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D E C I S I O N
of 5 August 1999

Case Number: T 0079/97 - 3.3.3

Application Number: 90304962.5

Publication Number: 0398573

IPC: C08K 5/54

Language of the proceedings: EN

Title of invention:

Devices featuring silicone elastomers

Applicant:

AT&T Corp.

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 56, 113(1)

EPC R. 71(2)

Keyword:

"Oral proceedings - non attendance of Appellant - opportunity to comment"

"Inventive step (no) - obvious combination of known features"

Decisions cited:

-

Catchword:

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Boards of Appeal

Chambres de recours

Case Number: T 0079/97 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 5 August 1999

Appellant: AT&T Corp.
32 Avenue of the Americas
New York, NY 10013-2412 (US)

Representative: Johnston, Kenneth Graham
Lucent Technologies (UK) Ltd,
5 Mornington Road
Woodford Green
Essex, IG8 OTU (GB)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 5 September 1996
refusing European patent application
No. 90 304 962.5 pursuant to Article 97(1) EPC.

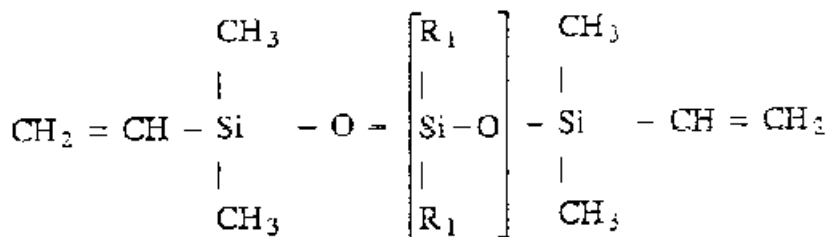
Composition of the Board:

Chairman: C. Gérardin
Members: B. ter Laan
J. Stephens-Ofner

Summary of Facts and Submissions

I. European patent application No. 90 304 962.5, filed on 9 May 1990, claiming priority of 18 May 1989 from an earlier application in the USA (US 354051) and published on 22 November 1990 under No. 0 398 573, was refused by a decision of the Examining Division of the European Patent Office dated 5 September 1996. That decision was based on a set of ten claims filed on 6 February 1996, Claim 1 reading:

"An article of manufacture comprising at least one optical component and a crosslinked siloxane copolymer in adhesive contact with the optical component, said optical component is selected from an optical fibre, an optical waveguide, a laser, a light-emitting diode and a photodetector the crosslinked siloxane copolymer is refractive index matched to the optical component and consists of a product resulting from crosslinking an uncrosslinked vinyl group- terminated dimethyldiphenyl siloxane copolymer having the general structure:



where R₁ is either methyl or phenyl and about 10 mole percent to about 20 mole percent of the diphenyl and dimethyl moieties in the uncrosslinked polymers are diphenyl moieties with at least one of phenyltris-(dimethylsiloxy)silane and 1,3-diphenyl-1,1,3,3-tetrakis-(dimethylsiloxy)-disiloxane in the presence of

from 1 to 20 parts per million of platinum catalyst, said uncrosslinked siloxane copolymer having molecular weight ranging from 1000 to 250,000, said disiloxane being miscible with said uncrosslinked siloxane copolymer, the mole percent of phenyl groups in the uncrosslinked siloxane copolymer being within a range of from 10 to 20 mole percent, and the ratio of hydride groups in said disiloxane to vinyl groups in said uncrosslinked siloxane copolymer falling within a range of from 0.1 to 6."

Dependent Claims 2 to 5 referred to preferred embodiments of the article according to Claim 1.

Independent Claim 6 read:

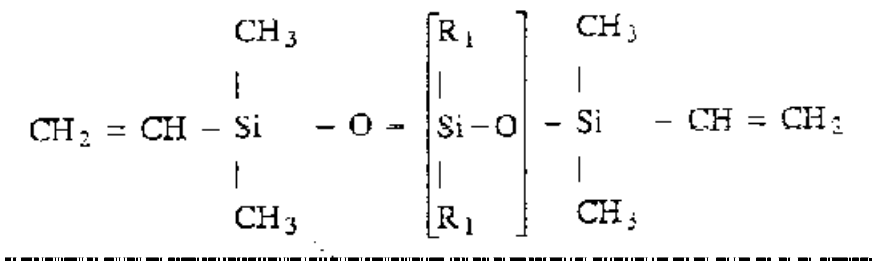
"A process for fabricating an article of manufacture comprising at least one optical component and a crosslinked siloxane copolymer in adhesive contact with at least one optical component, said optical component is selected from an optical fibre, an optical waveguide, a laser, a light-emitting diode and a photodetector, which comprises:

preparing a catalyst-copolymer crosslinking mixture refractive index matched to the at least one optical component,

placing the mixture in contact with the at least one optical component,

heating the mixture above room temperature to produce the crosslinked siloxane copolymer, wherein said mixture is prepared by

a) mixing a platinum catalyst with vinyl-terminated dimethyldiphenylsiloxane copolymer to form catalyst-uncrosslinked copolymer mixture, said uncrosslinked siloxane copolymer having the general structure:



where R₁ is either methyl or phenyl and about 10 mole percent to about 20 mole percent of the diphenyl moieties in the uncrosslinked polymers are diphenyl moieties having molecular weight ranging from 1000 to 250,000, the mole percent of phenyl groups being selected from within a range of from 10 to 20 mole percent to match refractive index of the crosslinked siloxane copolymer to the refractive index of the optical component, and the concentration of platinum catalyst in terms of weight of platinum in the catalyst-copolymer-crosslinking mixture is between 1 and 20 parts per million,

b) degassing catalyst-uncrosslinked copolymer mixture,

c) mixing the catalyst-uncrosslinked copolymer mixture with a crosslinking agent to form catalyst-copolymer crosslinking mixture, said crosslinking agent being miscible with the uncrosslinked copolymer mixture and being at least

one selected from phenyltris(dimethyl-siloxy)silane or 1,3-diphenyl-1,1,3,3-tetrakis(dimethylsiloxy)disiloxane and the mixtures thereof, and the ratio of hydride groups in the crosslinking agent to vinyl groups in the vinyl-terminated dimethyldiphenyl siloxane being between 0.1 and 6."

Dependent Claims 7 to 10 referred to preferred embodiments of the process according to Claim 6.

- II. The Examining Division held that the claimed subject-matter was novel, but did not involve an inventive step. In particular, it found that D1 (EP-A-0 153 414) disclosed an article of a cross-linked siloxane polymer which was similar to that of present Claim 1 and which was in contact with an optical component. The polysiloxane according to the claimed subject-matter differed from that of D1 in one of the end groups of the uncrosslinked polymer and in that it was stated to be refractive index matched to the optical component. Starting from D1, the problem to be solved was therefore seen as to match the refractive index of the siloxane copolymer to another optical component. That problem was solved by adjusting the mole percentage of phenyl groups in the uncrosslinked siloxane copolymer, as set out in original Claim 1. D1 contained a clear teaching that the refractive index of a polysiloxane containing methyl and phenyl residues could be adapted by shifting the ratio phenyl:methyl in the polysiloxane and that the refractive index became higher with increasing phenyl group content and lower with increasing methyl group content. Also, the skilled person was familiar with the other features of Claim 1

not specifically mentioned in D1, such as the molecular weight of the polysiloxane and the ratio of hydride groups in the disiloxane to vinyl groups in said uncrosslinked siloxane copolymer. Therefore, the solution defined in Claim 1 of the application in suit was considered to be obvious. Furthermore, although they were not decisive, a number of other objections under Articles 123(2) and 84 were raised.

III. On 14 October 1996 a Notice of Appeal was lodged against that decision, together with payment of the prescribed fee. The Appellant's arguments submitted in the Statement of Grounds of Appeal filed on 7 January 1997 can be summarised as follows:

- (a) D1 disclosed a light transmitting fibre, the core of which was a polysiloxane and the sheath of which could be a crosslinked polysiloxane. D1 stated that the refractive index of the polysiloxane polymer was controlled by the kind of substituents on the polymer; an increasing content of phenyl groups resulted in a higher refractive index, whereas a higher content of methyl or ethyl groups lowered the refractive index. According to D1, the phenyl group content of the sheath polysiloxane should be smaller than that of the core material.
- (b) D1 did not suggest to use the crosslinked polysiloxane in contact with an optical component wherein the refractive index of the polysiloxane matched that of the optical component.
- (c) D1 did also not disclose a device in which a

crosslinked polysiloxane served to support and to encapsulate optical components.

Furthermore, the Appellant also commented upon the remarks of the Examining Division regarding the wording of the claims.

IV. Although the Appellant did not file a request to hold oral proceedings, the Board deemed it expedient to do so.

(i) To that end, a fax proposing the date of 26 August 1999 and the alternative date of 25 August 1999 was sent out on 16 March 1999. In reply, by letter of 19 March 1999, received on 22 March 1999, the representative indicated that he would be on vacation on both of the proposed dates and expected to be away until at least the 15 September 1999.

(ii) By fax of 8 April 1999, 5 August 1999 and, alternatively, 4 August 1999 were proposed as new dates for the oral proceedings. Since no reply to the latter proposal was received, the summons to oral proceedings to be held on 5 August 1999 was issued on 21 April 1999 and received by the Appellant, as it appears from the acknowledgement of receipt signed on 23 April 1999 (EPA/EPO/OEB Form 2936 07.93).

(iii) On 5 August, the oral proceedings were duly held, but nobody was present on behalf of the Appellant. A telephone call made by the Registrar to the Representative's office

revealed that he was already on holiday and that no other person would attend in his stead. After considerable delay the oral proceedings were then continued despite the absence of the sole party, the Appellant.

- V. The Appellant requested "that the decision be cancelled in its entirety and a patent granted." The basis for such a grant was not indicated, but in view of the Appellant's numerous references to the claims as refused by the Examining Division and in the absence of any alternative set of claims, the above request can only be interpreted as a request to grant a patent on the basis of the claims filed on 6 February 1996.

Reasons for the Decision

1. The appeal is admissible.

Procedural matters

2. At the oral proceedings the Board established that the Appellant had been duly summoned in accordance with the requirements of Rule 71(1) EPC and that his absence was not due to any unforeseen circumstances. Therefore, the oral proceedings could be continued in his absence (Rule 71(2) EPC).
- 2.1 The present case being *ex parte*, no third parties were placed at a disadvantage by the unexpected absence of the Appellant. However, the Board wishes to express its concern at the behaviour of the representative in not

informing the Board of his absence beforehand, especially since the Board had already shown considerable lenience in changing the proposed dates for the oral proceedings at the special request of the representative. The newly proposed dates had not elicited any reaction from the representative, thus indicating his agreement to them. The Board cannot accept that any change in the planning of the representative's vacation would not have been known to him or to the patent department of his large company sufficiently long in advance to inform the Board that the Appellant would not be represented at the oral proceedings. Such conduct by a party, be he large or small, is not only unfair to the Board, which, as the court of last instance, is charged with the dispensation of justice under the EPC, but also substantially hampers the efficient and speedy handling of cases by them. This is particularly so in *ex parte* cases such as the present one, which demand a considerable degree of detailed and lengthy preparation.

- 2.2 By not issuing a communication but directly holding oral proceedings instead, the Board indicated its intention to follow the arguments of the Examining Division as indicated in the impugned decision (see point 5 below). The Appellant has had, in accordance with Article 113(1) EPC, an opportunity to present its comments on the objections raised in that decision and in fact availed itself of that opportunity in its Statement of Grounds of Appeal. By not attending the oral proceedings he however forewent the possibility of giving any further comments.

3. On considering the case at the oral proceedings the Board came to the conclusion that the subject-matter of Claim 1 lacked an inventive step in view of D1 for the reasons set out in detail in the Examining Division's decision of 5 September 1996, which are summarized in point II above.

3.1 Although the Board agrees with the Appellant's brief description of the disclosure of D1, the Appellant's interpretation of that disclosure as given in the Statement of Grounds of the Appeal cannot not be accepted for the following reasons:

(a) The fibre disclosed in D1, the sheath of which, as admitted by the Appellant, could comprise a crosslinked polysiloxane (see point IIIa) above) of a somewhat different composition than the one now required, does in fact constitute an optical component (the fibre core) in contact with and encapsulated by the crosslinked polysiloxane (see point IIIb) above).

(b) According to D1, the refractive index of the sheath should be adjusted to the core of the fibre so as to avoid transmission loss (D1, page 8, lines 9 to 18) (see point IIIc) above). Even if the term "refractive index matched" of present Claim 1 is read within the meaning given on page 1 lines 22 to 23 of the original description as "an index of refraction close to that of the core of the optical fibre", this would not be sufficient to establish a difference with D1. That the refractive index of the sheath material should be adjusted so as to avoid loss of light transmission

of the optical fibre (D1, page 8, lines 9 to 18) as well as how the refractive index of polysiloxane can be adjusted by varying the ratio of certain substituent groups (D1, page 7, lines 5 to 10), was, as the Appellant admitted, described in D1 (see point IIIa) above).

- (c) Therefore, contrary to the Appellant's allegation, D1 does suggest to use a crosslinked polysiloxane in contact with an optical component wherein the polysiloxane encapsulates the optical component and wherein the refractive index of the polysiloxane is adjusted to that of the optical component.

3.2 Following some explanation regarding the interpretation of the wording of Claim 1, the Appellant also proposed amendments to that claim, in particular the deletion of the term "about" to qualify the percentage of diphenyl moieties in the polymer (Statement of Grounds of Appeal, page 3, third full paragraph). Apart from the fact that a new Claim 1 amended in that sense has not been properly submitted, it is evident that such amendment would have no effect on the substantive issues which the first instance had to deal with. It follows that in that respect also the requirements of Article 113(1) EPC are satisfied.

4. In view of the above, the Appellants' request must fail as not complying with the requirements of Article 56 EPC, and the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

E. Görgmaier

C. Gérardin