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File Number: T 582/91 - 3.2.1

Application No.: 85 830 011.4

Publication No.: 0 153 280

Title of invention: Friction pad assembly for use in a disc brake for vehicles

Classification: F16D 55/02, F16D 65/02

D E C I S I O N
of 11 November 1992

Applicant:

Proprietor of the patent: Metal-Fren

Opponent: 01 Teves GmbH
02 Textar GmbH

Headword:

EPC Art. 56, 87, 88(2)(3), 123(2)(3)

Keyword: "Claimed priority allowable"
"Independent claim combined with one feature of a dependent claim -
no relationship with other features of the dependent claim -
allowable"
"Novelty (yes)"
"Inventive step (yes)"

Cited decisions: T 288/89 - 3.2.4 of 12.1.92 (not published)
T 16/87, OJ EPO 1992, 212
T 73/88, OJ EPO 1992, 557

Catchword

A feature added to an independent claim after the priority date and not constituting an essential element of the invention but a voluntary limitation of the scope of that claim does not invalidate the priority claimed (point 3.1).

One feature of a dependent claim can be combined with a preceding independent claim if there is clearly no close functional or structural relationship between the one feature of that dependent claim and its other features or between that one feature and the teaching of other dependent claims referred to in that dependent claim (point 2.2).



Case Number : T 582/91 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 11 November 1992

Appellant :
(Proprietor of the patent)

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Representative :

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Respondent :
(Opponent 01)

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Respondent :
(Opponent 02)

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Decision under appeal :

Decision of the Opposition Division of the
European Patent Office dated 2 July 1991 revoking
European patent No. 0 153 280 pursuant to
Article 97(1) EPC.

Composition of the Board :

Chairman : F. Pröls
Members : P. Alting van Geusau
J-C. de Preter

Summary of Facts and Submissions

- I. The mention of the grant of European patent No. 0 153 280 based on patent application No. 85 830 011.4 filed on 17 January 1985 and claiming priorities of 19 January 1984 (first priority document IT 5285384 U) and 19 March 1984 (second priority document IT 5314484 U) was published on 7 September 1988.
- II. In notices of opposition filed on 2 and 6 June 1989 the Respondents I and II (Opponents 01 and 02) requested revocation of the patent for the reasons of non-compliance with the provisions of Articles 100(a) (Opponents 01 and 02) and (c) (Opponent 01) EPC.

In respect of the allegations of lack of novelty and inventive step the oppositions were supported inter alia by the following documents:

- D1: DE-A-2 937 149
D2: FR-A-1 592 881
D3: FR-A-2 371 606
D4: GB-A-1 219 778 (corresponds to D2)
D5: DE-C-2 845 959, published on 20 November 1986
(corresponds to DE-A-2 845 959 published on 30 April 1980).

- III. By the decision of 2 July 1991 the Opposition Division revoked the patent.

The Opposition Division held that Claim 1 as amended did not contain subject-matter which extended beyond the content of the application as filed but that this claim lacked inventive subject-matter when having regard to the prior art disclosed in D1 and D2/D4.

- IV. An appeal was lodged against this decision on 1 August 1991, the appeal fee having been paid on 27 July 1991. The Statement of Grounds of appeal was filed on 31 October 1991.
- V. In accordance with auxiliary requests submitted by the Respondents the Board summoned the parties to oral proceedings. In its communication sent with the summons to oral proceedings the Board expressed the provisional opinion that some of the then valid claims did not comply with the requirements of Article 123(2) and (3) EPC.
- VI. With letter of 13 August 1992 the Appellant filed, as a main request, a new set of Claims 1-3 (marked "A"), an amended description pages 1 to 4 and a correspondingly amended new single sheet of drawings (Figures 1 to 5).

As an auxiliary request a new set of Claims 1 to 3 (marked "B") was submitted.

By implication the Appellant requested maintenance of the patent on the basis of the main request or, subsidiarily, on the basis of the auxiliary request.

Claim 1 of the main request reads as follows:

(on line 7 of the claim "singled" has been amended to read "single".)

"1. Friction pad assembly for vehicle disc brakes comprising a backing plate (1) having lateral shoulders (1a) adapted to slide along guides formed in the brake caliper and a central tab (2) on its upper edge, a pad (3) of friction material fixed to one of the main faces of the backing plate (1), and hold-down spring means formed from a single piece of wire having two ends and supported by

the backing plate (1) in correspondence with the tab (2), the spring means including two sprung arms (4) extending outwardly in a V-shape from an attachment part (5, 6, 7, 8) which partially surrounds the tab (2) and comprises two substantially U-shaped facing parts (5, 6, 7) the two sprung arms (4) being partly adjacent the main face (2a) of the tab (2) which is on the same side as the pad (3) of friction material, characterised in that

- the portion (8) of the attachment part which is adjacent the other main face (2b) of the tab (2) opposite the pad (3) and interconnects said U-shaped facing parts (5, 6, 7) has a non-rectilinear configuration, and

- the tab (2) has a shaped groove (10) in said other main face (2b) which houses the ends (7, 7) of the two U-shaped parts (5, 6, 7) opposite the sprung arms (4) and the non-rectilinear connecting part (8) of the spring means."

In the amended description the following corrections were carried out (Rule 88 EPC): on page 1, line 24 "DE-A-2 937 14" was amended to read DE-A-2 937 149, on page 2, line 21, "characteristic" was amended to read "characteristics" and on page 4, line 24, "this" was amended to read "its".

VII. In support of his request the Appellant essentially submitted the following arguments in writing.

As regards D1, considered by the Opposition Division to disclose a shaped groove in the main face of the tab no disclosure to this effect can be derived from this prior art.

A generic disclosure in D1 such as contained in Claim 4, which refers to a single groove, does not usually take away the novelty of any specific example falling within the term of that disclosure and thus does not disclose a single groove in the main face of the tab.

Claims 5 to 7 of D1 which have been referred to by the Opponent for support of the argument that such a single groove was envisaged, are not generic claims. Claim 5 states that the spring is housed in two grooves of the tab and Claims 6 and 7 which are dependent upon Claim 5 relate to the specific embodiments of Figure 9, according to which each of the two grooves is located in one of the side faces of the tab.

As far as D3 is concerned, this patent was considered as not relevant in the revocation decision and the Opponent has not raised any new argument concerning the relevance of this patent.

D6 is a national right of earlier date, which is not comprised in the state of the art (Article 54) for the purposes of the EPO examination for patentability.

DE-A-2 845 959 (D5) discloses a disc brake device comprising a pair of backing plates (3, 4) both adapted to slide along two guide pins (6) extending through openings (7) formed in said back plates. The pins are secured to the brake caliper. Only one (4) of the backing plates is provided with a central tab (13) on its upper edge and both backing plates are biased by a single substantially U-shaped spring (11) which engages the tab of one of the backing plates, the two guide pins and two supplementary openings (8, 8') formed in the other backplate.

The face of the tab (12) opposite the friction pad (2) is engaged by a V-shaped part (12) of the spring (11) in order to allow oscillation of the respective backing plate (4) on a horizontal axis for disengaging the pad from the brake. Therefore the friction pad assembly disclosed in this document is not only structurally different but also functionally different from the friction pad assembly as claimed in present Claim 1.

VIII. At the oral proceedings on 11 November 1992 only Respondent II was present. He requested that the appeal be dismissed and essentially argued as follows:

(a) Unacceptable broadening of the scope of the granted patent

The claims according to the main and auxiliary requests contain features of the granted dependent claims without the dependency of these granted claims having been properly taken into account and without all the features of the relevant granted dependent claims having been introduced in the combination contained in the present dependent claims.

Therefore the new claims do not comply with Article 123(3) EPC.

(b) Priority

The features of the independent claims according to the main and auxiliary requests are not completely disclosed in the claimed combination in any one of the priority documents. In particular, the feature "having lateral shoulders (1a) adapted to slide along the guides formed in the brake caliper" was disclosed in the first priority document but not in the second priority document.

Furthermore, the second priority document only discloses a V-form for the spring connecting part whereas in Claim 1 of the main and auxiliary request this feature is more generally defined as a non-rectilinear connecting part for which broader definition there is no support in the priority documents.

For these reasons the claimed priority cannot be allowed and consequently the document DE-A-3 323 362, published on 3 January 1985 (D6), becomes pre-published prior art.

Document D6 takes away the novelty of the subject-matter of the claims.

(c) Inventive step

In view of the content of the dependent Claims 4, 5 and 6 of D1 it is clear that the position of the grooves 7 shown in the embodiment of Figure 9 is not necessarily limited to the position shown in this figure but that the spring may be held in place by one or up to four grooves provided at the sides of the tab. The subject-matter of these claims thus consequently discloses also a single groove provided at the side of the tab opposite the friction material as defined in the independent Claims 1 of the main and auxiliary request.

Moreover when wanting to avoid disengagement of the spring from the tab it is immaterial whether the grooves are on the sides or on the main surfaces of the tab.

As regards the problem to be solved by the subject-matter of the claims the comments given in the description of the contested patent concerning D1 are not correct and not acceptable for reasons of Rule 34(1)(b) EPC.

In this respect D6, which comprises on page 5 a paragraph commenting upon the spring construction of D1, refers to the fact that the spring is fixed in a manner so that it is very difficult to remove it from the tab. This is in contradiction with the statements of the patent in suit.

Considering assembly of the spring to the tab it cannot be said that the spring now claimed does not have to be stretched when pushing it over the tab - in this respect there is no principal difference recognisable between the spring shown in D1 and the spring of the patent in suit.

Springs of the type under consideration are available in many forms. In the present case no evidence can be derived from the patent in suit that the claimed form leads to any particular technical effect which could support an inventive activity.

Therefore also the non-rectilinear connecting part, which is in itself known from D2/D4, cannot be considered of any inventive significance.

Attention is further drawn to the fact that brake manufacturers are now trying to impose on the brake pad suppliers high licence fees mainly based on patents relating to the hold-down springs. It is quite easy for the brake manufacturers to restrict the claims enough to get a patent granted although

the claimed springs are only slightly different in form but technically equivalent and not in any respect inventive.

Normally such patents are relatively harmless but in the case of brake pads which must be officially approved for road use no changes can be allowed to the springs without losing the approval. Therefore in the present case even a restricted patent claim is a real threat to Respondent II's business.

IX. Respondent I did not comment upon the amended claims. In his reply to the statement of grounds of appeal he essentially referred to the arguments put forward in the opposition procedure in which the opinion was held that a combination of the teachings of D2 and D1 would lead to the subject-matter of the granted patent.

He also held the view that it was not clear from the patent why the non-rectilinear connection part would imply any inventive significance.

Respondent I also requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal complies with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is admissible.
2. Amendments (main request)
 - 2.1 Claim 1 is based on granted Claim 1 and is further limited by the introduction of features of granted Claim 2 relating to the two spring arms being partly adjacent the main face of the tab which is on the same side as the pad,

and of granted Claim 4 as regards the feature that the tab has a shaped groove in said other main face which houses the ends of the two U-shaped parts opposite the spring arms and the non-rectilinear connecting part of the spring means.

Since the current independent Claim 1 is thus limited in scope when compared to the granted Claim 1 the requirements of Article 123(3) EPC are complied with.

2.2 Considering the requirements of Article 123(2) EPC the subject-matter of Claim 1 is disclosed in the application as filed in particular with respect to the embodiment of Figures 1 to 4.

Respondent II was of the opinion that when restricting the granted Claim 1 by introducing subject-matter from the dependent claims all the features of the dependent claims in question should be incorporated in the new independent claim.

(Although presented as an objection under Article 123(3) EPC this argument is in fact an objection related to Article 123(2) EPC.)

However, the EPC does not specify such a requirement. The Board considers that one feature of a dependent claim can be readily combined with a preceding independent claim as long as the skilled person recognises that there is clearly no close functional or structural relationship between the one feature of that dependent claim and its other features, or between that one feature and the teaching of other dependent claims referred to in that dependent claim. If this is the case, no objections under Article 123(2) EPC arise (see also T 288/89 of 12 January 1992, point 2.2). In the present case the feature of the granted Claim 4, essentially relating to the tab having a

shaped groove for accommodation of the two U-shaped parts and non-rectilinear connecting part of the spring is not directly related to the features of granted Claim 2, some features of the last part of which are nevertheless included in the pre-characterising part of Claim 1 under discussion.

- 2.3 Present Claim 2 corresponds in essence to the granted Claim 5 (originally filed Claim 7). Present Claim 3 corresponds to a combination of the granted Claims 2 and 3 (originally filed Claims 2, 3 and 4).
- 2.4 In view of the above conclusions no objections under Article 123(2) EPC arise.

3. Priority

- 3.1 When comparing the subject-matter of the claims and in particular of the amended Claim 1 with the subject-matter of the priority documents, it can be seen that the feature "having lateral shoulders (1a) adapted to slide along guides formed in the brake caliper" was not disclosed in the second priority document which relates to the other features of the claim.

However, in accordance with former decisions of the Boards of Appeal (see T 16/87, OJ EPO 1992, 212 and T 73/88, OJ EPO 1992, 557) a feature added to the claim after the priority date which does not constitute an essential element of the invention but a voluntary limitation of the scope of that claim does not invalidate the priority claimed, which conclusion is also adopted by this Board. In the present case the feature added to the claim relates to the guiding of the brake pads in the brake calipers which has no relevance to the constructional measures of the hold-down springs defined in the claims. Therefore, in

the Board's opinion the feature which was added does not change the character and nature of the claimed invention which therefore remains in substance the same invention as that disclosed in the second priority document.

- 3.2 As regards the argument of Respondent II that the second priority document discloses only a V-shaped connecting part and that therefore the claims should be restricted to such a configuration, the Board draws attention to Claim 1 of the second priority document, which claim refers solely to means for effecting a form coupling between a part of the spring and the metal backing plate. In the description it is emphasised that the embodiment disclosed in the drawings is a non-limiting example and the substantially V-shaped connecting part is referred to in the dependent Claims 2 and 4 to 6 thus also signifying that the V-shape is a preferred embodiment of the invention disclosed in the second priority document rather than that the V-shape is an essential feature of the invention in its broadest sense.

The feature "non-rectilinear connecting part" defined in Claim 1 under discussion can be seen as a generalisation of the V-shaped connecting part disclosed in the second priority document which generalisation is more limited than the subject-matter of Claim 1 of the second priority document and, in the present case, is considered a fully acceptable generalisation falling within the concept of the second priority document.

- 3.3 In accordance with Articles 88(3) and 89 EPC the filing date of the second priority document (19 March 1984) is therefore the effective filing date of the European patent application. Consequently D6, which has a later filing date, is not comprised in the state of the art for deciding upon novelty and inventive step of the subject-matter of the claims of the main request.

4. Prior art

- 4.1 D1, which is considered to represent the closest prior art, discloses a number of hold-down spring constructions for brake pads for disc brakes of which the embodiment shown in Figure 9 is the most relevant.

Figure 9 shows a friction pad assembly for vehicle disc brakes comprising a backing plate (1) having lateral shoulders adapted to slide along guides formed in the brake caliper and a central tab (8) on its upper edge, a pad of friction material fixed to one of the main faces of the backing plate, and hold-down spring means (4) formed from a single piece of wire having two ends and supported by the backing plate in correspondence with the tab, the spring means including two sprung arms (6) extending outwardly in a V-shape from an attachment part (5) which partially surrounds the tab and comprises two substantially U-shaped facing parts (5), the two sprung arms being partly adjacent the main face of the tab which is on the same side as the pad of friction material.

This prior art thus comprises the combination of pre-characterising features of Claim 1 of the main request.

- 4.2 D2/D4 discloses a hold-down spring for a brake pad for a disc brake which is formed of a piano wire and comprises hooked legs (9) for fitting to guide pins (8). The middle part of the spring may be formed in such a manner that a wavy head (10) is in a position offset from the centre of the backing plate towards the leading side of the pad.

This prior art shows a friction pad assembly for vehicle disc brakes comprising a backing plate (4) and a central tab (11) on its upper edge, a pad (3) of friction material fixed to one of the main faces of the backing plate (4),

and hold-down spring means (10) formed from a single piece of wire having two ends and supported by the backing plate (4) in correspondence with the tab (11), the spring means including two sprung arms extending outwardly from an attachment part which partially surrounds the tab (11), the two sprung arms being partly adjacent the main face of the tab which is on the same side as the pad (3) of friction material.

The portion of the attachment part which is adjacent the other main face of the tab opposite the pad (3) and interconnects said spring arms has a non-rectilinear configuration.

- 4.3 Document D3 discloses in an embodiment a friction pad assembly with a hold-down spring which is partly accommodated in a recess in the backing plate.

However, the backing plate does not have a central tab on its upper edge nor are the spring means of the form specified in Claim 1 of the contested patent and the recess is closed off by means of the pad of friction material.

- 4.4 D5 (DE-A-2 845 959) discloses a disc brake device comprising a pair of backing plates both adapted to slide along two guide pins (6) extending through openings (7) formed in said back plates, said pins being secured to the brake caliper. Only one (4) of the backing plates is provided with a central tab (13) on its upper edge and both backing plates are biased by a single substantially U-shaped spring (11) which engages the tab of one of the backing plates, the two guide pins and two supplementary openings (8, 8') formed in the other backplate.

5. Novelty

- 5.1 As follows from the above analysis of the prior art none of the cited documents discloses the combination of features of Claim 1 under discussion and therefore its subject-matter must be considered novel within the meaning of Article 54 EPC.

In particular, none of the cited documents discloses the combination of a shaped groove in the tab which houses the ends of the two U-shaped parts opposite the spring arms and the non-rectilinear connecting part of the spring means.

6. Inventive step

- 6.1 The hold-down spring arrangement in accordance with D1 (Fig. 9) has the drawback that fitting of the spring on the backing plate requires a previous stretching or bending of the attachment part, in order to allow its side portions to snap into the side grooves of the tab.

Taking into account the dimensions of the tab and spring wire such stretching gives the risk of deformation of the spring and thus unwanted disengagement from the backing plate caused by a consequential reduced spring action.

- 6.2 Considering the solution proposed in Claim 1 it is in the Board's opinion immediately apparent to the skilled person that the first feature of the characterising portion of Claim 1 provides more flexibility to the spring so that excessive stretching is avoided during mounting of the spring on the tab whereas the further characterising feature provides an efficient locking and stiffening of the spring in its working position so that the higher flexibility of the attachment part is eliminated when the

spring snaps into the groove of the tab. Thus the higher flexibility needed for mounting of the spring does not give a risk of easy disengagement from the backing plate after the spring is fitted.

- 6.3 The underlying problem to be solved by the patent in suit can therefore be seen in the provision of a friction pad assembly of the type specified above in which the attachment part of the spring means is not subjected to excessive stretching during assembly on the backing plate and, when assembled, is not subject in use to the risk of disengagement from the backing plate.
- 6.4 Looking for a solution to this problem the skilled person would not, in the Board's opinion, find any help in D1.

The Respondent argued that in view of the content of Claims 4 to 7 of D1 this prior art already discloses the possibility of a single groove in a main face of the tab for receiving the attachment part of the spring.

However, Claims 6 and 7 are dependent upon Claim 5 which specifies two lateral grooves as shown in the embodiment of Figure 9, and Claim 4, which specifies one recess is clearly concerned with further embodiments (see Figs. 5-8 and 10).

- 6.5 Although D2/D4 discloses a non-rectilinear spring part this part of the known spring is not for providing sufficient flexibility of the spring for facilitating mounting of the spring on the tab but merely defines the pressure of the spring arm to the guide pins 8 (see page 3, lines 16 to 21 of D4) in the assembled state.

D3 discloses neither a tab nor a non-rectilinear attachment part of the spring and cannot therefore, in

the Board's opinion, give any lead to the solution defined in Claim 1 under consideration.

The spring construction disclosed in D5 is both structurally and functionally different and for these reasons cannot be considered pertinent either.

6.6 It can further be derived from point 6.2 above that the features of Claim 1 and in particular the features of the characterising part work together in a combinatory manner to achieve easy attachment of the spring but without risking disengagement which could be expected when improving the flexibility of a spring. For this reason the allegation of Respondent II that the position of the groove or form of the spring is not significant for the achievement of the wanted technical result, cannot be accepted in the present case.

6.7 Summarising, the Board comes to the conclusion that the cited prior art documents taken alone or in any combination and considered by the skilled person cannot be considered to render the subject-matter of Claim 1 of the main request obvious, which, as a consequence, must be considered to involve an inventive step. Hence Claim 1 is allowable and so are the dependent Claims 2 and 3, which relate to preferred embodiments of the friction pad assembly of Claim 1.

7. As regards the amended description of the patent in suit Respondent II objected to the discussion of the prior art according to D1 on page 2 which, in his opinion includes disparaging statements not allowable under Rule 34(1)(b) EPC.

Considering the comments in the amended description the Board is of the opinion that the hold-down spring,

according to the embodiment of D1 of Figure 9, in view of its configuration, is clearly difficult to push into its position on the tab because this requires a substantial widening of the U-formed part of the spring to move them over the wide part of the tab adjacent the grooves by bending or stretching the straight connecting part. Therefore, there is indeed a risk of deformation which is detrimental to the holding of the spring to the tab.

In this respect the comments in D6 (page 1) with respect to D1 are also not in disagreement with those in the new description as was submitted by Respondent II. Of course, when taking the necessary caution so that no deformation occurs when mounting the spring, a good hold may be achieved, however such caution cannot be guaranteed and therefore the solution defined in Claim 1 of the amended patent which substantially avoids excessive deformation during mounting gives a lower risk of deformation and thus also of disengagement from the backing plate.

Hence the discussion of the prior art disclosed in D1 in the description of the amended patent is considered to be an acceptable comparison with the subject-matter of the amended patent rather than a disparaging statement.

8. Since the main request is allowable there is no need to consider the auxiliary request.

Order

For these reasons, it is decided that:

1. The impugned decision is set aside.
2. The case is remitted to the first instance to maintain the patent with the documents in accordance with the main request (see point VI of this decision).

The Registrar:



S. Fabiani

The Chairman:



F. Pröls