

Internal distribution code:

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

**Datasheet for the decision
of 9 May 2023**

Case Number: T 1369/19 - 3.4.03

Application Number: 11173044.6

Publication Number: 2390866

IPC: G02F1/1335, G09F13/14,
G09F13/22, G09F13/04

Language of the proceedings: EN

Title of invention:

Light source

Patent Proprietor:

Signify Holding B.V.

Opponent:

Majert GmbH & Co. KG

Headword:

Relevant legal provisions:

EPC Art. 76(1), 100(c), 101(2), 111(1)
RPBA 2020 Art. 13(1), 13(2)

Keyword:

Divisional application - subject-matter extends beyond content of earlier application (yes)

Amendment after summons - exceptional circumstances (no) - amendment overcomes issues raised (no) - taken into account (no)

Decisions cited:

G 0001/06, G 0001/93, T 0346/15

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1369/19 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 9 May 2023

Appellant: Signify Holding B.V.
(Patent Proprietor) High Tech Campus 48
5656 AE Eindhoven (NL)

Representative: Eisenführ Speiser
Patentanwälte Rechtsanwälte PartGmbH
Johannes-Brahms-Platz 1
20355 Hamburg (DE)

Respondent: Majert GmbH & Co. KG
(Opponent) Landsberger Strasse 80
45219 Essen (DE)

Representative: Nunnenkamp, Jörg
Andrejewski - Honke
Patent- und Rechtsanwälte Partnerschaft mbB
An der Reichsbank 8
45127 Essen (DE)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 27 March 2019
revoking European patent No. 2390866 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman T. Häusser
Members: A. Böhm-Pélissier
D. Prietzel-Funk

Summary of Facts and Submissions

- I. The appeal is against the decision of the opposition division to revoke the European patent EP 2 390 866 B1 (Articles 76(1) and 100(c) EPC).
- II. Grounds for opposition were lack of novelty and inventive step, insufficient disclosure and added subject-matter (Articles 100(a) to (c) EPC).
- III. Reference is made to the following **document**:
- D0 = WO 2007/043886 A1, publication of the **parent** application (case T 0346/15)
- IV. At the oral proceedings before the board the **appellant** (patentee) **requested** that the decision under appeal be set aside and
- (a) that the patent be maintained as granted,
 - (b) alternatively, that the patent be maintained in amended form on the basis of one of auxiliary requests I to VII, all filed with the statement setting out the grounds of appeal,
 - (c) or that the patent be maintained in amended form on the basis of one of auxiliary requests Ia, IIa, IIIa or VIII filed with the letter dated 6 April 2023.
- V. The **respondent** (opponent) **requested** that the appeal be dismissed.
- VI. **Claim 1** of the **main request**:

(patent as granted, labelling "1.1)", "1.2)", etc. as introduced by the respondent in its reply to the grounds of appeal):

- 1.1) *A light source (20) for providing homogenous illumination comprising:*
- 1.2) *- at least one elongated lamp;*
- 1.3) *- orienting means for providing the light source with a direction characteristic of an issued light beam during operation of the light source,*
- 1.4) *whereby the at least one elongated lamp comprises a plurality of at least three LEDs (26, 27) extending in substantially a same direction*
- 1.5) *and in that each LED is provided with a respective orienting means to provide said homogenous illumination,*
- 1.6) ***characterized in that*** *of each LED the directional characteristic is elliptical in said same direction.*

VII. Claim 1 of **auxiliary request I** differs from claim 1 of the main request in that after feature 1.4) the following is added:

"which is a first (main) direction of the elongated lamp, wherein the LEDs are disposed adjacently of each other in a row;"

and in that after feature 1.6) the following is added:

"which is the first (main) direction"

VIII. Claim 1 of **auxiliary request II** differs from claim 1 of auxiliary request I in that after feature 1.3) the following is added:

"wherein the orienting means comprise lens means;"

IX. Claim 1 of **auxiliary request III** differs from claim 1 of auxiliary request I in that after feature 1.3) the following is added:

"wherein the orienting means are lens means;"

X. Claim 1 of **auxiliary request IV** differs from claim 1 of auxiliary request I in that in feature 1.4) "at least three" is changed to "three to seven".

XI. Claim 1 of **auxiliary request V** differs from claim 1 of auxiliary request IV in that after feature 1.3) the following is added:

"wherein the orienting means comprise lens means or are lens means;"

and in that "which" is deleted in the addition to feature 1.6).

XII. Claim 1 of **auxiliary request VI** differs from claim 1 of auxiliary request IV in that after feature 1.3) the following is added:

"wherein the orienting means are lens means;"

and in that "which" is deleted in the addition to feature 1.4) and in that the following feature (X) is added at the end of the claim:

(X) ", wherein the elliptical characteristic has an aperture angle of about 25° in the first (main) direction and an aperture angle of about 4° in a second direction perpendicular to the first (main) direction"

XIII. Claim 1 of **auxiliary request VII** differs from claim 1 of auxiliary request VI in that feature 1.4) and the additions are amended resulting in the following feature:

"whereby the at least one elongated lamp comprises a plurality of three to seven LEDs (26, 27), the plurality comprising at least three differently coloured LEDs (26, 27), the LEDs extending in substantially a same direction that is a first (main) direction of the elongated lamp, wherein the LEDs are disposed adjacently of each other in a row;"

XIV. Claim 1 of **auxiliary requests Ia, IIa, and IIIa** differ from claim 1 of auxiliary Requests I, II, and III, respectively, in that feature 1.4) and additions are amended resulting in the following feature:

"whereby the at least one elongated lamp comprises a plurality of at least three LEDs (26, 27) extending in substantially a same direction corresponding to a longitudinal direction of the elongated lamp, wherein the LEDs are disposed adjacently of each other in a row;"

and in that feature 1.6) and additions are amended resulting in the following feature:

"characterized in that of each LED the directional characteristic is elliptical in said same direction corresponding to the longitudinal direction of the elongated lamp."

XV. Claim 1 of **Auxiliary Request VIII** differs from claim 1 of auxiliary request IIIa in that the following feature (X') is added at the end of the claim:

(X') ", wherein the elliptical characteristic has an aperture angle of about 25° in the first (main) direction coinciding with the longitudinal direction of the elongated lamp; and an aperture angle of about 4° in a second direction perpendicular to the first (main) direction"

XVI. The **appellant's arguments**, in so far as they are relevant to the present decision, are essentially as follows:

- (a) All features of the claims were originally disclosed in the parent application (D0).
- (b) Support for a "light source" independent from a display could be found in D0 on page 7, last paragraph, page 8, third and fourth and penultimate paragraphs.
- (c) "At least three LEDs" was supported in D0 by the passages on page 19, penultimate paragraph and page 20, penultimate and antepenultimate paragraphs in combination with page 8, penultimate paragraph and page 9, first paragraph.
- (d) "Elliptical directional characteristic" was disclosed in D0 on page 16, second paragraph and page 17, penultimate paragraph.
- (e) In view of the passages cited above, the figures and the general teaching of the embodiments, it was evident to the person skilled in the art that the aperture angles in the longitudinal and transverse directions were not limited to 25° and 4°, but could be selected as desired, that "three LEDs" had no specific technical effect and that the light source could be claimed without the display.

XVII. The **respondent's arguments**, in so far as they are relevant to the present decision, are essentially as follows:

- (a) The parent application D0 did not disclose a light source isolated from a display, nor did it originally disclose "three LEDs". By the problem to be solved (homogenous illumination of the display) the light source was linked to the display/wall. "Elliptical radiation characteristic" was disclosed only in the context of specific aperture angles. Consequently, claim 1 of the main request was an intermediate generalization of the subject-matter originally disclosed in the parent application.
- (b) All passages cited by the patentee were in the context of a display device. This was further supported by D0, page 5, second and third paragraphs, page 15, penultimate paragraph, page 16, the description of the figures, and claim 1.
- (c) The objections of (a) and (b) applied also to Auxiliary Requests I to VII, Ia, IIa, IIIa and VIII. Therefore, these requests should not be admitted.

Reasons for the Decision

1. The invention as claimed

- 1.1 The invention relates to a light source in a display device such as a light box, for instance for an illuminated advertisement, a traffic sign, a signpost, an illuminated ceiling, a dial for a clock or a measuring instrument.

- 1.2 It is an object of the invention to embody the light source such that a display face in the display device is illuminated homogeneously within relatively close tolerances. It is not only the luminance, but also the homogeneity of the luminance which determines the visibility of the information present on the display face, for instance the legibility of texts present thereon.
- 1.3 The invention provides orienting means (lenses) that are added to the light source so as to obtain an elliptical directional characteristic of the light emitted by the light source such that the light source can be applied to directly illuminate at least one wall almost exclusively and that this at least one wall is diffusely reflective such that a part of the light incident thereon is reflected to the display face.

2. **Articles 76(1) and 100(c) EPC**

- 2.1 According to G 1/06, headnote, in the case of a sequence of applications consisting of a root application followed by divisional applications, each divided from its predecessor, it is a necessary and sufficient condition for a divisional application of that sequence to comply with Article 76(1), second sentence, EPC that anything disclosed in that divisional application be directly and unambiguously derivable from what is disclosed in each of the preceding applications as filed, i.e. in the present case from the parent application D0.

However, D0 does not directly and unambiguously disclose the following features in isolation from other non-claimed features:

2.2 A light source (feature 1.1)

- 2.2.1 The board is of the opinion that D0 consistently refers to a "display device" (cf. title, original claims 1 to 15, which exclusively deal with such a display device). The appellant cited page 5, third paragraph of D0. However, the considerations there do not support the appellant's assessment. Rather, features of the display unit ("*... the invention provides a display device ...*") are referred to here. These do indeed take up the light source, but only in the sense that through this a direct illumination of at least one wall (of the display unit) takes place almost exclusively. Therefore, the light source and the wall (of the display unit) in question are placed in a certain relationship which speaks against the light source as such being an independent sub-unit.
- 2.2.2 In addition, the light source that can be seen in Figures 4, 5, 9A, 9C and 10 of D0 is always shown inside - and thus in context with - the display unit, such that the light source cannot be isolated from the display unit without committing an unallowable intermediate generalisation. All of the passages cited by the appellant are directly related to a display device. Therefore, D0 gives a clear indication to the effect that the light source, on the one hand, constitutes a component of the display unit and, on the other hand, is responsible for the predominantly direct illumination of at least one wall of the display unit. Consequently, a light source *per se* - and isolated from the display - is nowhere described in the parent application. The relationship between light source, wall and display, and the lack of any support in D0 that the light source can be used outside the context of the wall/display, makes it impossible to separate

the light source from the display without committing an undue intermediate generalisation.

2.2.3 Consequently, feature 1.1) is not directly and unambiguously derivable from the content of the parent application as filed.

2.3 **A plurality of at least three LEDs (feature 1.4))**

2.3.1 This feature is allegedly based on the following passages of D0 (underlining by the board):

(a) *"In this respect the display device can have the special feature according to a preferred embodiment that the light source comprises a LED or at least one group of LEDs extending in substantially the same direction"* (page 8, line 25 to 29);

(b) *"Figure 15 shows the relative spectral energy distribution of three differently coloured LEDs"* (page 19, penultimate paragraph) and *"For universal applications it is possible to envisage a combination of, on average, a ratio of two cold white LEDs to one warm white LED"* (page 20, antepenultimate paragraph);

(c) Figures 4, 5:

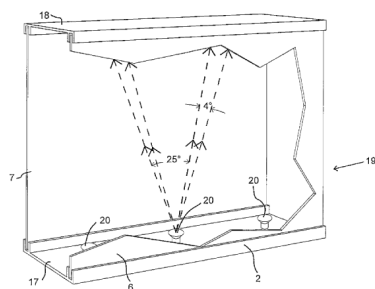


FIG. 4

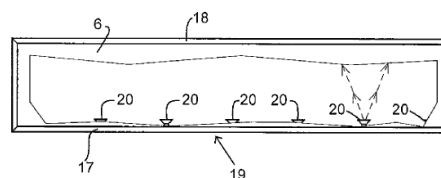


FIG. 5

D0

- 2.3.2 The appellant argued that the claimed range in Feature 1.4) ("at least three LEDs") to mean that the lower limit of the range ("three LEDs") was ultimately arbitrary and that this was allegedly not important. Moreover, the decision G 1/93 (headnote, second paragraph) was to be applied, according to which the lower limit of the range allegedly did not cause a technical effect and could therefore be claimed, even if it was not originally disclosed.
- 2.3.3 However, the board is of the opinion that this reasoning is not convincing because the number of LEDs has in the present context an influence on the beam characteristics of the "elongated lamp" and the illumination of the wall/display. Furthermore, the feature "at least three LEDs" is used by the appellant to distinguish the claimed feature combination from the prior art and to establish novelty over a disclosure with one or two LEDs, and therefore cannot be ignored.
- 2.3.4 The LEDs in Figures 4 and 5 each work with "orienting means", which are for example lenses (cf. D0, page 15, penultimate paragraph, to page 16, second paragraph). A specific elliptical beam characteristic is explained at this point (with aperture angles of 25° and 4° in perpendicular directions). The same context and teaching is given to the person skilled in the art throughout the application, i.e. to equip the LED in question with special orienting means to achieve overall that practically only the upper wall 18 of the display unit is illuminated and almost no light from the LEDs 20 falls directly on the display surfaces 6, 7 (cf. D0, paragraph bridging pages 15 and 16). This is achieved by the previously mentioned special elliptical beam characteristic. Therefore, the number of LEDs including the special alignment plays a role and is

correlated with the design and size of the display unit housing in order to provide the desired homogeneous illumination.

2.3.5 Furthermore, Figure 4 shows only a section of a display. The entire display contains most likely considerably more than three LEDs. Page 19, penultimate paragraph, discloses that three *differently coloured* LEDs are combined into one white light source. Page 20, antepenultimate and penultimate paragraphs disclose that three different LEDs (*two cold white LEDs and one warm white LED*) are combined. The quoted passages in connection with Figure 4 thus disclose multiples of three ("on average") of very specific (coloured, cold/warm white) LEDs, so there is no indication that "at least three LEDs" of any type are used. The number three is not disclosed in the description of the parent application as the lower limit of an open range ("at least three"), nor is it disclosed in relation to any type of LED, but only in the context of very specific LEDs, namely coloured and warm/cold white LEDs.

2.3.6 Consequently, the feature "at least three LEDs" is not directly and unambiguously derivable from the content of the parent application as filed.

2.4 **Directional characteristic is elliptical (feature 1.6)**

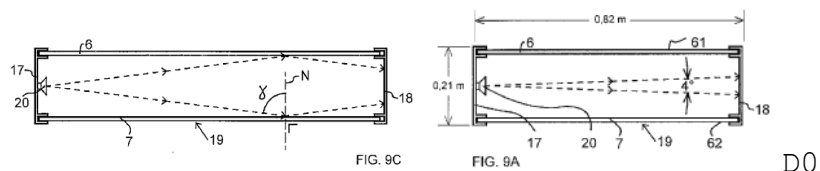
2.4.1 This feature is allegedly based on the following passage in the parent application:

"In order to realize the desired, more or less elliptical directional characteristic of LED 20 with an aperture angle of about 25° in the main direction and an aperture angle of about 4° in the direction perpendicular thereto, use can for instance be made of

optical provisions from the Carclo Precision Optics company (www.carclo-optics.com), part number 10049" (page 16, line 3 ff.).

2.4.2 However, this feature is only disclosed in the context of an aperture angle of about 25° in the main (longitudinal) direction and an aperture angle of about 4° in the (transverse) direction perpendicular thereto (see Figure 4). Therefore feature 1.6) is not disclosed in its general terms in the parent application. Also the further embodiment of Figure 14B has a specific opening angle (8° in the transverse direction). Therefore, such a special elliptical characteristic cannot be generalized if there is no disclosure for this in the parent application D0.

2.4.3 The appellant argued that the special elliptical beam characteristic described in the embodiments could be generalised due to the teaching in D0 on page 17, third paragraph, to page 18, first paragraph and Figure 10. In addition, reference was made to Figures 9C and 9A and to page 17, second paragraph. The skilled person would take from the overall teaching of D0 that the apertures of the directional characteristic were to be adapted to the display and that any aperture angle could be selected.



2.4.4 However, the cited passages do not provide the general teaching of an elliptical directional characteristic of each LED at any angle and without the context of the display/display screen. These passages disclose an

elliptical directional characteristic in the very specific context of the embodiments described. The embodiments of Figures 9A and 9C show the display of Figure 4, the corresponding passage in the description mentions angles exceeding the "Brewster angle" for incident light. Page 17, second paragraph, provides more details about the Brewster angle, but does not provide any further general teaching that the characteristics of the LEDs is or must be elliptical in general. The passage on page 17, third paragraph, merely describes in combination with Figure 10 cone cuts through the light cone by means of an inclined/curved display face, but no directional characteristics of the LEDs can be deduced therefrom.

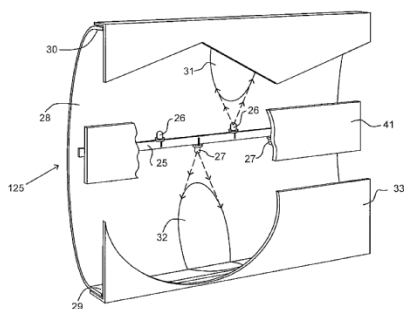


FIG. 10

D0

2.4.5 The appellant cited T 346/15 which relates to the parent application. The deciding board in this decision held that the claim feature "the at least one wall is opposite to a wall on which the light source is arranged" could be isolated from the context provided in the description. A contextual feature was indeed the aperture angle of 25° and 4°. The present board is of the view that the feature that for each LED "the directional characteristic is elliptical" cannot be directly compared to the feature in question in T 346/15 (i.e. the position of wall 18) because feature 1.6) is directly related to the elliptical shape of the light beam (and not to the relative position of a wall,

see points 2.4 to 2.6 of the Reasons in T 346/15), the elliptical shape being limited by the aperture angle of 25°/4°. This direct and immediate connection of the elliptical shape with the very specific numerical limitations makes the features "elliptical shape" and "aperture 25°/4°" inextricable.

2.4.6 Therefore, feature 1.6) is not directly and unambiguously derivable from the content of the parent application as filed, either.

2.5 Consequently, the subject-matter of granted claim 1 extends beyond the parent application as filed and thus the requirements of Article 100(c) EPC prejudice the maintenance of the patent as granted.

3. Auxiliary Requests I to VII, Ia, IIa, IIIa and VIII

3.1 Respective claim 1 of all requests comprises the feature of a "light source" (feature 1.1)) and either the feature of "at least three LEDs" (feature 1.4)) or the feature of "three to seven LEDs" (amended feature 1.4)), for which there is no basis in the parent application as filed for reasons corresponding to those mentioned under point 2.3 above. Hence, the subject-matter of respective claim 1 of all requests extends beyond the parent application as filed contrary to the requirements of Article 76(1) EPC.

3.2 (Amended) feature 1.4) extends beyond the content of the parent application as filed while at the same time limiting the scope of protection. The conflict here is that the offending feature would have to be deleted to as it is in violation of Article 76(1) EPC, but this would extend the scope of protection of the patent and thus violate Article 123(3) EPC (see G 1/93).

Therefore, there is no solution to this conflict (inescapable trap).

3.3 With regard to auxiliary requests Ia, IIa, IIIa and VIII submitted with the letter dated 6 April 2023 the problem is not overcome by respective claim 1 of these requests, so that these requests are not admitted into the proceedings under Article 13(2) RPBA 2020 in combination with Article 13 (1) RPBA 2020.

4. **Summary**

The subject-matter of claim 1 of the main request and of respective claim 1 of auxiliary requests I to VII does not fulfill the requirements of Articles 100(c) and 76(1) EPC, respectively.

Auxiliary requests Ia, IIa, IIIa and VIII are not admitted into the proceedings under Article 13(2) RPBA 2020.

Thus, the appeal against the decision to revoke the patent in suit must be dismissed (Article 101(2) EPC and Article 111(1) EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



S. Sánchez Chiquero

T. Häusser

Decision electronically authenticated