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Datasheet for the decision of 29 November 2011

Case Number: T 0007/09 - 3.2.05

Application Number: 01309801.7

Publication Number: 1211057

IPC: B29D 30/30

Language of the proceedings: EN

Title of invention:
Method for maufacturing a pneumatic tire

Applicant:
Bridgestone Corporation

Opponents:
Continental AG
PIRELLI TYRE S.p.A.

Headword:
-

Relevant legal provisions:
EPC Art. 54, 114(2), 123(2)
RPBA Art. 13(1)

Keyword:
"Novelty (main request and first auxiliary request, no)"
"Extension beyond the content of the application as filed (corrected second and second auxiliary request, yes)"
"Third auxiliary request not admitted as late filed"

Decisions cited:
T 0748/91

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0007/09 - 3.2.05

D E C I S I O N
of the Technical Board of Appeal 3.2.05
of 29 November 2011

Appellant: (Patent Proprietor)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 31 October 2008 revoking European patent No. 1211057 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman: W. Zellhuber
Members: W. Widmeier
A. Pignatelli

Summary of Facts and Submissions

I. The appellant (patent proprietor) lodged an appeal against the decision of the Opposition Division revoking European patent No. 1 211 057.

II. Oppositions had been filed against the patent as a whole based on Articles 100(a) EPC (lack of novelty, Article 54 EPC, and lack of inventive step, Article 56 EPC).

The Opposition Division held that the subject-matter of claim 1 as granted was not new.

III. Oral proceedings before the Board of Appeal were held on 29 November 2011.

IV. The appellant requested that the decision under appeal be set aside and, as main request, that the patent in suit be maintained as granted; or, as an auxiliary measure, that the patent in suit be maintained on the basis of the following documents:

(i) claims 1 to 4, filed as first auxiliary request on 2 March 2009; or

(ii) claims 1 to 4, filed as corrected second auxiliary request on 28 October 2011; or

(iii) claims 1 to 4, filed as second auxiliary request on 2 March 2009, or

(iv) claims 1 to 4, filed as third auxiliary request on 28 October 2011.

V. The respondents (opponent 01 and opponent 02) requested that the appeal be dismissed.

VI. Claim 1 of the main request reads as follows:

"1. A method for manufacturing a pneumatic tire, wherein at least one kind of tire constitutive member is formed on an outer peripheral side of a carcass band (13), said method comprising the steps, for forming a green tire, of:
radially outwardly expanding a widthwise center portion of a cylindrical carcass band (13); and winding and joining an unvulcanized rubber strip (14) onto an outer peripheral surface of the expanded carcass band (13), thereby forming said tire constitutive member, wherein said tire constitutive member includes any one of bead filler (19), sidewall (17), rubber chafer (16), buffer rubber, and belt undercushion."

Claim of the first auxiliary request reads as follows:

"1. A method for manufacturing a pneumatic tire, wherein at least one kind of tire constitutive member is formed on an outer peripheral side of a carcass band (13), said method comprising the steps, for forming a green tire, of:
(1) radially outwardly expanding a widthwise center portion of a cylindrical carcass band (13); and
(2) winding and joining an unvulcanized rubber strip (14) onto an outer peripheral surface of the expanded carcass band (13), thereby forming said tire constitutive member,

wherein said tire constitutive member includes any one of bead filler (19), sidewall (17), rubber chafer (16), buffer rubber, and belt undercushion, bead cores located on the carcass band being moved axially towards one another in the radial expansion step (1), and step (2) being applied to the product of step (1)."

Claim 1 of the corrected second auxiliary request reads as follows:

"1. A method for manufacturing a pneumatic tire, wherein at least one kind of tire constitutive member is formed on an outer peripheral side of a carcass band (13), said method comprising the steps, for forming a green tire, of:
(1) radially outwardly expanding a widthwise center portion of a cylindrical carcass band (13); and
(2) winding and joining an unvulcanized rubber strip (14) onto an outer peripheral surface of the expanded carcass band (13), thereby forming said tire constitutive member,
wherein said tire constitutive member includes any one of bead filler (19), sidewall (17), rubber chafer (16), buffer rubber, and belt undercushion, wherein during the step of winding and joining the unvulcanised rubber strip onto an outer peripheral surface of the expanded carcass band, bead portions located on the carcass band are positioned at the same or a wider axial spacing than portions of the carcass band (13) corresponding to the sidewalls, in the winding and joining step (2)."

Claim 1 of the second auxiliary request differs from claim 1 of the corrected second auxiliary request in the last feature of the claim which reads:

"bead portions located on the carcass band are positioned at the same or a wider axial spacing than portions of the carcass corresponding to the sidewalls, in the winding and joining step (1)."

Claim 1 of the third auxiliary request differs from claim 1 of the corrected second auxiliary request in the last feature of the claim which reads:

"bead portions located on the carcass band are positioned at a wider axial spacing than portions of the carcass band (13) corresponding to the sidewalls, in the winding and joining step (2)."

VII. The following documents were in particular referred to in the appeal procedure:

D1: WO-A-00/03867

D25: K.P. Backfisch, Dieter S. Heinz, "Das Reifenbuch", Motorbuch Verlag Stuttgart, 1994, pages 122, 123, 128, 129 and 131 to 134.

VIII. The appellant argued essentially as follows:

Main request

Claim 1 relates to a method for forming a green tyre. In document D1 the term "Reifenrohling" is used. This document starts from a prior art in which the carcass is formed on a metal former and in which a prevulcanization is performed before further elements of the tyre such as the sidewall are applied. Thus the

term "Reifenrohling" in document D1 means a prevulcanized tyre, contrary to the patent in suit where no prevulcanization occurs. There is not any embodiment in the patent in suit starting from a prevulcanized tyre. Thus, "green tyre" in the patent in suit means a tyre to which not any prevulcanization has been applied. Document D25 is a general guidance for a person skilled in the art. However, it cannot help to reveal what in document D1 and in the patent in suit is to be understood by "Reifenrohling" and "green tyre", respectively. In the method according to claim 1 the unvulcanized rubber strip is wound on the carcass band of an unvulcanized tyre, whereas in document D1 the rubber strip is wound on the carcass band of a prevulcanized tyre.

Consequently, the method of claim 1 is novel with respect to document D1.

First auxiliary request

Paragraph [0038] of the application as filed supports the feature of claim 1 that bead cores located on the carcass band are moved axially towards each other in the radial expansion step. Thus, the subject-matter of this claim does not extend beyond the content of this application.

Document D1 does not disclose the feature that the bead cores are moved axially towards one another in the radial expansion step of the carcass. In order to be novelty destroying a feature must be directly and unambiguously disclosed in prior art. As this is not the case in document D1, the subject-matter of claim 1

of the first auxiliary request is novel with respect to this document.

Corrected second and second auxiliary request

The feature that bead portions located on the carcass band are positioned at the same or a wider axial spacing than portions of the carcass or the carcass band corresponding to the sidewalls, is shown in the drawings of the application as filed. According to the decision T 748/91 it is allowable under Article 123(2) EPC to take ratios out from drawings and to claim such ratios in a patent claim. Paragraph [0038] of the application as filed explains when the rubber strip is applied. The corresponding Figures 1a and 1b of the application as filed show the distance of the bead portions during the winding and joining step. Figure 2 shows the carcass before and after the winding and joining step. As the bead portions have not been moved from the one to the other moment, it is clear that the position of the bead portions is the same as in Figure 2 during the winding and joining step.

The subject-matter of claim 1 of the corrected second and the second auxiliary request does therefore not extend beyond the content of the application as filed.

Third auxiliary request

The third auxiliary request has been filed in view of the observations in the communication of the Board. The difference with respect to the second auxiliary request is just the limitation to a wider axial spacing of the

bead portions. This request does therefore not cause a new situation.

IX. The respondents argued essentially as follows:

Main request

Claim 1 does not specify that the unvulcanized rubber strip is wound onto an unvulcanized tyre. The term "unvulcanized" is used in the patent in suit exclusively in combination with the rubber strip. Thus, there is no indication that the carcass to which the rubber strip is applied is also unvulcanized. Document D25 specifies what is to be understood by the German term "Reifenrohling" and its English equivalent "green tyre", namely a tyre which is not yet finally vulcanized, see page 123, left column, page 133, and page 134, left column. Thus, independent of whether during the production process of a tyre a prevulcanization is performed, the tyre is a green tyre up to its final vulcanization. Document D1 discloses in Figures 1 and 2 a first embodiment with a prevulcanized carcass and in Figures 3 and 4 a second embodiment where the carcass is not qualified as being unvulcanized or prevulcanized. Thus, this embodiment corresponds to the patent in suit. Also claim 1 of document D1 leaves it open whether the carcass is unvulcanized or prevulcanized. Only claim 6 refers to a prevulcanized carcass.

Thus, the method of claim 1 lacks novelty with respect to document D1.

First auxiliary request

It is not possible, as indicated in paragraph [0038] of the application as filed which refers to Figures 1a and 1b, that the bead rocks are diverged from each other and stabilized there and then to expand the carcass outward in the radial direction and to converge the bead rocks. Figures 1a and 1b do not support that. As there is a discrepancy between text and Figures which cannot be corrected, the feature of claim 1 that bead cores located on the carcass band are moved axially towards one another in the radial expansion step is not disclosed in the application as filed.

The carcass is the stabilizing body of the tyre and thus not as smooth as being expandable by weakening the material of the carcass. Thus, when expanding the carcass in the radial direction it must be ensured that the bead cores can move axially inwards, otherwise the carcass would tear. Consequently, the feature of claim 1 that the bead cores are moved axially towards one another in the radial expansion step is an inherent feature of any tyre producing method and therefore also an inherent feature of document D1. For this reason also the subject-matter of claim 1 of the first auxiliary request lacks novelty with respect to document D1.

Corrected second and second auxiliary request

The situation underlying decision T 748/91 and the situation in the patent in suit are not comparable because in the present case, unlike the situation given in T 748/91, the drawings do not unambiguously show the relation of the compared dimensions. The drawings of

the application as filed do not show any reference lines from which one could conclude in a clear and unambiguous manner to the axial distance of the bead portions. Moreover, the situation during the winding and joining step is not shown in the drawings. Also the description of the application as filed is silent about any spacing between bead portions during this production step. Thus, one cannot derive an axial spacing of bead portions as claimed in claim 1 of the corrected second and second auxiliary request from the application as filed.

Thus claim 1 of the corrected second and the second auxiliary request contains subject-matter which extends beyond the content of the application as filed.

Reasons for the Decision

1. *Main request*

Document D1 discloses a method for manufacturing a pneumatic tyre comprising the step of winding and joining an unvulcanized rubber strip onto an outer peripheral surface of an already expanded carcass band, thereby forming a sidewall (17) of the tyre (cf. page 1, first and second paragraph; page 4, second and third full paragraphs; page 12, last paragraph; and claim 1). Due to the fact that the rubber strip is wound onto the surface of an already expanded ("bereits bombierten") carcass band the method requires the step of radially outwardly expanding a widthwise center portion of a cylindrical carcass band.

In the field of pneumatic tyre production the term "green tyre" or its equivalent of the German language "Reifenrohling" are used. Document D25 which is a general summary of pneumatic tyre production discloses that these two terms have identical meaning and that a skilled person understands these terms as a tyre in production up to and before the step of its final vulcanization (cf. page 122, the title of the left photo; page 123, left column, lines 6 to 10; page 133, lines 9 to 20; and page 134, left column). The patent in suit does not comprise any different definition of the term "green tyre". It does not even comprise any definition of this term so that also in the patent in suit this term is to be understood in its general technical meaning as explained by document D25.

Neither claim 1 nor the description of the patent in suit mentions that the carcass may not be prevulcanized before the unvulcanized rubber strip is applied. This question is left open in the patent in suit and claim 1 is to be interpreted as covering both possibilities, i.e. that the unvulcanized rubber strip is applied to an unvulcanized or to a prevulcanized carcass.

Also document D1 covers both these possibilities. Claim 1 of this document leaves it open whether or not the carcass is prevulcanized prior to applying the sidewall rubber strip and only claim 6 defines a preferred embodiment with a prevulcanized carcass (c.f. also page 6, fourth full paragraph).

It follows that the method disclosed in document D1 includes steps for forming a green tyre and it follows that this method comprises the same steps as specified

in claim 1 of the main request. Consequently, the subject-matter of this claim lacks novelty.

2. *First auxiliary request*

Claim 1 of the first auxiliary request comprises the additional features that bead cores located on the carcass band are moved axially towards one another in the radial expansion step, and that the winding and joining step is applied to the product achieved in the step of radially outwardly expanding the carcass band. The latter feature is directly disclosed also in document D1 (cf. page 4, second full paragraph).

In the Board's judgement, the other additional feature is an inherent feature of a tyre production of the kind at issue. When expanding the carcass radially outwards the beads must necessarily move axially towards each other as a compensation movement. The carcass is not of a material which may be expanded by itself, i.e. by tearing and thinning it. The carcass is instead of a material which requires this axial movement of the beads in order not to be deformed and not to loose its stabilizing function. Thus, although not mentioned directly in document D1, this feature is inherent also to the method disclosed in document D1.

Consequently, irrespective of whether or not this additional feature of claim 1 of the first auxiliary request is explicitly mentioned in the application as filed, the subject-matter of this claim 1 also lacks novelty with respect to document D1.

3. *Corrected second and second auxiliary request*

3.1 Although late filed, the corrected second auxiliary request is admitted in accordance with Article 114(2) EPC and Article 13(1) of the Rules of Procedure of the Boards of Appeal (RPBA) because it contains just minor and obvious corrections with respect to the second auxiliary request.

3.2 Claim 1 of the corrected second and the second auxiliary request, respectively, comprise the additional feature with respect to claim 1 of the main request that during the step of winding and joining the unvulcanised rubber strip onto an outer peripheral surface of the expanded carcass band, bead portions located on the carcass band are positioned at the same or a wider axial spacing than portions of the carcass band corresponding to the sidewalls, in the winding and joining step.

The description of the application as filed is silent about the actual axial spacing of bead portions during the winding and joining step. Moreover, there is no indication that the position of bead portions relative to sidewall portions may be of any significance. The drawings are schematic (cf. paragraphs [0028] to [0036] of the application as filed), thus any details like lengths, distances and positions shown in the drawings do not necessarily correspond to those in the real world. In addition, the drawings do not show how the tyre looks like during this production step. Thus, it is not possible to derive in a direct and unambiguous manner any axial spacing of any bead portion relative to any portions of the carcass band corresponding to the sidewalls during this specific production step.

The situation underlying decision T 748/91 is different. There it was possible, with the instruction in the description how the drawings are to be interpreted, to derive in an unambiguous manner the relation of thicknesses of two layers (cf. point 2.1.1 of the reasons). As explained above, the application as filed of the present case does not provide for such an unambiguous disclosure.

Thus, the application as filed does not comprise any basis for a specific axial spacing of bead portions during the winding and joining step. The additional feature of claim 1 of the corrected second and second auxiliary request, respectively, therefore constitutes subject-matter which extends beyond the content of the application as filed, so that the requirements of Article 123(2) EPC are not met.

4. *Third auxiliary request*

The third auxiliary request was filed on 28 October 2011 and is therefore to be considered as late filed. The Board has expressed already in its communication attached to the summons for oral proceedings the preliminary opinion that the feature of the same or a wider spacing of bead portions with respect to the spacing of portions of the carcass during the winding and joining step is in conflict with Article 123(2) EPC. Thus, a limitation to only a wider axial spacing of bead portions cannot be considered as a response to this opinion aimed at to remove this deficiency. Moreover, as can be concluded from above, point 3.2, such a limitation lacks likewise support in the

application as filed as the spacing during the specific production step is not disclosed therein. For this reason, claim 1 of the third auxiliary request is prima facie not allowable.

This request is therefore not admitted in accordance with Article 114(2) EPC and Article 13(1) RPBA.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Meyfarth W. Zellhuber