and a small radius of curvature is formed between the rectilinear portions.

The content of part (b) of claim 1 was in originally filed claim 1 but removed, thus it has been abandoned before grant. It is not in the patent as granted so that it cannot be introduced again into the claim. The grant has a cut-off effect which means that a feature taken out of the application before grant cannot be reintroduced after grant.

In addition, the entire last feature of claim 1 is not clear. The coil axis is not a defined object and always extends outside the vehicle body in the vertical direction; it does not stop at the seats. The wording

of this feature is thus not clear, since it is not understandable how such an axis can extend in the direction of the lateral outside as well. Moreover, it is not clear what the part (b) should define in addition to the part (a). "Lateral" is not defined in the patent so that the meaning of this word is not clear; it is not even clear whether this should designate a single direction or several directions. The last feature of claim 1 is thus neither clear nor disclosed in the originally filed application.

Reasons for the Decision

1. The appeal is admissible.

2. The issues to be dealt with in this appeal are whether the subject-matter of claim 1 according to the main request was disclosed in the application documents as originally filed, whether its wording as amended since grant satisfies the requirements of clarity according to Article 84 EPC 1973 and whether the amendments extend the scope of protection.

It is the last feature of claim 1 according to the main request which is disputed by the respondents.
The feature reads as follows:

(a) "… wherein said spring (5) is held in such a state that the coil axis (CA) of said spring (5) is curved with the centre of curvature being on an inner side of the vehicle with respect to said strut (2)";

(b) "so that the coil axis of the spring is curved to extend in the direction to the lateral outside of said vehicle body".

3. The part (a) requires that the spring is held in such a state that the coil axis of the spring is curved with the centre of curvature being on an inner side of the vehicle with respect to the strut.

Claim 1 in its preamble requires the presence of a helical compression spring having a coil axis substantially curved at a predetermined radius of curvature. Already this feature which was also present in the originally filed claim 1 implies that there is a centre of curvature as the presence of a radius mathematically implies the presence of an emanating point, the centre of curvature.

Thus in the judgement of the board already the originally filed claim 1 gives support for the feature of a centre of curvature.

But several other places in the originally filed application documents are also a clear basis for this feature.
In all figures showing the spring it is clearly visible that the coil axis is curved and statements that it is curved at a predetermined radius of curvature can be found at numerous places in the original application as published, e.g. column 3 lines 49 to 51 "*The spring has a coil axis substantially curved at a predetermined radius of curvature...*", column 6, lines 46 to 50 "*The helical spring 5 is formed with a coil axis CA thereof passing through the center of the upper end plane*

curved at a predetermined radius of curvature...", column 8 lines 35 to 38 "*the coil axis of which passes the center of the upper end plane and curves in accordance with a predetermined radius of curvature...*".

The requirement that the centre of curvature should be on the inner side of the vehicle is also disclosed in the application documents as originally filed, albeit implicitly. One effect of the invention is to avoid the lateral or side force acting on the strut resulting from the offset between the strut and the wheel, and in order to achieve this, a spring with a curved coil axis is used instead of a spring with a straight coil axis. By using such a curved coil axis the force axis of the spring is no more coaxial with the axis passing through the centres of the end coils of the spring but is parallel to this axis and displaced in the direction of extension of the curvature of the curved coil. Such a displaced force when applied to the seats creates a moment on the seats and thus a side force opposite to the side force resulting from the offset in the suspension. This is simple mechanics and is readily understandable by the skilled man. As the wheels are located towards the lateral outside of the vehicle relative to the strut the resulting lateral force acts on the strut in the direction of the inner side of the vehicle. The curvature of the coils therefore must be oriented to the same side as the wheels to be able to compensate that force. It is thus evident that the centre of curvature is on the inner side of the vehicle with respect to the strut.
This is also clearly visible on figures 1, 10, which show the vehicle suspension, the wheel and the

curvature directed towards the lateral outside of the vehicle.

No other orientation is originally disclosed and, technically, no other orientation would make sense, since as explained above the side force on the strut resulting from the offset in the suspension is directed towards the inner side of the vehicle.

The part (a) is thus clearly supported by the application documents as originally filed.

4. The part (b) beginning with "so that" specifies explicitly that "*the coil axis of the spring is curved to extend in the direction to the lateral outside of said vehicle body*" and thus avoids any possible misreading or misinterpretation of the part (a) such as led to the contested decision.
Through the addition of part (b) it is thus perfectly clear, also in the wording of the claim, that the direction of extension of the curvature is towards the lateral outside of the vehicle, which as explained above is originally disclosed and in line with the technical problem to be solved by the invention.

5. Respondent II considers the part (b) not to be clear in that the coil axis as a mathematical or geometrical line extends essentially in the vertical direction, so that it is not understandable what should be meant by an extension in the lateral direction. For this reason as well respondent II considers that the whole of the last feature is not disclosed in the originally filed documents as the claim now also covers embodiments in which the centre of curvature is on the inner side of

the vehicle relative to the strut but the coil curvature is offset towards the inside of the vehicle.

The board cannot share these opinions.
As expressed in several decisions of the boards, the skilled man will try to understand a claim and not to misunderstand it. In particular the man skilled in the art will rule out interpretations which are illogical or which do not make technical sense.
The present feature cannot be read as if it stood alone but on the contrary must be read in the light of the whole disclosure of the patent and of the remainder of the wording of the claim.
As explained above, the effect achieved by the curved axis is clear from the whole disclosure. The first part of the claim already requires the presence of a radius of curvature and the last feature of the claim, and more specifically the part (b), can only be understood in this context as meaning that the curvature extends towards the lateral outside of the vehicle. Any other interpretation would make no sense, and the skilled man would rule out any such interpretation.

As far as the centre of curvature to be considered in the light of the embodiment of figure 17 is concerned, the board would like to add the following.

At the beginning of paragraph [0035] of the application as published it is stated : "*The coil axis is not necessarily formed in an arch shape or a circular shape, but may be substantially curved at a predetermined radius of curvature to obtain the same effects as those obtained in the embodiments.*"

Then it goes on with : "*As shown in FIG.17 for example, a coil axis CA1 can be formed by a series of two rectilinear lines a11, a12 to be substantially curved at the predetermined radius of curvature.*"

And at the end of the paragraph it can be read: *"As can be seen from FIG.18, according to the helical spring 5y as shown in FIG.17, which is curved substantially at the predetermined radius of curvature by the rectilinear lines a11, a12, if the substantial radius of curvature of the helical spring 5y is approximately the same in magnitude as the radius of curvature of the helical spring 5x, the reaction force axis of the helical spring 5y will be approximately the same as that of the helical spring 5x."*

Finally, at the end of paragraph [0036] it is mentioned : "*Or, the coil axis may be formed by a series of more than three rectilinear lines (not shown) to be substantially curved at the predetermined radius of curvature.*"

In the judgment of the board it is thus clear for the skilled man that the straight lines of figure 17 or any other combination of straight lines should be considered as an approximation of a curve extending over the whole length of the helical spring.

This series of straight lines being an approximation of the curved spring axis of the other embodiments, it is evident that also the centre of curvature of the spring axis of the spring shown in figure 17 is on the inner side of the vehicle with respect to the strut.

Additionally, as already stated above, according to present claim 1 the spring has "a coil axis substantially curved at a predetermined radius of curvature". It is clear that the centre of curvature now defined in the last feature is the centre of that same curvature. For this reason the small radius identified by respondent II at the junction between two rectilinear axes in figure 17 cannot be associated with the curved coil axis in the sense of the patent.

6. Respondent I considered the claim to be unclear because several other patents from the appellant deal with force compensation on vehicle suspensions in directions other than the lateral one and so lead to uncertainty as to whether in the present patent it was only intended to orient the curvature of the spring in the lateral direction.

The board does not see a basis in the EPC or in the general principles of law for such a way of interpreting the content of a claim or of a patent. Each patent is a property title on its own and the skilled reader should find enough information in it to understand what the patent is about. In the present case as explained above it is clear for which subject-matter protection is sought. The content of other patent documents unrelated to the present one has no relevance. Following the line of respondent II would amount to introducing so many sources of interpretation that there would no longer be legal certainty.

7. Respondent II considered with reference to the guidelines that the part (b) which corresponds to the last feature of claim 1 as originally filed cannot be

reintroduced into the claim as it had been abandoned in the examination phase and the grant of the patent constitutes a cut-off which limits the possibilities of amendment.

While it is accepted that the grant of a patent constitutes a cut-off which defines the rights of third parties, the allowability of amendments after grant is mainly ruled by Article 123 EPC. On top of the requirement that an amendment must be based on the originally filed application, after grant it may not extend the protection conferred by the patent as granted.

In the present case as explained above the last feature of claim 1 not only is supported by the originally filed application documents but since the last feature of granted claim 1 has been completed by an additional clear indication of the orientation of the curvature (part (b)), the scope of the claim has been reduced so that the requirements of Article 123(3) EPC are clearly fulfilled as well. Moreover, the subject-matter of the part (b) was neither deleted from the application nor excluded from the subject-matter of claim 1.

8. As to the objection of respondent I that the curvature of the coil axis has originally only been disclosed in combination with the eccentricity of the lower seat, this opinion is not shared by the board either.

First of all, originally filed claim 1 already contained the feature that the coil axis of the spring is curved to extend outside of the vehicle body, although the eccentricity of the lower seat was not

claimed. In addition, from the summary of the invention in paragraphs [0009] and [0010] it is also clear that the aim of the invention was to improve on known arrangements for compensating the side force on the strut but there is no mention of eccentricity of the lower seat.

9. Respondent I also contends that the original application provides no basis for the feature of a single lateral direction.

As set out under point 3 above, the skilled man understands from the original application that the curvature is directed in order to counter the side force on the strut. He will interpret present claim 1 in the same manner, whereby the wording "the direction to the lateral outside" finds a basis in the original application.

10. Claim 1 according to the main request thus does not contain subject-matter which was not originally disclosed and has not been amended in such a way as to either render it unclear or extend the scope of protection.

11. Since the board finds in favour of the main request consideration of the auxiliary requests would be superfluous.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance for further prosecution.

The Registrar: The Chairman:

A. Vottner J. Osborne