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**Datasheet for the decision
of 19 December 2017**

Case Number: T 1172/15 - 3.2.01

Application Number: 08161788.8

Publication Number: 2078667

IPC: B62K23/06, B62M25/04

Language of the proceedings: EN

Title of invention:
Bicycle shift operating device

Patent Proprietor:
Shimano, Inc.

Opponent:
SRAM Deutschland GmbH

Headword:

Relevant legal provisions:
EPC Art. 54, 123(2)

Keyword:
Novelty (yes)
Added subject-matter (no)

Decisions cited:

Catchword:



Beschwerdekammern

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Case Number: T 1172/15 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 19 December 2017

Appellant:

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Decision under appeal:

**Decision of the Opposition Division of the
European Patent Office posted on 31 March 2015
rejecting the opposition filed against European
patent No. 2078667 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman	G. Pricolo
Members:	C. Narcisi
	P. de Heij

Summary of Facts and Submissions

- I. The Opposition filed against European patent 2 078 667 was rejected by the decision of the Opposition Division posted on 31 March 2015. Against this decision an appeal was lodged by the Opponent on 10 June 2015 and the appeal fee was paid. The statement of grounds of appeal was filed on 6 August 2015.
- II. Oral proceedings were held on 19 December 2017. The Appellant (Opponent) requested that the decision be set aside and that the patent be revoked. The Respondent (Patentee) requested that the appeal be dismissed.
- III. Granted claim 1 reads as follows:
- IV. "A bicycle shift operating device comprising:
a base member (40);
a shift wire take-up element (44) rotatably mounted with respect to the base member in first and second rotational directions about a pivot axis fixed with respect to the base member (40); and a shifting unit (46) operatively coupled to the shift wire take-up element, the shifting unit including a shift operating member (70) movably mounted with respect to the base member to move along a first plane (P1) to operate the shift wire take-up element (44) in the first rotational direction, and to move along a second plane (P2) to operate the shift wire take-up element (44) in the second rotational direction, characterized by the first and second planes (P1; P2) intersecting by an angle between twenty degrees and seventy degrees."
- V. The Appellant's submissions may be summarized as follows:

The subject-matter of claim 1 extends beyond the content of the application as filed (hereinafter designated as EP-A), since the feature reading "a pivot axis fixed with respect to the base member (40)" was not disclosed in EP-A. In effect, it is nowhere explicitly stated in EP-A that the pivot axis (A) is fixed to the base member (40), and this is by no means clearly and unambiguously derivable from the disclosure of EP-A either. In EP-A (see [0034]) it is merely disclosed that "the shift wire take up element 44 and the shifting unit 46 are attached to the base member 40 by the shift unit axle 42 in conjunction with a first retaining plate 48 and a second retaining plate 50" and the omission of these specific features in claim 1 further constitutes an impermissible (intermediate) generalization of the subject-matter of EP-A.

The subject-matter of claim 1 is not new over E4 (US-A-4 343 201), as the disputed feature reading "a shift operating member (70) movably mounted with respect to the base member to move along a first plane (P1) to operate the shift wire take-up element (44) in the first rotational direction, and to move along a second plane (P2) to operate the shift wire take-up element (44) in the second rotational direction" (hereinafter designated as feature (i)) is known from E4.

In contrast to the appealed decision, in claim 1 the "shift operating member" (which is consistently given the reference sign 52 throughout the description of the patent specification (hereinafter designated as EP-B)) has to be regarded as comprising two parts (see EP-B, [0036]), i.e. a "lever member 70" and a "support member 69", wherein the "support member 69" moves along a first plane P1 (to operate the "shift wire take-up element 44" in the first rotational direction) and the

"lever member 70" moves along a second plane P2 (to operate the "shift wire take up element 44" in the second rotational direction). The same constructional arrangement is disclosed in E4, wherein lever 4 (moving in a first plane and having a rotational axis 31) and second lever 52 (moving in a second plane and having a rotational or pivot axis 53) respectively correspond to aforesaid "support member 69" and "lever member 70" in EP-B.

The characterizing feature of claim 1 is equally known from E4, for it implies a non-inventive selection of an angle parameter according to a subrange which is derivable from E4.

Therefore the claimed subject-matter lacks novelty over E4, given that the remaining features are also known from E4.

The subject-matter of claim 1 lacks novelty over E6 and E7.

E6 discloses a shift operating member comprising two levers 60 and 62. Account being taken of the fact that said feature (i) encompasses a shift operating member consisting of multiple parts and is not limited to a single shift operating element being moved in a first and second plane (see above), it ensues that feature (i) is known from E6. Indeed, the lever 60 is rotated around the main pivot axis 40 (in order to pull the wire) such that it moves in a plane P1 to operate the shift wire take-up element 52 in a first rotational direction. The second lever 62 rotates, in order to release the wire, about a second axis (pin 42) and thereby moves in a second plane P2, in order to operate the wire take-up element 52 in the second rotational direction. Hence, lever 60 in E6 corresponds to support

member 69 in the contested patent (EP-B) and second lever 62 corresponds to lever member 70 in EP-B. Finally, according to E6 (see [0063]), said planes P1 and P2 intersect at an angle between 0° and 30°. Hence, the characterizing feature of contested claim 1 is known from E6 and, the remaining features being similarly known therefrom, this document anticipates the claimed subject-matter.

E7 discloses, similarly to E6, a shift operating member having two levers moving in planes intersecting at an angle (see E7, [0020]) as claimed in the characterizing feature of claim 1. The lever 4 is rotatably mounted on the axis 17 and moves in a first plane (defined as second plane in E7) to operate the shift wire take-up element in the first (wire release) direction. The pull lever 3 moves along a second plane (first plane in E7) to operate the shift wire take-up element 10 in a second rotational direction (wire pull direction). Thus, said feature (i) is known from E7. Given the remaining features of claim 1 being also known from E7, this document anticipates the subject-matter of claim 1.

The subject-matter of claim 1 lacks novelty over public prior use O2 (see drawing O2b). In particular, O2 discloses a bicycle shift operating device 10 comprising a shift operating member including levers 1 and 14, wherein lever 1 rotates in a first plane in a first rotational direction in order to rotate the wire take-up element 11 in a first direction, and lever 14 rotates in a second plane in a second direction to rotate the shift wire take-up element 11 in a second direction. Thus, feature (i) is known from O2 and the characterizing features of claim 1 are likewise derivable from O2, for said two planes intersect at an

angle of 60° . It follows that the subject-matter of claim 1 lacks novelty, the remaining features being also derivable from 02.

Finally, public prior use 03 (see evidence 03b (Catalogue "Shimano bicycle system components", Shimano Industrial Co., Ltd., April 1982, page 124); evidence 03c (photographs 03c1 to 03c8)) also discloses the features of claim 1. 03 discloses a single lever shifter corresponding to the shift operating member of claim 1, wherein the shift operating member or lever 22 is movable in a plane P1 (see photographs 03c1-03c8) when pushed in a first direction, such as to slide on the guiding surface 26 of the protrusion 14, in order to operate the shift wire take-up element 4 in a first rotational direction. The lever is fixed in this position by a movement in direction (- Z) (see arrow in fig. 8 of the statement of grounds of appeal), thus leading its lower stop face portion 16' to abut protrusion 14 (position shown in 03c3).

In order to operate the shift wire take-up element 4 in a second rotational direction (to unwind or release the wire from the shift wire take-up element) the lever 22 is moved in the direction (+ Z) until the lower stop face portion 16' does not any more abut protrusion 14. From this position the lever 22 can move along a variety of paths (see fig. 9 in the statement of grounds of appeal), e.g. essentially parallel to said guiding surface of protrusion 14, or (alternatively) in a second plane P2 until its upper right edge 16" abuts the right hand corner of a use mark formed on base element 2. The variety of paths is for example indicated by the existence of use marks on base element 2. Plane 1 and Plane 2 intersect at an angle of 27.7° . In conclusion, said feature (i) and the characterizing feature are known from public prior use 03 which

anticipates the subject-matter of claim 1, for the remaining claimed features are similarly known from O3.

The subject-matter of claim 1 is also not based on an inventive step.

VI. The Respondent's arguments may be summarized as follows:

The subject-matter of claim 1 does not extend beyond the content of the application as filed, for the features "a pivot axis fixed with respect to the base member (40)" is clearly and unambiguously derivable from the application as filed (EP-A). Indeed, the skilled person reading EP-A and looking at the figures would not understand anything else than the fact that there is no mobility of axis 42, irrespective of how the other constructional parts are pivotally mounted to the axis 42.

The subject-matter of claim 1 is new over the disclosure of documents E4, E6 and E7, as well as over public prior use O2, since these documents do not teach a "shift operating member" consisting of a single lever movable along two intersecting planes for performing respective shifting operations. The claimed subject-matter is also novel over public prior use O3, for no clearly and unambiguously defined plane can be derived therefrom. This is due to the fact that, as mentioned by the Opponent itself, "some degree of freedom in the movement of the shift operating member" exists and "a variety of paths" are possible.

Reasons for the Decision

1. The appeal is admissible.

2. The subject-matter of claim 1 does not contravene Article 123(2) EPC, for the feature reading "a pivot axis fixed with respect to the base member (40)" (hereinafter designated as feature (ii)) does not extend beyond the content of the application as filed (EP-A). In effect, it results from the description of EP-A that the pivot axis 42, or "shift unit axle 42", "is formed by a bolt and a nut" (see [0042]), wherein the bolt is fixed to the base member 40 by insertion into a main axle hole 73 (see figure 6, paragraph [0040]) and by the connection with said nut. Thus, it is clearly and unambiguously disclosed in EP-A that said pivot axis defines a main pivot axis of the wire take-up element 44 and of the shifting unit 46 (see e.g. [0034], [0040]), and that this axis (being formed by said bolt and said nut) is fixed to the base member 40, for otherwise no stable and well-defined rotational motion of the wire take-up element and of the shift operating member would be possible. Also, no further features inextricably linked to feature (ii) have been omitted in claim 1, for the pivot axis consisting of said bolt and nut means (see EP-A, [0042]) constitutes by itself an entirely sufficient means for fixing said pivot axis with respect to the base member 40 and is not inextricably linked to any further features in the disclosed embodiments of the invention. Moreover, the statement "in the illustrated embodiment, the shift unit axle 42 is formed by a bolt and a nut" (EP-A, [0042]) clearly includes an implicit statement that the pivot axis is not always necessarily formed by a bolt and a nut and that it may likewise be formed by a variety of different equivalent means, as the skilled

person would clearly realize and as it results from claim 1 as originally filed (see EP-A), which merely defines a pivot axis without referring to any specific implementation.

3. The subject-matter of claim 1 is new over E4, given that said feature (i) is not known from E4. The Appellant's arguments are based on the assumption that feature (i) has to be construed as including a "shift operating member" comprising two parts (see EP-B, [0036]), i.e. a "lever member 70" and a "support member 69", wherein according to feature (i) the "support member 69" moves along a first plane P1 (to operate the "shift wire take-up element 44" in the first rotational direction) and the "lever member 70" moves along a second plane P2 (to operate the "shift wire take up element 44" in the second rotational direction). However, this assumption is erroneous, and this for several reasons.

First, the Appellant's construction of feature (i) is incompatible with an understanding of the claim based on the skilled person's common general knowledge and on common sense. Feature (i) requires a "shift operating member (70) movably mounted with respect to the base member to move along a first plane (P1) to operate the shift wire take-up element (44) in the first rotational direction, and to move along a second plane (P2) to operate the shift wire take-up element (44) in the second rotational direction". Obviously, the skilled person would understand that the "shift operating member" forms a physical unit or physical entity and consequently that the above wording of feature (i) requires said unit or entity as a whole and in its entirety to move along said first plane P1 (to operate the shift wire take-up element in the first rotational

direction) and to move along said second plane P2 (to operate the shift wire take-up element in the second rotational direction).

Second, in view of the description of EP-B the skilled person would likewise not construe feature (i) according to the Appellant's above assumption. Indeed, despite the "shift operating member" being described in EP-B (see [0036]) as comprising inter alia a support member 69 and a lever member 70, nonetheless it is only lever member 70 which is disclosed in EP-B as being movable along planes P1 and P2 (see EP-B, [0037], [0038]). Therefore the skilled person would understand (also since said "shift operating member" is referenced as 70 in feature (i) of claim 1) that in feature (i) of claim 1 the "shift operating member" has necessarily to be construed as being lever member 70, no other reasonable construction of this feature being possible in view of the disclosed embodiments.

This feature (i) is not fulfilled by the device of E4, given control lever 4 moving only in one plane and having a rotational axis 31, this being the sole "shift operating member" in the device of E4 (see E4, column 4, lines 40-64).

Second lever 52 (moving in a second plane and having a rotational or pivot axis 53) merely serves to unblock (or disengage) said control lever 4 in case that the control lever 4 is operated towards the high speed position (see E4, column 3, lines 18-27; column 4, lines 56-64) but does not operate the shift wire take-up element. Moreover, second lever 52 considered per se would not fulfil the terms of feature (i) either, for only control lever 4 (not lever 52) can act as a "shift operating member" to operate the shift wire take-up element in a (first or second) rotational direction to

shift the gear to a low speed position (see E4, column 4, lines 40-50).

For the same reasons as above the subject-matter of claim 1 is new over E6, over E7 and over public prior use O2. In effect, none of these prior art devices discloses a "shift operating member" according to aforementioned feature (i), i.e. constituting a single physical entity or unit being movable in its entirety and as a whole along a first plane to operate the shift wire take-up element in a first rotational direction, and along a second plane to operate the shift wire take-up element in a second rotational direction.

4. The subject-matter of claim 1 is new over public prior use O3, for said feature (i) is not derivable from O3. It emerges from the Appellant's own submissions that in order to operate the shift wire take-up element 4 in a second rotational direction (to unwind or release the wire from the shift wire take-up element) the lever 22 is first moved in the direction (+ Z) until the lower stop face portion 16' does not any more abut protrusion 14. From this position the lever 22 can then move along a variety of paths (see e.g. fig. 9 in the statement of grounds of appeal), e.g. essentially parallel to said guiding surface of protrusion 14, or (alternatively) in a second plane P2 until its upper right edge 16" abuts the right hand corner of a use mark formed on base element 2. The variety of paths is for example indicated by the existence of different use marks on base element 2.

Thus, the Appellant itself concedes that no unique, well defined second plane P2 exists in the device of O3, for a variety of paths is possible, once the lower stop face portion 16' does not any more abut protrusion 14 and the control lever 22 is operated in a direction

towards the base element 2 such as to unwind or release the wire from the shift wire take-up element.

Consequently, the control lever 22 does not move along a well defined plane P2, the actual path rather depending on the given circumstances, i.e. on a variety of accidental and fortuitous factors. In effect, the process of disengaging lower stop face portion 16' and protrusion 14 depends in a very sensitive manner on the force generated by the operator's fingers and on the direction in which this force is acting, said process also largely determining or influencing (by the amount and direction of the applied force) the subsequent path (after disengagement) followed by control lever 22. Owing to the lever 22 being mounted with play on the pivot axis 6 (this play being necessary and indispensable to disengage aforesaid constructive elements), there is no unique and predetermined plane (i.e. perpendicular to pivot axis 6) along which lever 22 moves when rotating about said pivot axis 6. Therefore, small variations of said force and of its direction (which are obviously inadvertently and inevitably produced by the operator) will lead to different paths and trajectories followed by control lever 22, which do not lie on a single, well defined plane P2. Particularly, the operator is essentially not in a position such as to reliably predict and control one specific path to be followed by the control lever among the variety of infinite possible paths.

Under the above mentioned circumstances, it cannot be derived from public prior use O3 that said shift operating member is made such as "to move along a second plane (P2) to operate the shift wire take-up element (44) in the second rotational direction" (see feature (i)), for this wording clearly requires that

the control lever 22 (or "shift operating member") be operable in a reliable and controllable manner such as to result in a well defined and reproducible plane P2. A different construction of feature (i) would also be at odds with the general technical teaching of the contested patent (EP-B), clearly disclosing a shift operating device having a mechanical structure and configuration defining mechanical constraints uniquely determining the dynamics of the "shift operating member" (control lever 70), thus limiting its motion to said planes P1 and P2. In particular no play is necessary (in the device of EP-B) between the control lever 70 and the pivot axis 42 (to permit motion in a second rotational direction), contrary to the device of O3. This is clearly due to the implementation of a different, more involved mechanical construction, as opposed to the simple mechanics disclosed by O3.

For the above reasons the subject-matter of claim 1 is new over the cited prior art (Article 54 EPC).

5. Despite alleging lack of inventive step of the subject-matter of claim 1 in writing, the Appellant never submitted during the appeal proceedings a corresponding substantiation. Hence the Board has no reasons to reconsider in this regard the conclusions stated in the appealed decision.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Vottner

G. Pricolo

Decision electronically authenticated