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**Datasheet for the decision
of 28 May 2015**

Case Number: T 2425/11 - 3.4.03

Application Number: 09152962.8

Publication Number: 2166580

IPC: H01L33/00

Language of the proceedings: EN

Title of invention:

Solid state lamp

Applicant:

Cree, Inc.

Headword:

Relevant legal provisions:

EPC Art. 52(1), 108

EPC 1973 Art. 54, 56, 84

EPC 1973 R. 71(2)

RPBA Art. 12(4), 13(1), 13(3), 15(1), 15(3), 15(5), 15(6)

Keyword:

Novelty - main request (no)

Late-filed auxiliary requests - admitted (no) - amendments
after arrangement of oral proceedings - procedural economy -
need for additional search (yes)

Decisions cited:

Catchword:



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Case Number: T 2425/11 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 28 May 2015

Appellant: Cree, Inc.
(Applicant) 4600 Silicon Drive
Durham, NC 27703 (US)

Representative: Brophy, David Timothy
FRKelly
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted on 6 July 2011 refusing European patent application No. 09152962.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman G. Eliasson
Members: S. Ward
T. Bokor

Summary of Facts and Submissions

- I. The appeal is against the decision of the Examining Division refusing European patent application No. 09 152 962 as "the application does not meet the requirements of the European Patent Convention", the applicant having been previously informed of the reasons for this conclusion in the communications of the Examining Division dated 15 October 2010 and 18 March 2011.

In the light of these communications, and of the European search opinion to which both of these communications refer, it may be ascertained that the grounds for refusal were that the claimed subject-matter was not new within the meaning of Articles 52(1) and 54 EPC, did not involve an inventive step within the meaning of Articles 52(1) and 56 EPC and/or was not clear within the meaning of Article 84 EPC.

- II. The appellant requested in writing that the decision under appeal be set aside and that a patent be granted on the basis of claims 1-10 of the main request or alternatively on the basis of one of the 1st to 4th auxiliary requests, all filed with the letter of 28 April 2015.
- III. The following documents cited by the Examining Division are referred to:

D1: US 5 535 230 A

D3: US 5 581 683 A

IV. Claim 1 of the main request, which is identical to claim 1 upon which the contested decision was based, reads as follows:

"1. A lamp (10), comprising:

a light source (12);

a disperser (16) that scatters, focuses, or directs light passing through it; and

a separator (14) having two ends, said light source disposed at one of said two ends and said disperser disposed at the other of said two ends, at least some of the light from said light source directed along said separator and through said disperser."

Claim 1 of the 1st auxiliary request adds the following feature to claim 1 of the main request:

"wherein at least some light from said light source is wavelength-converted in said separator or before entering said separator."

Claim 1 of the 2nd auxiliary request adds the following two features to claim 1 of the main request:

"said light source comprising a light emitting diode (LED);

"and further comprising a wavelength converting material between said LED and said separator, wherein at least some light from said light source is wavelength-converted before entering said separator."

Claim 1 of the 3rd auxiliary request adds the following two features to claim 1 of the main request:

"said light source comprising multiple light emitting diodes (LEDs);

"and further comprising a wavelength converting material between at least one of said LEDs and said separator, wherein at least some light from said light source is wavelength-converted before entering said separator."

Claim 1 of the 4th auxiliary request adds the following two features to claim 1 of the main request:

"said light source comprising multiple light emitting diodes (LEDs), at least two of said LEDs configured to emit light having different wavelengths;

"and further comprising a wavelength converting material between at least one of said LEDs and said separator, wherein at least some light from said light source is wavelength-converted before entering said separator."

V. The Examining Division found (by reference to previous communications) essentially as follows:

Document D1 (see Fig. 1) disclosed a lamp, comprising a light source (semi-conductor laser element 1), a disperser that directs light passing through it (diffusion lens 3) and a separator having two ends (hatched part of lamp casing), said light source disposed at one of said two ends and said disperser disposed at the other of said two ends, at least some of the light from said light source directed along said

separator and through said disperser (arrows Lo). Hence the subject-matter of claim 1 was not new (Articles 52(1) and 54 EPC).

Document D3 disclosed a separator (light guide 16), at the two ends of which were disposed a light source (LED 18) and a disperser (diffuser 10) respectively. The subject-matter of claim 1 was therefore also not new in relation to document D3.

VI. The appellant's arguments may be briefly summarised as follows:

In relation to Fig. 1 of document D1, even if it were conceded that the "hatched part of the lamp casing" was equivalent to the separator of claim 1, as suggested by the Examining Division, document D1 did not disclose a light source disposed at one end of the separator, as defined in claim 1, but laser elements 1 disposed at the heat sink 2, which was not one end of a separator.

Claim 1 also defined the feature: "at least some of the light from said light source (12) directed along said separator and through said disperser". Figs. 2, 3g, 6a and 6b of the application provided examples illustrating the paths of light from the light source towards the disperser, with the arrows in these figures demonstrating that the emitted light reflected off the sides of the separator. This was not disclosed in D1. In Fig. 1 of D1 the laser light emitted from the light source (1), represented by arrows Lo, was emitted straight towards the diffuser lenses (3), and thus was not "directed along said separator" as required by claim 1.

Hence, document D1 did not disclose all the limitations of claim 1 of the Main Request.

Regarding document D3, even if the light guide 16 could be seen as a separator, as argued by the Examining Division, document D3 did not disclose a light source disposed at one end of the separator, but instead an LED 18 disposed in the empty space (air) near the light input end 20 of the light guide. Thus, D3 failed to disclose all limitations of claim 1.

The auxiliary requests incorporated additional limiting features which further distinguished the claimed subject-matter from the prior art.

VII. The procedural history before the Board may be summarised as follows.

The application as refused comprised a single request having ten claims, of which: claim 1 was an independent claim for a lamp; claims 2-9 were dependent directly or indirectly on claim 1; and claim 10 was an independent claim for a method of producing dispersed light.

With the statement of grounds of appeal the appellant filed a new main request and 1st to 6th auxiliary requests. All requests comprised 17 claims, including new dependent claims 10-16.

In a communication under Article 15(1) of the Rules of Procedure of the Boards of Appeal (RPBA), the Board expressed the provisional opinion that there was no reason why the new dependent claims could not have been presented in the first instance proceedings. Furthermore, the Board was unable to understand how the

introduction of new dependent claims could make any contribution whatsoever to the appellant's case, hence it could see no justification for using its discretion under Article 12(4) RPBA to admit requests comprising the new dependent claims.

On 28 April 2015 - one month prior to the oral proceedings - the appellant filed the current requests: a main request and new 1st to 4th auxiliary requests, the previous 5th and 6th requests being withdrawn. The dependent claims 10-16 to which the Board had objected were no longer present in any request.

Oral proceedings before the Board were held in the absence of the appellant, the appellant having previously stated in writing the following: "*With reference to the above-identified Appeal, we will not be attending the scheduled Oral Hearing on 28 May 2015.*"

Reasons for the Decision

1. The appeal is admissible.

As announced in advance, the duly summoned appellant did not attend the oral proceedings. According to Rule 71(2) EPC 1973, the proceedings could however continue without the appellant. In accordance with Article 15(3) RPBA, the board relied for its decision only on the appellant's written submissions. The board was in a position to decide at the conclusion of the oral proceedings, since the case was ready for decision (Article 15(5) and (6) RPBA), and the voluntary absence

of the appellant was not a reason for delaying a decision.

2. *Main request: admissibility*

2.1 The Board's objection to the additional dependent claims 10-16 of the previous version of the main request has been overcome by deletion. Claims 1-9 are identical to those of the previous version and to those of the application as refused, and the Board has no objection to the amendments to the independent method claim (now claim 10), which essentially bring the subject-matter into correspondence with that of claim 1. The main request is therefore admitted into the proceedings.

3. *Main request: novelty in relation to document D1*

3.1 It is not disputed that Fig. 1(a) of document D1 discloses a lamp (see e.g. column 9, lines 38-43), comprising a light source (semiconductor laser element 1) and a disperser (diffusion lens 3) that directs light passing through it.

3.2 Furthermore, the hatched casing shown in Fig. 1(a) fixes the relative positions of the semiconductor laser element 1 and the disperser 3 so that they are spaced apart (i.e. separated) from each other. In this respect, the following discussion of the separator in the description of the present application is to be noted:

- *"The Separator 23 serves primarily to separate the light source from the Disperser 26. It can be any elongated hollow or transparent element or tube of any variety of geometries through which light may*

travel. It can be passive and not affect the light as it travels from the light source to the Disperser. Passive Separators include, but are not limited to, hollow tubes or offset rods which serve only to provide physical separation." (page 14, lines 7-14.)

The hatched casing of Fig. 1(a) of document D1 is therefore a separator.

- 3.3 According to this identification, the light source 1 is close to, but not coincident with, the left hand end of the separator. This, the appellant argues, means that document D1 does not disclose a light source which is "disposed at one of said two ends of the separator" as required by claim 1.

Whether this feature is or is not disclosed in document D1 clearly depends on the interpretation of the claimed feature "at one of said two ends of". The simple expression "at one end of" is not technical terminology drawn from the field of lamps or illumination, but merely a commonplace phrase, the meaning of which is to be sought in normal English usage.

In the opinion of the Board, an expression such as "X is disposed at one end of Y" has the well-recognized meaning that X is situated somewhere in the vicinity of (but not necessarily coincident with) an extremity of Y. A footballer, for example, standing a few metres from the goal-line of a football pitch may quite properly be described as being at one end of the pitch, without any danger that this would be misunderstood to mean that he must necessarily be standing on the goal-line. Similarly, saying that a person is standing at

one end of a corridor does not necessarily mean that this person is in contact with the end wall.

The appellant's analysis therefore imposes a meaning on the terms of the claim which is more restrictive than is warranted by normal usage. In Fig. 1(a) of document D1, the light source clearly occupies a position in the vicinity of one end of the hatched casing, and hence can be properly described as being disposed at one of the two ends of the separator.

The interpretation of this expression according to its everyday meaning could, of course, be called into question if the application defined it to have a special, more limited meaning within the context of the present invention. However, not only is no such limited definition disclosed in the description, but according to the arrangement depicted in Fig. 3c, which is said to be an embodiment of the present invention, the light source is near to, but not coincident with or abutting, the separator end, thus confirming the ordinary interpretation of the expression given above.

The Board therefore takes the view that Fig. 1(a) of document D1 discloses a light source disposed at one end of a separator in the form of the hatched casing.

- 3.4 It is further pointed out that, given the very general nature of the separator as defined in the application, other identifications are possible within the context of Fig. 1(a). According to page 8, lines 19-25, the separator could even be merely "free space", and hence the space between the elements 1 and 3 in Fig. 1(a) of document D1 would presumably qualify, with the light sources 1 being disposed at one of the two ends of the "separator".

- 3.5 Finally, on this point, similar identifications could be made in the case of other embodiments of document D1. For example, in Fig. 4(a), the side walls of the glass tube 5 may be identified as the separator, and the end wall comprising the fluorophore ("fluophor 4") may be identified as the disperser (the fluorophore absorbs incident light and re-emits light of a different wavelength, and the skilled person would be aware that the fluorescent light is re-emitted in all directions, i.e. is scattered or dispersed).
- 3.6 The Board is therefore in no doubt that the feature "said light source disposed at one of said two ends" is disclosed in document D1.
- 3.7 The appellant also argues that the feature "at least some of the light from said light source directed along said separator and through said disperser" is not disclosed, since the emitted light in document D1 does not reflect off the sides of the separator but is emitted directly towards it.

However, no such reflection is explicitly defined in claim 1, nor is it implicitly required. In fact, it is quite clear from the application that the invention is intended to include both passive separators which allow the light to pass directly from the source to the disperser, and active separators which may guide, redirect etc. the light on the path from the source to the disperser (see page 14, lines 7-25).

The appellant's argument in this regard is therefore not considered relevant, as it amounts to asserting that document D1 fails to disclose a feature which is not part of the claimed subject-matter.

3.8 For the above reasons, the Board judges that claim 1 of the main request is not new within the meaning of Article 54 EPC 1973 in the light of document D1.

4. *Main request: novelty in relation to document D3*

4.1 For completeness, the Board states its view that claim 1 of the main request also lacks novelty in the light of document D3, which discloses a light guide 16 (the application explicitly mentions that the separator may comprise "either a light pipe or an optical waveguide which guides the light from the LED to the Disperser" - page 9, lines 14-16), with a light source (LED 18) and a disperser (light diffuser 10) at either end.

4.2 The argument of the appellant that the light source in document D3 is not disposed at one end of the light guide, but only near it, is not found persuasive for the reasons set out under point 3.3 above, *mutatis mutandis*. Hence, the Board judges that claim 1 of the main request is also not new in the light of document D3.

5. *Main request: conclusion*

5.1 Since claim 1 of the main request is not new within the meaning of Article 54 EPC 1973, the main request is not allowable.

6. *Auxiliary requests: admissibility*

6.1 All of the current requests were filed after the expiry of the time limit for filing the statement setting out the grounds for appeal according to Article 108 EPC,

final sentence, and after oral proceedings before the Board had been arranged.

Article 13(1) RPBA states the following:

- *"Any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's discretion. The discretion shall be exercised in view of inter alia the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy."*

Article 13(3) RPBA states the following:

- *"Amendments sought to be made after oral proceedings have been arranged shall not be admitted if they raise issues which the Board or the other party or parties cannot reasonably be expected to deal with without adjournment of the oral proceedings."*

It therefore falls to the Board to decide whether the present auxiliary requests can be admitted into the procedure.

- 6.2 The Board's objection to dependent claims 10-16 in the requests filed with the statement of grounds of appeal has been overcome by the omission of such claims from the current requests.

However, the independent claims have also been amended, such that none of the independent claims of the current auxiliary requests is the same as any independent claim filed with the statement of grounds of appeal.

In particular, according to all of the auxiliary requests, claim 1 comprises *inter alia* the feature that at least some of the emitted light is wavelength-converted "before entering said separator" (in the 1st auxiliary request this feature is one of two alternative possibilities; in the 2nd to 4th auxiliary requests there is no other option).

6.3 As neither the claims filed with the statement of grounds of appeal, nor any claims considered by the Examining Division included this feature, the auxiliary requests represent a series of entirely fresh definitions of the subject-matter for which protection is sought. Admission of these requests would require the Board to examine this subject-matter for the first time at a late stage in appeal proceedings, which would not be consistent with the need for procedural economy set out in Article 13(1) RPBA.

6.4 Moreover, although wavelength conversion was mentioned in some of the claims as filed, it was defined as taking place in the disperser (claims 3 and 9-11), in a partially transparent enclosure (claims 5, 6) or in the separator (claim 8). The feature that the emitted light is wavelength-converted *before* entering the separator did not appear in any of the originally filed claims, and hence it may be doubted whether it was even searched.

In fact, not only was this feature not originally claimed, it is nowhere presented in the application as being an essential or important part of the invention. The only reference to light being wavelength-converted before it enters the separator is in a single sentence (page 11, lines 27-31) describing an optional aspect of one particular embodiment (that of Fig. 3c). So little

prominence is given to this feature in the application as filed that it would be surprising if the Search Examiner devoted much, if any, valuable search time to it; at the very least it cannot be presumed to have been fully searched.

Hence, any decision on whether one of the 1st to 4th auxiliary requests could form the basis for the grant of a patent would first require this subject-matter to be searched, meaning that the case would have to be remitted to the Examining Division for further prosecution including an additional search.

Such a course of action would clearly require the adjournment of the oral proceedings, and hence admission of these requests would be contrary to Article 13(3) RPBA.

- 6.5 Finally, the filing of the current 1st to 4th auxiliary requests cannot be regarded as a legitimate response to the Board's communication under Article 15(1) RPBA.

In this communication, the Board made the general point that while it was at least arguable that requests should be admitted if they comprised amendments which were *solely* directed at overcoming the objections which led to the refusal of the application, no justification could be seen for admitting requests comprising new dependent claims.

The Board also briefly examined the substance of the first independent claim of each of the requests then on file, "to take account of the possibility that the appellant may file admissible requests (or submit convincing arguments why the existing requests should be considered admissible)."

In the opinion of the Board, this communication could only be reasonably understood to mean that it was possible that requests corresponding to those filed with the statement of grounds of appeal might be admitted (hence the brief preliminary examination of this subject-matter), but only if the offending dependent claims were excised (or, less likely, if convincing reasons for allowing the new dependent claims to remain were submitted).

Nothing in this communication could reasonably be construed as an invitation to file requests comprising amended independent claims taking the definition of the invention in an entirely new direction, or as an indication that such requests might be admitted into the proceedings.

- 6.6 For the reasons given above, the Board refuses to admit the 1st to 4th auxiliary requests into the proceedings (Articles 13(1) and 13(3) RPBA).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



S. Sánchez Chiquero

G. Eliasson

Decision electronically authenticated