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**D E C I S I O N**  
**of 2 February 2006**

**Case Number:** T 1124/03 - 3.4.02

**Application Number:** 94200139.7

**Publication Number:** 0611948

**IPC:** G01B 11/275

**Language of the proceedings:** EN

**Title of invention:**

System for measuring the wheel base of an automobile frame and the transverse and longitudinal offsets of its steered wheels

**Patentee:**

CORGHI S.p.A.

**Opponent:**

Snap-On Equipment GmbH

**Headword:**

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**Relevant legal provisions:**

EPC Art. 123

**Keyword:**

"Amendment admissible (no) "

**Decisions cited:**

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**Catchword:**

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Case Number: T 1124/03 - 3.4.02

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.02  
of 2 February 2006

**Appellant:** CORGHI S.p.A.  
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**Respondent:** Snap-On Equipment GmbH  
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**Representative:** Nöth, Heinz  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 1 July 2003  
revoking European patent No. 0611948 pursuant  
to Article 102(1) EPC.

**Composition of the Board:**

**Chairman:** A. Klein  
**Members:** M. Rayner  
M. Vogel

## Summary of Facts and Submissions

- I. The present appeal is against the decision of the opposition division revoking European patent number 611 948 (application number 94 200 139.7). The patent concerns a system for measuring the wheel base of an automobile system. The present appeal is the second appeal by the patent proprietor (=appellant).
- II. In the decision of the opposition division appealed in the first appeal, appeal case number T 0502/99, the claim upon which the opposition decision was based included a feature "the optical angle measurement means [...] receive the light beams emitted by the two LEDs [...] in a plane distant from the apex of said two beams". The opposition division revoked the patent on the ground that the subject matter of the amended claim 1 did not fulfil the requirements of Article 84 EPC, as it was neither clear nor supported by the description. The single claim of the request furnished by the appellant in the first appeal proceedings no longer included the above feature and thus overcame the ground for revocation. The board therefore decided that the decision under appeal had to be set aside. As the claim presented to the board of appeal had been substantially amended in a way calling for further examination in relation to issues involving both formal and substantive requirements of the EPC, the board deemed it appropriate to remit the case to the department of first instance for further prosecution, without further comment as to the merits of the case of the parties.

III. According to the decision of the opposition division, which is the subject of the second and present appeal, the independent claims of all the requests submitted gave rise to objection under Articles 84, 123(2) or 123(3) EPC, for a number of reasons, amongst which are included the following.

- (a) Where means arranged to measure an angle ( $\alpha$ ) is omitted, this amounts to a broadening compared to claim 1 as granted leading to an infringement of Article 123(3). The amended subject matter claimed includes a line of sensors arranged to measure the distance between the points of incidence of two light lines and a microprocessor arranged to calculate the wheel base from the distance. This is possible, using for example a look up table, without measuring the angle ( $\alpha$ ).
- (b) The angle  $\alpha$  is not defined in the patent. Figure 5 shows an angle  $\alpha$ , the apex of which might be situated on a line through the front wheel axis, this apex may be on the line of the optical sensors 109 or it may be on the cylinder axis of the lens 108. Where the angle is defined as subtended by the two planes comprising the lens vertical axis and respectively the LEDs, the definition cannot be deduced from the documents as filed so that the definition infringes Article 123(2) EPC.

IV. In its appeal, the patent proprietor requested that the decision under appeal be set aside and that the patent be maintained on the basis of a claim according to its main request, where no reference to the angle ( $\alpha$ ) is

made. In support of its position, the patent proprietor submitted that omission of means arranged to measure the angle ( $\alpha$ ) is not an infringement of Article 123(3) because the relationship between the measured distance and angle is given by trigonometric formulae so that one is implicit in the other.

- V. In its submissions, the respondent (=opponent) requested that the appeal be dismissed. In support of its position, the opponent agreed with the reasons for revocation.
- VI. Consequent to auxiliary requests of both parties, the board appointed oral proceedings. In a communication attached to the summons, the board doubted whether the case of the appellant was strong enough to call all the reasoning of the opposition division into question, referring, for example, to use of look-up tables as mentioned by the opposition division. The board informed the parties that it was intended, if possible, to decide the case at the end of the oral proceedings and that if it were intended to file further submissions, this action should be prompt. The board underlined that even though the present appeal was already the second, no form of wording had yet been settled for substantive decision.
- VII. During the oral proceedings, the appellant argued that it is not necessary explicitly to measure the angle  $\alpha$  as this is implicit in the calculation and cannot be avoided because trigonometric formulae concerned take it into account. Measuring ( $\alpha$ ) and measuring the distance between the activated sensors thus amounts to

the same thing, there is no broadening because a look up table must be created using ( $\alpha$ ).

Towards the end of the oral proceedings, the appellant filed an amended claim including a reference to the angle ( $\alpha$ ) subtended between the light emitting diodes and the lens. The appellant explained that a lens receives two images of two LEDs and that there is an angle between the images of one LED and the other. The vertex of this angle is the point at which the images go through the axis of the lens. In the context of a distance of four metres or so, two and a half centimetres or less distance between the lens and the sensors do not cause the angle to be modified.

VIII. The respondent considered there are a number of objections which relate both to clarity of the amendments made and to their support in the documents as filed. It is not clear what angle ( $\alpha$ ) is determined and in view of the serious defects in the claim presented, the decision of the opposition division should be upheld.

IX. Claim 1 according to the request of the appellant is worded as follows. Compared with the claim filed with the appeal, underlined portions of the claim shows insertions made during the oral proceedings and the portions in brackets in the fourth and last line deletions.

"1. A system for measuring the wheel base of an automobile frame and the transverse and longitudinal offsets of its steered wheels, comprising a first and a second device respectively attacheded(able) by known

means to the front and back automobile wheels on the same side of the vehicle characterised in that said first device comprises two light emitting diodes (LEDs) located a known distance apart measured in the horizontal plane; and said second device comprises a cylindrical lens of vertical axis able to concentrate the light beams emitted by said diodes into two light lines parallel to the lens axis, a line of optical sensors arranged perpendicular to said lens axis to measure the distance between the points of incidence of said light lines with said line of sensors, a microprocessor arranged to calculate from said distance the angle ( $\alpha$ ) subtended between the light emitting diodes and the lens, and to calculate the wheel base (p) between the front and back automobile wheels on the same side of the vehicle, starting from (said measured distance) said angle ( $\alpha$ )."

- X. At the end of the oral proceedings the board gave its decision.

### **Reasons for the Decision**

1. The appeal is admissible.
2. Expressing the role of the angle ( $\alpha$ ) in an admissible amendment has been a thread underlying the opposition and appeal proceedings. For example, one possibility was considered in the first opposition proceedings and then withdrawn in the first appeal proceedings. The

various approaches made before the opposition division in the second opposition proceedings were not successful before that instance and as will become apparent, neither of the two approaches taken by the appellant in the second appeal proceedings was able to convince the board. Although strictly speaking the request as presented by the appellant means that only the amended claim filed during the oral proceedings is at issue, in view of the time and energy expended discussing the request filed with the appeal, the board considers it appropriate also to explain the reasoning behind its position on that.

3. In the present case, the board considers it helpful to take an overview of what the appellant was trying to do before considering detailed wording actually submitted. The submissions of the patent proprietor lead the board to understand that the dimensions of the second device, here the board can imagine for example separation between the cylindrical lens axis and line of sensors, are such that the angle subtended at the axis of the cylindrical lens by incoming light rays emitted from respective remote LEDs is determined responsive to the value of the measured distance between the optical sensors on the other side of the lens as activated by the respective rays. Knowing the angle, the device dimensions and the separation of the remote LEDs, and providing the first and second devices are positioned at the wheel axes, the wheel base can be calculated.
4. Claim 1 as granted required that the second device comprises optical angle measurement means arranged to measure the angle ( $\alpha$ ) subtended between the light rays emitted by the light emitting diodes. Therefore on



reading the claim submitted with the appeal, the board's initial reaction is that removing reference to the angle ( $\alpha$ ) contravenes Article 123(3) EPC because the claim has been amended in such a way as to extend the protection conferred. As pointed out by the opposition division, a look up table could be used according to the amended claim, in which case, say, previously measured distances are correlated directly to the sensor separation distance, thus no, as such identifiable, angle measurement is made or used in the calculation. The approach of the appellant that the angle must be measured because its trigonometry implicitly fits the wheelbase measured is not therefore persuasive in relation to means other than measuring the angle, like a look up table or indeed other software, being introduced into the claim consequent to the amendment made. The board observes that nothing in the remainder of the patent specification gives any reason to doubt its initial reaction. Thus, dependent claim 2 recites that a microprocessor is arranged to calculate the angle ( $\alpha$ ). In the description there is a reference to determining the wheel base using elementary trigonometric calculations by measuring the angle between the light beams. In lines 38 to 43 of column 3, it is explained that the distance between light originating points is a known function of the angle ( $\alpha$ ) which can be found by a microprocessor. The board therefore has no doubt that a claim, like that filed with the appeal, not referring to the angle ( $\alpha$ ) contravenes Article 123(3) EPC.

5. In the claim submitted during the oral proceedings, the appellant introduced the definition "angle ( $\alpha$ ) subtended between the light emitting diodes and the lens". One

can, however, only say, with respect to the documents as filed, that an angle ( $\alpha$ ) is subtended between the light emitting diodes and somewhere in one of the devices, looking at the rather schematic Figure 5, one might also think it is at the wheel axis. However, the position at which the angle ( $\alpha$ ) is subtended is, as pointed out by the opposition division, in relation to the second device nowhere more precisely defined in the patent or in the documents as filed. In particular, it is not defined at the "inter alia at least one cylindrical lens" as mentioned in lines 36 and 37 of column 3, nor is an explanation like that advanced in section 3 above present. Therefore, while the board might consider the explanation of the function of the device given by the appellant during the oral proceedings to be reasonable, the problem is that it is not actually disclosed. The position could, as argued by the opposition division be, for example, at the line of the optical sensors, the more so as the components in the device in, say, Figure 7 are not all identified so that the exact optical function in relation to what exact angle is really measured cannot be directly and unambiguously deduced with the knowledge of the skilled person. In addition, the position of the components in relation to the wheel axis cannot be deduced with certainty. The argument that a dimension of two and a half centimetres in four metres does not modify the angle, i.e. the board supposes the distance in the optical train compared with the wheelbase, may have a bearing on the accuracy of the device in use, but it is not accuracy of the device which is at issue here, but the question of whether subject matter has been added. In view of the lack of original disclosure, the answer to this question is in the positive and the amendment

made therefore contains subject matter which extends beyond the content of the documents as filed. The claim filed during the oral proceedings therefore contains an amendment which does not satisfy Article 123(2) EPC.

**Order**

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

The appeal is dismissed.

The Registrar

The Chairman

M. Kiehl

A. G. Klein