BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Internal distribution code:
(A) [ ] Publication in OJ
(B) [ ] To Chairmen and Members
(C) [X] To Chairmen
(D) [ ] No distribution

D E C I S I O N
of 7 June 2005

Case Number: T 0298/02 - 3.4.2

Application Number: 93310338.4

Publication Number: 0607692

IPC: G01M 11/02

Language of the proceedings: EN

Title of invention:
A method of inspecting ophthalmic lenses

Patentee:
JOHNSON & JOHNSON VISION PRODUCTS, INC.

Opponent:
Novartis AG

Headword:
-

Relevant legal provisions:
EPC Art. 52(1), 54, 56, 123(2)

Keyword:
"Novelty (main and first auxiliary requests: yes) - inspection system of the prior art not suitable for performing the inspection function of the claimed system"
"Inventive step (main request: no; first auxiliary request: yes)"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0298/02 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 7 June 2005

Appellant: (Opponent)	Novartis AG CH-4002 Basel (CH)
Representative:	VOSSIUS & PARTNER Siebertstrasse 4 D-81675 München (DE)
Respondent: (Proprietor of the patent)	JOHNSON & JOHNSON VISION PRODUCTS, INC. 4500 Salisbury Road Suite 300 Jacksonville Florida 32216 (US)
Representative:	Mercer, Christopher Paul Carpmaels & Ransford 43, Bloomsbury Square London WC1A 2RA (GB)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted 17 January 2002 rejecting the opposition filed against European patent No. 0607692 pursuant to Article 102(2) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

I. The appellant (opponent) has lodged an appeal against the decision of the opposition division rejecting the opposition against European patent No. 0607692 (based on European patent application No. 93310338.4).

II. The opposition filed by the appellant against the patent as a whole was based on the grounds of lack of novelty and lack of inventive step (Article 100(a) together with Articles 52(1), 54 and 56 EPC).

In its decision the opposition division referred among others to the following documents:

D1 : US-A-4691231,

D3 : EP-A-0491663 and

DA : "Automated Visual Inspection" B. G. Batchelor *et al.*, IFS Publications Ltd., U.K., 1985; pages 459 and 460,

and held that the claimed invention was novel and involved an inventive step. The opposition division held in particular that although the inspection station of the system for the inspection of bottles disclosed in document D1 would be suitable for inspecting ophthalmic lenses, the handling mechanism of the bottles of the system is incompatible with the nature of, and therefore unsuitable for ophthalmic lenses; in addition, document D3 discloses a system for the automated inspection of lenses and a combination of the teachings of documents D1 and D3 would not be obvious

in view of the differences between the respective inspection systems and the different handling requirements of bottles and lenses.

III. Oral proceedings were held before the Board on 29 April 2005 in the presence of the parties.

The appellant requested setting aside of the decision under appeal and the revocation of the patent in its entirety.

The respondent (patent proprietor) requested that the appeal be dismissed and that the patent be maintained as granted as a main request or maintained in amended form on the basis of claims 1 to 14 amended according to one of auxiliary requests I to V filed during the oral proceedings together with the description and the drawing sheets of the patent as granted.

At the end of the oral proceedings the Chairman declared the debate closed and announced that the decision would follow in writing.

IV. Claims 1 and 8 according to the main request read as follows:

" 1. A method of inspecting ophthalmic lenses (114), comprising the steps of:
continuously moving a multitude of lenses (114) along a predetermined path to move each of the lenses (114), one at a time, into a lens inspection position;
each time one of the lenses (114) moves into the lens inspection position,

i) activating a light source (30) to generate a respective one light pulse (82);

ii) directing the one light pulse (82) through said one lens (114) and onto an array (46) of pixels (146a, 146b);

iii) generating a respective one set of signals representing the intensity of light incident on said array (46);

iv) processing said set of signals according to a predetermined program to determine at least one condition of said one lens (114); and

v) generating an output signal representing said at least one condition;

wherein step i) further comprises the steps of:

vi) generating a start signal indicative that said lens (114) is in the said lens inspection position;

vii) transmitting said start signal to a light source controller (134) in communication with the light source (30) so as to thereby activate the light source (30)."

" 8. A system (10) for inspecting ophthalmic lenses (114), comprising:

means (12) for continuously moving a multitude of lenses along a predetermined path and for moving each of the lenses (114), one at a time, into a lens inspection position;

lighting means (14) for generating a respective one light pulse (82) each time one of the lenses (114) moves into the lens inspection position;

a pixel array (46) adapted to generate a respective one set of signals representing the intensity of each light pulse (82) incident on said array (46);

means for directing the light pulses (82) through the lenses (114) and onto the array (46) of pixels (146a, 146b); and

processing means (20) connected to the pixel array (46) for receiving said sets of signals therefrom, for processing said signals according to a predetermined program, and for generating an output signal representing at least one condition of each of the lenses (114);

wherein the means (12) for continuously moving the lenses (114) comprises:

means (94) for generating a start signal indicative that a lens (114) is in the said lens inspection position; and

means for transmitting said start signal to control means (134) in communication with the lighting means (14) so as to thereby activate the lighting means (14)."

Claims 2 to 7 and claims 9 to 14 are dependent claims referring back to claims 1 and 8, respectively.

Claims 1 to 14 according to auxiliary request I are identical to claims 1 to 14 of the main request except for the replacement of the expression "into a lens inspection position" in the second paragraph of each of claims 1 and 8 by the expression "through a lens inspection position".

The wording of the claims according to auxiliary requests II to V is not relevant to the present decision.

V. The arguments of the appellant in support of its request can be summarized as follows:

The amendments made to claims 1 and 8 of auxiliary request I by replacement of the term "into" by "through" is not supported by the original disclosure and by the description of the patent (Articles 123(2) and 84 EPC). The passage in column 6, line 37 ff. of the patent specification and according to which the lenses are continuously moved into and through the inspection position refers to the plurality of lenses and not to each of the lenses and the passage does not support that the lenses are continuously moved one by one while being inspected.

Document D1 pertains not only to the inspection of bottles but more generally to the inspection of transparent and translucent bodies (claim 1) and its teaching is applicable to the inspection of lenses. In addition, as acknowledged by the opposition division, the inspection station of document D1 is also suitable for the inspection of lenses which may for instance be fed into the inspection station by appropriate transport means such as a lens holder. Even if the sidewall inspection system of document D1 is not considered as suitable for detecting and inspecting a lens, the additional top/bottom inspection system disclosed in the document and also comprising cameras is suitable for such purpose. In addition, the sidewall inspection system of document D1 is designed to detect the edges of the bottles (column 8, lines 8 and 22) and would therefore detect the location of a lens, and the processing means are such that they would generate a signal representative of the lens, for instance of its

cloudiness. Thus, the system of D1 includes all the features required by the invention for the inspection of lenses, whereby some features such as the imaging resolution might require non-essential adjustments for an improved inspection of the lenses.

As to inventive step, the skilled person working in the field of automatic inspection at the priority date of the patent would have considered neighbouring as well as broader general technical fields within the meaning of decisions T 176/84 and T 891/91 and would therefore have also considered systems for the inspection of different objects such as that of document D1. In addition, due to the multidisciplinary character of the automated visual inspection of objects (pages 459 and 460 of document DA), the skilled person to be considered in the assessment of inventive step is a team of persons skilled in different fields such as electronic control, image and signal processing software, etc.

The closest prior art is represented by the system of document D1. According to the case law ("Case Law of the Boards of Appeal" 4th ed. 2001 EPO, chapter I, section D-6.12), there is no inventive step in the new use of a known measure when there is no fundamental difference between the problem solved with the known measure in the known case and the problem posed in the case under consideration. Thus, since the problem posed in the patent (column 1, lines 9 to 43) is the automated inspection of lenses and document D1 solves precisely this problem for the inspection of bottles (column 3, line 45 ff.), it is obvious to apply the teaching of document D1 to the inspection of lenses and

to arrive at the claimed invention, possibly after appropriate adjustments such as the imaging resolution of the system. In addition, any problem associated with the transport of lenses instead of bottles would be readily identified and solved by the skilled person in view of the common general knowledge in the relevant field and possibly after consideration of the lens transport mechanism 8 disclosed in document D3.

According to the claims of both the main request and auxiliary request I the lenses are continuously moved into the inspection position but neither the proper wording of the claims nor the description (Figures 4 and 6 and column 5, line 37 ff. and column 13, line 49 ff.) require that the lenses are also continuously moved through the inspection position. Starting from document D3 as closest prior art, the continuous movement of the lenses during inspection is neither excluded in document D3 nor incompatible with the corresponding disclosure, and in any case there are only two possibilities, namely that an instantaneous image of the lens is captured while the lens moves or that the lens is stopped for capturing an image of the lens, so that there is no reason for not considering a combination of documents D1 and D3. In addition, D3 also addresses explicitly the full automation of the inspection of lenses (page 8, lines 1 to 8) and since the distinguishing feature of the claimed invention relating to the automated activation of the illumination solves the problem of providing an automated illumination and this problem has been already considered in document D1 and solved by the same means as in the invention, no inventive step can be seen in the claimed invention.

The claimed invention is also obvious starting as closest prior art with the common general acknowledge of the team of skilled persons working in the field of automated visual inspection of objects. In this field the relevant issue is not the kind of objects to be inspected but the integration of the inspection system in a predetermined manufacturing system. If the objects are continuously moved in the manufacturing system, the team of skilled persons confronted with the problem of designing an inspection system adapted to the manufacturing system would be led to an inspection system as claimed, possibly after consideration of other inspection systems known in the art such as those shown in documents D1 and D3.

VI. The arguments of the respondent in support of its requests are essentially the following:

As far as novelty is concerned, the disclosure of a document relating to a system does not extend to similar, equivalent or obvious systems. The question is therefore not whether predetermined means of the bottle inspection system of document D1 can be used for the inspection of lenses, but whether the system disclosed in document D1 as a whole is suitable, without any adjustment, for the inspection of lenses. The photo cell of the system of document D1 is so arranged that it would not detect the presence of a lens in the detection position and would therefore fail to trigger the light strobe. Moreover, even assuming that the lens would be detected and imaged by the video cameras of the system of document D1, the image processing means which has been designed to process image sections of

bottles would not work appropriately. In addition, the image processing is designed in document D1 to determine whether a bottle has flaws and defects and is reusable or not on the basis of the count of occurrences of grey level pixels (column 10, lines 1 to 16 and 49 to 63) and would therefore not generate any signal output representing a condition of the lens.

The additional top/bottom inspection device of document D1 does not include, among others, illumination means, means for triggering a start signal upon detection of a lens and means for processing an image of the lens as claimed.

The different means of the inspection system of document D1 have been specifically designed to detect and inspect bottles and for this reason the objective closest prior art is represented by document D3 which pertains to the inspection of lenses. Contrary to the present claims and in particular to the claims amended according to auxiliary request I which make clear that the lenses are also continuously moved through the inspection position during inspection of the same, the image processing and inspection system of document D3 requires a careful centring and positioning of the lens at the inspection position for the identification of optical zones within the lens before inspection takes place. Thus, in document D3 the illumination must be switched on while the lens is being centred and positioned at the inspection position, the camera taking then one shoot after the lens has been correctly centred and positioned. The problem solved by the claimed invention over document D3 is improving the throughput in the inspection of lenses, in particular

by changing the way lenses are moved and fed into the inspection position and by illuminating each lens using a light pulse. Document D1, however, only concerns the inspection of bottles which have different handling requirements as lenses and the document does not address the aforementioned problem.

Reasons for the Decision

1. The appeal is admissible.

2. *The prior art*

2.1 Document D1 discloses a system for the inspection of bottles (abstract). In this system bottles 20 are continuously moved by means of a conveyor 30 and fed one at a time into a bottle inspection station (Figures 1 to 3 and column 4, line 54 ff.). A photo cell 54 generates a start signal each time a bottle moves into the inspection station (column 5, lines 24 to 35) and the start signal is transmitted to control means which activate strobe lights 60 (column 5, lines 44 to 59), the strobe lights generating illumination light that is directed through the sidewalls of the bottle and onto video cameras 50 located around the bottle, whereby the pixel array of each of the video cameras generates a set of signals representing the intensity of the light incident on the array (column 2, lines 62 to 67, column 5, line 60 to column 6, line 11, column 6, lines 43 to 46 and column 14, lines 34 to 38). The sets of signals are then processed by a computer (column 8, lines 36 to 49 and column 9, lines 9 to 19) according to a program

(column 7, line 5 ff.), the computer generating an output signal representing, among others, the degree of scuffing of the sidewalls of the bottle (column 11, line 15 ff. and Figures 6 and 9).

2.2 Document D3 discloses a system for the inspection of ophthalmic lenses and more particularly for the detection of defects in the lenses (abstract and Figures 1 and 2 together with page 4, line 14 to page 5, line 44). The system comprises a lens holder 68 and a device 8 for positioning each of the lenses, one at a time, at a lens inspection position (page 4, lines 14 and 15, and page 7, lines 10 to 20), means 1 for illuminating a lens 6 positioned in the inspection position and for directing the light from the lens onto a CCD camera 4, the pixel array of the CCD camera generating a set of signals representing the intensity of the light incident on the array (page 4, lines 15 to 28). The system further comprises an image processing device 9 which receives the set of signals and processes the signals according to a predetermined program and generates an output signal indicating whether or not the quality of the lens complies with a predetermined standard (page 4, lines 37 to 44 and page 5, lines 27 to 44 together with Figure 11).

2.3 Document DA is a book on automated visual inspection and the passages referred to by the appellant mentions the interdisciplinary character of the field of automated visual inspection of industrial artefacts and the mechanical handling considerations to be taken into account depending on the characteristics - such as the fragility - of the objects to be inspected (pages 459 and 460).

3. *Main request - Claim 8 as granted*

3.1 Claim 8 - Novelty

3.1.1 A comparison of the system defined in claim 8 as granted and the system disclosed in document D1 (see point 2.1 above) reveals that the latter comprises a number of structural and functional features in common with the system defined in claim 8. Relying on this finding the appellant has submitted that the system defined in claim 8 is anticipated by that disclosed in document D1. However, as argued by the respondent, the system disclosed in document D1 has been designed to inspect bottles and more generally for the inspection of hollow transparent and translucent bodies and like containers (claims 1 and 15) but is not suitable in several respects for the inspection of ophthalmic lenses.

First, the transport mechanism disclosed in document D1 for feeding the bottles into the inspection station consists of a conveyor 30 that is arranged to move the bottles in a vertical orientation along the feeding path by means of a separator auger screw 40 (Figure 1 together with column 4, lines 57 to column 5, line 2). Assuming the transport mechanism would also convey lenses towards the inspection station, the lenses would then be fed horizontally into the inspection station. Any other orientation of the lenses would require the provision of additional means or the modification of the transport mechanism of document D1. In addition, since the photo cell 54 of document D1 is located in the feeding path of the bottles so as to detect the

sidewalls of the bottles oriented vertically and being fed into the inspection station (Figure 1 and column 5, lines 24 to 35), the horizontal orientation of the lenses would preclude any response of the photo cell 54 when the lenses are fed into the inspection station and the photo cell would fail - without appropriate adjustment of its position and/or orientation - to trigger the start signal required to activate the strobe lights for illuminating the object to be inspected.

In addition, in document D1 the strobe lights 60 are arranged to illuminate the sidewalls of the bottles and the video cameras 50 are arranged to take views of the sidewalls of the bottles (Figures 1, 2, 7 and 9 together with the corresponding description) and not of the bottom of the bottles and the system of document D1 would therefore fail - without appropriate modifications - to illuminate and to take a view of a lens fed in a horizontal orientation into the inspection station. The appellant has submitted that document D1 specifies, in addition to the system for the inspection of the sidewalls of the bottles, an additional device 58 for the top/bottom inspection of the bottles (Figures 1 and 2 and column 5, lines 6 to 10, and column 8, lines 49 and 50) and that this device would be able to detect and to inspect lenses fed in a horizontal orientation into the inspection station. However, the latter arrangement is implemented in document D1 with a different, additional arrangement using "known [...] base inspection techniques" (column 2, lines 42 to 47) and in particular a device "as known in the art" (column 11, lines 54 to 60) and there is no disclosure in document D1 that the

top/bottom inspection device would also comprise triggering, illumination and processing means as those under consideration.

Finally, the sidewall inspection system of document D1 relies on the simultaneous processing of the images of the sidewalls of the bottle taken by video cameras located at different heights and at different angular orientations (Figures 1, 2 and 10a, and column 15, lines 14 to 36), whereby image processing is carried out on the basis of the pixel information of predetermined inspection windows (Figures 3 and 10b and column 5, lines 36 to 39 and column 10, lines 1 to 3) defined within the viewing fields of the video cameras and excluding the edges and the labels of the bottle and thus also excluding the bottom of the bottle (bottom edge window 98 in Figure 3 and column 9, lines 20 to 68 and column 4, lines 2 to 8 together with column 2, lines 47 to 51). Thus, image processing of the views taken by the video cameras when a lens is located on the basis of the inspection station would not generally include image information of the lens itself. In addition, since the image processing has been designed in document D1 to carry out processing on the basis of the detection of the edges and the labels of bottles, even assuming that the lens is positioned so that the video cameras would each take an image of the lens, the image processing would fail to detect the corresponding edges and labels and would therefore be unable to process appropriately the image views of the lens and to generate any technically meaningful output signal. Thus, without an appropriate redesign of the image processing means, the output signal of the

processing means - if any - would not represent any technically meaningful condition of the lens itself.

In view of the above considerations, the Board concludes that, in spite of the analogies between the two systems, the features of the system of document D1, and in particular the position and orientation of the photo cell 54, of the strobe lights 60 and of the video cameras 50 as well as the image processing program itself, would have to be appropriately modified or at least adjusted in order to render the system suitable for the inspection of ophthalmic lenses. These modifications and adjustments of the system of document D1, however, are neither explicitly nor implicitly disclosed in document D1 and go beyond the proper disclosure of the document and cannot therefore be taken into account in the assessment of novelty of the claimed subject-matter.

Consequently, the inspection system disclosed in document D1 and in particular several of the features of the system are not suitable for the inspection of ophthalmic lenses and the subject-matter of claim 8 is therefore novel over the disclosure of document D1 (Articles 52(1) and 54 EPC).

3.1.2 Document D3 discloses a lens inspection system (see point 2.2 above) but is silent as to the continuous movement of the lenses along a predetermined path before the lenses are one at a time moved into the inspection position, as to the generation of a light pulse when each of the lenses is moved into the lens inspection position, and as to the generation of a start signal indicative that a lens is in the

inspection position and the transmission of the start signal to control means so as to activate the generation of the light pulse. Therefore, the subject-matter of claim 8 is novel over the disclosure of document D3.

The respondent has submitted that according to claim 8 of the main request the lenses are also continuously moved while being moved into and through the inspection position and that this feature constitutes a further distinguishing feature of the claimed subject-matter over document D3. However, although the claim refers to the continuous movement of the lenses along a predetermined path, the formulation of the claim does not exclude that each of the lenses is positioned stationary in the inspection position while the lens is being inspected and after having been continuously moved along the predetermined path and for this reason the submission of the respondent cannot be followed.

3.1.3 Document DA is silent as to the inspection of lenses and as to devices for the inspection of lenses.

3.1.4 It follows from the above that the subject-matter of claim 8 is novel over the disclosure of each of documents D1, D3 and DA considered by the parties during the appeal proceedings (Articles 52(1) and 54 EPC).

3.2 Claim 8 - Inventive step

The primary object of the invention is the inspection of ophthalmic lenses (see claims and the introductory part of the description). Among the documents

considered by the parties during the appeal proceedings, only document D3 addresses the inspection of ophthalmic lenses and for this reason the Board considers document D3 as representing the closest state of the art.

The submission of the appellant that document D1 also qualifies as closest prior art cannot be followed because the system of document D1 is not suitable for the inspection of lenses (see point 3.1.1 above) and, in addition, the mere fact that the system of document D1 shows structural and functional similarities with the claimed system is not a reason in itself for considering the system of document D1 as a realistic starting point for the objective assessment of inventive step (see "Case Law of the Boards of Appeal", 4th ed. 2001, EPO, chapter I, sections D-3.1 and D-3.2). The further submission of the appellant that the common general knowledge also qualifies as closest state of the art is also insufficient in view of document D3 and in the absence of evidence relating to the common general knowledge in the specific field of the automated inspection of lenses.

The technical effect achieved by the distinguishing features of the subject-matter of claim 8 over the system of document D3 and identified in point 3.1.2 above is the improvement of the automated inspection of lenses, and more specifically the improvement of the throughput of the lens inspection system (column 1, lines 44 to 54 of the patent specification). Document D3, however, already points as one of the main aspects of its disclosure to the improvement of the automated process of both the manufacture and the quality control inspection of the lenses (page 2, lines 36 to 44,

page 3, lines 30 to 39, page 6, lines 41 to 43, and page 8, lines 1 to 8). Thus, the skilled person - or as submitted by the appellant the team of skilled persons - working in the field of automated control inspection of objects and confronted with the problem of further improving the automated process of the quality control of the lenses, and in particular the throughput, would consider other measures that are known in the field without however being confined to the inspection of lenses as submitted by the appellant. In the Board's opinion, and as also submitted by the appellant with reference to the common general knowledge of the team of skilled persons working in automated inspection of objects, the continuous movement of the objects to be inspected before the objects are one at a time fed into the inspection position and the generation of a light pulse upon detection of the object to be inspected reaching the inspection position constitute measures that were known at the priority date of the patent as exemplified by the automated inspection of bottles of document D1 (point 2.1 above). The respondent itself has acknowledged during the oral proceedings held before the Board that in document D3 the lens must be continuously illuminated while the lens is being centred and positioned at the inspection position and that for this reason document D3 implicitly requires some triggering operation of the inspection itself, for instance by triggering an imaging illumination for inspection and/or a one-shoot image capturing operation of the camera.

Consequently, since the application of the measures referred to above to the inspection system of document D3 poses no problem and the measures are known to

improve the automated inspection of objects and in particular the throughput, it was obvious at the priority date of the contested patent to apply such measures to the inspection system of document D3 and to arrive at the claimed subject-matter.

For these reasons, no inventive step can be seen in the subject-matter of claim 8 of the main request (Article 56 EPC).

4. *Auxiliary request I*

4.1 Amendments

Claims 1 and 8 according to auxiliary request I differ from claims 1 and 8 of the patent as granted in that the term "into" in the expression "[moving] each of the lenses (114), one at a time, into a lens inspection position" has been replaced by the term "through". Contrary to the appellant's submissions, this replacement is supported by the application as originally filed and in particular by the passage in column 7, lines 28 to 43 of the publication of the original application according to which a lens carrier is moved "continuously along a predetermined path to move lenses 84 smoothly into and through" the inspection position. The further passage of the publication of the application in column 15, lines 27 to 38 according to which "it is not necessary to stop the ophthalmic lenses being inspected" since the transport mechanism moves the lenses "continuously under the imaging subsystem" supports that each of the lenses being inspected is also continuously moved during inspection. Furthermore, the amended features of

the claim are supported by the corresponding passages of the description of the patent specification (column 6, line 37 ff. and column 13, line 49 ff.) within the meaning of Article 84 EPC, second sentence. In addition, the movement of a lens into a predetermined position encompasses the movement of the lens through the position and for this reason the amendments do not extend the scope of protection conferred by claims 1 and 8 as granted.

Thus, the Board is satisfied that the amendments made to claims 1 and 8 according to auxiliary request I comply with the requirements of Articles 84, 123(2) and (3) EPC.

4.2 Claim 8 - Novelty

The subject-matter of claim 8 of auxiliary request I is novel over the disclosures of documents D1, D3 and DA for reasons analogous to those set forth in point 3.1 above with regard to the subject-matter of claim 8 of the main request. In addition, contrary to the appellant's submissions, the reference in the amended claim to the lenses being continuously moved along a predetermined path and one at a time through the lens inspection position implies - on the proper construction of the claim and as supported by the description of the patent, see point 4.1 above - the continuous movement of the lens through the inspection position while the lens is being inspected and this feature constitutes a further distinguishing feature of the amended subject-matter over the disclosure of document D3 which requires the correct centring (page 4, lines 44 to 57) and positioning of the lens in the

inspection position and thus requires the stationary positioning of the lens before inspection takes place.

4.3 Claim 8 - Inventive step

The closest state of the art for the assessment of inventive step of the subject-matter of the amended claim 8 is also represented by the system disclosed in document D3. The further distinguishing feature identified in point 4.2 above has the effect that the automated inspection of the lenses is carried out by illuminating the lens with a light pulse generated at the time the lens moves continuously through the inspection position. Thus, the lens to be inspected is not stopped at the inspection position and is imaged and inspected while being moved through the inspection position, thus improving the throughput of the lens inspection system (column 1, lines 48 to 54).

The proposed solution, however, runs counter the requirement of the closest prior art that the lens is centred and positioned in the inspection position and thus that inspection takes place when the lens is in a stationary position (D3, page 4, lines 44 to 57). Thus, the skilled person confronted to the problem of improving the throughput of the inspection system of document D3 would have considered the application of the measures known in the art and referred to in point 3.2 above and which are generally applicable to different kinds of objects, but he would have refrained from carrying out the inspection of the lens while the lens moves because he would then have been concerned that the lens would not be correctly positioned as required by document D3 and this would have required a

complete redesign of the image processing of document D3.

As a matter of fact, inspection of an ophthalmic lens involves, among others, controlling its geometrical properties such as the uniformity of the radius of the lens (document D3, page 5, lines 17 to 26 and Figures 5 and 6) which requires the accurate determination of the position of the centre of the lens. While in document D3 such accurate determination results from a specific centring and positioning procedure, there is no hint in the prior art that such specific centring and positioning procedure could be dispensed with and that the position of the lens centre could be determined from the lens image itself by way of image processing techniques as disclosed in the patent in suit (column 18, lines 10 to 34).

Thus, none of the documents considered during the appeal proceedings discloses or suggests the inspection of lenses in continuous motion by instantaneously imaging the lens while being moved. In particular, in document D1 the bottles are continuously conveyed through the inspection station but the bottles are not required to be centred or aligned at the inspection position and the passages of document DA referred to by the appellant are silent as to the throughput in the automated inspection of objects.

For these reasons, the subject-matter of claim 8 amended according to auxiliary request I involves an inventive step with regard to the documents considered during the appeal proceedings (Article 56 EPC).

4.4 Claim 1 and dependent claims 2 to 7 and 9 to 14

Claim 1 according to auxiliary request I is directed to a method of inspecting ophthalmic lenses and the steps of the method are essentially in one-to-one correspondence with the functional features of the different means constituting the apparatus defined in claim 8 of auxiliary request I. It follows that the subject-matter of claim 1 is novel and involves an inventive step for reasons analogous to those set forth in points 4.2 and 4.3 above with regard to claim 8 of auxiliary request I (Articles 52(1), 54 and 56 EPC).

The same conclusion applies to dependent claims 2 to 7 and 9 to 14 by virtue of the dependence of these claims on claims 1 and 8, respectively.

5. The Board is therefore satisfied that the patent as amended according to auxiliary request I and the invention to which it relates meet the requirements of the EPC. Accordingly, the contested decision is to be set aside and the patent maintained in amended form on the basis of the patent documents according to auxiliary request I (Article 102(3) EPC).

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 maintain the patent in amended form on the basis of the following documents:

   - claims: claims 1 to 14 according to auxiliary request I submitted during the oral proceedings of 29 April 2005,

   - description: pages 2 to 18 of the patent as granted, and

   - drawings: Figures 1 to 42 of the patent as granted.

The Registrar: The Chairman:

P. Martorana A. G Klein