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**Datasheet for the decision  
of 24 September 2012**

**Case Number:** T 1975/09 - 3.2.06

**Application Number:** 04024187.9

**Publication Number:** 1493654

**IPC:** B62M 3/00

**Language of the proceedings:** EN

**Title of invention:**  
Bicycle crank assembly

**Patentee:**  
SHIMANO INC.

**Opponent:**  
SRAM Deutschland GmbH

**Headword:**  
-

**Relevant legal provisions:**

EPC Art. 123(2)  
EPC R. 140  
RPBA Art. 13(1)

**Relevant legal provisions (EPC 1973):**

EPC Art. 100(c), 76(1), 111(1)

**Keyword:**

"Main request - added subject-matter (yes)"  
"Auxiliary requests - not prima facie allowable"

**Decisions cited:**

G 0001/93, G 0001/05

**Catchword:**  
-



Case Number: T 1975/09 - 3.2.06

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.06  
of 24 September 2012

**Appellant:**  
(Patent Proprietor)

SHIMANO INC.  
3-77 Oimatsu-cho  
Sakai-ku  
Sakai City  
Osaka 590-8577 (JP)

**Representative:**

GROSSE SCHUMACHER KNAUER VON HIRSCHHAUSEN  
Patent- und Rechtsanwälte  
Nymphenburger Strasse 14  
D-80335 München (DE)

**Respondent:**  
(Opponent)

SRAM Deutschland GmbH  
Romstr. 1  
D-97424 Schweinfurt (DE)

**Representative:**

Thum, Bernhard  
Wuesthoff & Wuesthoff  
Patent- und Rechtsanwälte  
Schweigerstrasse 2  
D-81541 München (DE)

**Decision under appeal:**

**Decision of the Opposition Division of the  
European Patent Office posted 13 July 2009  
revoking European patent No. 1493654 pursuant  
to Article 101(3) (b) EPC.**

**Composition of the Board:**

**Chairman:** M. Harrison  
**Members:** T. Rosenblatt  
W. Sekretaruk

## Summary of Facts and Submissions

- I. European patent No. 1 493 654 was granted based on European patent application No. 04 024 187, which was filed as a divisional application of the earlier European patent application No. 03 005 136.

In the following, all references to the earlier and divisional applications "as filed" concern the respective published versions.

- II. The earlier application as filed comprises two independent claims 1 and 31 directed to "a bicycle crank arm apparatus". Claim 1 reads:

*"A bicycle crank arm apparatus comprising:  
an axle (59) having a first end portion and a second end portion, wherein the second end portion has an outer peripheral surface and a threaded inner peripheral surface;  
an axle bolt (380) having a threaded outer peripheral surface screwed into the threaded inner peripheral surface of the second end portion of the axle (59);  
a crank arm having an axle mounting boss defining an opening for receiving the second end portion of the axle therein, wherein the axle mounting boss includes a first fastener for tightening the crank arm mounting boss around the second end portion of the axle (59);  
and wherein the axle mounting boss is positioned axially inwardly of the axle bolt (380)."*

In the following, the feature

*"wherein the axle mounting boss includes a first fastener for tightening the crank arm mounting boss around the second end portion of the axle (59);"*

is referred to as the **fastener feature**.

Claim 31 differs from claim 1 only in that the "fastener feature" is replaced by

*"wherein the axle mounting boss includes a first mounting ear (337) in close proximity to a second mounting ear (338);"*.

III. Granted claim 1 of the patent in suit reads:

*"A bicycle crank arm apparatus comprising:  
an axle (59) having  
an axle body (348) with an outer peripheral surface (362),  
a first end portion (350) of the axle body (348) comprising a plurality of circumferentially disposed first splines (358) on its outer peripheral surface and a flange (366) extending radially outwardly from the first splines (358), and  
a second end portion (354) of the axle body (348) comprising a plurality of circumferentially disposed second splines (370) on its outer peripheral surface and a threaded inner peripheral surface (368),  
wherein the plurality of second splines (370) on the second end portion (354) does not extend radially outwardly relative to the outer peripheral surface (362) of the axle body (348);"*

*a first crank arm (60A) having an axle mounting boss (304) defining a splined inner peripheral surface (312) for receiving the first end portion (350) of the axle (59);*

*a second crank arm (60B) having an axle mounting boss (331) defining a splined inner peripheral surface (333) for receiving the second end portion (354) of the axle (59), wherein the plurality of second splines (370) passes through the axle mounting boss (308) of first crank arm (60A) and engages the axle mounting boss (331) of second crank arm (60B); and*

*an axle bolt (380) having a threaded outer peripheral surface (388) screwable into the threaded inner peripheral surface (368) of the second end portion (354) of said axle (59), and a flange (404) extending radially outwardly of the peripheral surface to abut against a lateral outer side surface of axle mounting boss (331) of the second crank arm (60B) positioned axially inwardly of the flange (404) of the axle bolt (380),*

*characterized in that said flange (366) of the axle body (348) is disposed at the extreme end of the first end portion (350); and the plurality of first splines (358) on the first end portion (350) protrudes radially outwardly relative to the outer peripheral surface (362) to engage axle mounting boss (308) of first crank arm (60A), so that the crank arms (60A, 60B) and the axle (59) are laterally positioned relative to each other when the axle bolt (380) is screwed into the second end portion (354) of the axle."*

- IV. The opposition division revoked the European patent because it considered that claim 1 of the main request

- and of the auxiliary requests 1 to 5 did not meet the requirements of Article 76(1) EPC.
- V. The appellant (proprietor) filed an appeal against this decision. With the grounds of appeal the appellant requested that the decision be set aside and that the patent be maintained based on one of the sets of amended claims corresponding to its main request or alternatively according to the claims of one of two groups of auxiliary requests I and II submitted therewith.
- VI. In a communication in preparation for oral proceedings, the Board informed the parties of its preliminary view that none of the requests on file appeared to be allowable with regard to *inter alia* Article 123 EPC.
- VII. With a letter dated 22 August 2012 the appellant replied to the Board's communication and submitted amended claims according to a main request and six groups of auxiliary requests I to VI to replace all preceding requests.
- VIII. Oral proceedings were held on 24 September 2012 during which the appellant withdrew the auxiliary requests of groups V and VI and submitted a further (single) auxiliary request labelled "Group V."
- IX. The appellant requested that the decision under appeal be set aside and the European patent be maintained as granted, or on the basis of one of the auxiliary requests according to Groups I. - IV. of 22 August 2012, or on the basis of the auxiliary request labelled "Group V." of 24 September 2012 (whereby the term

"*first end portion (350)*" is replaced by "*first splines (358)*", or the case be remitted to the opposition division for further prosecution concerning the basis for revocation, or the decision be corrected concerning the basis for revocation.

X. The respondent (opponent) requested that the appeal be dismissed.

XI. The auxiliary requests comprised the following amendments to the respective claim 1 (marked in bold).

(a) Auxiliary request I.1 (compared to claim 1 of the main request, i.e. compared to claim 1 as granted):

"... *an axle (59) adapted to be rotatably supported within a bottom bracket (33) of a bicycle with first and second adapter assemblies (124A, 124B), the axle having an axle body (348)*...

... *a flange (366) extending radially outwardly from the first **end portion (350)**, and a second end portion (354) of **said** axle body (348) comprising...*

... *wherein the plurality of second splines (370) passes through the axle mounting boss (308) of first crank arm (60A) **and through the adapter assemblies (124A, 124B)** and engages the axle mounting boss (331) of second crank arm (60B) **and the flange (366) abuts against the mounting boss of the first crank arm (60A); and...***

... *to abut against a lateral outer side surface of **the** axle mounting boss (331)...*

... ~~*characterised in that*~~ *said flange (366)...*"

(b) Auxiliary request I.2 (in addition to the amendments to claim 1 of auxiliary request I.1):

"... an axle (59) adapted to be rotatably supported within a bottom bracket (33) of a bicycle with first and second adapter assemblies (124A, 124B), **comprising first and second bearing units (138A, 138B), the axle having an axle body (348)...**

... when the axle bolt (380) is screwed into the second end portion (354) of the axle, **and so that the first and second bearing units (138A, 138B) are located outside of the bottom bracket assembly (33) when the axle (59) is in mounted state.**"

(c) Auxiliary request II.1 (compared to the main request):

"... a flange (366) extending radially outwardly from the first **end portion (350)**, and a second end portion (354) of **said** axle body (348) comprising...

... not extend radially outwardly relative to the outer peripheral surface (362) of the axle body (348), **the plurality of second splines (370) is flush with the outer peripheral surface (362) of the axle body (348);...**

...to abut against a lateral outer side surface of **the** axle mounting boss (331)...

... ~~characterised in that~~ said flange (366)..."

(d) Auxiliary request III.1 (compared to the main request):



"... a flange (366) extending radially outwardly from the first **end portion (350)**, and a second end portion (354) of **said** axle body (348) comprising...

... and engages the axle mounting boss (331) of second crank arm (60B), **wherein the axle mounting boss (331) of second crank arm (60B) includes a first fastener (343) for tightening the mounting boss (331) of second crank arm (60B) around the second end portion (354) of axle (59); and ...**

...to abut against a lateral outer side surface of **the** axle mounting boss (331)...

... ~~characterised in that~~ said flange (366)..."

(e) Auxiliary request IV.1 (compared to the main request):

"... a flange (366) extending radially outwardly from the first **end portion (350)**, and a second end portion (354) of **said** axle body (348) comprising...

... not extend radially outwardly relative to the outer peripheral surface (362) of the axle body (348), **the plurality of second splines (370) is flush with the outer peripheral surface (362) of the axle body (348);...**"

... and engages the axle mounting boss (331) of second crank arm (60B), **wherein the axle mounting boss (331) of second crank arm (60B) includes a first fastener (343) for tightening the mounting boss (331) of second crank arm (60B) around the second end portion (354) of axle (59); and ...**

...to abut against a lateral outer side surface of **the** axle mounting boss (331)...

... ~~characterised in that~~ said flange (366)..."

(f) Claim 1 of each of the auxiliary requests II.2, II.3, III.2, III.3, IV.2 and IV.3 comprises, in addition to the amendments of claim 1 of auxiliary requests II.1, III.1 and IV.1, the respective amendments introduced in auxiliary requests I.1 and I.2.

(g) Auxiliary request labelled "GROUPE V" (compared to the main request):

"... not extend radially outwardly relative to the outer peripheral surface (362) of the axle body (348), **the plurality of second splines (370) is flush with the outer peripheral surface (362) of the axle body (348);...**

... and engages the axle mounting boss (331) of second crank arm (60B), **wherein the axle mounting boss (331) of second crank arm (60B) includes a first mounting ear (337) spaced apart from but in close proximity to a second mounting ear (338), first mounting ear (337) includes an unthreaded fastener opening (339) and a threaded fastener opening (340), and second mounting ear (338) includes an unthreaded fastener opening (341) and a threaded fastener opening (342), wherein a crank arm bolt (343) having a threaded shank (344) and a head (345) extends through unthreaded fastener opening (339) in first mounting ear (337) and screws into threaded opening (342) in second mounting ear (338) such that head (345) abuts against first mounting ear (337), a crank arm bolt (346) having a threaded shank (347) and a head (348) extends through unthreaded fastener opening (341) in second mounting ear (338) and screws**

*into threaded opening (340) in first mounting ear (337) such that head (348) abuts against second mounting ear (338), so that crank arm bolts (343, 346) tighten first mounting ear (337) and second mounting ear (338) towards each other for clamping axle mounting boss (331) around axle (59); and ...*  
*... ~~characterised in that~~ said flange (366)..."*

XII. In the following the feature added in auxiliary request II.1, see above item XI(c),

*"the plurality of second splines (370) is flush with the outer peripheral surface (362) of the axle body (348);"*

is referred to as the **flush feature**.

XIII. The arguments of the appellant may be summarised as follows:

*Main request*

- (a) The object of the claimed invention was that the lateral position of the axle in relation to the bottom bracket of the bicycle frame by which the axle was supported should be easily adjustable (see column 1, lines 18 to 24 and line 58 to column 2, line 3 of the opposed patent). This was achieved by varying the depth to which the axle bolt was threaded into the second end portion of the axle body, until the desired amount of play of the axle existed (see paragraph [0024] of the patent).

- (b) The subject-matter of claim 1 of the patent in suit had its basis in claim 1 and paragraphs [0001], [0004] of the earlier application. Paragraph [0004] of the earlier application specified the essential components of such a crank assembly, i.e. the axle, crank arms and axle bolt. It also disclosed the effect to be achieved by this structure (see above).
  
- (c) Other features, such as the spacers to which the Board referred in its communication, were not required. Paragraphs [0009] and [0010] of the earlier application disclosed further components of a "bottom bracket assembly" which, while being entirely separate from this, could be used together with the claimed crank assembly. Its features were thus not necessary for defining the crank arm assembly. Only the axle bolt was thus required for the lateral adjustment.
  
- (d) Although paragraph [0004] and claim 1 of the earlier application mentioned a fastener, this fastener was not linked to the lateral adjustment of the components; rather it provided for radial clamping of the crank arm to the crank axle. Paragraph [0023] of the earlier application disclosed that the lateral positioning of the axle was finished after the axle bolt had been screwed into the axle. Omitting the "fastener feature" did not require any real adaptation of the other features. Assessing the three criteria of the essentiality test (e.g. T 331/87) thus led to the conclusion that, in contrast to the axle bolt, the

"fastener feature" was not an essential feature and could therefore be omitted.

- (e) By the first sentence in the passage of column 7, lines 2 to 6 of the earlier application, starting with "*[i]n this embodiment,...*", two possibilities were implied: the splines being either flush with or radially inwardly of the outer peripheral surface of the axle body. In the following lines 6 to 14, a functional disclosure of how to design the second end portion of the crank axle body, namely so as to allow the crank axle to freely pass through other components of the bottom bracket during the assembly. The skilled person would have derived from this latter sentence that it was not required that the splines were necessarily flush with the outer peripheral surface. The feature "do not extend radially outwardly" was all that was required to achieve the desired purpose, so that, in line with T 284/94, the "flush feature" could be omitted. The skilled person would not have attached any importance to the intermediate sentence starting with "*Instead, ...*".
- (f) The "flush feature" and the feature "do not extend radially outwardly" had no close functional or structural connection with each other, so that it was not required to define both in the claim (in line T 714/00, T 582/91 and T 2008/04). Whether certain subject-matter was directly and unambiguously "derivable" meant that the skilled person was not bound to the literal disclosure; rather it implied that the skilled person upon

appreciation of the function to be achieved would consider and thereby derive which features were essential in this respect.

- (g) The hypothetical stance could be taken that the claim initially comprised the "flush feature". Applying the essentiality test to such a claim, would then clearly have confirmed that the "flush feature" could have been removed. For the same reasons, the "flush feature" could then be omitted when the feature "do not extend radially outwardly" was included in the claim.
- (h) Similarly, when applying the novelty test (see the recent decisions T 1825/09, T 1122/09, T 1617/07, T 153/07) it was clear that the subject-matter of claim 1 was not new over the original disclosure, whereby this test also confirmed that the claimed subject-matter fulfilled the requirement of Article 123(2) EPC.
- (i) Having regard to G 1/93, it was clear that the "flush feature" could be omitted without infringing Article 123(2) EPC. It did not provide any further technical teaching with respect to the purpose of enabling an axle to freely pass other components but simply constituted a further and unnecessary limitation to the claimed subject-matter.

Auxiliary requests of groups I to III

- (j) Basis for the addition of the "flush feature" in the requests of group II was column 7, lines 5/6,

of the published earlier application, corresponding to column 7, lines 16-18 of the patent in suit. For the "fastener feature" in group III, basis for the amendment could be found in claim 1 and paragraphs [0019] and [0023] of the earlier application, the latter corresponding to paragraphs [0020] and [0024] of the patent in suit. The remaining amendments to the claims of each individual request are not related to these features. The same reasons as given with respect to the main request nevertheless still apply with respect to these auxiliary requests.

*Auxiliary requests of group IV*

- (k) Claim 1 of these requests comprises the "fastener feature" and the "flush feature". The corresponding amendment relied on the passages indicated with respect to groups II and III above. From Figures 2 and 3 and from the description of the assembly of the crank assembly and the bottom bracket in paragraph [0023] of the divisional application underlying the patent in suit it could be derived that a single fastener was sufficient to achieve the radial clamping of the crank arm on the axle. The term "fastener opening" was used in paragraph [0019], supporting the use of the term "fastener" in the claim language in place of the specific term "bolt" employed in paragraph [0023].

*Auxiliary request labelled "GROUP V."*

- (l) The amendment to claim 1 became necessary after the appellant had to face a new objection, raised

for the first time during the oral proceedings, that the divisional application underlying the patent in suit did not provide any basis for the "fastener feature" as included in claim 1 of groups III and IV. Basis for the amendment to claim 1 was paragraph [0019] of the earlier application, which was identical with paragraph [0019] of the divisional application underlying the patent in suit, as well as Figures 2, 3 and 6. The feature in paragraph [0019] "a threaded fastener opening 340", implied that a general "fastener" could be used. Also, the deletion of the statement "as discussed below" from the end of the amended feature, even though this was present at the end of paragraph [0019], did not require any further amendment since the function of the bolts to tighten the crank arm to the axle body was already specified in the claim and the later passages did not disclose anything beyond this. The definition of additional features was also not required in view of the fact that the intended functions, which still concerned the adjustment of the lateral position of the crank arm assembly as could be seen from paragraph [0005] of the divisional application, were achieved by the features defined in claim 1. The features mentioned in paragraph [0009] belonged to a separate assembly and paragraph [0023] disclosed merely the assembly method and hence was not a description of a physical entity. The request was therefore *prima facie* allowable and should be admitted into proceedings.



- (m) The decision was based on Article 76(1) EPC. This was the incorrect legal provision on which to base a decision of revocation. A granted patent should be judged under Article 100(c) EPC, not Article 76(1) EPC since the latter related to divisional applications only, not the corresponding patent. Remittal of the case to the first instance was then appropriate to examine the opposition on the proper criteria, or failing this the decision should be corrected.

XIV. The arguments of the respondent may be summarised as follows:

*Main request*

- (a) The basis for granted claim 1 could not be seen in claim 1 and paragraph [0004] of the earlier application as filed. In both instances the fastener was specified as a feature of the crank arm apparatus so that it was clearly disclosed as an essential feature thereof. Also in the description of the assembly of the crank arm apparatus in paragraph [0023], this understanding was confirmed. The axle bolt was initially positioned, then the two bolts 343 and 346 were tightened to set the final position. To adjust the play of the crank arms a fastener, specifically in the form of the two bolts was required. The earlier application did not present any alternative solution for this function. In contrast, granted claim 1 of the patent in suit also covered alternatives where the setting of the final position of the components was achieved by

other features for which there was no disclosure in the earlier application.

- (b) If it had to be assessed whether subject-matter was directly and unambiguously derivable from the original application, functional considerations and/or a reflection on possibly equivalent solutions were not allowed because they led to subject-matter beyond the original content.
- (c) The "essentiality test" did not apply since the subject-matter of claim 1 was not obtained only by omitting the "fastener feature". Rather, a number of features were additionally included from the description.
- (d) The passage in paragraph [0020] of the earlier application, specifically the two sentences in column 7, lines 2-6, had to be considered in their context and could not be read in isolation. The two propositions were directly linked to each other by the term "[i]nstead" introducing the second of the two sentences. It evidently emphasised the preceding statement in that it further explicitly specified the single embodiment, which led to the function disclosed in the subsequent sentence in column 7, lines 6 to 14. The discussion of the essentiality test by the appellant therefore lacked relevance. It was irrelevant whether other solutions could exist which allowed the axle body to be capable of freely passing through the other components. Only the original disclosure of the single embodiment had to be considered, rather than other non-

disclosed embodiments which possibly might also have constituted workable possibilities.

*Auxiliary requests of groups I to IV*

- (e) These auxiliary requests were not *prima facie* allowable. The requests of groups I to III did not overcome the objections existing with regard to the previous requests. In group IV, the "fastener feature" added to claim 1 constituted a generalisation of the two fastening bolts 343 and 346 disclosed in paragraph [0023] of the divisional application underlying the patent in suit and thereby contravened the requirement of Article 123(2) EPC. The requests should thus not be admitted into the proceedings.

*Auxiliary request labelled "GROUP V."*

- (f) The amendments were only based on the description and resulted in subject-matter which had never been discussed before. The amendments were too complex in view of the requirements of Articles 84 and 123(2) EPC to be dealt with by the respondent during the oral proceedings. In view of the problem stated in paragraph [0005] and the method of assembly disclosed in paragraph [0023], still further features, such as the spacers, which were disclosed in the context of the added features, were essential in order to achieve the described functions. The amendment therefore was not *prima facie* allowable so that this request should not be admitted.

- (g) Remittal of the case to re-open examination was not required, nor was correction of the decision. Anyway, this matter was not part of the appellant's appeal grounds, had been raised very late and was of no relevance for the reasoning of the decision.

## **Reasons for the Decision**

### *Procedural issues*

1. The appellant requested that the case be remitted to the opposition division for further prosecution concerning the basis for revocation, or the decision be corrected concerning the basis for revocation.

Both requests are rejected for the following reasons.

- 1.1 The patent in suit was opposed *inter alia* on the ground that the subject-matter of the European patent extended beyond the content of the earlier application as filed (Article 100(c) EPC 1973). In the reasons of the impugned decision the opposition division held that claim 1 of the main request, as well as that of the then pending auxiliary requests 1 to 5, did "not meet the requirements of Article 76(1) EPC" (see Reasons for the decision, items 2.2, 2.3 and 3).
- 1.2 Article 76(1) EPC 1973 sets out the conditions for filing a European divisional application. As a consequence arising from this provision, the Examining division is required to compare the content of the divisional application as filed and as amended during

the procedure up to the grant of a patent with the content of the earlier application as filed (see also G 1/05, OJ EPO 5/2008, 271, item 3 of the Reasons).

Article 100 EPC 1973 exhaustively sets out the grounds on which an opposition may be filed, and its paragraph (c) defines *inter alia* the ground that the subject-matter of the European patent extends, if the patent was granted on a divisional application, beyond the content of the earlier application. It thus requires that the opposition division compares the subject-matter of the granted European patent (and not that of its underlying divisional application, see G 1/05, *ibid*, item 3.6), including claims, description and figures as granted, with the content of the earlier application as filed.

This Board finds that Article 100(c) EPC [1973] would have been the correct provision to be cited in the decision of the opposition division when the claims of the granted patent in suit were considered.

With respect to amendments made to the claims in the course of the opposition procedure, Article 101(3)a) and b) EPC sets out that the opposition division should form an opinion on whether or not the patent and the invention to which it relates meet the requirements of the Convention. Frequently Article 76(1) EPC is invoked in decisions of the opposition divisions, and is also referred to in some decisions in opposition-appeal proceedings by the Boards of Appeal, when the amended subject-matter is examined with respect to the content of the earlier applications as filed. Article 76(1) EPC relates however to a requirement for filing a

divisional application, which is not a requirement of the Convention for an (amended) patent. This Board considers that the requirement of Article 123(2) EPC, which although not explicitly referring to the content of the "earlier application(s)", is the corresponding requirement of the Convention, in the sense of Article 101(3) EPC, to be met by the patent in relation to amendments made thereto, with respect to the content of the earlier and of the divisional application(s) as filed.

- 1.3 As is apparent from item 8 of the "Facts and Submissions" and for example item 2.1 of the "Reasons" for the decision in the impugned decision, the opposition division consistently and correctly compared the subject-matter of the granted claim with the content of the earlier application as filed, and thereby correctly examined the ground of opposition raised by the opponent in the notice of opposition. The opposition division did not comment or take any decision on the legal status of the divisional application underlying the patent in suit. That the opposition division erroneously referred to Article 76(1) EPC [1973] has no impact on the substance of the decision and at most constitutes an error in the citation of the correct Article of the EPC. For the decision taken, in substance, there is however absolutely no difference, since the same principles were applied.

From the grounds of appeal and the subsequent submissions in the appeal procedure, it is abundantly clear that the appellant understood the reasons why the decision revoking the patent had been taken and

presented detailed arguments as to why the opposition division's conclusions in their substance were wrong.

Remittal of a case to the department of first instance lies in the Board's discretion under Article 111(1) EPC 1973 after having examined the allowability of the appeal. In this respect it has to be noted that the wrong citation of legal provisions alone (without any influence on the examination in substance) does not make an appeal allowable. Consequently Article 111 EPC 1973 does not provide sufficient justification for the appellant's request for remittal.

According to Article 11 of the Rules of Procedure of the Boards of Appeal (RPBA), a case may also be remitted if in the proceedings before the first instance fundamental deficiencies are apparent. In the present case the appellant did not even assert that the proceedings leading to the impugned decision had suffered from a fundamental deficiency of this nature. The Board itself is also unable to identify any procedural defect in the opposition proceedings (cf. item 1.3 above).

The request for remittal for further prosecution concerning the basis for revocation is thus rejected.

- 1.4 In decisions of the European Patent Office, only linguistic errors, errors of transcription and obvious mistakes may be corrected (Rule 140 EPC). The request of the appellant to correct the wrong reference to Article 76(1) EPC 1973 might only be considered to fall under the third category mentioned before. The Board is

not competent to decide on a request for correction of a written decision taken by the opposition division.

For this reason the appellant's request for correction under Rule 140 EPC is rejected.

It may be useful to add that it appears anyway that such correction might not have been possible at all, even if this request for correction had been made to the opposition division. Although the impugned decision contains an error in the citation of the relevant Article of law, there is no evidence upon which the conclusion could be reached that this is an obvious mistake within the meaning of Rule 140 EPC. In the reply of the proprietor to the notice of opposition and in the opposition division's communication in the annex to the summons to oral proceedings, as well as in the corresponding minutes, reference was made consistently to Article 76(1) EPC [1973]. It is therefore not clear that the opposition division intended anything else than what is stated in the impugned decision.

*Main request - Article 100(c) EPC 1973*

2. The subject-matter of claim 1 of the granted patent in suit extends beyond the content of the earlier application as filed.
- 2.1 Compared to originally filed claims 1 and 31 of the earlier application, in claim 1 of the patent as granted neither the "fastener feature" nor the corresponding feature of respective claim 31 (see item I above) is specified anymore. On the other hand, claim 1 of the patent in suit defines, in addition to the



features in common with earlier claim 1 (and 31), a number of features which do not have any correspondence in the remaining originally filed claims of the earlier application and which are taken from the description of the preferred and single embodiment of a crank arm apparatus as part of a particular bottom bracket assembly. For example, the granted claim now defines two crank arms, additional features of their respective mounting bosses and additional features of the end portions of the axle, which are disclosed in paragraphs [0018] to [0020] of the earlier application as filed. In view of what follows it may be left undecided whether, and indeed which, other features, such as any of those mentioned in the cited paragraphs or in paragraphs [0009] and [0010], for example the spacers, would possibly have been required to define subject-matter which is directly and unambiguously derivable from the earlier application.

- 2.2 The so-called essentiality test relied on by the appellant in its arguments that the "fastener feature" and the "flush feature" are not essential features of the subject-matter of granted claim 1 and might consequently be omitted, is occasionally applied by the Boards in cases where it has to be determined whether a feature originally comprised in an independent claim may be omitted from it. The present case is different from that situation in that granted claim 1 of the patent in suit is not derived from the original independent claim 1 of the earlier application by a simple deletion of features. Rather, the subject-matter is, as noted above, a combination of selected features from the comparatively broad claim 1 and features taken in isolation from the preferred embodiment of the

invention of the earlier application as filed. The appropriate test for such subject-matter is to establish whether the resulting combination of features is directly and unambiguously derivable from the earlier application as filed, here in particular, whether a bicycle crank arm apparatus according with all the features of claim 1 but without the "fastener feature" and without the "flush feature" is disclosed in the earlier application as filed.

- 2.3 A bicycle crank arm apparatus without the "fastener feature" is not directly and unambiguously derivable from the earlier application.
- 2.3.1 Paragraph [0001] of the earlier application comprises a broad general statement that the invention is directed to a bicycle crank assembly and to the components and tools used to assemble it. Paragraph [0004] indicates at its beginning the problem to be solved as being that of providing a crank assembly wherein the lateral position of the axle may be adjusted without one or more of the disadvantages of prior art axle assemblies. Subsequently, an embodiment of the invention is disclosed which corresponds almost literally to the wording of claim 1 of the earlier application, including the "fastener feature" (column 1, line 50 to column 2, line 5). It follows the description of "[a]t least one advantage of **this** structure..." (column 2, lines 5 to 10, emphasis added). The advantage "*that the axle bolt may be used to laterally position the axle and the crank arms relative to each other*" is thereby attributed to the entire combination of the features disclosed in the preceding lines, including the fastener. That the fastener, contrary to the axle bolt,

is not explicitly mentioned for this advantage, cannot be seen as a direct and unambiguous disclosure for a bicycle crank arm assembly comprising axle, crank arms and axle bolt with all the specific features mentioned before and defined in earlier claim 1 but specifically without the "fastener feature".

2.3.2 Paragraph [0019], in combination with Figures 6 and 7, discloses a left side crank arm of the sole embodiment of the assembly. This arm, corresponding apparently to the second crank arm of granted claim 1, comprises *inter alia* a mounting boss with two mounting ears having threaded holes to receive two threaded crank arm bolts 343 and 346 for tightening the mounting ears towards each other and thereby clamping the axle mounting boss around the axle. This clamping function corresponds to the purpose specified in claim 1 of the earlier application for the "fastener feature", so that the crank arm bolts represent one, and in fact the only, embodiment of it. Paragraph [0023] discloses the complete method of the assembling of the axle and crank arms to the bottom bracket of the bicycle frame and to a number of other features not specified in the claim, such as a dust tube, O-ring seals and adapter assemblies (see column 7, line 48 to column 8, line 9). According to the final passage thereof, the assembling is not terminated once the axle bolt is screwed by the desired amount into the axle's thread. Rather, it terminates with the tightening of the bolts 343 and 346 which serve, in addition to the radial clamping function, the purpose to "**set the final position of crank arm 60B and thereby the play between crank arms 60A and 60B and spacers 154A and 154B.**" (emphasis added by the Board). The "fastener feature", embodied by the

bolts 343 and 346, is thus clearly linked to the lateral adjustment of the components of the crank arm assembly or apparatus. Neither this paragraph nor any other passage indicated by the appellant discloses an alternative to adjusting the lateral positions of the crank arms (and spacers) other than by using the "fastener feature", or that the setting of the final position and consequently the use of the "fastener feature" may be dispensed with.

2.3.3 The Board concludes that, based on the passages indicated by the appellant, the earlier application does not disclose a crank arm apparatus according to claim 1 of the granted patent in suit which does not include the "fastener feature" according to claim 1 of the earlier application.

2.4 Although the foregoing finding constitutes in itself a sufficient reason not to allow the appellant's main request, it is appropriate in view of the auxiliary requests to consider also whether a crank arm apparatus according to claim 1 without the "flush feature" is directly and unambiguously derivable from the earlier application. This is also not the case, for the following reasons.

2.4.1 The feature of claim 1 of the granted patent in suit according to which the plurality of second splines on the second end portion does not extend radially outwardly relative to the outer peripheral surface of the axle body is almost literally based on the sentence in column 7, lines 2 to 5 of the earlier application, starting with "*[i]n this embodiment, splines 370 do not extend radially outwardly...*". The sentence immediately

following this commences with "[i]nstead , the splines 370 are flush...". The expression "instead" establishes a direct link to the previous sentence. It more precisely limits the preceding statement, namely that in "this embodiment", which is the sole embodiment disclosed, the splines, which do not extend radially outwardly, are flush with the outer peripheral surface. Therefore the feature "do not extend radially outwardly" added to claim 1 as granted leads to an inadmissible intermediate generalisation of the single embodiment with flush splines.

2.4.2 Although the Board can agree with the appellant that the purpose mentioned in the immediately following lines 6 to 14 of column 7, which is to enable the second end portion of the axle body to pass freely through the other components, could seemingly be obtained also with splines which are radially inwardly compared to the outer peripheral surface, this is nevertheless not sufficient to establish that the generalised feature, as present in the claim, is directly and unambiguously derivable from the earlier application. The skilled person is not supposed to apply common general knowledge in order to derive alternative embodiments (i.e. in this case, splines other than flush) or a general teaching ("do not extend radially outwardly") from a function attributed to a specific feature (flush splines in the single embodiment), unless there is a specific hint to do so, such as a clear statement to the effect that a certain function may be embodied differently by other known means or by the disclosure of other alternative embodiments. In the present case, there is no clear and unambiguous indication in the earlier application that

would have led the skilled person to consider such alternative embodiments or the generalised feature introduced in granted claim 1.

- 2.4.3 The appellant's argument that the feature "do not extend radially outwardly" has no close functional relationship with the "flush feature" or even with other features of the claim, is not persuasive. It is meaningless to consider whether a generalised feature interacts with itself in its more specific form. The decisions referred to by the appellant in this respect (cf. item XIII(f) above), i.e. T 714/00, T 582/91 and, presumably, T 1408/04 (instead of T 2008/04 which the appellant mentioned in the oral proceedings but which seemingly does not exist) are thus of no relevance. Also, in as far as these decisions were cited to establish the principle that this feature is not essential for inclusion in the sense that there might be no close structural or functional relationship with the other features, the Board whilst accepting this principle *per se*, finds that there is anyway an inextricable link between these features. The appellant has failed in the present case to establish, based on the originally filed disclosure, that there is no close structural or functional link; the appellant's contention is simply based on, at best, an ambiguous interpretation of the paragraph in question.
- 2.4.4 Irrespective of whether the so-called "novelty test" is at all appropriate to decide on the disclosure of subject-matter resulting from the addition of a feature which itself, as in the present case, has to be considered a generalisation of disclosed subject-matter, the above conclusion on added subject-matter would not

be changed. By simply adding a part of the disclosure "do not extend radially outwardly" the resulting subject-matter concerns a crank assembly with splines on the axle's second end portion which may be flush with or which may end radially inwardly of the outer peripheral surface. Only the first alternative is disclosed. The second alternative constitutes the new technical content because there is no disclosure for splines ending radially inwardly.

- 2.4.5 The appellant also referred to G 1/93 (OJ EPO 1994, 541), alleging that the "flush feature" merely represented a further limitation without any further technical contribution. The questions answered in G 1/93 address a different point of law. It is concerned with the conditions under which amending a granted claim, in which an originally undisclosed feature limiting the scope of protection of the claim in comparison with that of the application as filed, had been added during examination, can be allowed without contravening the requirement of Article 123(3) EPC. The granted claim of the patent in suit however does not comprise the "flush feature" as an originally undisclosed feature. The "flush feature" provides anyway a clear technical contribution to the invention since it is a selection of embodiments with flush splines out of all possible spline configurations which do not extend outwardly compared to the outer peripheral surface. In this respect it is irrelevant whether or not this feature provides an additional technical function compared to that achieved by the more general feature of non-outwardly extending splines.

- 2.5 At least for the above reasons the ground of opposition according to Article 100(c) EPC 1973 prejudices the maintenance of the European patent as granted, so that the appellant's main request is not allowable.

*Auxiliary requests of groups I to III -  
Article 13(1) RPBA*

3. The auxiliary requests of these groups were filed after the end of the period for submitting the grounds of appeal and therefore constitute an amendment to the appellant's case which may be admitted and considered at the Board's discretion (Article 13(1) RPBA). The appellant conceded that the auxiliary requests of group I do not comprise any amendments which are appropriate to overcome the foregoing objections with respect to the main request. Similarly, the auxiliary requests of groups II and III comprise amendments which respectively address only one of the two deficiencies considered in item 2 above. The appellant did not provide any additional arguments concerning these requests beyond those already addressed with respect to the main request. Consequently none of these auxiliary requests was *prima facie* allowable in the sense that it at least overcame the previous objections of added subject-matter in view of the earlier application as filed. The Board thus exercised its discretion under Article 13(1) RPBA not to admit these auxiliary requests into the proceedings, because they do not fulfil the need for procedural economy.

*Auxiliary requests of group IV - Article 13(1) RPBA*



4. The auxiliary requests of group IV, which were filed together with those of groups I to III and which therefore also constitute an amendment to the appellant's case, comprise, besides the "flush feature", also the "fastener feature" in its original wording of claim 1 of the earlier application as filed. The patent in suit and the underlying divisional application as filed undisputedly do not comprise anymore the generalised broad wording for the "fastener feature", neither in the claims nor in the description. The introduction of the "fastener feature" therefore introduces subject-matter extending beyond the content of the divisional application as filed, contrary to the requirement of Article 123(2) EPC. Since the other amendments to claim 1 of each of the auxiliary requests of group IV are not related to the definition of the fastener, these requests were not *prima facie* allowable in the sense that they overcame the previous objections without introducing any new objection. Consequently the need for procedural economy is not fulfilled and these requests were also not admitted into the proceedings (Article 13(1) RPBA).
  
5. The appellant argued that the "fastener feature" as defined in claim 1 of the auxiliary requests of group IV had its basis in Figures 2 and 3 of the divisional application as filed, as well as in paragraphs [0019] and [0023]. The figures and the passages of the description referred to by the appellant however only disclose the details of a single embodiment of a crank assembly (see also above item 2.3.2). The "fastener feature" specified in claim 1 of auxiliary requests of group IV encompasses however other embodiments of fasteners, such as clamps, for which there is

apparently no basis in the application, at least not within the passages indicated by the appellant. There is hence no basis for such generalised wording of the "fastener feature" in the divisional application as filed.

*Auxiliary request labelled "GROUP V." -  
Article 13(1) RPBA*

6. The auxiliary request labelled "GROUP V." was submitted as a reaction to the objection under Article 123(2) EPC to the requests of group IV raised for the first time during the oral proceedings. The amendment concerns essentially an introduction of wording taken from paragraph [0019] of the earlier and divisional applications. According to the appellant this passage was the only relevant part of the description for the addition of the respective features, since the problem mentioned in paragraph [0005] of the divisional application was still the one of paragraph [0004] of the earlier application, i.e. the adjustment of the lateral position of the axle. It was solved by the features now defined in claim 1. Paragraph [0019] comprises however, at the end, a reference ("*...as discussed below*") to the following parts of the description, which can only be understood as referring to the assembling described in paragraph [0023]. In this paragraph the added features are disclosed in close functional relationship to a number of other features (see above item 2.3.2). For example, as pointed out by the respondent and already referred to above, tightening of the threaded bolts not only clamps the crank arm to the axle, but also sets the final position of the crank arm relative to the spacers. The

amendment therefore raises the question whether other features of the single embodiment, including for example the adapter assemblies or the spacers as part of the former, are separate components or whether these are indeed functionally linked to the features of the crank arm apparatus according to this amended claim 1. These questions would have required a detailed examination of the structural and functional relationship of the entirety of the combination of features disclosed in the earlier and divisional applications as filed. This would have been too complex to be carried out during the oral proceedings at this latest possible stage of the proceedings. The Board thus exercised its discretion under Article 13(1) RPBA not to admit this request into the proceedings.

7. The appellant pointed to paragraph [0009] of the earlier and the divisional applications to emphasise that the disclosed embodiment comprised several distinct assemblies or components, so that the crank arm apparatus of claim 1 constituted a complete and independent combination of features. The Board is unconvinced by this argument since it is not immediately clear from that paragraph that the components mentioned therein do not have close functional links to the claimed crank arm apparatus, in particular in view of the problem relied upon by the appellant. For example, according to column 3, lines 43 to 46, of this paragraph, the adapter assemblies are used in part to position the axle laterally within the bottom bracket so that the front sprockets are properly aligned with rear sprockets. The functional relationship between all the components disclosed in the description is evidently highly complex and it is

not immediately clear which further features might have been relevant in this respect.

**Order**

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

The appeal is dismissed.

The Registrar

The Chairman

M. Patin

M. Harrison