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**Datasheet for the decision  
of 29 April 2010**

**Case Number:** T 0377/08 - 3.4.02

**Application Number:** 04250008.2

**Publication Number:** 1507159

**IPC:** G02C 7/04

**Language of the proceedings:** EN

**Title of invention:**  
Multifocal contact lens

**Applicant:**  
J.B. Associates BV

**Opponent:**  
-

**Headword:**  
-

**Relevant legal provisions:**  
EPC Art. 56

**Relevant legal provisions (EPC 1973):**  
-

**Keyword:**  
"Inventive step (no)"

**Decisions cited:**  
-

**Catchword:**  
-



Case Number: T 0377/08 - 3.4.02

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.02  
of 29 April 2010

**Appellant:** J.B. Associates BV  
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Olympic Plaza Building  
NL-1076 EE Amsterdam (NL)

**Representative:** Curtis, Philip Anthony  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 23 October 2007  
refusing European patent application  
No. 04250008.2 pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** A. Klein  
**Members:** A. Maaswinkel  
D. S. Rogers

## Summary of Facts and Submissions

I. The appellant (applicant) lodged an appeal against the decision of the examining division refusing the European patent application No. 04250008.2.

II. In its decision, the examining division held that the subject-matter of the independent claims did not involve an inventive step (Art. 52(1) and 56 EPC) having regard to documents:

D1: US-A-5 864 379

D2: US-A-5 898 473

D3: US-A-5 024 517

D4: US-A-4 869 587.

According to the decision under appeal, claim 1 of the main request defined substantially a trifocal contact lens having three concentric zones of which the central circular zone served for near distance vision correction, an intermediate zone for intermediate vision correction and an outer annular zone for far distance vision correction. Each of the documents D1, D3, D4 disclosed such a trifocal lens. The subject-matter of claim 1 only differed from these prior art lenses in that its zones were spherical. Documents D3 and D4 were silent about the particular surface shape of the individual zones and the lens disclosed in D1 had a spherical central zone and aspherical annular zones. Since it was known to use both spherical and aspherical surface shapes in multifocal contact lenses (both shapes being disclosed in document D2) the skilled person would choose one of these surface shapes for manufacturing the contact lens of document D3.

Since, furthermore, spherical surfaces were easier to fabricate than any other curved surface, the selection of a spherical surface shape would be the preferred one.

The claims of the auxiliary request essentially corresponded to those of the main request with the additional feature that the outer zone refractive power was between approximately 1 dioptré and 2.5 dioptrés less than the central zone refractive power. This range, however, was typical in correction of the intended wearers of such lenses (presbyopic patients) and therefore this feature did not contribute to inventive step.

III. With the statement of grounds of appeal the appellant filed sets of claims according to a main and an auxiliary request which were identical to the respective main and auxiliary requests considered in the decision of the examining division and requested that a patent be granted on the basis of these requests:

Main Request: claims 1 to 30 of the Main Request filed with the letter of 14 February 2008;

Auxiliary Request: claims 1 to 28 of the Auxiliary Request filed with the letter of 14 February 2008.

Furthermore the appellant filed an auxiliary request for oral proceedings.

IV. In a Communication pursuant to Article 15(1) RPBA accompanying the summons to oral proceedings the board expressed its preliminary opinion that the subject-

matter of the independent claims of both requests on file did not involve an inventive step.

V. Oral proceedings took place on 29 April 2010. At the oral proceedings the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of either the main request or the subsidiary request filed with the statement of grounds of appeal. The board gave its decision at the end of the oral proceedings.

VI. The wording of claim 1 of the main request reads as follows:

"A contact lens (10), comprising a transparent material having front (12) and rear (22) surfaces,

wherein the rear surface comprises a base curve which is adapted to fit an eye of a wearer of the lens, and

wherein the front surface comprises a central circular zone (24), an annular outer zone (18), and an annular region (14,16) intermediate the central zone and the outer zone, the contact lens being characterized in that:

the central circular zone is substantially spherical and, together with the base curve, is configured to generate a central zone refractive power selected so as to correct near vision of the wearer;

the annular outer zone is substantially spherical and, together with the base curve, is configured to generate an outer zone refractive power which is less than the central zone power; and

the annular region, intermediate the central zone and the outer zone, comprises one or more contiguous

intermediate annular zones, each of which is substantially spherical, the one or more intermediate annular zones being configured, together with the base curve, to generate respective one or more intermediate zone refractive powers defining a monotonic progression of decreasing refractive power from the central zone to the annular outer zone".

The wording of claim 16 of the main request reads as follows:

"A method for forming a contact lens (10), comprising forming on a transparent material a rear surface (22) comprising a base curve which is adapted to fit an eye of a wearer of the lens; and a front surface (12) comprising a central circular zone (24), an annular outer zone (18), and an annular region (14,16) intermediate the central zone and the outer zone,

characterized in that:

the central circular zone is substantially spherical and, together with the base curve, generates a central zone refractive power selected so as to correct near vision of the wearer,

the annular outer zone is substantially spherical and, together with the base curve, generates an outer zone refractive power which is less than the central zone power, and

the annular region, intermediate the central zone and the outer zone, comprises one or more contiguous intermediate annular zones, each of which is substantially spherical, the one or more intermediate annular zones, together with the base curve, generating respective one or more intermediate zone refractive powers defining a monotonic progression of decreasing

refractive power from the central zone to the annular outer zone".

Claims 2 to 15 and 17 to 30 of this request are dependent claims.

Independent claim 1 of the auxiliary request differs from claim 1 of the main request by the additional feature at the end of the claim:

*"(...from the central zone to the annular outer zone;)  
and the outer zone refractive power is between approximately 1 diopter and approximately 2.5 diopters less than the central zone refractive power".*

Independent claim 15 of the auxiliary request differs from claim 16 of the main request by the additional feature at the end of the claim:

*"(...from the central zone to the annular outer zone,)  
and the outer zone refractive power is between approximately 1 diopter and approximately 2.5 diopters less than the central zone refractive power".*

Claims 2 to 14 and 16 to 28 of the auxiliary request are dependent claims.

VII. The arguments of the appellant may be summarised as follows.

Approaching the question of inventive step using the problem-solution approach, yields the following analysis: The closest prior art could be taken as, for example, document D1. The problem solved by the present

invention compared with D1 is the provision of a multifocal contact lens which offers a wide range of distance corrections, whereby a single lens may be provided for use with a variety of patients with different corrections. The solution defined in the independent claims includes the provision of a multifocal contact lens with plural concentric zones all of which have spherical shapes. In the opinion of the appellant such a contact lens design would not have been obvious for the skilled person as may be appreciated from the prior art. In particular the type of multifocal lens disclosed in D1 combines a spherical central zone with aspherical annular zones. Document D2 discloses a multifocal contact lens having only two zones: a central zone for either near or distance vision correction; and an annular outer zone for intermediate region vision correction. In column 4, lines 4 and 5; and lines 65 to 68, this document discloses that the respective zones may comprise any combination of spherical and aspherical surfaces, and, therefore, does not actually teach a preference for spherical surfaces, in particular not for selecting a spherical surface shape for both zones. Document D3 does not disclose anything about the surface shape of the lens. Also document D4 is silent about the particular surface shape of the trifocal lens disclosed there. Therefore in none of the cited documents is a multifocal lens disclosed wherein each zone has a spherical surface, rather there is a preference of using at least one aspherical surface (D1), of using a combination of spherical and aspherical surfaces (D2), or there is no surface shape disclosed (D3, D4). Contrary to the opinion of the examining division, the manufacturing of a multifocal contact lens having



plural annular concentric spherical zones is not easier or more straightforward than that of a similar lens of aspherical shape for the following reason. Depending on the type of machine used for shaping the lens (spherical lathe, pantographic lathe, CNC lathe) in most cases the material is milled in a first process step, after which in a second process step the surface must be polished. In the case of a multifocal lens with plural concentric annular zones of spherical shape, the borders between two adjacent spherical zones have a V-shape with sharp inflection points. The skilled person would immediately realise that such sharp points are much more difficult to polish than a similar lens wherein the zones have aspherical shapes with continuously changing radii of curvature or smooth transitions between each adjacent zone. Therefore, since none of the cited prior art documents expresses a preference for selecting spherical surfaces, and in particular no document provides a hint of using a spherical surface for all zones, the skilled person would not have any reason for selecting spherical surface shapes for the zones and would prefer aspherical surface shapes. This argument is also valid for contact lenses which are moulded, because in this case an initial mould must be manufactured with the same difficulties of the sharp transitions between two adjacent zones, if these were to have spherical surface shapes.

Finally reference is made to the declarations supplied during the examination proceedings, which show that the claimed lenses do solve the problem in the prior art by offering a wide range of distance corrections, whereby a single lens may be provided for use with a variety of

patients with different corrections. This was also demonstrated by the commercial success evidenced by the growth of sales of the contact lenses according to the invention.

## **Reasons for the Decision**

1. The appeal is admissible.

2. *Amendments*

The present sets of claims according to the main and auxiliary requests are identical to those that were before the examining division and were the subject of the decision under appeal. These claims were not found objectionable under Art. 123(2) EPC and the board has no such objections of its own.

3. *Patentability - main request*

3.1 In the letter containing the grounds of appeal the appellant has referred to document D1 as the closest prior art. The board concurs with this position. This document discloses a contact lens comprising a transparent material having front and rear surfaces, wherein the rear surface comprises a base curve which is adapted to fit an eye of a wearer of the lens (*implicit to this type of lenses*), and wherein the front surface comprises a central circular zone (10, Zone 1, Figure 1), an annular outer zone (40, Zone 4), and an annular region (20, Zone 2; 30, Zone 3) intermediate the central zone and the outer zone. The central circular zone 1 is substantially spherical

(col. 7, l. 43) and, together with the base curve, is configured to generate a central zone refractive power selected so as to correct near vision of the wearer (reading, col. 7, l. 55). The annular outer zone is, together with the base curve, configured to generate an outer zone refractive power which is less than the central zone power (col. 4, l. 57, correction for distance vision). The annular region, intermediate the central zone and the outer zone, comprises one or more contiguous intermediate annular zones, the one or more intermediate annular zones being configured, together with the base curve, to generate respective one or more intermediate zone refractive powers defining a monotonic progression of decreasing refractive power from the central zone to the annular outer zone (col. 4, l. 49 - col. 5, l. 17).

3.2 In the multifocal contact lens defined in claim 1 the central circular zone as well as the annular outer zone and the intermediate annular zones are all substantially spherical. This differs from the lens in document D1 which in the embodiment of Figure 1 has a spherical central zone 1, while the zones 2, 3 and 4 are "preferably aspherical" (col. 7, l. 43 - 46).

3.3 According to the appellant, the underlying technical problem would be the provision of a multifocal contact lens which offers a wide range of distance corrections, as mentioned in the penultimate sentence of paragraph [0014] of the published patent application, whereby a single lens may be provided to correct the vision of patients with different prescriptions. The appellant in this respect has made reference to a declaration by David Berkow presented during the first instance

proceedings to demonstrate that with so-called "Dispo Multi" contact lenses said to be manufactured according to the patent application, a reduced stock of only 65 types of lenses could achieve vision correction for a variety of patients, for whom 715 types were needed when using "regular" contact lenses.

3.4 The board, however, cannot concur with this position since there is no evidence whatsoever in the file that the alleged effect (the reduced stock of lenses that an optician would need) is a consequence of those technical features which distinguish the claimed invention from the closest prior art, namely the spherical shape of the outer and intermediate annular zones of the lens, rather than, for instance, the particular combination of number, curvature or width of the zones in the Dispo Multi lenses.

3.5 For this reason the board considers the underlying technical problem to reside merely in providing an alternative design for the lens known from document D1.

3.6 A solution of this problem appears to be disclosed in the same document D1. From the expression "preferably" used in the passage in col. 7, l. 42 - 46, addressing the concrete embodiment of Figure 1 ("Zone 1 preferably spherical", "Zones 2, 3 and 4 preferably aspherical") it may be understood that alternative shapes are not a priori excluded. Rather, according to claim 10 of D1, which is appended to claim 7 and both claims to claim 1 of D1, the lens may include plural transition zones "wherein said transition zones are spherical".

- 3.7 Therefore the skilled person finds in document D1 a clear hint towards the alternative of providing the outer annular zones with spherical shapes instead of aspherical shapes.
- 3.8 At the oral proceedings before the board the appellant had argued that the skilled person would not have contemplated designing a multifocal contact lens with concentric annular zones of spherical shape, since the fabrication and in particular the polishing of such lenses would be problematic because of the V-shaped transitions between two spherical zones and since the fabrication of aspherical surfaces would be easier. The board does not share this position of the appellant; the multifocal lenses considered in the patent application, as well as in document D1, are commonly of the "soft contact lens" type, see paragraph [0030] of the published patent application, see also col. 11, l. 24 and l. 31, and claim 16 of D1. Such lenses are, for instance, produced by moulding, see D1, col. 11. l. 49. In this case a master mould (negative) is produced, which at the priority date of the present patent application could have been produced by using a CNC lathe in a single processing step including both milling and polishing. Afterwards the soft contact lenses may be mass-produced by using this mould as a master form for replication. Such a fabrication process can be carried out both for spherical and aspherical surface shapes. Therefore the skilled person would not be discouraged from following the teaching of D1, disclosing that spherical shapes for the outer zones may be selected.

3.9 Finally the appellant has made reference to a declaration by Shimon Behar filed in the first instance proceedings in which evidence of the commercial success of so-called "Dispo Multi" contact lenses said to be manufactured according to the patent application had been presented. Indeed, the proof of commercial success of an article might provide a secondary indication of an inventive step if it is clear that such success results from an underlying technical effect achieved by the claimed subject-matter. However, neither at the written proceedings, nor during the oral proceedings before the board was there any evidence presented that the cause for the alleged commercial success lay in the spherical surface shapes of the outer and annular zones.

3.10 Therefore, since document D1 itself provides a clear suggestion to manufacture the multifocal lens disclosed in this document both with the central and all outer transition zones having spherical shapes, and since it appears that the manufacturing of a master mould for replication of such (soft) contact lenses is within the normal capabilities of a skilled person in this technical field, it is concluded that the subject-matter of claim 1 of the main request does not involve an inventive step.

3.11 *Claim 16*

The method of forming a contact lens defined in claim 16 essentially defines the steps for forming the lens of claim 1. As discussed supra, in fabricating the contact lens of document D1 with spherical surfaces as proposed in the same document the skilled person would

carry out the steps of claim 16 without an inventive step being involved.

4. *Auxiliary Request*

4.1 Independent claims 1 and 15 include the additional features "...that the outer zone refractive power is between approximately 1 diopter and approximately 2.5 diopters less than the central zone refractive power" over the independent claims of the main request.

4.2 With respect to this additional feature the examining division had considered that an addition between 1 dpt and 2.5 dpt is a typical range for the correction of presbyopic patients and the skilled person would select a value within this approximate range according to the need of the patient (see point 2.2 of the Decision under Appeal). Neither in its statement of grounds of appeal, nor during the oral proceedings before the board, has the appellant forwarded any arguments to the contrary. Hence the board concurs with the position of the examining division and the subject-matter of these claims does not involve an inventive step.

5. Since the independent claims of either request do not meet the requirements of Article 52(1) and 56 EPC, the appeal is not allowable.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

M. Kiehl

A. G. Klein