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**Datasheet for the decision  
of 30 August 2012**

**Case Number:** T 0187/09 - 3.2.06

**Application Number:** 02017319.1

**Publication Number:** 1281611

**IPC:** B62M25/08, B62M25/00

**Language of the proceedings:** EN

**Title of invention:**

Shift positioning device for a bicycle transmission

**Patentee:**

SHIMANO INC.

**Opponent:**

SRAM Deutschland GmbH

**Relevant legal provisions:**

EPC 1973 Art. 54, 56

EPC Art. 123(2)

**Keyword:**

Admissibility of amendments (main and first to fifth auxiliary requests) - no

Admittance into the proceedings (sixth auxiliary request) - yes

Novelty (sixth auxiliary request) - yes

Inventive step (sixth auxiliary request) - yes



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Case Number: T 0187/09 - 3.2.06

**D E C I S I O N**  
**of the Technical Board of Appeal 3.2.06**  
**of 30 August 2012**

**Appellant:** SRAM Deutschland GmbH  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted 24  
November 2008 concerning maintenance of the  
European Patent No. 1281611 in amended form.**

**Composition of the Board:**

**Chairman:** M. Harrison  
**Members:** G. Kadner  
R. Menapace

## **Summary of Facts and Submissions**

I. The mention of grant of European patent No. 1 281 611, on the basis of European patent application No. 02017319.1 filed on 1 August 2002 and claiming a Japanese priority from 1 August 2001, was published on 1 March 2006.

II. Notice of opposition, in which revocation of the patent on the grounds of Articles 100(a) and 100(c) EPC was requested, was filed against the granted patent.

By way of its interlocutory decision posted on 24 November 2008, the opposition division found that the European patent in an amended form met the requirements of the EPC. The opposition division held that the application as originally filed offered sufficient basis for a bicycle shift positioning device according to claim 1 of the first auxiliary request such that the requirement of Article 123(2) EPC was met, and that the subject-matter claimed was novel over the cited prior art and inventive when starting from E1 (WO-A-00/07871) as the closest prior art.

III. Notice of appeal was filed against this decision by the appellant (opponent) on 19 January 2009, and the appeal fee was paid on the same day. With its grounds of appeal dated 10 February 2009, the appellant filed additional prior art documents E14 (DE-C-19 02 021), E15 (EP-A-0 895 926) and E16 (DE-A-24 24 548), and pursued its request for revocation of the patent on the grounds of lack of novelty, lack of inventive step and a contravention of Article 123(2) EPC.

- IV. Together with its reply to the appeal filed on 18 June 2009, the respondent (patentee) filed a new main request including an amended claim 1.
- V. On 25 July 2012 the appellant filed a further prior art document E17 (US-B-6 220 111) to support its objection of lack of inventive step of the subject-matter claimed.
- VI. In a communication accompanying the summons to oral proceedings the Board expressed its preliminary view that the new main request did not seem admissible with respect to Article 123(2) EPC, and that novelty and inventive step would only need to be discussed if an admissible request were on file.
- VII. On 30 July 2012 the respondent filed new first to fifth auxiliary requests.
- VIII. Oral proceedings were held before the Board on 30 August 2012 during which the respondent filed a new sixth auxiliary request.

The appellant requested that the decision under appeal be set aside and the patent be revoked.

The respondent requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request filed on 18 June 2009 or on the basis of one of the first to fifth auxiliary requests filed on 30 July 2012 or on the basis of the sixth auxiliary request filed during the oral proceedings with the Figures as granted

- i) Claim 1 according to the main request reads as follows (with numbering according to the respondent's labelling):

"(1.1) A bicycle shift positioning device comprising:  
(1.2) a base member (50) adapted to be mounted to a bicycle,  
(1.3) a first rotating body (51) rotatably mounted relative to the base member (50);  
(1.4) a second rotating body (55) rotatably mounted relative to the first rotating body (51);  
(1.5) a positioning member (52) fixed on the base member (50) and  
(1.6) having a plurality of positioning elements (52b, 52c, 52d);  
(1.7) a pawl (53) coupled for movement with the first rotating body (51),  
(1.8) wherein the pawl (53) moves between a positioning member engaging position and a positioning member disengaging position;  
(1.9) a pawl biasing mechanism (54) for biasing the pawl (53) toward the positioning member engaging position;  
and characterized in that  
(1.10) the second rotating body (55) includes a pawl control aperture (55b) for controlling the movement of the pawl (53) between the positioning member engaging position and the positioning member disengaging position,  
(1.11a) the pawl control aperture (55b) is an arcuate aperture having a small-diameter aperture portion (55e) and a large-diameter aperture portion (55f),  
(1.11b) a pawl control element including an inclined surface (55g) is formed between the small-diameter aperture portion (55e) and the large-diameter aperture portion (55f),  
(1.11c) the pawl control element being coupled for movement with the second rotating body (55); and  
(1.12) the pawl (53) is disposed in the pawl control

aperture (55b),

(1.13) wherein the pawl control element of the pawl control aperture (55b) allows the pawl (53) to move toward the positioning member engaging position when the first rotating body is in a first rotational position relative to the second rotating body, and

(1.14) wherein the pawl control element of the pawl control aperture (55b) causes the pawl (53) to be in the positioning member disengaging position when the first rotating body is in a second rotational position relative to the second rotating body."

- ii) Claim 1 according to the first auxiliary request is based on the main request. Feature (1.11c) was amended and shifted before feature (1.10), now reading:

"the bicycle shift device further comprises a pawl control element coupled for movement with the second rotating body (55); and"

and in feature (1.11b) "a pawl control element ..." was amended to "the pawl control element ..."

- iii) Claim 1 according to the second auxiliary request is based on that of the first auxiliary request, whereby feature (1.12) has been replaced by:

"wherein the pawl (53) is maintained in the positioning member disengaging position when a tip (53b) of the pawl (53) is disposed in the small-diameter aperture portion (55e) of the pawl control aperture (55b), and wherein the pawl is allowed to move toward the position member engaging position when the tip (53b) of the pawl is disposed in the large-diameter aperture portion (55f) of the pawl control aperture (55b); and"

iv) Claim 1 of the third auxiliary request is based on the first auxiliary request. Feature (1.10) was amended by the addition of:

" , and the second rotating body (55) includes an arcuate interlocking aperture (55c) for engaging an interlocking pin (64h) of a pawl mounting member (64) of the first rotating body (51), wherein the second rotating body (55) is coupled for rotating the first rotating body (51); and"

v) Claim 1 according to the fourth auxiliary request is based on that of the second auxiliary request whereby to feature (1.10) the same amendment has been made as that to the corresponding feature (1.10) of the third auxiliary request.

vi) Claim 1 of the fifth auxiliary request is based on that of the fourth auxiliary request. Feature (1.2) was amended to:

"a base member being a case (50) adapted to be mounted to a bicycle"

vii) Claim 1 according to the sixth auxiliary request is based on that of the fifth auxiliary request. Amendments have been made to features (1.3), (1.6), (1.11c as shifted), (1.10), (1.11b). The amended claim (with further inserted features underlined) reads:

"A bicycle shift positioning device comprising:  
a base member being a case (50) adapted to be mounted to a bicycle,  
a first rotating body (51) in the form of a winding body (51) rotatably mounted around a spindle (58) and rotatably mounted relative to the base member (50);

a second rotating body (55) in the form of a pawl control member rotatably mounted around the spindle (58) and rotatably mounted relative to the first rotating body (51);

a positioning member (52) fixed on the base member(50) and

having a plurality of positioning elements (52b, 52c, 52d) in the form of protrusions;

a pawl (53) coupled for movement with the first rotating body (51),

wherein the pawl (53) moves between a positioning member engaging position and a positioning member disengaging position;

a pawl biasing mechanism (54) for biasing the pawl (53) toward the positioning member engaging position;

wherein

the bicycle shift positioning device further comprises a pawl control element coupled for movement with the second rotating body (55); a circular spring member (54) for biasing the pawl (53) toward the positioning member engaging position; and an electric drive mechanism (57) for driving the second rotating body (55);

the second rotating body (55) includes a pawl control aperture (55b) for controlling the movement of the pawl (53) between the positioning member engaging position and the positioning member disengaging position and the second rotating body (55) includes an arcuate interlocking aperture (55c) for engaging an interlocking pin (64h) of a pawl mounting member (64) of the first rotating body (51), wherein the second rotating body (55) is coupled for rotating the first rotating body (51), wherein the length of the interlocking aperture (55c) in the circumferential direction is greater than the circumferential gap between the protrusions (52b, 52c, 52d); and

the pawl control aperture (55b) is an arcuate aperture



having a small-diameter aperture portion (55e) and a large-diameter aperture portion (55f) disposed upstream of the smaller-diameter aperture portion (55e) in the cable winding direction (A),  
the pawl control element including an inclined surface (55g) is formed between the small-diameter aperture portion (55e) and the large-diameter aperture portion (55f),  
wherein the pawl (53) is maintained in the positioning member disengaging position when a tip (53b) of the pawl (53) is disposed in the small-diameter aperture portion (55e) of the pawl control aperture (55b), and  
wherein the pawl (53) is allowed to move toward the positioning member engaging position when the tip (53b) of the pawl (53) is disposed in the large-diameter aperture portion (55f) of the pawl control aperture (55b); and  
wherein the pawl control element of the pawl control aperture (55b) allows the pawl (53) to move toward the positioning member engaging position when the first rotating body (51) is in a first rotational position relative to the second rotating body, and  
wherein the pawl control element of the pawl control aperture (55b) causes the pawl (53) to be in the positioning member disengaging position when the first rotating body is in a second rotational position relative to the second rotating body."

IX. The arguments of the appellant can be summarized as follows:

Claim 1 of the main request as well as those of the auxiliary requests contravened Article 123(2) EPC because the amendments taken from the description of a particular embodiment had been isolated out of the context of the combination of features as disclosed

there, thus leading to an inadmissible intermediate generalisation.

The subject-matter of claim 1 according to the sixth auxiliary request did at least not involve an inventive step. The request should not be admitted into proceedings because it was complex in that amendments were taken from several different paragraphs of the description. A bicycle shift positioning device of the type claimed was known from E1. Such a device could be fitted with and operated by an electric drive if such a need would arise. The skilled person aiming to improve the known shift positioning device in respect of stability and an exact shift operation would find a suitable solution in E14. The shift operation was performed there by a pawl control element 16 having an arcuate aperture 17 with a step as claimed, whereby the pawl was maintained in a positioning member 24 disengaging position when a tip of the pawl 11 was maintained in the small-diameter aperture of the pawl control aperture, and wherein the pawl was allowed to move toward the position member 24 engaging position when the tip of the pawl 11 was disposed in the larger diameter aperture portion of the pawl control aperture. By combination of the teachings of E1 with that of E14 the subject-matter claimed was rendered obvious.

- X. The respondent argued that the main request should be allowed because it included sufficient disclosure of the essential features for characterizing the invention. It was not necessary to include all specific features into the claim since the skilled person was well aware that e.g. a base member must be present for the shift positioning device to be mounted to a bicycle without the restriction to a case including an electric drive mechanism. Paragraph [0004] explained that a base could

be inside the case, but it was evident that the case was not essential as could be seen from paragraph [0005] which then only mentioned the base. It was also clear from paragraphs [0045], [0046] and [0047], where it was stated that different configurations to those of the specific embodiment might be used, that the invention could be varied, for example in regard to the winding body which was obviously not required as part of the shifting mechanism. It was of the utmost importance to understand that claim 1 was directed to a shift positioning device and that limitations in the claim, even in respect of Article 123(2) EPC, should only be required to the specific features of the shift positioning device rather than any other features described in an embodiment thereof, with the consequence that any feature not related to the shift positioning device was not an essential feature of the invention claimed and could thus be omitted when considering the requirement of Article 123(2) EPC.

At least the bicycle shift positioning device according to claim 1 of the sixth auxiliary request included all the features as disclosed in a specific embodiment and should be admitted into the proceedings. The subject-matter of claim 1 was not complex since the entire proceedings had been concerned with the issue of disclosure in regard to these introduced features, which not only overcame all previous objections but resulted in a claim which was both novel and inventive over the cited prior art.

Since the cited prior art documents E1 relating to a manual shift device and E14 relating to an automatically speed shifting hub, both disclosed totally different solutions, and the skilled person would be prevented to try a combination of those prior art documents since

they were incompatible. Even when combining the teaching of E14 with E1, this anyway did not lead to the bicycle shift positioning device having the features as claimed, and therefore the subject-matter of claim 1 involved an inventive step.

## **Reasons for the Decision**

1. The appeal is admissible.
2. *Amendments (Article 123(2) EPC)*
  - 2.1 Main request and first to fifth auxiliary requests
    - 2.1.1 All respective claims 1 are based on granted claim 1 which has been amended by the insertion of features taken from the description (paragraphs [0014], [0021], [0022] and [0023] having the same wording in the A-publication and in the patent specification). In particular, the insertion into feature (1.3) has been taken from paragraph [0014] having the wording:

*"As shown in Figs. 5-8, the positioning unit 29 has a case 50; a first rotating body in the form of a winding body 51 rotatably mounted around a spindle 58; a positioning member 52 fixed on the case 50; a pawl member 53 mounted on the winding body 51 for rotating between a positioning member engaging (locked) position and positioning member disengaging (separated) position; a circular spring member 54 for biasing the pawl member 53 toward the positioning member engaging position; a second rotating body in the form of a pawl control member 55 rotatably mounted around spindle 58 for controlling the movement of pawl member 53 between the positioning member engaging position and the positioning*

*member disengaging position; a position detector 56 for detecting the position of pawl control member 55; and an electric drive mechanism 57 for driving the pawl control member 55."*

- 2.1.2 In claim 1 (feature 1.5) the wording of granted claim 1 was altered from "a positioning member coupled to the base member" to "a positioning member fixed on the base member". The term "fixed" to describe the particular form of coupling of the parts is however only disclosed in the context of "fixed on the case 50". Omitting the "case" out of the correlation as it was originally disclosed (i.e. the fixing of the positioning member to a specific part) therefore leads to an inadmissible intermediate generalisation of the original disclosure, contrary to Article 123(2) EPC.

The foregoing conclusion is not altered by the respondent's argument that a case should be understood simply as a preferred form of base member and that a skilled person would recognise that only a base was required. First, nothing in the application as filed equates a base member with a case member. Further, the application as filed in paragraph [0004] even differentiates the two, by referring to "a base member disposed inside the case". The mere fact that paragraph [0005] does not further refer to a case cannot be seen to provide any further unambiguous information in this regard, noting that paragraph [0003] also discloses a case without mention of a base member. It may also be noted that all these paragraphs anyway relate to the prior art and are not an explanation of the invention.

The respondent also argued that claim 1 was directed to a shift positioning device and that limitations in the claim should only be required to the specific features

of the shift positioning device rather than any other features of further parts described in an embodiment of the shift positioning device, allowing, in the respondent's view, any non-essential features to be omitted. However, the Board is not persuaded by this argument. Whilst claim 1 as filed may have been directed to particular subject-matter, the claim was then amended by the introduction of further features taken from the description. Those features were only disclosed in a specific context, namely in a combination with certain other features. When considering whether a disclosure is present concerning introduced features together with the other features (i.e. the combination of features in current claim 1, namely the invention now being claimed), consideration has to be given to the structural and functional interrelationship of the features (introduced into claim 1) within the context of the disclosure from where they are taken. In the present case, the only context in which "fixing" is disclosed, is in the specific context of a case. This is the only direct and unambiguous disclosure available to a skilled person. To suggest that a case is not necessary (as the respondent does), without some disclosure to that effect in the particular context, is thus nothing more than speculation. For the consideration of Article 123(2) EPC, it is thus of no relevance for the present appeal that the claim as originally filed included a majority of features defining parts of a movement mechanism for shift positioning.

- 2.1.3 Furthermore, in the particular embodiment of Figs. 5-8 as described in paragraph [0014], "the first rotating body" is defined as "in the form of a winding body rotatably mounted around a spindle 58" and the "second rotating body" as "in the form of a pawl control member 55 rotatably mounted around spindle 58 ...". Again, the

selection of a feature out of the context as disclosed and adding it to the claim, causes an inadmissible intermediate generalisation with the consequence that subject-matter having the particular combination of features as now claimed has not been disclosed in the application as originally filed contrary to Article 123(2) EPC.

2.1.4 The respondent's further argument that other configurations of the first rotatable member could be used, is not convincing because according to paragraph [0046] for example, a winding body must be present in any case in the embodiments; it can only be biased in a different manner. As regards the other paragraphs mentioned by the respondent as being of relevance in this regard, paragraph [0045] states only that a shift control cable is merely an example and that other configurations can be used. However it is not immediately recognisable which features may then be added or omitted from the specific disclosure of the embodiment in which the winding body forms an integral part. Similarly, paragraph [0047] merely describes that desirable changes can be made, without specifying any details of how any change is indeed to be made. None of these paragraphs therefore assists the respondent's argument that the first rotating member being specifically a winding body need not be included in the claim.

The main request is therefore not allowable.

2.1.5 The first to fifth auxiliary requests were filed one month before the scheduled date of the oral proceedings and are therefore a change to the respondent's case filed after submission of its response to the appeal grounds. In respect to these requests, the Board

exercises its discretion under Article 13(1) RPBA not to admit them into the proceedings since they at least have some of the same deficiencies of the main request and are, therefore, *prima facie* not allowable.

## 2.2 Sixth auxiliary request

Admittance into proceedings (Article 13 RPBA)

Into claim 1 of this request, all relevant features from the cited paragraphs in the description have been introduced as disclosed in their context. It may be noted that the omission of the features concerning the "position detector" in the claim is acceptable having consideration to Article 123(2) EPC because these particular features have no structural and functional coherence with all the other features concerning the pawl control by means of the first and second rotating body together with the detailed control mechanism for the movement of the pawl.

Further, the use of "body" from granted claim 1 instead of "member" as in the description is acceptable since, in the specific context, it is evident that these expressions have an equivalent meaning. The appellant also had no objections in regard to Article 123(2) EPC.

The appellant instead argued that the request should not be admitted into proceedings because it had been filed at a very late stage and was complex due to the fact that the amendments had been taken from several different paragraphs of the description. However, the Board is not convinced by this argument in the present case, since the introduced features were specifically those lacking features of the embodiment from which the particular features had originally been inserted into



claim 1 before claim 1 was granted. And, the portions of the description introduced all related to the same embodiment which had been under discussion during the entire proceedings. Since all the features were introduced in their entirety, further discussion on Article 123(2) EPC was also obviated and no further objections appeared to arise as a result of the amendments. It also appeared *prima facie* that the subject-matter of claim 1 appeared to be both novel and to involve an inventive step with respect to the cited prior art.

The Board thus exercised its discretion and admitted the request into the proceedings.

3. *Novelty (Article 54 EPC)*

Novelty of the subject-matter of the claims was not contested by the appellant, and the Board is also satisfied that none of the prior art documents on file discloses the combination of features of at least claim 1.

4. *Inventive step (Article 56 EPC 1973)*

- 4.1 For the purposes of considering inventive step, the closest prior art may be considered to be E1, which discloses a bicycle shift positioning device comprising: a base member being a case 1 adapted to be mounted to a bicycle,  
a first rotating body 3 in the form of a winding body 4 rotatably mounted relative to the base member 1;  
a second rotating body 2 in the form of a pawl control member rotatably mounted relative to the first rotating body 3;  
a positioning member 7 fixed on the base member 1 and

having a plurality of positioning elements 1 in the form of protrusions;

a pawl 6 coupled for movement with the first rotating body 3,

wherein the pawl 6 moves between a positioning member engaging position and a positioning member disengaging position;

a pawl biasing mechanism 14 for biasing the pawl 6 toward the positioning member engaging position (Fig. 1 and 2; page 3, line 25 to page 4, line 30).

4.2 Starting from E1, the technical problem was stated by the appellant as being the provision of a stable and reliable pawl control. This problem is allegedly solved by a bicycle shift positioning device having the features of claim 1.

4.3 The appellant was further of the opinion that the skilled person would easily be in a position to find a suitable solution to the problem when considering E14. This document disclosed an automatic bicycle shift positioning device positioned in a hub using a pawl control mechanism which was allegedly similar to that of the patent. Changing the manual operation of the shift device to an electric drive was allegedly within the knowledge of the skilled person and thus would allegedly not involve an inventive step.

4.4 The Board doubts whether the skilled person, even when starting from E1 would have had a reason to try a combination of this with E14, even when considering the technical problem put forward by the appellant to be an objective technical problem, since E1 and E14 are incompatible in terms of structure and function. The rotatable elements of the shift positioning device according to E1 are not rotatably mounted around a

spindle, and therefore, even when considering the axle of the bicycle hub as a "spindle" in the sense of claim 1, the installation of the mechanism of E14 within the device of E1 cannot be readily performed. The device of E1 is also manually driven whilst the shift control of E14 is actuated by centrifugal force. Therefore the skilled person would have had absolutely no reason to consider an electric drive at all when starting from E1. The pawl control element ("Steuerscheibe 16") of E14 having a pawl control aperture 17 which is an arcuate aperture having a small-diameter aperture portion and a large-diameter aperture portion (Fig. 5), is not driven by means of an interlocking pin of the pawl mounting member 9 extending into an arcuate interlocking aperture, but is directly rotated by rods 22 attached at the centrifugal weights 20 and extending into holes 19 of the control element 16 when the centrifugal weights 20 are forced outwardly (Figs. 4 and 5; column 8, lines 47 to 68).

4.5 Even if a skilled person would for some reason, in attempting to solve the problem stated by the appellant, try to combine any features disclosed in E1 and E14, the skilled person would then not arrive at the subject-matter having the combination of features of claim 1. Therefore, when starting from E1 and considering the teaching of E14, the subject-matter of the bicycle shift positioning device claimed involves an inventive step.

5. Since no further objections or arguments were presented in respect of inventive step against claim 1 of the sixth auxiliary request, the Board is also satisfied that claim 1 meets the requirements of the EPC.

No further objections were raised against claims 2 to 18, the dependency of which was adapted to claim 1, nor

to the adapted description. Nor did the Board itself find reason to raise any objection in this regard.

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent with the following documents:

claims 1 to 18, together with the description pages 1, 1a to 7, all as filed during the oral proceedings;

Figures 1 to 17 as granted.

The Registrar:

The Chairman:



M. Patin

M. Harrison

Decision electronically authenticated