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Datasheet for the decision of 13 March 2015

Case Number: T 0640/14 - 3.4.01

Application Number: 01943856.3

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IPC: G01R1/06, G01R1/073, H01L21/66

Language of the proceedings: EN

Title of invention:
SUPPORT BODY ASSEMBLY FOR CONDUCTIVE CONTACTOR

Applicant:
NHK Spring Co., Ltd.

Headword:

Relevant legal provisions:
EPC 1973 Art. 84, 54(2), 56
EPC Art. 54(3), 123(2)

Keyword:
Claims - clarity (yes)
Novelty - (yes)
Inventive step - (yes)
Amendments - added subject-matter (no)

Decisions cited:
T 0667/08, T 0190/99

Catchword:

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Case Number: T 0640/14 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 13 March 2015

Appellant: (Applicant)	NHK Spring Co., Ltd. 10, Fukuura 3-chome Kanazawa-ku, Yokohama-shi, Kanagawa 236-0004 (JP)
Representative:	Dennemeyer & Associates S.A. 55, rue des Bruyères 1274 Howald (LU)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 12 November 2013 refusing European patent application No. 01943856.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	G. Assi
Members:	P. Fontenay
	C. Schmidt

Summary of Facts and Submissions

I. The present decision relates to the appeal which was filed against the decision of the examining division to refuse European patent application No. 01 943 856.3.

The impugned decision was remitted to the post on 12 November 2013.

II. In the "*Reasons for the decision*", the examining division held that the subject-matter of claim 1 according to the main request, then pending, extended beyond the content of the application as filed contrary to the requirements of Article 123(2) EPC.
According to the examining division, there was no support in the original disclosure for the feature of the "*reinforcing member extending only in a part of the support member devoid of any holder holes*". Moreover, the reference to "*a plurality of openings*" provided in the reinforcing member was considered to constitute an unallowable intermediate generalisation of three specific embodiments of the invention. A further unallowable generalisation resulted from the indication that said openings were filled with "*the material*" of the support member without incorporating the additional specific indication of the description according to which this material was a plastic material.

In two *obiter dicta*, the examining division further observed that the subject-matter of claim 1 was not clearly defined (Article 84 EPC 1973) and, notwithstanding the unallowable amendments, was not new in view of the prior art (Article 52(1) EPC and Article 54(1),(2) EPC 1973) and in any case, even when relying on a more restrictive interpretation of the claim's wording, not inventive (Article 56 EPC 1973).

Particular reference was made to document JP-A-2000-338134 (D2) and its abstract in the English language, and to document WO-A-00/032050 (D3).

Similar conclusions as to added subject-matter, clarity, novelty and inventive step applied to the auxiliary request then pending.

III. The notice of appeal was filed on 2 January 2014. The appeal fee was paid on the same day. The statement of grounds of appeal was filed on 5 March 2014.

IV. With the statement of grounds of appeal, the appellant confirmed its request that the decision under appeal be set aside and further requested that a patent be granted on the basis of sets of claims according to a main request or, in the alternative, on the basis of a first or second auxiliary requests. The claims according to the new requests were enclosed with the statement of grounds.

As a further auxiliary request, the appellant requested that oral proceedings be appointed.

V. In accordance with the appellant's request, summons to attend oral proceedings were issued on 14 November 2014.

VI. In a communication of the Board pursuant to Article 15(1) RPBA issued on 26 November 2014, the appellant was informed of the provisional opinion of the Board with regard to the new filed requests.

The attention of the appellant was more particularly drawn to an objection of lack of clarity resulting from the fact that the claimed invention as defined in claim

1 of the main request did not appear to recite all the essential features required to solve the problems concerning production costs resulting from difficulties in drilling certain materials such as invar, ceramics, glass or silicon, warping of the support member assembly and errors in positioning the contact members. This objection derived primarily from the fact that claim 1 of the main request was silent as to the nature of the materials being used for the support member and the reinforcing member, respectively.
Moreover, the fact that the reinforcing member extended only in a part of the support member absent of any holder holes but was provided with openings accommodating said holder holes, lead to some confusion as to the relationship actually existing between said reinforcing member and said holder holes.

Concerning the issue of novelty, the Board indicated that it was not fully convinced by the analysis relied upon by the examining division with regard to documents D2 and D3. However, in view of the comments made as to clarity, the Board refrained from commenting on the merits of the requests filed with the statement of grounds.

VII. By letter of reply dated 11 February 2015, the appellant presented comments addressing the objections of the Board. In its view, the definition of claim 1 of the main request was sufficient to define the invention in a manner that was both clear and concise. It was emphasised that the definition was not intended to cover the embodiments of Figures 3-5 and 7-9 and that the claimed wording was fully consistent with the actual embodiments of the invention as illustrated in Figures 1, 2 and 6.

VIII. Oral proceedings before the Board took place on 13 March 2015 in presence of the appellant's representative.

IX. During the oral proceedings the appellant filed a revised main request which replaced all previous requests.

X. Claim 1 of the present request reads:

"*1. A support member assembly suitable for use in a contact probe head for contacting an object to be contacted, comprising:*

a support member (1) formed with a plurality of holder holes (2) for supporting conductive contact members (11) in a mutually parallel relationship, the support member being made of plastic material suitable for forming such holder holes; and

a reinforcing member (3), which consists of metallic materials, glass, ceramics or silicon and which is integrally buried within the support member (1), said reinforcing member (3) extending only in a part of the support member (1) devoid of any holder holes (2) and extending to a vicinity of the outer periphery of the support member (1)."

Claims 2 and 3 are dependent claims.

Reasons for the Decision

1. It is noted that the revised version of the Convention (EPC 2000) does not apply to European patent applications pending at the time of its entry into force (13 December 2007), unless otherwise provided. In this decision, where Articles or Rules of the former

version of the EPC apply, their citation is followed by the indication "*1973*".

2. Admissibility

The appeal meets the requirements of Articles 106 to 108 EPC and Rule 99 EPC. It is thus admissible.

3. Article 123(2) EPC

3.1 Claim 1

Claim 1 of the present request derives, primarily, from original claim 1.

The features relating to the materials being used for the support member and the reinforcing member, respectively, have been specified. A basis for the support member being made of plastic material may be found on page 3 (lines 4 and 5), page 4 (lines 8-14), page 5 (line 10) and page 8 (lines 9 and 10) of the application as filed. The indication that the reinforcing member may consist of metallic materials, glass, ceramics or silicon is to be found on page 4, lines 15-17, of the original application.

Claim 1 further specifies that the reinforcing member is integrally buried within the support member, as recited in original claim 5 and disclosed on page 7 (lines 24 and 25) and page 8 (lines 9 and 10) of the original application.

The feature in original claim 1 of "*a reinforcing member ... extending in a part of the support member devoid of any holder holes*" has been specified to read "*said reinforcing member (3) extending* ***only*** *in a part*

of the support member (1) devoid of any holder holes (2) ***and extending to a vicinity of the outer periphery of the support member"*** (bold added). A support for this amended feature may be found in the paragraph bridging pages 7 and 8 of the original disclosure which reads "*the reinforcing member 3 extends to a vicinity of the outer periphery of the support member 1 generally in the shape of a disk, and is provided with a plurality of rectangular openings 3a each for accommodating a corresponding group of the holder holes 2. Thus the reinforcing member 2 occupies a part of the support member 1 where the holder holes 2 are absent or sparsely distributed*".

The examining division held that this passage did not unambiguously and directly implied that the reinforcing member exclusively occupied a part of the support member where the holder holes were absent and that there was therefore no basis in the original disclosure for the introduction of the adverb "*only*" in the claim.

The Board notes that literal support for an amendment is not required under the wording of Article 123(2) EPC. What really matters is the technical information that the skilled person reading the original disclosure would have derived from its content (description, claims and drawings) considered in its entirety (cf. decision T 0667/08, not published, Catchword and point 4.1.4 of the Reasons). In the present case, the allegedly missing information according to which the reinforcing member exclusively occupies a part of the support member where the holder holes are absent is clearly disclosed in the Figures 1 and 2 to which the passage reproduced above relates (cf. description, page 7 (line 18)). Thus, although the adverb "*only*" is not linguistically disclosed, the technical information

related thereto is directly and unambiguously derivable from Figures 1 and 2 considered in the light of the paragraph reproduced above.

Furthermore, there is no need when selecting a feature from the description to reproduce the whole context associated with this feature if the skilled person would have recognised that the selected feature is not necessarily related, whether structurally or functionally, to the other non-selected features. Under the present circumstances, it is considered that the specific geometry of the disk and openings is not associated in any way to the actual extension of the reinforcing member within the support member.

3.2 Claims 2 and 3

Claims 2 and 3 derive from original claims 9 and 10, respectively.

3.3 It follows that the claims of the present request meet the requirements of Article 123(2) EPC.

4. Article 84 EPC 1973

4.1 Claim 1

The feature of claim 1 according to which the support member is made of plastic material suitable for forming the holder holes permits to solve the problems acknowledged on page 2 (line 20) to page 3 (line 3) of the application as filed, which resulted from the use in the prior art of materials such as silicon, ceramics, glass or alloys such as invar.

It follows from the statement on page 3 (lines 4-8) of the description as filed that it is also essential to avoid warping of the support material caused by the pressure induced by the large number of conductive contact members. In the absence of any indication in the application suggesting that this aspect may be of minor importance in view of the main problem addressed by the invention, the Board holds that also the features actually required to solve this secondary problem, i.e. the avoidance of any warping of the support assembly, qualify as essential features of the invention.

Since claim 1 incorporates all the features required in order to facilitate drilling operations in the support member assembly, by appropriate selection of the materials to be used for the support member, while still avoiding warping of said assembly, by specifying the nature of the materials to be used for the reinforcing member, it is considered that all essential features required for the definition of the invention are recited in claim 1. In this respect, it is noted that the claimed materials also solve the further problem of thermal expansion that may cause positional errors of the conductive contact members (cf. page 3 (lines 8-11)).

4.2 Claims 2 and 3

Claims 2 and 3 relate to the embodiment of Figure 6. Their wording was amended to be consistent with the wording of independent claim 1.

4.3 It follows that the claims of the present request meet the requirements of Article 84 EPC 1973.

5. Article 54(1),(2) EPC 1973

5.1 Document JP-A-2001-223247 is a patent application originating from the same applicant as for the present application. This document would reproduce all the features of claim 1. However, JP-A-2001-223247 was published on 17 August 2001 after the filing date of the present application, and hence does not form part of the prior art in the sense of Article 54(2) EPC 1973.

5.2 Document D2 discloses a layered structure which is regarded as suitable for use in a contact probe head. This structure consists of a support member (core board 10) which is reinforced by an upper and lower carbon fiber reinforced plastic (CFRP) adhered thereto. The support member is formed with a plurality of holes.

There is, however, no mention in D2 of the claimed feature of the reinforcing member being "*integrally buried within the support member*" in the sense that the reinforcing member would be fully embedded within said support member. Figures 2 and 3 in D2, referred to by the examining division, disclose that the support member is actually sandwiched between the upper and lower plates of the reinforcing member. It follows that the further claimed feature of the reinforcing member "*extending only in a part of the support member devoid of any holder holes*" (reference signs have been removed) is also not present in the disclosure of D2.

5.3 Document D3 discloses a support member assembly for a contact probe head. D3 being drafted in the Japanese language, reference is made in the following to document D3a (EP-A-1 113 274) which is a corresponding document drafted in English, but published on

4 July 2001 after the filing date of the present application. The Board notes that the drawings of D3 and D3a are identical and would lead the skilled person to the following understanding.

Document D3a discloses a contact probe head comprising a reinforcing member which, according to Figure 3, may consist of plate members (11, 12). Said reinforcing member has a plurality of through holes (13) designed to receive corresponding contact members (6). A layer (14) is provided between the reinforcing member from said contact members.

Te Board does not understand the examining division's assessment of novelty over D3, which is too concise both in the decision under appeal (cf. point 5.2 of the Reasons) and in the letter of 26 March 2013 (cf. point 4.1.2). Only by way of hypothetical assumption one might think that the insulating layer (14) in D3 was considered as a support member in the sense of the present invention.

In this respect, while it would be justified to rely on a broad interpretation of the claimed wording when assessing novelty and inventive step, there are limits. Indeed, it is a generally recognised principle that the skilled person, when considering a claim, should rule out interpretations which are illogical or which do not make technical sense (cf. T 0190/99, not published, Catchword).

In the Board's judgment, the concept of support member according to the present application implies a requirement of strength or rigidity as confirmed by the fact that the claimed support member has to support the conductive contact members. On the contrary, the layer

(14) of D3a appears to be deprived of any sufficient strength or rigidity. Thus, the layer (14) of D3 does not appear to be suitable to support the conductive needles in a mutually parallel relationship, this functionality being rather achieved by the plate members (11, 12).

5.4 None of the other documents cited in the search report discloses all the features of present claim 1.

5.5 It follows that the subject-matter of claim 1 is thus new in the sense of Article 54(1),(2) EPC 1973.

6. Inventive step - Article 56 EPC 1973

6.1 The architecture of the assembly disclosed in document D2 differs substantially from the claimed structure and would require fundamental changes in order to arrive at the claimed subject-matter. The skilled person would have, firstly, to reverse the roles played by the support member and reinforcing member and, secondly, to renounce to the multilayered structure in favour of a structure with one element being buried into the other one.

For these reasons, it is considered that document D2 does not constitute a realistic starting point for assessing inventive step.

6.2 Document D3 discloses a support member assembly which shares a common aim with the claimed invention and reproduces all the structural limitations recited in claim 1 with the exception of the support member.

Consequently, document D3 constitutes a suitable starting point when deciding on the inventive merits of

the claimed assembly. It is thus considered to illustrate the closest prior art.

The support member, as defined in claim 1, permits the drilling of holder holes with high precision.

It thus permits to solve the problems of low production efficiency and high production costs known from the prior art (cf. page 3 (lines 2 and 3) of the application as filed).

The Board observes that the very structure disclosed in D3 leads away from a replacement of the layer (14) by a support member as defined in claim 1. In this respect, it is repeated that the supporting function required by the assembly of D3 is satisfactorily provided by the plate members (11, 12). Moreover, the burying of said plate members in a plastic material would lead to filling the through holes with said material and therefore require the additional step of again drilling said holes, thus *de facto* decreasing the production efficiency contrary to what is intended by the present invention. As a final remark, it is stressed that this approach would not avoid the need to first drill the holder holes in the plate members.

As a matter of fact, there is no hint in D3 for the provision of a support member actually formed with a plurality of holder holes, said function being already fulfilled by the presence of the plate members.

Therefore, the subject-matter of claim 1 does not derive in an obvious manner from the closest prior art.

6.3 The other documents cited in the decision under appeal are not particularly relevant.

6.4 It follows that the subject-matter of claim 1 meets the requirements of Article 56 EPC 1973.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division with the order to grant a patent on the basis of claims 1 to 3 of the request filed during the oral proceedings of 13 March 2015 and a description to be adapted.

The Registrar: The Chairman:

R. Schumacher G. Assi

Decision electronically authenticated