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**Datasheet for the decision  
of 4 March 2016**

**Case Number:** T 0565/11 - 3.2.08

**Application Number:** 01124867.1

**Publication Number:** 1199118

**IPC:** B21F3/02

**Language of the proceedings:** EN

**Title of invention:**

Method and apparatus for producing a helical spring

**Patent Proprietor:**

CHUO HATSUJO KABUSHIKI KAISHA

**Opponent:**

Verband der Deutschen Federnindustrie e.V. (VDFI)

**Headword:**

**Relevant legal provisions:**

EPC Art. 84  
EPC R. 43(6)

**Keyword:**

Claims - clarity (no) -  
clarity in opposition appeal proceedings

**Decisions cited:**

G 0003/14, T 0986/97

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
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Case Number: T 0565/11 - 3.2.08

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.08**  
**of 4 March 2016**

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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
27 December 2010 concerning maintenance of the  
European Patent No. 1199118 in amended form.**

**Composition of the Board:**

**Chairwoman**            P. Acton  
**Members:**            M. Foulger  
                             P. Schmitz

## Summary of Facts and Submissions

- I. With the decision dated 27 December 2010, the opposition division found that the then valid first auxiliary request fulfilled the requirements of the EPC.
- II. The appellant (opponent) filed an appeal against this decision. The notice of appeal and the statement setting out the grounds of appeal were filed in due form and within the given time limits.
- III. Oral proceedings took place before the Board of Appeal on 4 March 2016.
- IV. The appellant requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed, or in the alternative, that the patent be maintained in amended form according to the first auxiliary request filed during the oral proceedings or the second auxiliary request filed with the letter dated 19 September 2011.

- V. Claim 1 of the main request (patent as maintained by the opposition division) reads:

"A method for producing a helical spring by cold working to bend and twist an element wire (W) while feeding the wire, comprising:

providing a plurality of configuration parameters for defining a desired configuration of a target helical spring,

the configuration parameters including number of coils, leads (L1,L2,...) and coil radii (R1,R2,...) provided along a radial direction of each coil and set along the

leads (L1,L2,...) of the target helical spring (feature A),  
converting the configuration parameters coil radii (R1,R2,...) and leads (L) into product dimensional parameters  
itches (P1,P2,...) and  
coil diameters (D1,D2,...) which are provided in a radial direction of each coil of the target helical spring and  
set along the pitches (P1,P2,...) for the number of coils (feature B),  
setting at least bending positions and twisting positions for each coil of the target helical spring at least on the basis of the coil diameters (D1,D2,...) in accordance with the target helical spring and  
bending and twisting the element wire (W) at the positions set in response to every predetermined feeding amount of the element wire (W), to produce the target helical spring with each coil thereof formed to provide the coil diameter (D1,D2,...)."

Claim 1 of the first auxiliary request is further restricted over the main request by the addition of "as shown at the left side drawing in Fig. 6" and by "as shown at the right side drawing in Fig. 6" after features A and B respectively to qualify the configuration and the dimensional parameters respectively.

Claim 1 of the second auxiliary request is further restricted over the main request by the addition of "such that each coil diameter (D1,D2,...) defines a direct distance between two points located diametrical to each other with respect to the coil axis along the course of each coil" after feature B to further define

the product dimensional parameters.

VI. The appellant argued essentially the following:

a) Main request

The following features were added to claim 1 during the opposition proceedings:

"the configuration parameters including number of coils, leads (L1,L2,...) and coil radii (R1,R2,...) provided along a radial direction of each coil and set along the leads (L1,L2,...) of the target helical spring,"  
"coil diameters (D1,D2,...) which are provided in a radial direction of each coil of the target helical spring and set along the pitches (P1,P2,...) for the number of coils".

These amendments could therefore be examined for clarity according to the order of G3/14. These features were indeed unclear because the term "a radial direction" was used in two different senses - either perpendicular to the centreline of the spring or along the coil, i.e. inclined to the perpendicular. This ambiguous, double meaning within the claim rendered the scope of the claim unclear.

Furthermore the expression "set along the leads" was unclear in the context of the claim because it was used to refer to the radius. Along the leads was an axial direction, see patent, Fig. 6, the radius was however perpendicular to this. How the radius could be set along the leads was therefore not clear.

Moreover the claims should be clear and unambiguous in themselves without reference to the content of the

description - which was not the case with the present claim 1.

Claim 1 was therefore not clear in the sense of Article 84 EPC.

b) Auxiliary request 1

The reference to the drawings did not resolve the clarity problems of claim 1 of the main request. Moreover such a reference was allowed by Rule 43(6) EPC only where absolutely necessary. The decision, T 986/97, cited by the respondent related to a case where protection was sought for a particular shape which could not have been described in another way. The present case, on the other hand, related to the definition of parameters which could have been described in words. The reference to the drawing raised further clarity problems since it was not clear whether the method claimed was restricted to the particular spring shown in Fig. 6.

c) Auxiliary request 2

Claim 1 of this request suffered from at least some of the clarity problems of the main request and was at least for this reason not allowable.

VII. The respondent argued essentially the following:

a) Main request

The claim must be seen in the context of the patent as a whole including drawings and description. In this light the invention provided an improved method for producing a helical spring in that coordinate parameters which describe the form of the spring in a coordinate system,



i.e. coil radii and leads, are converted into product parameters, i.e. coil diameters and pitches, which are defined within the spring. Paragraph [0027] and [0032] of the patent specification, referring to Fig. 6 of the patent, clearly illustrated the difference between configuration parameters and product dimensional parameters. In this respect, claim 1 provided a clear technical teaching.

"Set along" was to be interpreted in the light of Fig. 6 and did not mean along the leads or pitches in the axial direction because the person skilled in the art would clearly recognise that this would not make sense as the radius could not be in this direction. The reader would then turn to Fig. 6 for an explanation.

Claim 1 was therefore clear in the sense of Article 84 EPC.

b) First auxiliary request

Claim 1 of the first auxiliary request had been clarified with respect to the main request by addition of a reference to Fig. 6. Fig. 6 showed unambiguously what was meant by leads, pitches, radii and diameters. The decision T986/97 demonstrated that a reference to the drawings was allowable and in the present case such a reference was necessary in order to define the given parameters.

c) Second auxiliary request

Claim 1 had been modified to include the teaching of Fig. 6 without however the direct reference to the drawing as in the first auxiliary request. The feature added to claim 1 served to clearly define what was meant

by coil diameter.

Thus claim 1 of the main, first auxiliary and second auxiliary requests was clear in the sense of Article 84 EPC.

## Reasons for the Decision

### 1. Main request

1.1 Claim 1 as granted was amended during opposition proceedings to arrive at claim 1 of the present main request. The amendments that are relevant for this decision are:

"the configuration parameters including number of coils, leads (L1,L2,...) and coil radii (R1,R2,...) provided along a radial direction of each coil and set along the leads (L1,L2,...) of the target helical spring,"  
"coil diameters (D1,D2,...) which are provided in a radial direction of each coil of the target helical spring and set along the pitches (P1,P2,...) for the number of coils,"

The underlined wording was not present in the granted claims.

These amendments may therefore be examined for clarity according to the order of G3/14.

1.2 According to claim 1 the radii and the diameters are each provided along, or in, a radial direction of each coil. However in Fig. 6 it may be seen that the radii are measured perpendicularly to the axis and the diameters are measured along the coil itself i.e. not perpendicularly to the axis of the spring. Thus, in the

claim, the same expression is used with two different meanings and is therefore ambiguous.

1.3 Furthermore the expression "along the leads" when defining the coil radii is unclear because the leads (and the pitches) are measured axially. The radii are however perpendicular to the axis and therefore there is a contradiction inherent in this expression. Fig. 6 may well illustrate how the radii and diameters are measured but does not provide any hint as to what is meant by "along the leads" because the radii are drawn perpendicular to the leads. Paragraphs [0027] and [0032] of the patent also do not explain what is meant by this expression. Therefore this contradiction, present in the claim, is not resolved even should the teaching of Fig. 6 or the description be taken into account.

1.4 The amendments to claim 1 are therefore not clear and consequently do not meet the requirements of Article 84 EPC.

2. First auxiliary request

2.1 Claim 1 of this request is not clear because the feature of the radii being set along the leads is still present and the reference to Fig. 6 does not clarify the situation. This figure merely illustrates the fact that the feature is self-contradictory because the leads and radii are perpendicular.

The reference to the drawing introduces further ambiguities as it is not known to what extent the disclosure of the drawing restricts the scope of the claim, for example, it is not clear whether the method claimed is restricted to a spring having the same number of coils as shown in the drawing.

Claim 1 is therefore not clear in the sense of Article 84 EPC.

- 2.2 Moreover the reference to the drawing is not allowable because it is not absolutely essential. The intention of the reference is not to define a shape (as in T986/97) but rather to define parameters which could have been defined clearly with words when drafting the patent application. Thus the decision T986/97 deals with a different situation which is not comparable to that in the present case. Therefore, additionally, this request does not comply with Rule 43(6) EPC.

3. Second auxiliary request

The feature, discussed above, whereby "coil radii (R1,R2,...) provided along a radial direction of each coil and set along the leads (L1,L2,...) of the target helical spring" is still included in the claim. Thus, for the reasons given above the claim is not clear (Article 84 EPC).

**Order**

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

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chairwoman:



S. Sánchez Chiquero

P. Acton

Decision electronically authenticated