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Bezeichnung der Erfindung: Kit of parts for a coaxial connector assembly
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement : H01R 17/12

ENTSCHEIDUNG / DECISION
vom / of / du 9 December 1987

Anmelder / Applicant / Demandeur : AMP Incorporated

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence : Coaxial connector/AMP

EPO / EPC / CBE Article 123(2)

Kennwort / Keyword / Mot clé : Unallowable amendment of claim (deletion of essential feature)

Leitsatz / Headnote / Sommaire

I. For the purpose of Article 123(2) EPC, "the content of the application as filed" does not include any priority documents, even if they were filed on the same day as the European patent application.

II. It is not permissible to delete from an independent claim a feature which the application as originally filed consistently presents as being an essential feature of the invention, since this would constitute a violation of Article 123(2) EPC.

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Case Number : T 260/85

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 9 December 1987

Appellant : AMP Incorporated
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Decision under appeal : Decision of Examining Division 053
of the European Patent Office
dated 13 June 1985 refusing European
patent application No. 81 305 340.2
pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : P.K.J. van den Berg

Members : W.J.L. Wheeler

G.D. Paterson

Summary of Facts and Submissions

- I. European patent application No. 81 305 340.2, publication No. 0 052 980, filed on 11 November 1981, claiming priority from two previous applications, US 210693 and US 210694, both of 26 November 1980, was refused by the decision of the Examining Division 053 of the European Patent Office dated 13 June 1985. That decision was based on Claims 1 to 4 filed on 23 June 1984.
- II. The reason given for the refusal was that the subject-matter of Claims 1 and 2 extended beyond the content of the application as filed, contravening Article 123(2) EPC.
- III. The Appellant lodged an appeal against this decision on 7 August 1985, together with new Claims 1 to 3 in replacement of the claims rejected by the Examining Division. The appeal fee was paid on the same day. The Statement of Grounds was filed on 8 October 1985.
- IV. Claim 1 reads as follows:

"A coaxial electrical connector or kit of parts therefor comprising an outer conductive shell (6) adapted for connection at one end to an outer conductor (16) of a coaxial cable and at an opposite end adapted for connection to a complementary coaxial connector (56), a conductive centre-contact (8) adapted for connection to a centre conductor of the cable and engageable with a centre contact of the complementary connector (56), a hollow cylindrical spring element (2) inserted within and contacting the shell (6), and a dielectric between the centre contact (8) and the outer shell (6), characterised in that the spring element (2) comprises spring fingers (22) having portions doubled back on themselves and engaged in circumferentially distributed manner against the inner

periphery of the shell (6) at the said opposite end, the outer shell (6) including a radially inwardly extending lip (66) overlying at least partially the doubled back portions of the spring fingers (22)."

- V. In the Statement of Grounds the Appellant argued that the subject-matter of Claim 1 (which corresponds exactly to Claim 1 rejected by the Examining Division) was based on the application as originally filed and therefore did not contravene Article 123(2) EPC. The essence of the argument was that in the application as filed the introductory part of the description included three different statements of invention, the first of which, page 1, lines 8 to 15, together with the following description, provided a proper basis for the present Claim 1. If the present Claim 1 had been filed originally, it would not have lacked basis. The third statement of invention, page 2, line 12 to page 3, line 3, was more specific than the originally filed Claim 1 and should, therefore, not be regarded as a broad statement of invention.

The present Claim 1 had not added any technical disclosure. It should therefore be allowable, following T 201/83 (OJ 10/84, page 481), in particular paragraphs 2 and 3 of the reasons. The effect of the amendment was only to extend the scope of protection, which was permissible before grant under Article 123(2) EPC, in conformity with long established English case law (1973 RPC 23, United Carr).

It was well known that coaxial connectors could have dielectric plugs with or without air spaces. It was also evident to a skilled reader that the features "spring fingers" and "air space dielectric" could be provided separately and independently in a coaxial connector, and that all the advantages of the features recited in the characterising parts of both the originally filed Claim 1

and the present Claim 1 could be obtained without an air space dielectric. The omission of this feature from the present Claim 1 therefore clarified an obscurity, which, following T 172/83 (OJ 12/83, page 493), was permissible. Furthermore, the originally filed Claim 1 was inconsistent with the description at pages 1 to 3 and the second paragraph on page 8, and the present Claim 1 resolved this inconsistency in a straightforward manner.

The "application as filed" for the purposes of Article 123(2) included the two US priority documents, which related to the air gap dielectric and the spring fingers respectively, thereby demonstrating that these two features had to be considered separately. The claims of US 210694 were not limited to an air space dielectric.

The present Claim 1 combined a fair protection for the Appellant with a reasonable degree of certainty for third parties in compliance with the protocol to Article 69 EPC.

- VI. After some correspondence between the Rapporteur and the Appellant, in which the Appellant referred to T 6/81 (OJ 5/82, page 183) and T 52/82 (OJ 10/83, page 416), the Appellant filed an affidavit in which an expert witness testified, in effect, that the spring fingers and the form of the dielectric plug were independent of each other. He found the reference in the originally filed Claim 1 to the air space confusing, as it had no relevance to the features recited in the characterising part of the claim. It would have been obvious to him that the air space dielectric could have been omitted from the structure defined by the originally filed Claim 1. This omission was the only way he could think of to remove the confusion.

VII. The Appellant requests:

- (a) grant of a patent on the basis of the following documents:

Claims 1 to 3 filed with the Notice of Appeal, received 7 August 1985;

Description, pages 1 and 4 to 8 as originally filed, and pages 2, 2a and 3, received 15 December 1984;

Drawings, sheets 1/4 to 4/4 as originally filed.

- (b) reimbursement of the appeal fee.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.
2. The main question to be decided in this appeal is whether or not the present application has been amended in such a way that it contains subject-matter which extends beyond the content of the application as filed, which would be contrary to Article 123(2) EPC.
3. It is, however, in view of the Appellant's submissions on the point, first of all necessary to consider the question of whether or not the content of the two previous US applications filed in support of the declaration of priority belong to "the content of the application as filed", for the purpose of Article 123(2) EPC.

"Application for European patents" is the subject of Part III of the EPC. Part III is divided into two chapters.

Chapter I, containing Articles 75 to 86, concerns the filing and requirements of a European patent application.

In particular, the contents of a European patent application are set out in sub-paragraphs (a) to (e) of Article 78(1) EPC. It is clear from Article 78(1) EPC in conjunction with Articles 82 to 85 EPC that the substantive contents of a European patent application are the description and claims together with any drawings.

As a separate matter, Chapter II of Part III of the EPC, containing Articles 87 to 89, concerns the priority of a European patent application. From Article 88 and Rule 38 EPC it is clear that the filing of a copy of a previous application is required only for the purpose of claiming priority.

In the Board's view, it clearly follows that for the purpose of Article 123(2) EPC, "the content of the application as filed" does not include any priority documents, even if they were filed on the same day as the European patent application.

The Board is aware of the fact that in several decisions of the Legal Board of Appeal the contents of priority documents were taken into consideration for the purpose of establishing whether amendments offered as corrections of errors under Rule 88 EPC met the requirement that it must be immediately evident that nothing else would have been intended than what is offered as the correction, see for example J 19/80 (OJ 3/81, page 65) and J 4/85 (OJ 7/86, page 205). However, it is important to note that in these decisions, the priority documents were considered as evidence, not as part of "the content of the application as filed."

4. The content of the application as filed and published in EP-A-0 052 980 will now be considered.

Claim 1 as originally filed reads:

"A kit of parts for a coaxial connector assembly in which a conductive outer shell (6) is adapted for connection at one end to an outer conductor (16) of an electrical coaxial cable and at a second end mateably to another complementary coaxial connector assembly (56), a conductive center contact (8) is adapted for connection to a center conductor (12) of the cable, a hollow conductive spring element (2) is adapted for insertion within and contacting the outer shell (6), and a unitary dielectric plug (4) is adapted for press fit assembly with the spring element (6) and contains an air space dielectric (33), and the center contact (8) is adapted for press fit with the dielectric plug (4), characterized in that, the spring element (2) includes spring fingers (22) having portions doubled back on themselves and adapted for distribution against the inner periphery of the shell (6) at the second end, and the outer shell includes a radially inward lip (66) overlying at least partially the doubled back portions of the spring fingers (22)."

Claims 2 to 5 as originally filed are dependent on the above cited Claim 1.

The description as originally filed opens with a reference to a prior art coaxial connector assembly known from US-A-3 745 514, followed by a statement at page 1, second paragraph, that:

"The present invention utilizes a tubular, unitary spring element carrying spring fingers that are reversely bent into U-shapes. The U-shapes flatten in compression in a

space concentric and between the first and the second coaxial connector assemblies. The spring element is inherently self-limiting in deformation, providing an assembly functioning with fewer parts than a previous assembly."

This will be referred to as statement (a).

The description as originally filed continues with a reference to another prior art coaxial connector assembly known from US-A-3 678 447, pointing out that its dielectric plug is solid and provides only limited resiliency, and that an air space surrounds the plug to compensate for impedance mismatch. The first paragraph on page 2 of the application as filed reads:

"In the present invention, a dielectric plug for a coaxial connector includes concentric cylinders or sleeves, that combine with an air space or gap concentrically between the sleeves to provide a composite dielectric compensating for impedance mismatch. The sleeves are made thin for resilient flexure into the air gap to facilitate press fit assembly of the outer sleeve into a connector shell and press fit assembly of a center contact into the inner sleeve of the plug. The resilient characteristics of the sleeves permit assembly without damage of the assembled parts."

This will be referred to as statement (b).

This is followed in the application as originally filed by a statement in the form of one continuous sentence, beginning on page 2, line 12, and ending on page 3, line 3.

This statement, which will be referred to as statement (c), reads as follows:

"A coaxial electrical connector assembly of the present invention includes, a solid dielectric plug with a forward portion and inner and outer concentric sleeves joined integrally with the forward portion, a passageway extending axially through the forward portion and through the inner sleeve and adapted for receiving the center contact, and a dielectric air space extending between the sleeves, the sleeves adapted for resilient flexure and deflection into the space upon force fit assembly, respectively, with a conductive outer shell and a conductive center contact of the coaxial electrical connector assembly, a hollow spring element within the shell, the dielectric plug force fit within the spring element, a passageway extending axially through the plug, the conductive center contact force fit within the passageway and connected to a center conductor of the cable, and resilient spring fingers on the spring element, of the fingers being doubled back on themselves to provide inner and outer spring leaves distributed against the inner periphery of the shell at the mating end and adapted for resilient compression against the inner periphery of the shell upon surrounding and resiliently engaging a complementary portion of another coaxial connector assembly mateably received in the shell, and the shell includes a radially inward lip overlying the spring fingers."

It can be seen that the assembly defined by statement (c) comprises the same individual components (namely a conductive outer shell including a radially inward lip, a conductive center contact, a hollow conductive spring element including spring fingers having doubled back portions, and a dielectric plug containing an air space) as are specified in Claim 1 as originally filed.

Furthermore, although the definitions of the essential features of the dielectric plug are not conterminous in the claim and statement (c), they are in agreement to the extent that the plug is of unitary construction, is adapted for press fit assembly with the spring element and center contact, and contains an air space dielectric.

The application as originally filed continues with a list of eight objects of the present invention, which read as follows:

"Accordingly an object of the present invention is to provide a kit of parts for a coaxial connector assembly of relatively few component parts.

An object of the present invention is to provide a kit of parts for a coaxial connector assembly which comprises economically produced, stamped and formed contacts and drawn body members.

A further object of the present invention is to provide a coaxial connector assembly kit of parts which provides for convenient assembly, and which comprises improved spring retention means and further means for protecting said spring retention means.

A further object of the present invention is to provide a coaxial connector assembly kit of parts which is economically and readily produced, and readily assembled.

A further object of the present invention is to provide a coaxial connector assembly kit of parts including a dielectric plug having means to facilitate resilient press fit of the plug with other component parts of a coaxial connector assembly.

It is a further object of the present invention to provide a coaxial connector assembly kit of parts including a plug of composite dielectric achieving impedance compensation for impedance mismatch caused by the cable termination.

A further object of the present invention is to provide a dielectric plug with improved means to facilitate resilient retention of a contact body therein.

Another object of the present invention is to provide a dielectric plug facilitating press fit into an outer connector shell, and press fit of a contact member into the dielectric plug, and means compensating for impedance mismatch caused by cable termination with the shell and contact member."

It can be seen that all eight objects are achieved by a kit according to Claim 1 as originally filed and by a coaxial connector assembly as defined by statement (c).

Two coaxial connector assemblies are described with reference to figures 1 to 5 and figure 6, respectively. From page 4, line 28 to page 5, line 1, and page 5, lines 18 to 23, it can be seen that the assembly described with reference to figures 1 to 5 includes a dielectric body (4), comprising a forward cylindrical sleeve (30) joining rearwardly disposed inner and outer coaxial cylindrical sleeves (34) and (32), radially spaced apart by an air space dielectric (33). As can be seen from page 6, lines 11 to 13, and page 7, lines 3 to 7, the air space (33) allows the sleeves (32, 34) to be made thin and thereby possess resilient spring characteristics, facilitating the press fit assembly of the spring element (2), dielectric body (4) and center contact (8). As can be seen from page 7, lines 7 to 11, the air space also compensates for impedance mismatch.

As can be seen from page 4, lines 24 to 26, figure 6 illustrates a pair of coaxial connector assemblies "without the features of the invention." According to page 8, lines 10 to 12, the assembly illustrated in figure 6 is similar

to that previously disclosed (with reference to figures 1 to 5), but with no lip (66). Clearly, it is because of the lack of lip (66) that this assembly is described on page 4 as being "without the features of the invention," since statement (c) and Claim 1 as originally filed require the presence of a radially inward lip overlying (at least partially) the spring fingers. There is no reason to think that the air space (partly shown at the left hand side of figure 6) is not a feature of the invention.

It can be seen that both the described assemblies include a dielectric body containing an air space dielectric and that the air space plays a role in the achievement of all but the first two of the eight stated objects.

5. The Appellant contends that each of the three statements (a), (b) and (c) should be interpreted as a statement of invention relating to a different aspect of the invention.

However, in the opinion of the Board, the application as filed consistently presents a single invention relating to a coaxial electrical connector assembly, or a kit of parts therefor, comprising the component parts specified in Claim 1 as originally filed and statement (c), in which the dielectric plug differs from the one known from US-A-3 678 447 in the manner defined in statement (b) in order to compensate for impedance mismatch and facilitate press fit assembly, and which utilizes a spring element differing from the one known from US-A- 3 745 514 in the manner defined in statement (a) in order to reduce the number of parts in the assembly.

The phrases: "The present invention utilizes..." and "In the present invention,..." employed at the start of statements (a) and (b) are not equivalent to "A coaxial connector assembly of the present invention includes,..." employed in statement (c). It is unambiguously clear that statements (a) and (b) refer to individual component parts of the invention and not to the invention as a whole. In particular, if statement (a) is read in conjunction with the following description, as suggested by the Appellant, it is quite clear that the absence of a mention of the air space dielectric in statement (a), which is concerned only with the spring element, does not imply a coaxial connector without an air space dielectric.

The fact that the third statement (c) is not wholly conterminous with the originally filed Claim 1, does not imply that the air space dielectric, which is mentioned in statement (c) and in Claim 1 as originally filed, could be omitted. Nor does it imply that statement (a) should be interpreted as a statement of invention instead of statement (c). In fact, of the three statements (a), (b) and (c), statement (c) is the one which comes closest to Claim 1 as originally filed.

6. The Appellant's argument that if the present Claim 1 had been filed originally, it would not have lacked support in the application as originally filed, is in itself correct, but the fact is that it was not filed then. Of course, it goes without saying that if the present Claim 1 had been there in the originally filed application, it would not infringe Article 123(2) to leave it there. However, the claim would have been inconsistent with the description as originally filed. The only "support" for such a claim would have been in the claim itself, and it would have been necessary to amend the description to support it, as may be deduced from Article 84 EPC.

The United Carr case (1973 RPC 23), referred to by the Appellant, was decided under national statutory provisions which differed materially from those of Article 123(2) EPC, and is therefore not relevant to the present case.

7. While it is true that under Article 123(2) EPC it is permissible to extend the scope of protection before grant, this is only possible within the content of the application as filed. In the present case, the application as originally filed contains no disclosure, express or implied, that the air space could be omitted. On the contrary, the reasons for its presence, namely to provide compensation for impedance mismatch and to permit assembly without damage of the assembled parts, are given repeatedly, see statement (b), page 6, lines 9 to 13, and page 7, lines 1 to 11. Thus the situation in the present case is not analogous to the situation in T 172/83 (OJ 12/83, page 493) where the omitted feature was one whose presence in the claim cast doubt on the whole purpose of the circuitry (see item 2 of the Board's reasons).
8. The Board agrees with the Appellant that it was well known that coaxial connectors could have dielectric plugs with or without an air space. However, this does not alter the fact that the application as filed relates only to coaxial connectors with an air space. Similarly, the fact that the features "spring fingers" and "air space dielectric" could have been provided separately and independently does not alter the fact that these features are only presented in combination in the application as filed, and that the air space is consistently described as being provided to compensate for impedance mismatch and facilitate press fit assembly of the components. Thus, in the Board's opinion, it would not have been possible to recognise the possibility of omitting the air space directly from the

application as originally filed. The conditions stated in paragraph 3 of the reasons for the decision T 201/83 (OJ 10/84 page 481) are, therefore, not met in the present case.

9. The fact that the present Claim 1 might combine a fair degree of protection for the Appellant with a reasonable degree of certainty for third parties does not exempt it from the provisions of Article 123(2) EPC.
10. The Appellant contends that the deletion of the air space from Claim 1 is permissible as it comes within the realm of clarifying an obscurity or removing an inconsistency. In the opinion of the Board, however, removal of the inconsistencies between statement (c) and the originally filed Claim 1 would not necessitate the deletion of the air space dielectric.

Regarding the testimony of the expert witness, it may well be that upon reading the originally filed Claim 1 for the first time, a person skilled in the art might wonder why the air space dielectric were there. In this case he would naturally turn to the description for a possible explanation. There, he is told the air space serves a twofold purpose: compensation for impedance mismatch and facilitation of assembly. There is nothing in the application as filed to suggest that the air space could be omitted. The fact that this particular expert could see that the air space was not essential for the function of the spring fingers does not mean that the application as filed discloses or implies that it could be omitted. It merely means that the expert had sufficient imagination to conceive his own modifications of the disclosure, beyond the content of the application as originally filed.

11. The Appellant referred to T 6/81 (OJ 5/82, page 183) and T 52/82 (OJ 10/83, page 416), arguing, in effect, that the omission of the air space from the precharacterising part of Claim 1 was allowable as this feature did not appear in the prior art on which the first part of the claim was based.

In T 6/81, the feature removed from the first part of the claim was transferred to the characterising part of the claim (see paragraph 2.4 of the reasons). This case is therefore not analogous to the present case in which the air space has been deleted from Claim 1.

In T 52/82, there was no indication in the application as originally filed that it was of importance for the solution of the stated problem to replace the pivotable arm of the prior art apparatus by a rotatable disc (see paragraph 4(d) of the reasons). In the present case, however, the air space is of importance for compensating impedance mismatch and facilitating press fit assembly, see items 7, 8 and 10 above, and it plays a role in the achievement of six of the stated objects, see item 4 above.

12. Having taken all the Appellant's arguments into consideration, the Board is of the opinion that it is not permissible to delete from an independent claim a feature which the application as originally filed consistently presents as being an essential feature of the invention. Such an amendment would extend the subject-matter of the application beyond its content as filed, in contravention of Article 123(2) EPC.

The Board consequently concludes that the present Claim 1 cannot be accepted. There are no auxiliary requests regarding alternative claims. The appeal must therefore be dismissed.

13. As a consequence, the request for reimbursement of the appeal fee must also be denied, since, according to Rule 67 EPC, reimbursement is dependent on the allowance of the appeal.

Order

For these reasons, it is decided that:

1. the appeal is dismissed.
2. the request for reimbursement of the appeal fee is refused.

The Registrar:

The Chairman:

F. Klein

P.K.J. van den Berg