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Case Number: T 1775/06 - 3.4.02

Application Number: 00902921.6

Publication Number: 1154302

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Language of the proceedings: EN

Title of invention:
Eyeglass and its manufacturing method

Applicant:
HOYA CORPORATION

Opponent:
-

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step - technical prejudice (no)"

Decisions cited:
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Catchword:
-

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Case Number: T 1775/06 - 3.4.02

D E C I S I O N
of the Technical Board of Appeal 3.4.02
of 11 November 2008

Appellant: HOYA CORPORATION
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted on 7 July 2006 refusing European application No. 00902921.6 pursuant to Article 97(1) EPC 1973.**

Composition of the Board:

Chairman: A. G. Klein
Members: F. J. Narganes-Quijano
M. J. Vogel

Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal against the decision of the examining division to refuse European patent application No. 00902921.6. The application is based on the International application No. PCT/JP00/00763 (publication No. WO00/48035) the English translation of which was supplied to the EPO under Article 158(2) EPC 1973 with the letter dated 24.07.2001 and published pursuant to Article 158(3) EPC 1973 with the publication number EP-A-1154302.

II. During the first-instance proceedings the examining division referred *inter alia* to documents

D1: "Megane Kogaku", Koji Ose, Kyoritsu Shuppan, Tokyo (JP), 1988; pages 101-102
D4: US-A-4310225
D5: US-A-3960442
D6: US-A-3434781
D9: "Einstärken- und Mehrstärken-Brillengläser", A. Schikorra; Optische Fachveröffentlichung GmbH, Heidelberg (DE), 1994; pages 65-66
D10a: EP-A-0857993
D11: "Handbuch für Augenoptik", Carl Zeiss, Stuttgart, 3rd ed. 1987; pages 122 and 123
D12: DE-A-19612284

and in the decision under appeal the examining division found that the subject-matter of claim 1 amended according to the different requests then on file did not involve an inventive step (Article 56 EPC 1973). In its decision the examining division also observed that the subject-matter of claim 1 of the main request could

be considered to be anticipated by the implicit disclosure of document D10a.

III. Oral proceedings were held before the Board as requested by the appellant on an auxiliary basis.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 to 7 of the main request considered by the examining division in the decision under appeal or, as an auxiliary request, on the basis of claims 1 to 6 filed during the oral proceedings together with the description and the drawings as recorded in point 2 of the order below.

At the end of the oral proceedings the Board gave its decision.

IV. Claim 1 according to the main request of the appellant reads as follows:

"1. A spectacle lens manufacturing method comprising the steps of:

designing a spectacle lens (3) based on a VR value obtained for each individual spectacle wearer, showing a distance VR from a reference point (V) of a rear surface (21) of a lens of each spectacle wearer to a center of rotation (R) of the eye (1a); and

manufacturing the spectacle lens (3) based on a design specification thus obtained,

wherein the VR value is obtained for each individual spectacle wearer by adding

a VC value which is obtained by determination for each individual spectacle wearer and which shows a

value of a distance VC from a reference point (V) of a rear side (21) of the lens to a cornea vertex (C) on wearing spectacles, and

a CR value which is obtained by measurement for each individual spectacle wearer and which shows a value of a distance CR from the cornea vertex (C) to a center of rotation (R) of the eye (1a)."

Claim 1 amended according to the auxiliary request is worded as follows:

"1. A spectacle lens manufacturing method comprising the steps of:

designing a spectacle lens (3) based on a VR value obtained for each individual spectacle wearer, showing a distance VR from a reference point (V) of a rear surface (21) of a lens of each spectacle wearer to a center of rotation (R) of an eye (1a) ; and

manufacturing the spectacle lens (3) based on a design specification thus obtained,

wherein the VR value is obtained for each individual spectacle wearer by adding

a VC value which shows a value of a distance VC from a reference point (V) of a rear side (21) of the lens to a cornea vertex (C) on wearing spectacles, and

a CR value which shows a value of a distance CR from the cornea vertex (C) to the center (R) of the eye (1a), wherein

the VC value is obtained by determination for each individual spectacle wearer;

the CR value is obtained for each individual spectacle wearer by measuring an axial eye length CO by an apparatus for measuring the axial eye length, and

multiplying a measurement value by a ratio between statistically obtained values CR and CO."

The auxiliary request also includes dependent claims 2 to 6 all referring back to claim 1.

V. The arguments submitted by the appellant in support of its requests are essentially the following:

In recent years the possibility has been considered of individually designing spectacle lenses for each individual spectacle wearer on the basis of parameters such as the inter-pupil distance. The present inventors have found that the individual differences in the value VR are unexpectedly large and have a strong influence on the optical performances of spectacle lenses (aberration of aspherical lenses, optical characteristics of multifocal and progressive lenses, etc.). In order to reduce this influence, the invention proposes to obtain the value VR for each individual spectacle wearer and to design the spectacle lens based on this value of VR. These measures are not suggested or rendered obvious by the prior art. In addition, the individualized determination of the value VR requires technically and economically feasible measurement equipments and techniques that were not available before the priority date of the claimed invention so that it was not obvious to obtain the value VR for each individual wearer and to take the value into consideration in the design of the lenses.

None of the prior art references considered during the proceedings discloses the claimed measures, and in particular documents D1, D4, D5, D6, D10a, D11, and D12

all use a fixed or standardized VR value and not individual VR values as claimed. This is a clear indication that a technical prejudice existed in the prior art against a spectacle lens design based on individualized VR values. It is difficult to measure the value of VR and there is no prior art practice in this respect. Only in the present invention the individualized design of lenses on the basis of VR values determined individually for each wearer has been recognized as feasible in the spectacle lens field.

As regards the auxiliary request, a spectacle lens manufacturing method including the claimed procedure of obtaining individual CR values of the spectacle wearers is not suggested by the prior art references. The claimed invention allows for the easy and simple individual determination of the value CR at a low cost by simply measuring the value of CO by means of known equipment normally available at spectacle stores.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request*

2.1 Claim 1 of the main request is directed to a method of manufacturing a spectacle lens on the basis of a design specification involving the distance from a reference point of the rear surface of the lens to the centre of rotation of the wearer's eye (in the following the value "VR"). The examining division's finding that spectacle lens manufacturing methods comprising the

aforementioned features are already known in the prior art as illustrated in documents D1 (Figure 4.5 and the corresponding description), D4 (disclosure with reference to Figure 7), D5 (disclosure of Figures 1 and 2), D9 (page 65, second column) and D10a (Figure 3 and page 6, lines 28 to 32) has not been disputed by the appellant.

The method defined in claim 1 differs from the methods of the prior art considered by the examining division in that the value of VR is obtained for each individual spectacle wearer by adding the distance from a reference point of the rear side of the lens to the cornea vertex (in the following the value "VC") determined for each individual wearer and the distance from the cornea vertex to the centre of rotation of the eye (in the following the value "CR") obtained by measurement for each individual wearer.

None of the documents presently on file discloses these features, as already found by the examining division in the reasons of the decision. In addition, the observations made by the examining division in its decision that the implicit disclosure of document D10a might well anticipate the claimed method are not persuasive because the disclosure of the document does not exclude that the value of VR referred to in the document corresponds to a standard or average value and, in any case, there is no disclosure in the document that would allow the conclusion that the value 27,5 mm of the distance from the rear surface of the lens to the centre of rotation of the eye specified in the document (Figure 3 and page 6, lines 31 and 32) is

determined for an individual wearer following a procedure as claimed.

The Board concludes that the method of claim 1 is novel over the available prior art (Article 52(1) EPC and Article 54(1) EPC 1973).

2.2 The distinguishing features of the claimed method identified above allow the individual design of spectacle lenses according to the specific value of VR of each particular wearer and therefore allows the manufacture of lenses best suited for each individual wearer (page 8, lines 7 to 15 of the description of the application). The objective problem solved by the claimed method can therefore be seen in the improvement of the optical performances of the manufactured spectacle lens.

As found by the examining division and according to the Board's assessment, however, it would be obvious for the skilled person confronted with the problem formulated above to design the lens according to the characteristics of each spectacle wearer and, in particular, according to the specific value of VR of the particular wearer in order to individually adapt the optical prescriptions of the lens to the particular wearer and, thus, improve the optical performances of the lens for this particular wearer. In addition, the determination of the value VR as the sum of the values of VC and CR constitutes a conventional measure falling within the general knowledge of the skilled person and cannot support the presence of an inventive step either.

2.3 The arguments submitted by the appellant in support of inventive step of the claimed subject-matter and summarized in the first paragraph of point V above are not found persuasive because, as already noted by the Board in the communication annexed to the summons to oral proceedings,

- both the fact that the value of VR differs from individual to individual and the fact that the optical performances of a spectacle lens depend on the prescribed value of VR are known by the skilled person working in the field of optical design of spectacles lenses as illustrated by documents D1 (Figure 4.5), D4 (column 5, line 25 to column 7, line 50, in particular column 6, line 61 to column 7, line 2), D5 (column 3, lines 16 to 32 and column 6, lines 50 to 56), D6 (column 7, lines 40 to 44 and column 8, lines 29 to 68), D9 (page 65, second column), D10a (page 4, lines 45 to 48) and D12 (page 2, lines 13 to 16) as it is also the case of the determination of VR as the sum of VC and CR (see for instance document D4, column 6, lines 51 to 56 and document D6, column 7, lines 27 to 32), and

- technical aspects such as the method of determination or measurement of the values of VC and CR and the optical performances of the lens designed according to the value of VR are not addressed by the subject-matter actually claimed.

2.4 In reply to these arguments and comments of the Board, the appellant submitted that the fact that the prior art documents on file follow a different approach constitutes evidence that the individual design of a spectacle lens on the basis of the specific value of VR for the particular spectacle wearer constituted a

technical prejudice at the relevant date and that the invention defined in the main request overcomes this technical prejudice.

This line of argument, however, does not convince the Board. The mere fact that a series of documents follow an approach different to that proposed in the claimed invention does not amount to a rejection of the claimed approach and is therefore not sufficient to establish a technical prejudice against the claimed approach. In addition, the appellant - who has the burden of the proof in establishing the existence of the alleged technical prejudice, see "Case Law of the Boards of Appeal", EPO 5th ed., 2006, chapter I, section D, point 9.2 - has failed to identify any prior art disclosure that would have pointed to a prevailing, preconceived idea generally held in this field against the design of spectacle lenses on the basis of the specific value of VR for the each wearer or that would have clearly pointed towards technical obstacles in following such an approach. Rather, as already pointed out by the Board in the aforementioned communication, the skilled person would understand that the approaches followed in the prior art such as selecting a standard or an average value of VR as in documents D4 (paragraph bridging columns 6 and 7), D6 (column 7, lines 27 to 35), D9 (page 65, second column), D10a (page 6, lines 31 and 32), D11 (Figure 92) and D12 (page 2, lines 13 to 16) or designing the lens so as to accommodate different values of VR within a tolerance value of optical performance as in documents D1 (see comments of the applicant in the paragraph bridging pages 2 and 3 of the letter dated 08.01.2003 and the partial translation of the document on page 7 of the

letter dated 07.09.2004) and D5 (column 6, lines 50 to 56 and column 7, lines 9 to 17) have been adopted in order to simplify the design order procedure and the mass production of spectacle lenses and thus to reduce costs (see in this respect page 14 of the description of the application, lines 6 to 12).

The Board concludes that there is no indication of technical prejudice in the prior art against the individualized design of spectacle lenses on the basis of the specific value VR of the spectacle wearer and that the claimed approach does not overcome a technical prejudice, but amounts to simply accepting the known - or at least easily predictable - disadvantages associated with the design of lenses according to the individual constraints of the spectacle wearer in a mass, commercial order system for spectacle lenses.

As regards the potential technical difficulties in the measurement of the value VR alleged by the appellant, the Board notes that claim 1 of the main request does not address any technical consideration that might be required in the determination of the value VR.

2.5 In view of the above considerations, the Board concludes that the subject-matter of claim 1 of the main request does not involve an inventive step (Article 56 EPC 1973).

3. *Auxiliary request*

3.1 Claim 1 of the auxiliary request further requires the step of determining the value of CR as the product of the measured value of the length of the eye along its

axis (in the following the value "CO") and the ratio between statistically obtained values of CR and CO.

Consequently, the determination of the value of CR for a particular wearer and therefore the individualized determination of VR only require the measurement of the value of CO for the particular wearer, this measurement being easier than the direct measurement of CR or of VR. Thus, while the direct measurement of CR or VR would require complex equipment, the claimed procedure simplifies the determination of the value of CR and renders possible the individualized determination of CR, and therefore of VR, using standard equipment for the measurement of CO which, according to the appellant, is generally available in spectacle stores.

The claimed subject-matter therefore solves the problem of simplifying the individualized determination of VR using standard equipment already available in spectacle stores.

None of the documents on file address this problem. In addition, none of the documents provides a teaching that would render obvious the claimed solution within the meaning of Article 56 EPC.

3.2 Accordingly, the Board concludes that the subject-matter of claim 1 of the auxiliary request is new and involves an inventive step with regard to the available prior art (Article 52(1) EPC and Articles 54(1) and 56 EPC 1973). The same conclusion applies to dependent claims 2 to 6 by virtue of their dependence on claim 1.

4. The Board is also satisfied that the application documents amended according to the auxiliary request and the invention to which they relate meet the remaining requirements of the EPC within the meaning of Article 97(2) EPC. In particular, the amended application documents would satisfy the requirements of Article 123(2) EPC. Thus, with reference to the English translation of the International application supplied to the EPO pursuant to Article 158(2) EPC 1973, claim 1 of the auxiliary request is essentially based on the subject-matter of claim 1 of the translation, after having undergone a change of category, together with the passage on page 11, line 15 to page 12, line 5 of the translation of the description, and dependent claims 2 to 6 are respectively based on page 35, line 21 *et seq*. and page 21, lines 16 and 17, claim 2, page 26, line 5 to page 27, line 6, page 40, lines 13 to 22 and page 46, lines 14 to 19, page 48, lines 1 to 9, and claim 8 of the English translation of the International application; in addition, the amendments to the description and to Figure 4 are also based on the content of the English translation of the International application.

In view of the above, the Board concludes that the decision under appeal is to be set aside and a patent be granted on the basis of the application documents amended according to the present request of the appellant (Article 97(2) EPC and Article 111(1) EPC 1973).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent on the basis of the following documents:
   - claims 1 to 6 filed during the oral proceedings held on 11.11.2008,
   - description pages 9 to 19, 21 to 23, 26 to 28 and 30 to 54 filed with the letter dated 24.07.2001, pages 1 to 3, 8, 24 and 29 filed with the letter dated 08.01.2003 and pages 20 and 25 filed with the letter dated 01.09.2008, pages 4 to 7 being deleted, and
   - drawing sheets 1/26 to 3/26 and 5/26 to 26/26 filed with the letter dated 24.07.2001 and sheet 4/26 filed with the letter dated 08.01.2003.

The Registrar: The Chairman:

M. Kiehl A. G. Klein