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D E C I S I O N
of 14 June 2005

Case Number: T 0834/02 - 3.2.7

Application Number: 96111388.3

Publication Number: 0798077

IPC: B24B 9/14

Language of the proceedings: EN

Title of invention:
Lens grinding apparatus having chamfering and other grinding wheels mounted on the same shaft

Patentee:
NIDEK CO., LTD

Opponent:
Satisloh GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 100(c), 100(a), 56, 114(2)

Keyword:
"Extension beyond the content of the application as filed (yes)"
"Late filed documents (not admitted)"
"Inventive step (yes)"

Decisions cited:
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Catchword:
-

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Case Number: T 0834/02 - 3.2.7

D E C I S I O N
of the Technical Board of Appeal 3.2.7
of 14 June 2005

Appellant: (Opponent)
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Respondent: (Proprietor of the patent)
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Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted 31 May 2002 rejecting the opposition filed against European patent No. 0798077 pursuant to Article 102(2) EPC.**

Composition of the Board:

Chairman: P. A. O'Reilly
Members: K. Poalas
E. Lachacinski

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the decision of the Opposition Division rejecting the opposition against the European patent No. 0 798 077.

The opposition was filed against the patent as a whole based on Article 100(a) EPC (lack of inventive step) and Article 100(c) EPC (extension beyond the content of the application as filed).

The Opposition Division held that the grounds for opposition mentioned in Articles 100(a) and (c) EPC did not prejudice the maintenance of the patent as amended.

The following documents were taken under consideration by the Opposition Division:

D1: DIN 58742 "Optikfertigung; Diamantbesetzte Zentrier- und Schleifscheiben",

D2: US 4 766 699 A,

D3: US 5 347 762 A,

D4: WO 91 03794 A,

D5: DE 90 04 305 U.

The appellant filed with the grounds of appeal the documents:

D6: Prospect "Horizon III" of National Optronics, Inc., USA, undated, and

D6': "HORIZON III EDGER", Instruction, Operation and Maintenance Manual, dated January 1996, and

a sheet having four drawings made by the appellant.

II. The appellant requested that the decision under appeal be set aside and the patent revoked.

III. The respondent (patent proprietor) requested that the appeal be dismissed and the patent be maintained as granted, alternatively, that the patent be maintained in accordance with the auxiliary request filed with letter of 11 May 2005. In the auxiliary request claim 7 is deleted.

IV. Claims 1 and 7 as granted read as follows:

"1. A lens grinding apparatus for performing frame-fit processing on an eyeglass lens, comprising:
input means for obtaining data for the frame-fit processing including lens edge position data;
means for calculating processing data based on the data obtained by the input means;
lens holding shafts for holding a subject lens in between;
means for rotating the lens holding shafts;
a grinding-wheel shaft on which a grinding wheel for lens edge grinding in rough processing and in bevel processing and a grinding wheel for chamfering are mounted coaxially;
wherein said grinding wheel for chamfering has a first grinding wheel for chamfering a front side of the lens

and a second grinding wheel for chamfering a rear side of the lens;
wherein a maximum diameter of each of said first and second grinding wheels is substantially equal to a maximum diameter of said grinding wheels for lens edge grinding in rough processing and in bevel processing; and
wherein each of said first and second grinding wheels is located at an outermost position with respect to said grinding wheel for lens edge grinding in rough processing and in bevel processing;
means for rotating the grinding-wheel shaft on its axis;
moving means for moving the grinding-wheel shaft toward a rotation axis of the lens holding shafts, and for moving the grinding-wheel shaft in a longitudinal direction thereof relative to the subject lens, to grind or chamfer the subject lens; and
control means for controlling the grinding-wheel shaft moving means based on the processing data in rough and bevel processing and chamfering."

"7. The lens grinding apparatus as set forth in claim 1, wherein the input means includes means for receiving eyeglasses frame data by an eyeglasses frame shape measuring apparatus and layout data, and means for measuring edge positions of front and rear surfaces based on the eyeglasses frame data and the layout data, and wherein the processing data calculating means for calculating a moving distance of the grinding-wheel shaft based on data indicating the edge positions, the eyeglasses frame data and the layout data."

V. Oral Proceedings before the Board of Appeal took place on 14 June 2005.

VI. The Appellant argued in written and oral submissions essentially as follows:

(a) The subject-matter of claim 7 related to "means for measuring edge positions of front and rear surfaces based on the eyeglasses frame data and the layout data" extends beyond the content of the application as filed.

(b) Documents D6 and D6' are directed to the same machine. The skilled person knows that machine prospects and operational manuals are printed in order to be published. Therefore, it is for the skilled person obvious that "January 1996" as printed on the second page of document D6' is the publication date of said document and that document D6 was also published at the same point in time.

(c) The apparatus according to claim 1 differs from the apparatus known from document D4 by the following features:

1.7 a maximum diameter of each of said first and second grinding wheels is substantially equal to a maximum diameter of said grinding wheels for lens edge grinding in rough processing and in bevel processing;

1.8 each of said first and second grinding wheels is located at an outermost position with respect to said grinding wheel for lens edge grinding in rough processing and in bevel processing;

1.10 moving means for moving the grinding-wheel shaft toward a rotation axis of the lens holding

shafts, and for moving the grinding-wheel shaft in a longitudinal direction thereof relative to the subject lens, to grind or chamfer the subject lens; and

1.11 control means for controlling the grinding-wheel shaft moving means based on the processing data in rough and bevel processing and chamfering.

The features 1.10 and 1.11 being a simple kinematic reversal of the conditions known from document D4 are obvious to the person skilled in the art, see also document D2 disclosing a movable grinding wheel shaft.

The skilled person is led directly to the features 1.7 and 1.8 by the teaching of either document D1 or by the one-way-street situation shown in the figures 1 to 4 made by the appellant and filed with the grounds of appeal.

Also documents D2 and D3, by disclosing blocks of different grinding wheels having all the same diameter, give a hint to the person skilled in the art to position chamfering grinding wheels at the outermost positions of said blocks.

VII. The Respondent argued in written and oral submissions essentially as follows:

(a) The means for measuring edge positions of front and rear surfaces as claimed in claim 7 are clearly described in the application as originally filed in the part referring to the lens frame shape measuring apparatus 650 and to the lens

thickness measuring section 400. The lens frame shape measuring apparatus 650 and the receipt of the eyeglasses frame data and the layout data are disclosed on page 14, lines 3 to 13. The lens thickness measuring section 400 is disclosed on page 11, line 12, to page 12, line 26 and the lens edge thickness measurement is disclosed on page 15, line 3 to page 16, line 2. These citations show clearly, that all features of claim 7 are disclosed in the application as originally filed.

(b) Documents D6 and D6' filed for the first time in the appeal proceedings are late filed. Furthermore, since document D6 has no date on it, there exists no evidence about the publication date of said document. The same applies also to document D6', since said document has not only be filed in part but there exists also no evidence that "January 1996", as printed at the bottom of the second page of D6', was the period of time at which said document was published.

Therefore, documents D6 and D6' should be disregarded.

(c) The apparatus according to claim 1 differs from the apparatus known from document D4 by the above mentioned features 1.7, 1.8, 1.10 and 1.11.

It is the object of the present invention to provide a lens grinding apparatus which can perform chamfering with a simple mechanism, especially to reduce machining costs and working costs.

Document D1 relates to centring disks and disks with special profiles designated for centring grinding machines for grinding the cylindrical periphery of a polished lens such that the mechanical axis and the optical axis fall together.

The teaching of D1 has nothing to do with the problem to be solved according to the present invention and document D1 defines disks having several different diameters d1, which can be combined in several different possibilities. Further, for example form F has an outer diameter d4, which is greater than the diameter d1.

Thus, a person skilled in the art would not have taken document D1 into consideration to solve the above-mentioned problem of the invention.

It is also clear from the figures 1 to 4 filed by the appellant with letter of 27 September 2002 that there does not exist a one-way—street situation regarding a possible arrangement of the grinding wheels. Besides the possibilities shown in Figures 1 to 4, further possibilities would be for example to arrange the first grinding wheel 32 and the second grinding wheel 33 such that they form a V-shaped grove or to arrange the several grinding wheels such that they are arranged with pre-determined clearances on the grinding wheel shaft or that there are provided several grinding wheel shafts on which a single grinding wheel is arranged, respectively. This clearly shows, that

it is not necessary to arrange the grinding wheels for chamfering as defined in item 1.8 of claim 1 of the patent in suit so that no one-way—street situation is present to solve the object of the invention.

Reasons for the Decision

1. *Article 100(c) EPC*

The respondent argues that the feature "means for measuring edge positions of front and rear surfaces based on the eyeglasses frame data and the layout data" disclosed in claim 7 as granted is derivable from the following passages of the description as originally filed:

- page 14, lines 3 to 13 where it is stated that

"The following description will be directed to a case where various kinds of data including the data (three-dimensional configurational data on a lens frame shape and a template) of a lens shape measuring apparatus 650 (see U.S. Patent No. 5,228,242, for instance) installed in each optician's shop, layout data (a distance between geometrical centers of both lens frame portions, a papillary distance, etc.), a lens kind and strength data, and other data are transmitted through public communications lines to the host computer 651 which is provided in a processing center, and a lens is processed by the lens grinding apparatus according to the embodiment.";

- page 12, lines 18 to 26 where it is stated that

"The shape of the lens front refraction surface is obtained by rotating the lens while keeping the feeler 523 in contact with the lens front refraction surface (bevel bottom (or bevel top)). Then, the shape of the lens rear refraction surface is obtained by rotating the lens while keeping the feeler 524 in contact with the lens rear refraction surface to (this operation is basically the same as disclosed in Japanese Unexamined Patent Publication No. Hei. 3-20603 and U.S. Patent No. 5,333,412 mentioned above).";
and
- page 15, lines 3 to 12 where it is stated that

"(1) Lens Edge Thickness Measurement
Upon receipt of the start signal, the control unit 600 drives the DC motor 103 to lower the chuck shaft holder 120, to thereby hold the subject lens by means of the chuck shafts 121 and 152. Next, the control unit 600 produces processing data which has the position of the lens optical axis as the origin based on the layout data, lens frame shape data, and other data. Edge information of the bevel top or bottom (preferably, the bevel bottom) is obtained in the edge thickness measurement of the subject lens."

The Board cannot find in the above mentioned passages of the originally filed application any reference to a measurement of the edge positions of front and rear surfaces of the subject lens on the basis of the eyeglasses frame data and the layout data.

For a measurement of the edge positions of front and rear surfaces of the subject lens on the basis of the

eyeglasses frame data and the layout data the control unit 600 has to control the movement of the lens measuring section 400 on the basis of the eyeglasses frame data and the layout data. There is no mention in the above mentioned passages of the originally filed description for such an operational link between the control unit and the lens measuring section.

Also the reference to the measuring device of US 5 333 412 A in the description of the originally filed application does not disclose any information about a measurement of the edge positions of front and rear surfaces of the subject lens on the basis of the eyeglasses frame data and the layout data, since said reference is directed to the structural details of such a measuring device only and it does not disclose any information about the data basis upon which such a measurement takes place.

Therefore, the subject-matter of claim 7 as granted discloses subject-matter which extends beyond the content of the application as originally filed, violating thereby the requirements of Article 100(c) EPC.

The main request of the respondent has to be refused.

2. *Documents D6 and D6'*

Documents D6 and D6' were filed for the first time with the letter disclosing the appeal grounds and there is no evidence in the file that said documents belong to the state of the art according to Article 54(2) EPC.

In the case of document D6 the document is undated and there is no information in the file about its publication date. In the case of D6' there is a date of "January 1996" printed at the bottom of the second page of D6', but there is no evidence in the file that this date indicates the publication date of said document. Since D6' is an operating manual the date of "January 1996" could indicate the validity date for the manual and such a manual would be supplied along with the corresponding machine. There is however no evidence that the corresponding machine was ever marketed. The Board concludes that it was not proven that the documents D6 and D6' were published before the priority date of the patent in suit.

The Board cannot follow the appellant's argument that every printed brochure or machine manual is also published and that the time of publication is identical with any time indication which can be found on such printed documents. This appellant's argument therefore remains an allegation without conclusive evidence.

Therefore, the Board exercises its discretion according to Article 114(2) EPC to disregard these documents.

3. *Article 56 EPC*

3.1 Closest prior art

The Board agrees with the parties that document D4 represents the most relevant prior art disclosing a lens grinding apparatus for performing frame-fit processing on an eyeglass lens, comprising:

1.1 input means for obtaining data for the frame-fit processing including lens edge position data;
1.2 means for calculating processing data based on the data obtained by the input means;
1.3 lens holding shafts for holding a subject lens in between;
1.4 means for rotating the lens holding shafts;
1.5 a grinding-wheel shaft on which a grinding wheel for lens edge grinding in rough processing and in bevel processing and a grinding wheel for chamfering are mounted coaxially;
1.6 wherein said grinding wheel for chamfering has a first grinding wheel for chamfering a front side of the lens and a second grinding wheel for chamfering a rear side of the lens;
and
1.9 means for rotating the grinding-wheel shaft on its axis.

3.2 Problem underlying the invention

It is the object of the present invention to provide a lens grinding apparatus which can perform chamfering with a simple mechanism, thereby avoiding interference between the chamfering wheels and the lens chuck shaft or a part of the lens other than the portion to be chamfered, see patent specification, column 2, lines 22 to 25 and column 12, lines 17 to 20.

3.3 Solution

In accordance with claim 1 of the patent in suit the above mentioned problem is solved in that the apparatus of document D4 is modified so that

1.7 a maximum diameter of each of said first and second grinding wheels is substantially equal to a maximum diameter of said grinding wheels for lens edge grinding in rough processing and in bevel processing, and
1.8 each of said first and second grinding wheels is located at an outermost position with respect to said grinding wheel for lens edge grinding in rough processing and in bevel processing.
Furthermore,
1.10 moving means for moving the grinding-wheel shaft toward a rotation axis of the lens holding shafts, and for moving the grinding-wheel shaft in a longitudinal direction thereof relative to the subject lens, to grind or chamfer the subject lens and
1.11 control means for controlling the grinding-wheel shaft moving means based on the processing data in rough and bevel processing and chamfering are provided.

Due to the fact that a maximum diameter of each of said first and second grinding wheels is substantially equal to a maximum diameter of said grinding wheels for lens edge grinding in rough processing and in bevel processing and that the first and second grinding wheels is located at an outermost position it is possible to reduce the possibility of interference between the grinding wheel and the lens chuck shaft or a part of the lens other than the portion to be chamfered.

3.3.1 The above mentioned solution is not rendered obvious by the documents under consideration for the following reasons:

None of the presented documents discloses a hint for providing the first and second chamfering grinding wheels of the apparatus known from document D4 with a maximum diameter substantially equal to a maximum diameter of said grinding wheels for lens edge grinding in rough processing and in bevel processing and for locating said first and second chamfering grinding wheels at an outermost position.

Even accepting the argumentation of the appellant that the implementation of the features 1.10 and 1.11 to the apparatus known from document D4 is obvious to the person skilled in the art, since these features representing a simple kinematic reversal of the kinematic conditions of document D4, the skilled person would not arrive at the subject-matter of claim 1 of the patent in suit since it no hint would be found for the incorporation of first and second grinding wheels as defined in the features 1.7 and 1.8 into the apparatus known from document D4 in order to solve the problem mentioned above.

Document Dl relates to centring disks and disks with special profiles designated for centring grinding machines for grinding the cylindrical periphery of a polished lens such that the mechanical axis and the optical axis fall together. Such a producing step is completely different from the lens grinding apparatus according to claim 1 of the patent in suit, which performs a frame—fit processing on an eyeglass lens, so that the lens fits into the frame. Due to the enormous variety of eyeglass frames, it is obvious that the requirements for operating centring machines and for operating lens grinding machines for frame—fit

processing are completely different. Thus, the teaching of Dl has nothing to do with the problem mentioned above.

Furthermore, document Dl shows a cylindrical center grinding wheel with setting flanges (see form E on page 2) for laterally mounting profiled grinding discs (see forms F and G on page 4). Some of the profiled grinding discs (form "G") have the same outer diameter d1 as the center wheel, whereas others (form "F") have an outer diameter d4 greater than the diameter d1 than the center wheel. Therefore, no clear teaching about the relationship between a maximum diameter of the grinding wheels for chamfering of the front and rear side of the lens and a maximum diameter of concentrically positioned grinding wheels for lens edge grinding in rough processing and in bevel processing or about the positioning of such grinding wheels for chamfering in relation to the grinding wheels for lens edge grinding in rough processing and in bevel processing of a machine according to document D4 is derivable from document D1.

Thus, a person skilled in the art trying to solve the above mentioned problem of the patent in suit would not take document Dl into consideration at all.

As far as figures 1 to 4 filed by the appellant with letter of 27 September 2002 are concerned the Board comments as follows:

Firstly, the first three figures do not represent a state of the art but they only show some possible arrangements of grinding wheels according the

appellant's intuition and after having taken knowledge of the teaching of the patent in suit. Secondly, it is very unlikely that a person skilled in the art would not adapt the dimension of the tools to be used for treating the lens to the dimensions of the lens to be treated in order to avoid the collision problems shown in figures 1 to 3. Thirdly, the figures 1 to 3 themselves demonstrate that there is more than one possibility of arranging the grinding wheels, even if in each of these three cases an adaptation of the dimensions of the grinding wheels to the dimensions of the lens to be treated needs to be taken into consideration. Fourthly, in addition to the possibilities for arranging the grinding wheels shown in figures 1 to 3, further possibilities were presented by the respondent. These included arranging the first grinding wheel and the second grinding wheel such that they form a V-shaped grove or arranging the several grinding wheels such that they are arranged with pre-determined clearances on the grinding wheel shaft or providing several grinding wheel shafts on which a single grinding wheel is arranged respectively.

Therefore, the Board concludes that figures 1 to 4 of the appellant's letter of 27 September 2002 are not suitable to prove a one-way—street situation leading to the features 1.7 and 1.8 of claim 1 of the patent in suit.

The Board considers the appellant's argument that documents D2 and D3 by disclosing blocks of different grinding wheels having all the same diameter give a hint to the person skilled in the art to position chamfering wheels at the outermost positions of said

blocks as a mere allegation without any conclusive evidence. D2 only specifically mentions one grinding wheel 20 (cf. column 3, lines 13 to 14 and column 5, lines 3 to 7). D3 mentions an abrasive wheel 60a for glass lenses, an abrasive wheel 60b for plastic lenses and an abrasive wheel 60c for tapered edge and plane machining (cf. column 4, lines 14 to 21). Tapered edge machining is undefined and may refer to bevel processing in the sense of the patent in suit, so that no information may be derived from D3 teaching the provision of a grinding wheel for chamfering. Moreover, when having a block of coaxially mounted grinding wheels with no information about which types of grinding wheels are present and the positioning of specific grinding wheels, there are several possibilities for positioning the chamfering wheels, for example in the middle of said block such that the inclined surfaces face one another to form a single groove. As mentioned above no indication for positioning the chamfering wheels at the outermost positions of the block of grinding wheels exists in D2 or D3.

3.3.2 For the above mentioned reasons, the subject-matter of claim 1 of the patent in suit involves an inventive step within the meaning of Article 56 EPC.

3.4 Dependent claims 2 to 6 concern particular embodiments of the lens grinding apparatus claimed in claim 1 and are likewise allowable.

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 the first instance with the order to maintain the patent in the following version:

   description: columns 1 to 13, as granted;
   claims: 1 to 6 as filed with letter of 11 May 2005;
   drawings: figures 1 to 8 as granted.

The Registrar: The Chairman:

G. Nachtigall P. O'Reilly