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**Datasheet for the decision
of 11 October 2023**

Case Number: T 1811/21 - 3.2.01

Application Number: 15827633.7

Publication Number: 3175172

IPC: F21L4/02, F21V5/00, G02B3/10,
F21V19/02

Language of the proceedings: EN

Title of invention:
DUAL FOCUS FLASHLIGHT

Patent Proprietor:
Coast Cutlery Co.

Opponent:
Ledlenser GmbH & Co. KG

Headword:

Relevant legal provisions:
EPC Art. 100(b), 100(a), 54, 56

Keyword:
Grounds for opposition - insufficiency of disclosure (no)
Novelty - (yes)
Inventive step - (yes)

Decisions cited:

T 1664/06

Catchword:



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Case Number: T 1811/21 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 11 October 2023

Appellant: Ledlenser GmbH & Co. KG
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 11 August 2021
rejecting the opposition filed against European
patent No. 3175172 pursuant to Article 101(2)
EPC.**

Composition of the Board:

Chairman J. J. de Acha González
Members: M. Geisenhofer
S. Fernández de Córdoba
A. Wagner
O. Loizou

Summary of Facts and Submissions

- I. The appeal was filed by the opponent (appellant) against the decision of the opposition division to reject the opposition filed against the patent in suit.
- II. The opposition division decided that
- (a) the patent disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art; and
 - (b) the subject-matter of claim 1 as granted was new over the prior use "Mammut X-Shot" (evidenced by document convolute E4, hearing of the witness Mr. Matthias Gerke and inspection of a sample) and inventive starting from the prior use "Mammut X-Shot" or the prior use "Fenix TK51" (evidenced by document convolute E1) as representing the closest prior art.
- III. During the opposition proceedings, the following documents referred to in the present decision were also mentioned:
- D6 US 2011/0064856 A1
 - E5 DE 10 2009 050 395 A1
 - E6 WO 2004/003428 A1
 - E7 WO 03/004932 A1
 - E8 WO 03/060495 A1
- IV. Oral proceedings were held before the Board on 11 October 2023.

(a) The appellant (opponent) requested that the decision of the opposition division be set aside and the patent be revoked.

(b) The respondent (patent proprietor) requested that the appeal be dismissed.

V. Granted claim 1 reads as follows:

"A dual-focus flashlight (100) comprising:

a housing member (102);

a lens (104) having a geometric center point, wherein the lens (104) comprises:

a first focusing element, wherein the first focusing element (106a) is adapted to shape a light beam into a spot beam, and wherein the first focusing element is spaced a first distance from the geometric center point of the lens (104); and

a second focusing element (106b), wherein the second focusing element is adapted to shape a light beam into a flood beam, and wherein the second focusing element is spaced a second distance from the geometric center point of the lens;

a first LED (110a) positioned to direct light through the first focusing element (106a);

a second LED (110b) positioned to direct light through the second focusing element (106b);

a power source disposed within the housing member (102) and adapted to provide power to the first and second LEDs; and

a control element configured to selectively provide power to the first LED (110a), the second LED (110b), or both the first and second LEDs, wherein the first LED has a smaller die than the second LED, and wherein the distance between the first LED and the first focusing element is greater than the distance between the second LED and the second focusing element and

wherein the flashlight further comprises a base member (108) to which the first and second LEDs (110a, 110b) are mounted, and, optionally the base member comprises a first pedestal (112a) configured to position the first LED (110a) in a position relative to the first focusing member (106a), and wherein the position of the first LED is selected to generate an optimal spot beam

wherein the base member (108) comprises a second pedestal (112b) configured to position the second LED (110b) in a position relative to the second focusing member (106b), and wherein the position of the second LED is selected to generate an optimal flood beam, wherein,

the first focusing element (106a) comprises a central focusing element (114) and an annular ring portion (116) extending from and surrounding the central focusing element, the central focusing element (114) comprises a piano-convex, convex-concave, or meniscus lens ,

the second focusing element (106b) comprises a piano-convex, convex-concave, or meniscus lens, or, optionally wherein the second focusing element consists essentially of a piano-convex, convex-concave, or meniscus lens,

the first focusing element (106a) further comprises a side wall extending from the central focusing element and configured to form a rear void (118a) for receiving at least a portion of the first LED (110a),

the second focusing element (106b) further comprises a side wall extending therefrom and configured to form a rear void (118b) for receiving at least a portion of the second LED (110b), and

wherein the first and second distances from the geometric center point of the lens are substantially the same, or, optionally wherein the first and second distances from the geometric center point of the lens are different,

wherein the control element is a switch, and, optionally, wherein repeated activation of the switch causes the flashlight to change modes, wherein a first mode causes only

the first LED to be activated and a second mode causes only the second LED to be activated, wherein a third mode causes both the first and second LEDs to be activated, and, optionally, wherein a fourth mode causes the flashlight to power off."

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

- (a) The invention according to the main request was not disclosed in a manner sufficiently clear and complete for a skilled person to carry it out. The skilled person was not able to understand what was meant with "*a smaller die*". Furthermore, the distance between the LEDs and the respective focusing elements was not sufficiently defined to reproduce the flashlight.
- (b) The subject-matter of claim 1 of the main request was not new over the prior use "Mammut X-Shot" (E4) which *inter alia* disclosed a common base member to which the two LEDs were mounted.
- (c) Even if one had assumed that the LEDs were not mounted on a common base member, it was not inventive to use a common printed circuit board for both LEDs in the prior use "Mammut X-Shot" as shown in any of D6, E5, E6, E7 or E8.
- (d) Furthermore, the subject-matter of claim 1 of the main request lacks an inventive step when starting from the prior use "Fenix TK51" (E1) as closest prior art.

VII. The respondent's arguments can be summarised as follows:

- (a) The embodiment shown in the figures and described in the corresponding parts of the description could be carried out by a person skilled in the art. In particular, it was derivable from paragraph [0020] of the description that the light emitting surface was referred to when comparing the size of the dies. The distance between die and focusing element was the distance between the LED and the surface of the focusing element that directly faced the LED.
- (b) The prior use "Mammut X-Shot" lacked a common base member to which both LEDs are mounted but used two separate printed circuit boards. The subject-matter of claim 1 was hence new.
- (c) The skilled person had no suggestion at hand to use a common printed circuit board for both LEDs of the prior use "Mammut X-Shot". This required an entire re-design of the flashlight such that the skilled person would not consider using a common printed circuit board.
- (d) The argument based on a combination of the prior use "Mammut X-Shot" with document D6 was submitted for the first time with the appellant's statement of grounds and should therefore not be admitted into the proceedings.
- (e) The prior use "Fenix TK51" (E1) did not even disclose focusing elements (such as lenses) such that it was a less suitable starting point for an argument on inventive step compared to the prior use "Mammut X-Shot". The appellant did not provide reasons why the opposition division's decision should not be followed.

Reasons for the Decision

Sufficiency of disclosure (Article 100(b) EPC)

1. The opposition division held that the patent as granted disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

1.1 The appellant disagreed and argued that the skilled person was not able to choose suitable LEDs which fulfill the criteria "*first LED has a smaller die than the second LED*" since the patent did not provide sufficiently clear information on the dimension referred to (area of the light emitting surface of the die, volume of the die, any other geometrical dimension of the die).

1.1.1 The Board considers that the patent provides a sufficiently clear and complete disclosure of the criteria to be used, i. e. what to consider as the relevant dimension for defining the size of the die of the first and second LEDs.

1.1.2 Paragraph [0014] of the patent as granted reads as follows:

"Conversely, the LED that pairs with the spot beam focusing element (e. g., the spot beam LED) has a smaller size "die" or light-emitting surface (compared to the flood beam LED),..."

This passage hence clarifies that when referring to "*a smaller die*" in claim 1, the size of the LED's light-emitting surface is meant, i. e. the area of the die that emits light.

1.1.3 The appellant argued that the term "*smaller size "die" or light-emitting surface*" referred to two alternatives: either to the size of the die or to the size of the light-emitting surface. In the first alternative, the skilled person still did not know what shall be considered as "*a smaller die*" as recited in claim 1.

The Board disagrees. The expression used in paragraph [0014] does not define two alternatives but the reference to the light-emitting surface is an explanation of what shall be considered to be a "*smaller size die*". Otherwise (and following the appellant's understanding), the author would have used the expression "*smaller size "die" or smaller light-emitting surface*".

1.1.4 The skilled person hence understands from claim 1 taken in combination with paragraph [0014] that they should choose two different LEDs, the first LED having a smaller light-emitting surface than the second LED.

1.2 The appellant further argued that the skilled person was not able to reproduce the feature "*distance between the first LED and the first focusing element is greater than the distance between the second LED and the second focusing element*" since the figures did not show such a difference in distance.

1.2.1 The figures of the patent in suit are, however, only a schematic representation of the embodiment. They may not be used in isolation to derive precise distances or a ratio between distances by measuring since the figures are not technical drawings to scale (see e.g. T1664/06, reasons 2.1.2 and 2.1.3).

- 1.2.2 On the contrary, the figures must be seen in the context of the corresponding parts of the description. Paragraph [0021] explicitly refers to figure 2 and describes that the distance between the spot beam focusing element 106a and the spot beam LED 110a shown in this figure is greater than the distance between the flood beam focusing element 106b and the flood beam LED 110b. The skilled person thus clearly understands from this passage of the description that there shall be a difference in distance in figure 2 albeit such a difference is not clearly derivable from the figure taken in isolation.
- 1.2.3 The skilled person thus understands that different distances between the LEDs and their respective focusing elements should be used.
- 1.3 The Board therefore sees no reason why the skilled person should not be able to carry out a flashlight according to the invention as defined in claim 1.

Hence, the opposition division's decision with regard to the requirements of Article 100(b) EPC was correct.

Novelty (Article 54 EPC)

2. The opposition division held that the subject-matter of claim 1 was new over the prior use "Mammut X-Shot".

They found that the flashlight according to the prior use comprised two different LEDs, whereby each of the LEDs was mounted to a respective printed circuit board (PCB). These PCBs were arranged at different levels and fixed within the housing, the prior use hence lacked a base member to which both LEDs were mounted.

2.1 The appellant argued that a base member in the sense of claim 1 must not necessarily comprise just one single element but can consist of two separate elements (for instance the two separate PCBs of the prior use "Mammut X-Shot") being connected by a further, third element (the rear wall of the housing). The base member was merely any kind of holder that ensured the correct positioning of the LEDs relative to their corresponding focusing element in order to carry out their function.

2.2 The Board disagrees. Two separate PCBs (each being provided with a LED) that are spaced apart from one another cannot be considered to form a base member in singular to which both LEDs are mounted.

The two PCBs in conjunction with the rear wall of the housing of the prior use are not considered by the skilled person as just one member due to the different functions of these parts and due to the different materials used for the housing and the PCBs.

The LEDs in the prior use are furthermore mounted to the PCBs and not to the rear wall of the housing, the rear wall is therefore not forming part of the (single) base member to which the LEDs are mounted.

The skilled person would hence consider the prior use "Mammut X-Shot" to comprise two distinct base members arranged at different levels, a base member for a LED representing to the skilled person the basis to which the LED is mounted and not a holder generally speaking.

2.3 The prior use "Mammut X-Shot" thus lacks at least a base member to which both LEDs are mounted and

therefore does not anticipate the subject-matter of claim 1.

The opposition division's decision is consequently also correct in this respect.

Inventive step (Article 56 EPC)

3. The opposition division decided that the subject-matter of claim 1 was not obvious when starting from the prior use "Mammut X-Shot" as the closest prior art.

3.1 The appellant referred to documents E5, E6, E7, E8 and D6 arguing in a first line of attack that the skilled person knew from these prior art documents that mounting all LEDs to a single base member allowed for an easy mounting that ensured a correct position of the LEDs with respect to the focusing elements.

3.1.1 It is not apparent to the Board why the correct position of the LEDs with respect to the focusing elements should not be ensured in the prior used headlight "Mammut X-Shot". On the contrary, it appears that both the LEDs and the focusing elements of the prior use are securely held in their housing. This is a prerequisite for this kind of headlamps since they are used e. g. for jogging cross-country where the headlamp sometimes bears the risk to fall off the user's head.

3.1.2 Even if the skilled person would seek to improve the design of the prior use "Mammut X-Shot" such that a correct position of the LEDs with regard to the focusing elements is ensured, there is no teaching available in the prior art that such an improvement can be obtained by using a single PCB for both LEDs.

3.1.3 The appellant alleged that document E6 disclosed such a teaching on pages 8 and 9 of the description in conjunction with figure 3.

The Board does not agree for the following reasons:

- (a) The skilled person would not have considered E6 when improving the prior use "Mammut X-Shot" since the flashlight of E6 is not configured to provide at the user's choice either a flood beam or a spotlight. E6 only provides for a spotlight (see page 3, lines 10 - 15).

- (b) Even if the skilled person would have considered E6, this document does not provide a teaching that would guide the skilled person to exchange the two separate PCBs of the prior use "Mammut X-Shot" by one single common PCB.
 - (i) Pages 8 and 9 of E6 describe that three LEDs 24, 26 and 28 are arranged such that emitted light is focused and directed to a target area that shall be illuminated. This passage cites various distances and orientations of the LEDs with regard to the magnifier lenses but the passage does not specify how the LEDs and the magnifier lenses are held to ensure these orientations. In particular, the passage does not suggest the use of a common base member to which the LEDs are mounted.

 - (ii) Figure 2 of E6 shows a PCB 20 to which the LEDs 24, 26 and 28 are mounted. However, there is no mention in the description that

a common PCB has advantages. It hence can only be speculated why the LEDs of E6 are all arranged on a common PCB but no concrete teaching can be derived from figure 2 and/or the corresponding passages of the description.

- (iii) Figure 3 of E6 shows a sectional view of the LEDs and the magnifier lenses 34, 36 whereby all the LEDs extend through an inner cover 30 within the flashlight, which in the appellant's view could also be considered as a base member. Again, E6 does not disclose advantages of such a design such that the skilled person cannot derive a teaching applicable to the prior use "Mammut X-Shot".
- (iv) Furthermore, the cover in E6 is clearly not a base member to which the LEDs are mounted since the LEDs only extend through this cover (page 5, lines 18 to 21).
- (v) The skilled person hence cannot derive from figure 3 (taken in isolation or in combination with the passages on pages 8 and 9) a teaching guiding him or her to the idea of combining the two separate PCBs of the prior use "Mammut X-Shot" to form one single PCB that could be understood as a base member in the sense of the patent in suit.

3.1.4 The teaching is also lacking in documents E5 and E8:

- (a) E5 uses a plurality of identical LEDs with identical focusing elements ("Linsenring" 5), all LEDs being activated at the same time to provide a maximum of light intensity by juxtaposition. The skilled person would hence not consider this document when improving the prior art flashlight "Mammut X-Shot" since the design of the prior art flashlight is based on different sized LEDs being alternatively actuated to provide different light distributions according to the user's preference.
- (b) The same consideration applies to E8.
- (c) Both documents do not broach the issue of mounting several LEDs to a common PCB either.

3.1.5 Document E7 discloses in figure 2 a common PCB 30 on which two LEDs 32a, 32b are mounted. However, in E7 no teaching is mentioned that this design has a particular advantage.

Furthermore, it is not possible to use this design in the prior art flashlight "Mammut X-Shot" since the geometry of the focusing elements (lenses 44a, 44b) of E7 is totally different, using an additional element 28 as a guide to concentrate light emitted by the LEDs on the lenses (see page 16, first paragraph).

3.1.6 The appellant further alleged that document D6 would also render it obvious to use a common base member for mounting the LEDs of the prior use flashlight "Mammut X-Shot".

The Board is not convinced for the following reasons:

(a) D6 discloses a plurality of different designs for a flashlight using several LEDs: Figure 1 shows two LEDs 4 and 5, each being mounted to a respective base 11, 12 (see paragraph [0041]). Figure 4 and 5 discloses first, second and third LEDs 28, 29, 30 being mounted to first, second and third base 25, 26, 27 (see paragraph [0042]).

D6 hence discloses that each LED is mounted to its own, individual base and thus confirms the design used in the prior use flashlight "Mammut X-Shot" where each LED is mounted to its own PCB.

(b) Albeit the plurality of bases of D6 in turn are mounted to a common heat dissipating member (see paragraph [0041]: "heat sink" 6), D6 does not teach the use of a common PCB for all LEDs, contrary to the appellant's allegation. The prior use "Mammut X-shot" in turn does not require a heat dissipating member.

3.1.7 It can hence be left undecided whether the combination of the prior use "Mammut X-shot" with D6 is admissible - as contested by the respondent.

3.2 In a second line of attack, the appellant argued that the skilled person would use a single PCB to replace the two PCBs of the prior art to reduce weight.

It is not apparent how joining two PCBs to form one single PCB can reduce weight. The surface of the PCBs is determined by the need of space in order to arrange the electronic components required to run the LED. This need of space is independent of whether the electronic components are arranged on one single PCB or distributed amongst two distinct PCBs.

3.3 In a third line of attack, the appellant argued that the use of a common PCB in the prior use "Mammut X-Shot" would be just a matter of design that does not justify an inventive activity.

The Board does not agree. The prior use "Mammut X-Shot" uses different LEDs mounted on distinct PCBs at different levels to ensure a correct position of the LED with regard to the focusing elements. Since the headlight is carried on the user's head, the design is optimised to provide a compact flashlight. It hence must be assumed that the design of the flashlight "Mammut X-Shot" is not just based on an arbitrary chosen geometry such that the skilled person would not deviate from this design without any convincing reason.

3.4 Starting from the prior use "Mammut X-Shot", the subject-matter of claim 1 is hence not obvious.

4. The opposition division further decided that the subject-matter of claim 1 is not obvious when starting from the prior use "Fenix TK51" as the closest prior art.

4.1 The appellant only referred to their submissions put forward during the opposition proceedings (see statement of grounds, page 14, section c): "Departing from E1" and also letter of 11 July 2023, point 2.4.2). However, they did not provide any reasons as to why the opposition division's decision was erroneous in this regard.

4.2 The Board hence sees no reason to deviate from the opposition division's decision with regard to inventive step starting from the prior use "Fenix TK51".

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



A. Voyé

J. J. de Acha
González

Decision electronically authenticated