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D E C I S I O N
of 12 June 2002

Case Number: T 1200/00 - 3.2.1

Application Number: 96203202.5

Publication Number: 0775599

IPC: B60C 3/04

Language of the proceedings:

Title of invention:
A tyre having optimum characteristics for the ride comfort of a vehicle

Applicant:
PIRELLI PNEUMATICI S.p.A.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 52(1), 83, 84

Keyword:
"Novelty, inventive step (yes)"
"Sufficiency of disclosure (yes)"
"Clarity (yes)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1200/00 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 12 June 2002

Appellant: PIRELLI PNEUMATICI
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 2 June 2000 refusing European patent application No. 96 203 202.5 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: F. Gumbel
Members: S. Crane
G. Weiss

Summary of Facts and Submissions

I. European patent application No. 96 203 202.5 was refused by a decision of the Examining Division posted on 2 June 2000.

The reasons given for the decision were that the subject-matter of claim 1 as originally filed lacked novelty with respect to the document EP-A-0 402 303 (D1), that the claimed invention was insufficiently disclosed (Article 83 EPC) and that claim was unclear and not supported by the description (Article 84 EPC).

More specifically, the Examining Division argued that since the tyre of document D1 had the same basis structural features of that claimed it would inevitably exhibit parameters falling within the very broad ranges defined in the claim. The applicants had not, as foreseen for such cases by the Guidelines for Examination, C-IV, 7.5, provided comparative tests to disprove this assumption. The objection of insufficiency of disclosure was based on the consideration that the application did not provide sufficient information to the person skilled in that art how he was to adjust the materials of the known tyre structure so as to obtain the claimed parameters. As for the objection under Article 84 EPC this was again related to the breadth of claim 1, the Examining Division arguing that the application did not teach how a tyre had to be modified to cover the full range of claimed parameters.

II. A notice of appeal against this decision was filed on 28 July 2000, the appeal fee having already been paid on 27 June 2000. The statement of grounds of appeal was

submitted on 12 October 2000.

The appellants (applicants) argued that the objections of lack of novelty and lack of clarity/support were based on a broad interpretation of claim 1 which, although perhaps possible on its wording, was evidently not intended. To overcome this objection they offered an amended claim according to an auxiliary request. With regard to the objection of insufficiency the appellants argued that for the relevant skilled person, ie a qualified tyre designer familiar with the conventional techniques and materials used in the tyre industry, the application gave ample information as to how to construct the claimed tyres.

III. In a communication posted on 30 January 2002 the Board indicated that given the concession by the appellants that the original claim 1 was unclear then the grant of a patent with this claim could not be envisaged. In response to this communication the appellants, with letter dated 21 March 2002, elected to pursue the application on the basis of the previous auxiliary request and filed an amended page 5 of the description to adapt this to the terms of the amended claim 1.

Claim 1 under consideration this reads as follows:

"A tyre (70) for a wheel of a vehicle comprising a tread strip (71), shoulders (72), sidewalls (73), beads (74) provided with cores (76) and bead fillers (77), a carcass (80) and a belt structure comprising belt plies (81), where said tyre (70) is representable by a dynamic rigid-ring tyre model (1) with concentrated parameters, characterized in that it has construction features that are substantially

equivalent to concentrated parameters that, measured under each vertical load ranging from 200 kg to 650 kg, fall within the following intervals corresponding to preselected indices of comfort:

rb = 100 - 300 (Ns/m)

rbt = 2 - 40 (Nms/rad)

rcz = 100 - 350 (Ns/m)

rct = 10 - 90 (Nms/rad)

Ckx = 18,000 - 70,000 (N),

where rb is a radial foundation dampening of said dynamic tyre model (1); rbt is a torsional foundation dampening of said dynamic tyre model (1); rcz is a residual radial dampening of said dynamic tyre model (1); rct is residual torsional dampening of said dynamic tyre model (1); and Ckx is a slipping stiffness of a brush model of said tread (71)."

Dependent claims 2 and 3 related to preferred embodiments of the tyre according to claim 1.

Reasons for the Decision

1. The appeal complies with the formal requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC. It is therefore admissible.

2. The basic tyre construction set out in the preamble of claim 1 (tread strip, shoulders, sidewalls, beads,

carcass and belt plies) is wholly conventional. A tyre of this type is disclosed for example in documents D1.

As explained in the introductory description of the present application the vibrational behaviour of a tyre is of great significance when determining the effect the tyre will have on the ride comfort of a vehicle and it is the aim of the invention to provide a tyre having optimum characteristics in this respect. A known theoretical tool in the analysis of tyre performance is the "dynamic rigid-ring tyre model" in which the tyre may be described by various "concentrated parameters" related to stiffness, dampening etc. A model of this form is described by P.W.A. Zegelaar et al in "Tyre Models for the study of In-plane Dynamics", Dynamics of Vehicles on Roads and on Tracks, Supplement to Vehicle System Dynamics, volume 23, 1994 (document D3) referred to in the original application. Some of the concentrated parameters are determined by direct measurement on the tyre, others may be calculated, as explained extensively in the application, from suitably obtained experimental results.

Claim 1 sets ranges for five of these concentrated parameters, measured under "each vertical load ranging from 200 kg to 650 kg" as opposed to "a vertical load..." as stated in original claim. This amendment, the only difference between the present claim and the original claim, is to make it clear that over the whole of the stated load range all of the defined concentrated parameters have to stay within the given ranges, the Examining Division having interpreted the original claim as permitting the values of the parameters to be determined independently and variously at any load value within the stated load range.

Although there is no literal basis for this amendment in the application as originally filed, the Board is satisfied that the person skilled in the art would understand the limitation involved as being implicit from the totality of the disclosure, the principle reason for this being that the interpretation adopted by the Examining Division results in such a broad ambit for the claim that its effectiveness as a definition of a tyre having any specific characteristics is called into question. The Board also notes in this respect that the concentrated parameters of the particular embodiment of tyre described are given at loads of both 277 kg and 555 kg. There is therefore no objection to present claim 1 under Article 123(2) EPC.

3. As can be seen from above the terms of claim 1 are somewhat unusual in that the tyre being claimed is not defined directly by its properties (apart from its conventional construction) but instead by the fact that these properties are representable in a certain way in a specific model of the tyre. The Board sees no problem in the indirect definition of the tyre in this manner as the concentrated parameters of the model will of course be directly determined by the make-up of the tyre itself. It also notes that the Examining Division seemingly had no difficulty with this aspect of the original claim, its objection under Article 84 EPC being concerned, as the Board understands it, with the claims inordinate breadth. In view of the significant limitation introduced into the claim discussed previously, there are no outstanding objections in this respect.

4. The application goes into considerable detail as to how, within the framework of the dynamic rigid-ring

tyre model utilized, the concentrated parameters associated with any physical embodiment of tyre may be determined. It also specifies all of the relevant material and structural properties of one such embodiment and, as already indicated above, gives the claimed concentrated parameters of this tyre at two widely space load values. The Board is satisfied that the person skilled in the art, on the basis of this information and his relevant specialised knowledge in the field of tyre design, will be able to adapt the characteristics of essentially any practical commercial embodiment of tyre under development so that its concentrated parameters lie within the ranges claimed over the whole of the indicated vertical load range. This is the essence of what the claimed invention is about. It is not a requirement for sufficiency of disclosure that the person skilled in the art be put into a position enabling him to obtain all arbitrary combinations of specific values of the concentrated parameters within the respective claimed ranges, as effectively implied by the decision under appeal.

The objection under Article 83 EPC can therefore not stand.

5. The objection of lack of novelty with respect to document D1 was based on the assertion that the tyre disclosed there, having the same basis construction as that set out in the claim, must inevitably exhibit concentrated parameters lying within the broad ranges claimed. The Examining Division had previously invited the appellants, with reference to the Guidelines for Examination C-IV, 7.5, to refute this assertion by filing evidence showing that differences did exist between the claimed and the known tyre.

The relevant part of that paragraph of the Guidelines is evidently intended to give the Examining Division a means of dealing with what has sometimes been termed "parametritis", ie the practice of seeking to repatent what is known by limiting claims by reference to a series of parameters not mentioned in the prior art. It is indicated there that "if the known and the claimed products are identical in all other respects (which is to be expected if, for example, the starting products and the manufacturing processes are identical), then in the first place an objection of lack of novelty arises." As a general principle that is certainly not to be criticised. However, in the present case, document D1 does not contain sufficient information about the material characteristics of the various elements of the tyre to construct a physical embodiment which can unequivocally be said to belong to the state of the art, and with which a comparison test, as mentioned in the Guidelines, could then be made.

With their statement of grounds of appeal the appellants have however submitted concentrated parameters of four commercially available prior art tyres which were renowned for their ride comfort. None of these tyres exhibit the combination of concentrated parameters of the claimed tyre. The appellants have therefore effectively refuted the underlying assumption of the Examining Division that any tyre having the basic construction specified in the claim would inevitably exhibit the claimed concentrated parameters. Also of interest from the quoted results is the load dependency of the measured parameters, thus confirming that the restriction introduced into claim 1 is of genuine significance.

In the light of the above the objection of lack of novelty with respect to document D1 cannot be sustained (Article 54 EPC). Furthermore, there is nothing in the cited state of the art which could have led the person skilled in the art to produce a tyre exhibiting the structure and concentrated parameters set out in claim 1, so that the subject-matter of the claim must also be seen as exhibiting the required inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to grant a patent on the basis of the following documents:

claims: 1 and 2 filed with letter dated 21 March 2002, claim 3 as originally filed;

description: pages 1 to 4 and 6 to 24 as originally filed, page 5 filed with letter dated 21 March 2002;

drawing: pages 1/10 to 10/10 as originally filed.

The Registrar: The Chairman:

S. Fabiani F. Gumbel