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 30 November 2004

Case Number: T 0249/03 - 3.2.3

Application Number: 96901087.5

Publication Number: 0757772

IPC: F21V 11/02

Language of the proceedings: EN

Title of invention:
LUMINAIRE

Patentee:
Koninklijke Philips Electronics N.V.

Opponent:
Siteco Beleuchtungstechnik GmbH

Headword:
-

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - no (main and auxiliary request)

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0249/03 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 30 November 2004

Appellant: (Opponent)
Siteco Beleuchtungstechnik GmbH
Ohmstrasse 50
D-83301 Traunreut (DE)

Representative:
Schohe, Stefan
Forrester & Boehmert
Pettenkoferstrasse 20-22
D-80336 München (DE)

Respondent: (Proprietor of the patent)
Koninklijke Philips Electronics N.V.
Groenewoudseweg 1
NL-5621 BA Eindhoven (NL)

Representative:
Dusseldorp, Jan Charles
Philips
Intellectual Property & Standards
P.O. Box 220
NL-5600 AE Eindhoven (NL)

Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 19 December 2002 rejecting the opposition filed against European patent No. 0757772 pursuant to Article 102(2) EPC.

Composition of the Board:

Chairman: C. T. Wilson
Members: U. Krause
J. P. B. Seitz

Summary of Facts and Submissions

I. The appeal contests the decision of the Opposition Division dated 8 October 2002 and issued in writing on 19 December 2002, rejecting the opposition against the European patent No. EP-A-0 757 772. The opposition was based on the grounds of Article 100(a) EPC (lack of inventive step). The grounds of Article 100(b) referred to after expiry of the opposition period were not admitted by the Opposition Division as being late filed and not *prima facie* relevant.

II. The patent comprises an independent claim 1 directed to a luminaire and dependent claims 2 to 14 concerning preferred embodiments. The wording of claim 1 is as follows:

"1. A luminaire comprising
a housing (1) provided with a light emission window (2);
means (3) for accommodating a tubular electric lamp (4) in a plane P which is perpendicular to the light emission window, alongside said light emission window;
concave side reflectors (5) positioned opposite one another along plane P and each having an outer edge (6) adjacent the light emission window in a plane Q;
three-dimensional lamellae (10) transverse to the plane P and transverse to the light emission window (2), each having an outer edge (11) in the light emission window and inner edges (12) inside the housing (1), and each having a respective deflection surface (13) between the outer edge (11)

and the inner edges (12) which has a concave curvature in and parallel to plane P and whose outer edge (11) is concave and has a direction in plane P which is substantially parallel to plane Q, the concave curvature of the deflection surfaces (13) becoming less pronounced towards the side reflectors (5), characterized in that the inner edges (12) of each of the lamellae (10) are substantially parallel or concave towards one another."

III. The notice of appeal was filed by the Opponent (hereinafter denoted Appellant) on 19 February 2003 and the appeal fee was paid on the same day. The statement of the grounds of appeal was submitted on 29 April 2003.

In response to a communication of the Board issued as an annex to the summons to attend oral proceedings pursuant to Article 11(1) RPBA on 12 December 2003 the Appellant maintained objections based on the ground of Article 100(b) EPC and the Proprietor (hereinafter denoted Respondent) submitted on 21 October 2004 an amended claim 1 according to an auxiliary request which differs from claim 1 as granted by appending the passage "and further characterized in that said concave curvature becomes less pronounced towards said side reflectors over the entire length of the outer edge".

During oral proceedings held on 30 November 2004 the following documents were taken into consideration as being particularly relevant for the assessment of inventive step:

D1: EP-A-0 138 747

D2: pages 5, 18-20 and 22 of catalogue No. 040842 "LINEAR-Systeme", SEMPERLUX GmbH, and parts of drawing No. SX 1303-0090-41/4 of SEMPERLUX GmbH and of drawing No. 04 0 01608 00 01 of ELKAMET-Werk, all relating to the prior use of BICAV-lamellae of the type "SX 14" in a luminaire of the type "SX 131 BAP 360" of SEMPERLUX GmbH;

D3: EP-A-0 309 832

D4: DE-A-3 112 210

D6: EP-A-0 271 150

D12: DE-A-3 440 028

IV. The Appellant requested that the decision under appeal be set aside and that the patent be revoked.

The Respondent requested that the appeal be dismissed and that the patent be maintained as granted (main request). He auxiliarily requested that the decision under appeal be set aside and that the patent be maintained on the basis of claim 1 filed as an auxiliary request with letter dated 21 October 2004.

V. The arguments of the Appellant can be summarized as follows:

Starting from a luminaire as shown in D1 or D2, the object of the invention was to be seen, as set out in paragraph 0015 of the patent, in increasing the light output for the cases where the indirect shielding

provided by the inner edges of the lamellae was of less importance. The skilled person knowing the laws of geometrical optics would recognize the detrimental effect of the increased thickness of the lamellae adjacent to the side reflectors on the light output and therefore consider reducing this thickness, thereby arriving at the alternative of having parallel inner edges, as defined in claim 1 as granted. He would even be pointed to such a solution by the documents D3, D4 and D6 having a reflecting cover or "hat" on the parallel inner edges of the lamellae, the cover further improving the light output without increasing indirect glare. A practical way to implement this solution in the lamella of D1 or D2 was to cut or bend this known lamella along a line so as to generate two parallel upper wall portions with upper edges connected by the cover.

The subject-matter of the patent was also obvious in view of a combination of either D6 or D12 with D1. D6 and D12 both disclosed a luminaire having lamellae with parallel inner edges, comprising all the features of claim 1 with the exception of the concave lower edge of the lamellae. A skilled person seeking to improve the light output of this luminaire was taught by D1 to replace the straight lower edge by a concave one (see D1, page 4, lines 22 to 24). In order to implement such a concave edge in the luminaire of D6 or D12 the curvature of the deflection surfaces had to be varied across the width of the lamellae to be adapted to the height of the deflection surfaces so as to decrease from the center towards the sides.

The amended claim 1 of the auxiliary request was neither clear nor supported by the application as filed because the length of the outer edge was not clearly defined, possibly including parts of the lamella projecting outside of the side reflectors, and neither the description nor the - schematic - drawings disclosed a continuous variation of the curvature along the entire outer edge. As to inventive step, a similar variation of the curvature would result from adapting the curvature to the height of the deflection surfaces in D6 or D12 for the same reasons as with claim 1 as granted.

VI. The Respondent presented essentially the following counterarguments:

In comparison with simple flat lamellae, the three-dimensional lamellae of the luminaire disclosed in D1 or D2 provided, as taught on page 5 of the catalogue of D2, an optimized light distribution which would not be changed by the skilled person without a clear incentive in the art. Such an incentive was given neither by D6 nor by D12, both disclosing flat parallel upper wall portions of the lamellae which would, if implemented in the lamella of D1 or D2, have an unpredictable effect on the light distribution. Moreover, the skilled person would not consider providing a concave lower edge at the lamellae of D6 or D12 because it involved the addition of various other features which had to be picked from further documents, for example the varying curvature from D2. The fact that the invention was not made earlier, although the relevant documents had been known for about 10 years, could be seen as a further indication of inventive step.

Claim 1 of the auxiliary request was clear as the outer edge was defined, in the claim, as being "in the light emission window", i.e. bound by the side reflectors. The variation of the curvature over the entire length of the outer edge was clearly derivable from the continuous curvature of the outer edge and of the deflection surfaces in figures 9 and 13 of the patent relating to the same lamella. This was in contrast to D2 showing, in drawing No. 04 0 01608 00 01, a variation of the curvature from the centre of the lamella to a point where the inner edges of the lamella met the side reflectors, followed by a constant curvature up to the ends of the outer edge adjacent to the side reflectors. A skilled person trying to incorporate the concave lower edge of D1 into the lamella of D6 or D12 would not know how the deflection surfaces should be formed. In addition, D2 disclosing a variation over little more than half of the outer edge would teach away from the claimed variation along the entire outer edge.

Reasons for the Decision

1. The appeal complies with the provisions of Articles 106 to 108 EPC and of Rules 1(1) and 64 EPC and is, therefore, admissible.

2. *Main request - novelty*

Novelty was not in dispute and the Board is satisfied that none of the available prior art documents discloses a luminaire comprising all the features of

claim 1. Thus, the invention defined in this claim is considered to be new.

3. *Main request - inventive step*

3.1 Concerning inventive step of the main request, a luminaire as disclosed in D1 or D2, denoted "SEMPERLUX luminaire", was taken as the closest prior art in the appealed decision. D2 is a collection of documents relating to an alleged public prior use of a luminaire which was not disputed by the Respondent. Thus, it can be accepted without further proof that a luminaire having the features derivable from D2, i.e. a luminaire of the type "SX 131 BAP 360" comprising the low profile cassette "M185" with a reflector of the type "SX 131" and lamellae of the type "SX 14", is prior art. However, it is noted that, irrespective of the same origin from the company SEMPERLUX GmbH, this prior art on the one hand and document D1 on the other hand are separate pieces of prior art because there is no clear relation between both documents, for example by means of a mutual reference, and the shape of the lamellae depicted in the figures of D1 does not correspond exactly to that of the types "SX 14" in D2.

3.2 There is a considerable body of case law on the question of determining the closest prior art (see "Case Law", 4th edition, pages 102 to 106), defining several factors, such as the number of common features or the common technical field, purpose and technical problem, as crucial for the choice of the closest prior art. Whilst these factors might each have some value, the choice of the closest prior art can only be made on the basis of the general consideration that the

starting point must be the prior art in the technical field concerned which, under realistic conditions in that field, would most easily have enabled the skilled person to make the invention.

Based on these considerations the Board considers document D6 to be the appropriate starting point, rather than document D1 or D2 which both disclose luminaires with lamellae of a particular three-dimensional form which does not lend itself to modifications in order to obtain parallel or concave upper edges. The Board follows the reasoning presented in the appealed decision in this respect.

3.3 Document D6 discloses (see figures 1 and 2 and the associated description) a luminaire comprising the various typical components (housing, light emission window, tubular electric lamp, concave side reflectors and lamellae) in their mutual relation as defined in the precharacterising portion of claim 1. The lamellae (4) have a lower portion including concave deflection surfaces (7) ending in a common straight outer edge and an upper portion comprising parallel wall portions (8) having parallel upper edges which are covered by a light-reflecting cover (9) and specially curved to shield spots of light reflected by the side reflectors whilst keeping the total light output at a maximum (see for example page 5, first paragraph). Thus, the luminaire of D6 relates to the same technical field as that of the invention and is concerned with the same problem of combining efficient shielding of direct and indirect light with maximum light output.

3.4 It differs, however, from the claimed luminaire in that the outer edge of the lamellae is straight rather than concave, and that the concave curvature of the deflection surfaces is constant across the width of the lamellae, rather than becoming less pronounced towards the side reflectors. The known lamellae are, therefore, easy to manufacture, for example by folding and pressing a sheet metal blank. It is, however, evident for the skilled person that the straight outer edge provides more than necessary shielding of direct light in the longitudinal direction (C90) of the lamp in comparison with that provided towards the sides (C60, C50). It is equally evident that this is the reason why document D1 suggests, in lines 22 to 24 of page 4, to enhance the efficiency of the luminaire by replacing a straight outer edge by a concave outer edge which is shown, in figure 2, to have a continuous curvature between the side reflectors. Thus, the skilled person was taught by D1 to consider providing a concave outer edge of the lamellae in order to enhance the efficiency of the luminaire.

3.5 The Respondent argued that the skilled person considering such a modification would have to turn to further prior art such as D2 in order to learn how the concave outer edge could be incorporated in the lamella of D6, namely by decreasing the curvature from the centre of the lamella towards the sides thereof. In the view of the Board no such further prior art is required because the variation of the curvature will be the obvious choice of the skilled person. In fact, the above mentioned effect of the concave outer edge is in no way related to the indirect shielding provided by the upper portions of the lamella and was described in

D1 as an improvement independent of the remaining lamella design. There is, therefore, no reason to change the remaining lamella of D6 when incorporating a concave outer edge. This means that the folding or bending line in the lamella of D6 between the lower deflection surfaces and the upper parallel wall surfaces should be left as it is, whereby the concave outer edge would be closer to this line in the centre of the lamella than at its sides, which translates into a more pronounced curvature of the deflection surfaces at the centre than at the sides, resulting in three-dimensionally curved deflection surfaces. Since the outer edge is continuously curved, as shown in figure 2 of D1, the variation of the curvature of the deflection surfaces will also be continuous.

3.6 It may be that the thus modified lamellae cannot be produced by folding a single piece of sheet metal. This would not, however, be an obstacle to the modification because it is clear from the text on page 5, lines 13 onwards ("If the case may be...") that such a manner of manufacturing the lamellae was clearly only a preferred embodiment, leaving it to the practitioner to employ other manufacturing methods such as joining two pressed sheet metal parts along their outer edges by conventional methods, or using a plastics material for moulding the lamella, which seems to be the case in D1.

Likewise, a possible effect of the modified curvature of the deflection surfaces on the light distribution will not discourage the skilled person from carrying out the modification. In fact, there is no reason to assume that the modification has a detrimental effect on the characteristics of the deflection surfaces to

reflect incident light rays coming from the lamp towards the light emission window so as to obtain an essentially uniform illumination.

A further argument of the Respondent was that the fact that the invention was not made earlier, although the relevant documents had been known for about 10 years, was an indication of inventive step. A rather short time span such as ten years cannot, however, be considered as an indication of inventiveness if there are clear arguments for obviousness, as set forth above in points 3.3 to 3.6.

3.7 It is, therefore, concluded that the subject-matter of claim 1 as granted does not involve an inventive step. Thus, the main request cannot be allowed.

4. *Auxiliary request - clarity and disclosure*

4.1 The Appellant puts forward that the amended claim 1 of the auxiliary request was not clear because in the added feature the length of the outer edge was not clearly defined, possibly including parts of the lamella projecting outside of the side reflectors. The Board cannot share this view because, as pointed out by the Respondent, the outer edge is defined in claim 1 as being in the light emission window which itself is bound by the outer edges of the side reflectors. Thus, the outer edge ends at the side reflectors and cannot comprise portions of the lamella lying outside of the side reflectors.

4.2 As to the disclosure of the added feature the Respondent made reference to figures 9 and 13 of the

patent which, as made clear in lines 2,3 and 10,11 of column 8, concerned the same embodiment. Figures 9 and 13 of the patent correspond to 9 and 15 of the application as filed which also contains the text of column 8 of the patent (see page 8, lines 24 and 31,32). The continuously curved lower edge between the coupling points (19') to the side reflectors, as shown in figure 15 of the application as filed, suggests that the curvature of the deflection surfaces bound by this edge and by the folding line 14 is likewise continuous along the entire outer edge, and this is confirmed by the curved lines tracing the shape of the deflection surfaces as depicted in figure 9, showing that the entire deflection surface is concavely curved and that this curvature decreases smoothly from the centre to the sides of the lamellae.

4.3 The amended claim 1 of the auxiliary request is therefore not open to objection under Articles 84 and 123(2) EPC.

5. *Auxiliary request - novelty and inventive step*

5.1 Regarding novelty the same considerations apply as for the main request. Thus, it remains to be determined whether the added feature in claim 1 of the auxiliary request may, in combination with the subject-matter of claim 1 as granted, involve an inventive step.

5.2 It was pointed out above in point 3.5 that the obvious incorporation of the concave outer edge shown in figure 2 of D1 into the lamella of D6 leads to a continuous variation of the curvature of the deflection surface. Since the concave outer edge of D1 is curved

across the entire light emission window from one side reflector to the opposite one, the concave curvature of the deflection surfaces must vary in corresponding manner across the entire width of the luminaire from one side reflector to the opposite one, i.e. over the entire length of the outer edge of the lamella. The skilled person will therefore arrive also at the subject-matter of the amended claim 1 when modifying the luminaire of D6 to incorporate the concave outer edge of D1, without having to take any further prior art into account. Hence, it is irrelevant that D2 discloses, as brought forward by the Respondent, a variation of the curvature over part of the outer edge only.

5.3 It follows that the subject-matter of claim 1 of the auxiliary request is likewise obvious and, therefore, also the auxiliary request cannot be allowed.

6. Since neither request meets the requirement of inventive step, it does not have to be examined whether the grounds of Article 100(b) should have been admitted and, if so, whether they would prejudice the maintenance of the patent.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

R. Schumacher C. T. Wilson