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Bezeichnung der Erfindung: A compound dielectric Multi-Conductor Transmission Line and Devices constructed therefrom.
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement : H01P 3/08

ENTSCHEIDUNG / DECISION

vom / of / du 10 April 1989

Anmelder / Applicant / Demandeur : Martin Marietta Corporation

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence : Transmission line/Martin Marietta

EPÜ / EPC / CBE PCT Rules 13 and 40(1)

Schlagwort / Keyword / Mot clé : "Single general inventive concept (no)"

Leitsatz / Headnote / Sommaire

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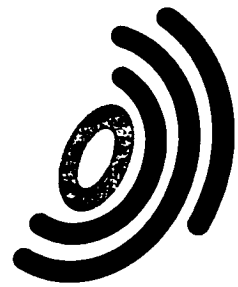

Case Number : W 2/88 - 3.5.1
International Application No PCT/US 85/02423

D E C I S I O N
of the Technical Board of Appeal
of 10 April 1989

Appellant : MARTIN MARIETTA CORPORATION
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U.S.A.

Representative : J.B. EISEL
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Subject of this decision: Protest according to Rule 40.2(c) of the Patent Cooperation Treaty made by the applicants against the invitation (payment of additional fee) of the European Patent Office (branch at The Hague) dated 10 April 1986

Composition of the Board :

Chairman : P.K.J. van den Berg
Members : J.A.H. van Voorthuizen
E. Persson

Summary of Facts and Submissions

I. On 12.12.1985 the applicant filed the international application PCT/US85/02423 at the US Patent Office, claiming priorities of 19.12.84 and 27.11.85 based on six previous US national applications, five of which are dated 27.11.85, being continuations-in-part of the application dated 19.12.84.

II. On 10.04.1986 the EPO, acting as the competent ISA, addressed to the applicant an invitation to pay seven additional search fees as it considered that the requirement of unity of invention was not satisfied. Eight groups of claims were distinguished:

- Claims 1-12: Compound transmission line and filter
- Claims 13-18: Leaky wave guide antenna
- Claims 19-24: Tapered rod antenna
- Claims 25-30: Isolator
- Claims 31-36: Circulator
- Claims 37-43: Light-sensitive switch
- Claims 44-46: Coupling to a waveguide
- Claims 47-49: Coupling to an external device.

III. On 23.05.1986 the applicant paid the additional fees under protest. The protest was received at the EPO on 23.05.1986. Two further letters from the applicant were received on 03.09.86 and 20.11.87, after the expiry of the time limit for filing the protest. In these letters the applicant requested that no decision should be taken by the Board before it had received the search report and he drew attention to two previous decisions of Boards of Appeal in PCT protest cases.

IV. In his protest the applicant essentially argued as follows:

The dependent claims in this application comprise precisely the type of dependent claims permitted under Rule 13.4 PCT being "specific forms of the invention claimed in an independent claim."

In the Invitation, there is no reason given why the application is alleged not to comply with the requirement of unity of invention. Instead, the various alleged separate inventions are merely listed, with no explanation of why they are not considered as a permitted "specific form of the invention claimed in an independent claim". This appears to be a completely arbitrary assignment of separate invention status to what are no more than the variations in an underlying invention permitted in dependent claims.

This application involves a single invention and a single inventive concept, as embodied in all of the claims, comprising a specific type of transmission line structure. There is only one independent claim, Claim 1, and therefore, this basic invention is necessarily included in all of the dependent claims. A variety of devices may be made based on the invention, but they all use the same basic inventive structure as set forth in Claims 1 and 2, upon which all the other claims are based. Therefore, there is clearly unity of invention. In its Invitation, the International Searching Authority appears to have arbitrarily decided that every variation on this basic invention would require a separate search. Applicant submits that this is not the case, since the inventive concept in each claim is the same.

Reasons for the Decision

1. The protest complies with Rule 40.2(c) PCT and is therefore admissible.

2. The applicant has based his argument that there is only one independent claim, defining a basic transmission line structure, on which claim all other claims depend so that they necessarily include the same basic invention and that therefore there is unity of invention, on Rule 13.4 PCT.

3. Rule 13(4) PCT, however, states that **subject to Rule 13(1)** it shall be permitted to include ... dependent claims, ..., even where the features of any dependent claim could be considered as constituting in themselves an invention. Rule 13(1) PCT requires that the international application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept. It follows that Rule 13(4) PCT must be understood as referring to inventions which comply with this latter requirement. Clearly then the Appellant's argument could only hold good under the condition that Rule 13(1) PCT is satisfied.

4. In the present case the application relates on the one hand generally to the basic structure of a transmission line having reduced conductor and radiation losses, as broadly set out in Claims 1 and 2. On the other hand, the application relates to a number of further devices for specific applications (antenna, isolator etc.) incorporating the features of said transmission line structure but at the same time comprising features specifically related to each such application.

5. More in particular the first claims of the second to eighth groups of claims distinguished in the invitation comprise

the following features in addition to the transmission line features proper:

Claim 13 specifies a particular dimension of one of the dielectric layers in a region at one terminal end and the inclusion of means for coupling to or from free space, whereby an antenna structure is provided.

Claim 19 specifies a particular permittivity of one of the dielectric layers in a region at one terminal end and the inclusion of means for coupling to or from free space, whereby an antenna structure is provided.

Claim 25 specifies the inclusion of an anisotropic, selectively located, material inhibiting energy propagation in one direction but not in the other, whereby a signal isolator is provided.

Claim 31 specifies the inclusion of two strips of biased anisotropic material, selective signal coupling therebetween being obtained as a function of the applied bias, whereby a circulator structure is provided.

Claim 37 specifies the inclusion of a strip of light sensitive material and the presence of a gap in the conductive layer in the vicinity of which light energy from an external source generates a hole-electron plasma, whereby a light controlled device is provided.

Claim 44 specifies the presence of an outwardly projecting energy transition section whereby energy may be coupled to or from the transmission line.

Claim 47 specifies the inclusion of an elongated conductive strip between two of the dielectric layers whereby energy may be coupled between the transmission line and an external device.

6. It follows clearly from the foregoing enumeration that the concept on which the transmission line structure is based and the concepts on which the various further devices are based are and must be essentially different, especially as the problems to be solved are different. Designing a transmission line structure having low losses is fundamentally different from e.g. designing an antenna which has to have predetermined radiation properties.

7. It is true that the further devices are defined in claims which are all formally dependent on Claim 2 in which a transmission line structure is defined. It cannot be held, however, that these further devices are specific forms of the transmission line structure itself as defined in Claim 2 (or as "variations on the basic invention" as the applicant has put it) within the meaning of Rule 13.4 PCT as the particular features specified in Claims 13 to 49 place the devices defined by these claims wholly outside the area of transmission line design. Moreover, it is clear from the formulation of Claims 13-49 that they define in effect a number of independent devices as defined in the invitation which would necessitate the carrying out of searches in the subdivisions of the classification system pertinent to such devices.

8. The Board is therefore of the opinion that the international application relates to eight inventions which do not form a single general inventive concept so that the application does not comply with Rule 13(1) PCT.

9. The Board is satisfied that the invitation meets the requirements of Rule 40(1) PCT. Under the circumstances of the present case, the indications given in the invitation were sufficiently clear and complete to the initiated reader when read in conjunction with the application.

10. It follows that the invitation to pay seven additional search fees was correctly issued and that the protest is not justified.

Order

For these reasons, it is decided that:

The protest is unjustified and no reimbursement of the additional search fees is ordered.

The Registrar: The Chairman:

S. Fabiani P.K.J. van den Berg

16/4 '89

27.04.89