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**Datasheet for the decision
of 4 July 2013**

Case Number: T 1330/10 - 3.2.01

Application Number: 03013161.9

Publication Number: 1375331

IPC: B62L 1/00

Language of the proceedings: EN

Title of invention:

Apparatus for mounting a brake drum to a bicycle frame

Patent Proprietor:

SHIMANO INC.

Opponent:

SRAM Deutschland GmbH

Headword:

-

Relevant legal provisions (EPC 1973):

EPC Art. 54, 56

Keyword:

"Novelty (yes)"

"Inventive step (yes)"

Decisions cited:

-

Catchword:

-



Case Number: T 1330/10 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 4 July 2013

Appellant: SRAM Deutschland GmbH
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted 13 April 2010
rejecting the opposition filed against European
patent No. 1375331 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman: G. Pricolo
Members: Y. Lemblé
P. Guntz

Summary of Facts and Submissions

- I. The appeal is directed against the decision of the Opposition Division to reject the opposition against European patent No. 1 375 331.
- II. The patent was opposed under Art. 100 (a) EPC 1973. In its decision the opposition division held that the subject-matter of the patent as granted met the requirements of novelty and inventive step having regard to *inter alia* the following prior art documents:
- E1: DE-A-36 22 994,
 - E2: DE-A-39 25 714,
 - E3: DE-A-195 36 157,
 - E6: EP-B-0 110 402,
 - E8: Pages 238 and 239 from the book of Fritz Winkler and Siegfried Rauch: "Fahrradtechnik; Bielefelder Verlagsanstalt 1980",
 - E10: Copy of the leaflet "BF/C & BR/C Brake Hubs" from the firm Sturmey Archer,
 - E11: Copy of the leaflet "Teileliste Bremsnaben (90mm) AB/C - B F/C" from the firm Sturmey Archer.
- III. In their written statement setting out the grounds of appeal the Appellants presented for the first time the following items:
- Annex WUE-1: bracket fastening member
 - Annex WUE-2: photographs
- IV. In the oral proceedings held on 4 July 2013 the Appellants requested that the decision under appeal be set aside and the patent be revoked. The Respondents

(Patent Proprietors) requested that the appeal be dismissed.

V. Claim 1 as granted reads as follows (delimitation of features as proposed by the Appellants):

- M1 An apparatus for mounting a brake device (13f, 13r) to a bicycle frame (1), wherein the brake device (13f, 13r) brakes the hub (6) of a wheel that rotates around a hub shaft (15a), and
- M2 wherein the apparatus comprises a fastening bracket (30f, 30r) comprising:
- M3 a base portion adapted to receive the hub shaft (15a) therethrough;
- M4 an arm portion (34b) that extends outwardly from the base portion (34a);
- M5 a detaining portion (34c) having first and second side surfaces disposed on the arm portion (34b) for mounting the brake device (13f, 13r) to the bicycle frame (1); and
- M6 a bracket fastening member (25f, 25r) characterized in that
- M61 said bracket fastening member (25f, 25r) has a detaining space into which the detaining portion (34c) is inserted for detaining the fastening bracket (30f, 30r) to the bicycle frame (1); and
- M62 an insert member (19) straddling a distal end of the detaining portion (34c)
- M621 and comprising first and second contact portions (19a, 19b) that face the respective first and second side surfaces of the detaining portion (34c),
- M622 and a third contact portion (19c) that extends from the at least one of the first and second

contact portions (19a, 19b) and faces a third side surface of the detaining portion (34c) when the insert member (19) is disposed in the detaining space.

VI. The Appellants' submissions may be summarised as follows:

The subject-matter of claim 1 was not novel over the brake device of prior art document E3. Document E3 disclosed in Fig. 1-5 a brake device having the features of the preamble of claim 1, namely a brake hub with a hub shaft (feature M1), a fastening bracket 1,2 (feature M2) comprising a base portion 1 (feature M3), an arm portion 2 (feature M4) and a detaining portion (lug 4) with sides surfaces (feature M5), and a fastening member consisting of an angled piece with arms 6 and 8 (feature M6).

Concerning the features of the characterising part of the claim, the term "detaining space" did not require for the space to be a closed one, but should be broadly interpreted as a part of a three-dimensional volume. Since the bracket fastening member 6,8 formed a "detaining space" into which, in the assembled state, the detaining portion 4 was inserted for detaining the fastening bracket 2 to the bicycle frame (see Fig. 2), feature M61 was known from E3. In the same way, the term "straddle" should not be interpreted too restrictively and simply meant "to span something, being wider than it, such as to extend on both sides of it". As shown in Fig. 4 and 5 of E3, an insert member (connecting element 7 and nut 10) "straddled" a distal end of the detaining portion 4. Therefore, feature M62 was also known from E3. Further, the insert member

comprised a first (shoulder part of the connecting element 7) and a second (frontal face of the nut 10) contact portions that faced the respective first and second side surfaces of the detaining portion 4 (feature M621), and a third contact portion (cylindrical peripheral surface of the shaft of the connecting element 7) that extended from the at least one of the first and second contact portions and faced a third side surface (see elongated slot 5) of the detaining portion when the insert member was disposed in the detaining space (feature M622).

On the basis of an analogue interpretation of the terms of the claim as explained above, the subject-matter of claim 1 was not novel over the apparatus for mounting a brake device shown in Fig. 10 and 11 of prior art document E2. These figures showed a brake device having a brake hub 10 with a hub shaft 19 (feature M1), a fastening bracket 43 (feature M2) comprising a base portion (feature M3), an arm portion (feature M4) and a detaining portion (end section 14) with side surfaces (feature M5), and a fastening member consisting of a bracket 15 with screw 46 (feature M6).

The bracket fastening member 6,8 formed a "detaining space" into which, in the assembled state, the detaining portion 14 was inserted for detaining the fastening bracket 43 to the bicycle frame. As shown in Fig. 11 of E2, an insert member (bolt 47) straddled a distal end of the detaining portion 14. Further, the insert member 47 comprised a first and a second (shoulder parts of the bolt 47) contact portions that faced the respective first and second side surfaces of the detaining portion 14 (feature M621), and a third contact portion (cylindrical peripheral surface of the

bolt 47) that extended from the at least one of the first and second contact portions and faced a third side surface of the detaining portion 14 when the insert member was disposed in the detaining space (feature M622).

The subject-matter of claim 1 did not involve an inventive step because it was obviously derivable from a combination of the prior art documents E8 with E3. The closest prior art was document E8 which showed in Fig. 510 a bicycle drum brake. Although this brake was not described in detail, the skilled person clearly recognised features M1 to M61 in this figure: in particular a fastening bracket (HSB 256) having a radially extending fastening arm inserted in an opening of a bracket fastening member (HSL 702, HSL 703). Because of doubts expressed by the Respondents on the exact configuration of the bracket fastening member, pieces WUE-1 and WUE-2 were submitted to explain how the detaining space of the bracket fastening member received the detaining portion of the bracket in Fig. 510 (feature M61). The subject-matter of claim 1 therefore only differed from that of E8 by the features M62, M621 and M622. The objective problem to be solved with respect to the apparatus known from E8 would therefore be the elimination of rattling noises which could occur, if the brake arm was not fixed properly or if there was a play between the bracket arm and the bracket fastening member (see paragraph [0007] of the patent specification). It was generally known in the field of bicycle technology to solve this typical problem with elastic noise-damping coatings or caps. This was shown for example in document E3 which, for the purpose of preventing noises in a similar bracket

detaining mechanism (see column 2, lines 63-67), proposed to cover the securing nose 8 of the bracket fastening member with a plastic coating or a cap at the region which caused the noises. The application of this teaching to the fastening bracket of document E8 would lead to the interposition of an elastic insert between the detaining portion of the bracket arm and the fastening member. Such an insert disclosed the features M62 to M622 of claim 1 of the patent. The argument of the Respondents that E8 did not suggest the rattling noise problem, was not convincing. As a matter of fact, a play must exist, since it was only with play that the retaining portion of the bracket arm could be inserted in the retaining space. If this play was a source of noises, then it was obvious to interpose an insert having noise damping properties.

Alternatively, the man skilled in the art would come in an obvious manner to the subject-matter of granted claim 1 because, starting from the brake device of document E2 or document E1, he would regard it as obvious to mount a plastic cap (insert member in the sense of the claim) on the detaining portion 14 (see Fig. 10 of document E2) for the purpose of preventing rattling noises. This was suggested in column 2, lines 63-67 of document E3 or in column 1, lines 40-49 of document E6.

VII. The arguments presented by the Respondents may be summarized as follows:

On the basis of a correct and realistic interpretation of the terms "detaining space", "straddle a distal end", "side surface" one could only come to the conclusion

that the subject-matter of claim 1 as granted was novel over each of the prior art documents E3 and E2 cited by the Appellants.

Contrary to the opinion of the Appellants, the subject-matter of claim 1 as granted involved an inventive step. The closest prior document E8 did not clearly show how the bracket fastener HSL 702, HSL703 detained the detaining portion of the fastening bracket. Pieces WUE-1 and WUE-2, which should show the detaining space of Fig. 510 of document E8, were filed too late and should not be taken into consideration by the Board. Figure 510 of document E8 did not suggest a problem of rattling noises, even if the detaining space was configured in conformity with the clamp WUE-1 and WUE-2. Such clamps were elastically tightened around a stay of the bicycle frame and therefore did not have a play which might cause rattling noises. A skilled person would not consider that document E3 could contribute to solve a problem on the clamp of document E8. Neither E1, E2 nor E3 disclosed an insert member in accordance with feature M62, i.e. an insert member straddling a distal end of the detaining portion of the brake arm. E6 was not relevant because it did not address the problem formulated by the Appellants.

Reasons for the Decision

1. The appeal is admissible.
2. Novelty
 - 2.1 Feature M 61 of claim 1

Feature M61 of claim 1 requires that the bracket fastening member should have a detaining space into which the detaining portion can be inserted.

For the Board, feature M61 is not disclosed in E3. Nor is fulfilled the requirement of feature M622 referring to the insert member being disposed in the detaining space. The insert member (connecting element 7 and nut 10 for the Appellants) cannot be, at the same time, a part that defines the limits of the retaining space and the "insert" to be disposed in that space. Therefore, the "insert member" (parts 7,10) cannot be invoked to contribute to the delimitation of the detaining space. The angled piece consisting of the angled arms 6 and 8 shown in Fig. 1 to 5 of document E3, which is the "bracket fastening member" for the Appellants, may divide the space into two distinct parts (on each side of it), such a coarse subdivision cannot, however, be meant by the expression "has a detaining space". Even if the arms 6,8 were considered to define an hypothetical triangular space by joining their ends by an imaginary line, the detaining portion (Lasche 4) cannot be seen to be clearly inserted into that space neither is the "insert member 7,10" disposed in that space. Therefore, the piece 6,8 does not have a detaining space within the meaning of claim 1.

2.2 Feature M62 of claim 1; the term "to straddle a distal end"

The Board does not agree with the interpretation of the Appellants in respect of the term "to straddle a distal end". In the particular context of mechanical devices like the present bicycle components, the unusual use of the verb "to straddle" has a precise meaning which is well-defined in dictionaries (to be astride, like a rider on a horse). For the Board, the term "to straddle a distal end", as clearly shown and described in the opposed patent (see Fig. 14-15 and paragraph [0016]), does not just mean "wider than something such as to extend on both sides thereof", but is also clearly to be understood by the skilled person as being on both sides of the distal end of an object without, however, passing through that object. This is not the case for the "insert member" of document E3 or of document E2. In document E3, the "insert member" (connecting bolt 7) passes through an oblong slot 5 of the flat element 4 ("detaining portion") and cannot be considered to straddle a distal end of this element (see Fig. 3). The same conclusion applies to the embodiment of the Fig. 10-11 of document E2. The bolt ("Bolzen 47") that the Appellants consider to be the "insert member" does not straddle a distal end of the detaining portion ("gabelförmiges Endstück 14") but is obviously riveted to this piece 14 through a hole, remaining permanently attached to it. Documents E3 or E2 do not therefore disclose feature M62 of claim 1.

2.3 Features M621 and M622; the term "side surface"

The Appellants submit that the term "side surface" mentioned in these features does not have any special or precise meaning going beyond a mere "surface". In doing so, they dropped the word "side". However, the Board judges that said word confers a specific meaning to the term "surface", namely that said surface constitutes one side of the respective member. This is further corroborated by the description and the pertinent figures of the opposed patent, which does not leave any room to interpret a "side surface" merely as "any surface".

As regards document E3, if it is assumed that the connecting elements 7,10 ("insert member" for the Appellants) comprise a first contact surface (shoulder part of the element 7), a second contact surface (frontal face of the nut 10) and a third contact surface (cylindrical peripheral surface of the shaft 7) as alleged by the Appellants, then the third contact portion contacts an inner surface of the lug 4 (oblong slot 5), and not a side surface as the alleged first and second contact portion do. Feature M622 is therefore not known from E3.

As for the definition of the contact surfaces of the "insert member" (bolt 47) in the embodiment of Fig. 10-11 of document E2, the Appellants define the abutting shoulder faces of the bolt 47 to constitute the first and second contacting portions and the smaller cylindrical peripheral diameter portion to constitute the third contact portion. The first and second contact portions may face side surfaces of the

detaining portion ("gabelförmiges Endstück 14"), the third contact portion, however, does not face a side surface but an inner cylindrical surface of the mounting hole in the end piece 14. Thus, feature M622 is also novel over E2.

2.4 The Board concludes from the considerations made above that at least features M61, M62 and M622 of claim 1 are not disclosed by the prior art document E3 and at least features M62 and M622 of claim 1 are not disclosed by document E2.

3. Inventive step

3.1 In their contention that the subject-matter of the granted claim lacked an inventive step, the Appellants started from document E8 as the closest prior art. It has not been contested that Fig. 510 of this document discloses the features M1 to M6 of the preamble of claim 1. In the following it will be assumed, as submitted by the Appellants on the basis of pieces WUE-1 and WUE-2, that the bracket fastening member HSL 702, HSL 703 has a detaining space in accordance with feature M61 of claim 1. Owing to the distinctive features M62 to M622, the Appellants referred to paragraph [0007] of the patent specification to formulate the objective technical problem as the elimination of rattling noises which can occur if the brake arm is not fixed properly and presented the interposition of a noise damping cap as an obvious solution to that problem.

3.2 The Board cannot follow this argumentation. In the Board's judgement, the formulation of the problem and

the presentation of the solution made by the Appellants, appear to be parts of an artificial construct which is not appropriate to demonstrate obviousness.

Bracket fasteners of the type shown in document E8 (clamp WUE-1 and WUE-2) are elastically tightened around a stay of the bicycle frame. If there is a play between the detaining space and the detaining portion on the arm of the bracket, which might cause rattling noises, this play can be readily eliminated by increasing the elastic tightening of the bracket fastener (see screw of the fastener in Fig. 510). Thus, a rattling noise problem does not occur on such clamping fasteners. Such clamps have been in use for many decades (according to E8 at least since 1980) and problems of rattling noises in connection with these known bracket fasteners are neither mentioned nor suggested in prior art documents. This prior art situation might differ from that of the opposed patent where the option of a quick release hub (see paragraph [0005] of the patent specification) might have played a role in the explanations given in paragraph [0007] of the patent specification referred to by the Appellants.

3.3 The Appellants, referring to column 2, lines 63-67 of document E3, saw in the insertion of a noise damping element (cap) an obvious solution to rattling noises.

In document E3, the arm 2 of the fastening bracket 1 is detained by capturing the fork R of the bicycle frame between an abutment 3 of this arm 2 and an adjustable safety lug 8 (see oblong slot 5, connecting element 7 and nut 10). In order to avoid damages at the paintwork and prevent noises, both pieces 3 and 8 comprise a

plastic coating at the region in contact with the fork. The plastic coating mentioned in document E3 may be indeed a noise damping means, it is however used in connection with a very particular bracket detaining arrangement which should assure that the once adjusted zero-backlash remains, even after the brake mechanism has been dismantled from the dropout 13 and reassembled (see E3: lines 52-67 in column 2).

There is no mention of a cap in document E3 and there is also no unambiguous disclosure of a cap in Fig. 1 and 4 of E3. Even if it is supposed that the person skilled in the art would here recognise a cap, he would not make the link with the detaining portion of the bracket fastening apparatus of document E8 because the operating mode of this clamp differs completely from that of E8/WUE-1/WUE-2. Thus, even with regards to document E3, there is no technical motivation to cover the detaining portion of the bracket fastener of E8 with a plastic cap.

- 3.4 The Appellants also invoked the combinations E2/E3, starting from E2.

The working principle of the apparatus shown in Fig.10-11 of E2 relies on a screwing/unscrewing device (screw 46) which clamps the fork 42 of the bicycle frame between the detaining portion 14 of the fastening bracket and the bracket fastening member 15. A play as a source of noises can be eliminated at any time (screw 46). Moreover, even if the skilled person contemplated the use of a plastic coating on the portion 14 in contact with the fork 42 as mentioned in E3, this would not lead to the claimed apparatus (absence of feature M622).

- 3.5 Considering the combinations E2/E6 or E8/E6 also cited by the Appellants, the Board notes that document E6 deals with the problem of preventing noise in braking with a band brake (column 1, lines 42-49). In order to prevent vibration due to friction, E6 proposes to laminate in close contact with each other different elements (inner wire 16, wire guide 12, brake band 9 and lining 8) constituting this band brake. Thus, E6 addresses a completely different problem and cannot be of any help in mounting a brake device to a bicycle frame. Hence, claim 1 involves an inventive step over any of the above mentioned combinations involving the document E6.
- 3.6 The Appellants also cited document E1 to demonstrate obviousness. The passage they cited (column 3, lines 42-45) does not mention in detail, how the detaining portion of the arm 6 might be fastened to the fork of the bicycle frame and cannot lead to the claimed subject-matter in an obvious manner.
- 3.7 The Board concludes from the above considerations that the subject-matter of claim 1 as granted involves an inventive step (Article 56 EPC 1973).
- 3.8 To reach the above conclusion the Board assumed that feature M61 was known from document E8. There is no need to examine this question in detail, since this conclusion would not be altered if this assumption revealed not to be true.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

A. Vottner

G. Pricolo