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Aktenzeichen / Case Number / N^o du recours : T 300/88 - 3.3.3

Anmeldenummer / Filing No / N^o de la demande : 81 304 329.6

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Bezeichnung der Erfindung:
Title of invention: Rubber composition for tires
Titre de l'invention :

Klassifikation / Classification / Classement : C08L 9/06

ENTSCHEIDUNG / DECISION

vom / of / du 14 May 1990

Anmelder / Applicant / Demandeur :

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Bridgestone Tire Company Limited

Einsprechender / Opponent / Opposant : Hüls AG

Stichwort / Headword / Référence : Tire composition/BRIDGESTONE

EPD / EPC / CBE Art. 56

Schlagwort / Keyword / Mot clé :
"Inventive step (yes)"
"Costs not awarded on late cancellation
of hearing"

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

Beschwerdekammern

European Patent
Office

Boards of Appeal

Office européen
des brevets

Chambres de recours



Case Number : T 300/88 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 14 May 1990

Appellant : Hüls Aktiengesellschaft
(Opponent) Postfach 1320
D-4370 Marl 1 (DE)

Representative :

Respondent : Bridgestone Tire Company Limited
(Proprietor of the patent) 10-1, Kyobashi 1-chome Chuo-ku
Tokyo (JP)

Representative : Whalley, Kevin
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Decision under appeal : Decision of the Opposition Division of the European
Patent Office dated 6 May 1988 rejecting
the opposition filed against European patent
No. 0 048 618 pursuant to Article 102(2) EPC.

Composition of the Board :

Chairman : F. Antony
Members : R. Lunzer
R. Schulte

Summary of Facts and Submissions

- I. European patent No. 48 618 was granted on 11 December 1985 on the basis of application No. 81 304 329 filed on 21 September 1981, claiming Japanese priority of 20 September 1980.

- II. On 11 July 1986 an opposition was lodged by the Appellant on the sole ground of lack of any inventive step, citing the following documents:

- Eh1 US-A-4 387 756
- Eh2 Kautschuk und Gummi Kunststoffe 33, 251
(April 1980).

Later in the proceedings, and outside the time limit specified in Article 99(1) EPC, the Appellant sought to introduce the following documents:

- Eh3 DE-A-2 937 137
- Eh4 DE-B-1 620 985

and to introduce arguments attacking the sufficiency of the description under Article 100(b) EPC. These further documents, and the further ground of opposition, were excluded by the Opposition Division in the exercise of its discretion under Article 114(2) EPC.

- III. By its decision dated 6 May 1988 the Opposition Division rejected the opposition, holding that document Eh1 had to be excluded from consideration because it, and the Japanese priority document (JP-A-80 124 662) on which it was based, had both been published after the priority date of the patent in suit, and therefore could not be taken into account when assessing novelty or inventive step for the purposes of Articles 54 and 56 EPC.

Thus the only document remaining for consideration in relation to the issue of obviousness under Article 56 EPC was EH2, as to which the Opposition Division found that its teachings were at least in some respects unclear, and that it contained no concrete suggestions which would enable the skilled man to achieve the favourable balance of properties which the patent in suit asserted were attained by the means specified in its claims.

Accordingly, the patent was upheld without amendment, the single independent Claim 1 being in the following form:

"1. A rubber composition for a pneumatic tire tread, comprising 10 to 120 parts by weight of carbon black and 0.5 to 5 parts by weight of a vulcanizer (each based on 100 parts by weight of a styrene-butadiene copolymer rubber alone or a blend rubber of not less than 30 parts by weight of the said styrene-butadiene copolymer rubber and not more than 70 parts by weight of other diene rubber, the said styrene-butadiene copolymer rubber being obtained by random copolymerization of styrene with 1,3-butadiene and satisfying the following requirements:

- (1) the content of bound styrene is 10 to 30% by weight;
- (2) the content of 1,2-bonds in the butadiene is 42 to 70% by weight;
- (3) the content of trans-1,4 bonds in the butadiene is not less than 25% by weight;
- (4) the value obtained by subtracting the content of cis-1,4 bonds in the butadiene from the said content of trans-1,4 bonds is not less than 8% by weight;

and being characterized by satisfying the following further requirements:

- (5) the relation between the said content of bound styrene and the said content of 1,2-bonds is $65 \leq 1.7 \times \text{the content of bound styrene (\% by weight)} + \text{the content of 1,2-bonds (\% by weight)} \leq 100$;
- (6) the weight mean molecular weight (\bar{M}_w) is 35×10^4 to 65×10^4 ;
- (7) the ratio of the weight mean molecular weight (\bar{M}_w) to the number mean molecular weight (\bar{M}_n) is not more than 2.3;
- (8) the number of peaks in a molecular weight distribution curve is not less than 2; and
- (9) the relation between the said weight mean molecular weight and the said content of trans-1,4 bonds is $75 \leq \bar{M}_w \times 10^{-4} + 1.3 \times \text{the content of trans-1,4 bonds (\% by weight)} \leq 120$."

IV. An appeal against this decision was lodged on 4 July 1988, the appeal fee being paid on the same day, and the Grounds of Appeal were filed on 9 September 1988. The Appellant sought the reversal of the decision of the Opposition Division on the ground of lack of any inventive step, particularly having regard to documents EH3 and EH4, and also with regard to EH2.

In relation to EH2 it was argued that the Opposition Division had misinterpreted its teaching by holding that it demonstrated that rolling resistance is determined by T_g . In fact the document taught that with a given T_g , corresponding to a desired compromise between wear resistance and wet skid resistance, it is possible to achieve low rolling resistance, and this teaching was the core of the patent in suit.

V. The Respondent supported the decision of the Opposition Division on every point, sought the consequent rejection of the appeal and asked for a hearing to be appointed if

the Appeal Board should consider making any decision other than rejecting the appeal.

- VI. On 4 January 1990 a Summons to attend oral proceedings was issued, fixing the date for the hearing as 14 March 1990.
- VII. On 2 February 1990 a communication was sent to the parties by the Board, indicating that it was minded to exclude documents EH3 and EH4, and that it was likely to uphold the finding of the Opposition Division in relation to EH2.
- VIII. On 9 March 1990 the parties were informed by telephone (confirmed in writing on 13 March 1990) that on reconsideration the Board did not consider that the oral proceedings fixed for 14 March 1990 were necessary, there being no request for a hearing on the part of the Appellant.
- IX. By a letter dated 13 March 1990 and received by the Office by fax the following day, the Respondent asked for an award of costs in his favour, pointing out that it had been necessary for the Respondent's representative to prepare for the oral hearing, which preparation would have been unnecessary if the cancellation had been even two weeks earlier.
- X. The Appellant requests that the patent be revoked, while the Respondent requests dismissal of the appeal, and asks for an award of costs.

Reasons for the Decision

- 1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.

2. Having given careful consideration to the contents of documents EH3 and EH4, and finding that they are not relevant to the issue of inventiveness, the Board has decided that these documents should be excluded in the exercise of its discretion under Article 114(2) EPC. In so deciding, the Board has been guided by the principles laid down in Decision T 156/84 (OJ EPO 1988, 187), cited by the Appellant.

3. The patent here in issue relates to rubber compositions for tyres. As is well known, some of the desirable properties of a rubber composition used in tyre making conflict with others. Although a tyre rubber composition is desired ideally to have good workability and high strength at rupture, and also to confer on the finished tyre the properties of low rolling resistance, wear resistance, resistance to unevenness of wear, and wet skidding resistance, to mention only the properties referred to in the patent in suit, it is well known that the tyre maker has to choose a balance and compromise of properties, depending on the performance requirements of any given kind of tyre.

4. The patent in suit is concerned with the problem of achieving an overall improvement in the above-mentioned properties, and the examples demonstrate that this objective is achieved. By way of contrast, the comparative examples show that non-compliance with one of the nine features of Claim 1 can have an adverse effect on at least one of the said properties. In circumstances such as the present, where the claim has nine characterising integers and an overall improvement is credibly asserted to have been achieved with respect to six properties, it would be unreasonable to expect a patentee to demonstrate that each

of the integers is essential to the attainment of each of the six alleged improvements. Reference is made to somewhat similar circumstances dealt with by Decision T 57/84 (OJ EPO 1987,53). On the basis of the material contained in the patent, the Board is satisfied that the invention as claimed does indeed solve the problem specified.

5. Document (2) is the only document which is relevant for the purposes of this appeal. The Board is satisfied that it does not disclose any composition having all the features defined in Claim 1 of the patent in suit. Therefore, the subject matter of Claim 1 is to be considered novel within the meaning of Article 54 EPC.
- 6.1 The issue of inventiveness turns on whether it would have been obvious to the skilled person confronted with the problem identified in point 4 above to arrive at the invention as claimed starting from the teaching of document EH2. That document is concerned with the properties of inter alia L-SBR rubbers (L-SBR stands for lithium catalyzed styrene-butadiene rubber) for use in tyres. It contains the results of some work correlating Tg with tyre properties, rubber compositions with Tg. It also correlates certain different rubber compositions, each having the same Tg, with heat build up under load.
- 6.2 In the passage bridging pages 251 and 252 the relationship of Tg to elasticity, wear resistance and wet skidding is discussed. On page 252 in Fig. 2 the dependence of Tg on contents of styrene and butadiene is considered, and at page 254 (right hand column and in relation to Fig. 9) it is indicated that improved resistance to heat build up in a tyre may be attained by the adoption of lower styrene content in combination with increased vinyl content.

- 6.3 In the opposition the Respondent argued that the teachings of this document were conflicting, and the Opposition Division found that its teachings were in some respects unclear. The Board is not convinced that either of these observations is borne out by a careful reading of the cited document. It contains a number of teachings, and the Appellant is right in contending, as is mentioned in IV above, that the essential teaching of this document is that improved rolling resistance is attainable by control of the composition, notably by reducing styrene and increasing the vinyl component, while keeping Tg fixed.
- 6.4 However, even accepting the Appellant's argument that that observation is at the core of the present invention, the Board fully concurs with the finding of the Opposition Division, that there is no pointer whatever to be found in this document towards the simultaneous adoption of all the closely defined features of compositions according to Claim 1 of the patent in suit.
- 6.5 The Appellant has not suggested any reason why the skilled man, seeking an overall improvement in the properties outlined in section 3. above, and starting from the teaching of EH2, would proceed directly and without further invention from its very general teaching, to the specific teaching of the patent in suit. The subject-matter of Claim 1 of the patent in suit is therefore held to involve an inventive step.
7. The same applies mutatis mutandis to Claims 2 and 3, which relate to preferred embodiments of the rubber compositions specified in Claim 1.
8. While the Board clearly has a discretion within the framework of Article 104 EPC to award costs against a party if such a party's conduct has contributed

unnecessarily to an increase in costs incurred during taking of evidence or in oral proceedings, in the present case there can be no question of the Appellant's conduct having contributed to the Board's own decision to cancel the hearing at short notice. That decision, incidentally, was taken by the Board specifically with the intention of avoiding further costs being incurred unnecessarily, notably on the part of the Respondent, whose representative is located in London. In these circumstances, the Respondent's request for an award of costs must be refused.

Order

For these reasons, it is decided that:

1. The appeal is dismissed.
2. The Respondent's request for an award of costs is refused.

The Registrar:



P. Martorana

The Chairman:



F. Antony