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File No.: T 0007/91 - 3.2.3

Application No.: 84 306 972.5

Publication No.: 0 138 588

Classification: F21Q 1/00

Title of invention: Indiscernible lamp

**D E C I S I O N**  
of 29 June 1993

Applicant: CARELLO LIGHTING PLC

Proprietor of the patent:

Opponent: SWF Auto-Electric GmbH

Headword:

**EPC:** Art. 56, 83

Keyword: "Clarity and sufficiency of the disclosure (yes)" - "Inventive step (no)"

**Headnote**  
**Catchwords**



Case Number: T 0007/91 - 3.2.3

**D E C I S I O N**  
of the Technical Board of Appeal 3.2.3  
of 29 June 1993

**Appellant:**  
(Opponent)

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**Representative:**

**Respondent:**  
(Proprietor of the patent)

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**Representative:**

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**Decision under appeal:**

Interlocutory decision of the Opposition Division  
of the European Patent Office dated 13 December  
1990 concerning maintenance of European patent  
No. 0 138 588 in amended form.

**Composition of the Board:**

**Chairman:** C. T. Wilson  
**Members:** H. Andrä  
L.C. Mancini

### Summary of Facts and Submissions

- I. European patent No. 0 138 588 was granted on 8 July 1987 with eight claims in response to European patent application No. 84 306 972.5, filed on 12 October 1984.
- II. A notice of opposition to this patent was filed on 6 April 1988 by the Appellant (Opponent) requesting that the patent be revoked in its entirety in accordance with:
- (a) Article 100(a) EPC, with particular reference to Articles 52 to 57 EPC; and
  - (b) Article 100(b) EPC.

The Appellant referred *inter alia* to the following documents:

- (D1) US-A-1 717 617
- (D2) US-A-2 345 777
- (D3) DE-C- 864 063
- (D4) DE-A-2 920 962.

- III. By an interlocutory decision within the meaning of Article 106(3) EPC dated 13 December 1990, the Opposition Division maintained the patent in amended form on the basis of the documents according to the fifth auxiliary request attached to the impugned decision.
- IV. The Appellant filed a notice of appeal on 24 December 1990 paying the appeal fee on the same day. The Statement of Grounds of Appeal was received on 13 April 1991 in which statement the Appellant attacked the patent under the grounds of Article 100(a) and (b) EPC

with particular reference to the documents D1, D2 and D4.

V. In a communication of the Board pursuant to Article 11(2) RPBA dated 11 May 1993, the Board gave its provisional opinion, setting out with regard to the ground for opposition under Article 100(b) EPC that the term "colour complementary to that of the front cover" according to Claim 1 seemed to provide an unambiguous teaching to the skilled person also in the field of subtractive colour mixing. The Board held further that the disclosure of the documents D1 or D2 in combination with D3 and D4 seemed to be particularly relevant in view of the issue of inventive step to be discussed in oral proceedings.

VI. In reply to the communication of the Board dated 11 May 1993, the Respondent submitted new documents according to a main request and an auxiliary request with the letter of 26 May 1993, received 27 May 1993.

Claim 1 according to the main request reads as follows:

"A lamp assembly designed to emit light of a specified colour when energised, comprising a housing (10) having an internal lamp (13), a light transmitting front cover (22) which is coloured to give the assembly a different colour appearance when not energised to said specified colour, and filter means (15) positioned within the housing (10) so as to intercept light before it is emitted through the front cover (22), said filter means (15) colouring emitted light in a mixture of the specified colour and a colour complementary to that of the front cover (22); characterised in that

- (a) the housing (10) has a reflector (11);
- (b) the front cover (22), in use, is juxtaposed to a coloured decorative panel (24);

(c) a lens element (15) including a multiplicity of individual lenses (17) is positioned within the housing (10);

(d) a baffle (18) is disposed between said lens element (15) and said cover (22), the cover (22) itself being provided with lensing (23) so that it forms an additional lens element; and

(e) the baffle (18) has a plurality of light transmitting portions (20) each of which is disposed on the optical axis of a respective one of those lenses (17), the remainder of the baffle (18) being light-absorbing or opaque."

Claim 1 according to the auxiliary request reads as follows:

"A lamp assembly designed to emit light of a specified colour when energised, comprising a housing (10) having an internal lamp (13), a light transmitting front cover (22) which is coloured to give the assembly a different colour appearance when not energised to said specified colour, and filter means (15) positioned within the housing (10) so as to intercept light before it is emitted through the front cover (22), said filter means (15) colouring emitted light in a mixture of the specified colour and a colour complementary to that of the front cover (22); characterised in that

(a) the housing (10) has a reflector (11);

(b) the front cover (22), in use, is juxtaposed to a coloured decorative panel (24);

(c) a lens element (15) including a multiplicity of individual lenses (17) is positioned within the housing (10);

(d) a baffle (18) is disposed between said lens element (15) and said cover (22), the cover (22) itself being provided with lensing (23) so that it forms an additional lens element;

(e) the baffle (18) has a plurality of light transmitting portions (20) each of which is disposed on the optical axis of a respective one of those lenses (17), the remainder of the baffle (18) being light-absorbing or opaque; and

(f) the housing (10) has a further reflector (12), a further internal lamp (14) and further filter means (16) to intercept light emitted from said further lamp (14) and colour the light in a mixture of a colour complementary to that of the front cover (22) and a further specified colour which is different to said first specified colour, said further reflector (12), further lamp (14) and further filter means (16) being disposed laterally of the first-mentioned reflector (11), lamp (13) and filter means (15) so that light from the further lamp (14) passes through the front cover (22) without passing through the first filter means (15)."

In support of his request to maintain the patent on the basis of the documents according to the main or the auxiliary submission filed with the letter of 26 May 1993, the Respondent submitted the following arguments in writing and in the oral proceedings before the Board:

- Having regard to the Opponents' objection under Article 100(b) EPC, in particular the point made by them that a filter cannot mix different colours, this is not true for colour filters in general, many filters being capable of transmitting a broad spectrum of light such that this can be regarded as transmitting different colours, i.e. a colour mixture. Contrary to the Opponents' statement implying that the concept of complementary colours in subtractive colour mixing cannot be observed, there is a specific reference in the Encyclopaedia

Britannica to complementary colours in relation to subtractive colour mixing.

- The lamp assembly disclosed in document D1 is a signal lamp arranged to provide different signal colours depending upon whether the front bulb 24 or the rear bulb 30 is illuminated. A person with ordinary skill in the art would well appreciate that it would be impossible to locate the baffle and lens elements of document D4 within such a lamp assembly with any hope of being able to obtain acceptable signals from both bulbs in use. With the baffle and lensing inserted in the lamp assembly according to document D1 the "Stop" symbol cannot be seen and it would for this reason not be obvious to combine the teachings of documents D4 and D1.
  
- An essential feature of the lamp assembly disclosed by document D2 is that the blue and yellow filters are uniformly spaced apart by substantially the wavelength of the light transmitted through the blue disk, i.e. 450 nm. It will be difficult, if not impossible, to achieve this and provide lensing at the same time on each of the filters. Furthermore, the skilled person would have no reason to provide the baffle between the yellow and blue filters of document D2 in view of the intended use of the lamp assembly as a headlight in which the problem of eliminating a phantom light does not arise.
  
- The teaching of document D3 is totally different from that according to the invention because there is no suggestion of filter means colouring emitted light in a mixture of the specified colour and a colour complementary to that of the front cover. There is also no disclosure of the feature that the front

cover, in use, is juxtaposed to a coloured decorative panel.

- The document D4 does not mention the colour relationship between the front cover of the lamp assembly and the neighbouring panel. The colouring of both the front cover and the filter means is not clearly disclosed, especially since lens element 13 is only optionally coloured; at least, there is no disclosure of the filter means colouring emitted light in a mixture of a specified colour and a colour complementary to that of the front cover.

VII. The Appellant maintained his request to revoke the patent in its entirety on the grounds of Articles 100(a) and (b) EPC.

He set out that nearly all the features according to Claim 1 of the main request are known from document D4. In document D3 it is disclosed that a desired colour mixture can be obtained by arranging two coloured filter means in series. This basic concept when applied to the lamp assembly disclosed in document D4 would lead to the subject-matter of Claim 1 without an inventive step being involved. Having regard to Claim 1 of the auxiliary request, the document D3 shows also two lamps disposed side by side whereby the colour of the emitted light results from corresponding filter means arranged in series. The particular colouring, e.g. for the rear light, the brakes or the lamp-signaller is regulated by legal prescriptions.

## Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is admissible.
2. Article 123 EPC
  - 2.1 Main request

The subject-matter of Claim 1 derives essentially from original Claims 1, 4 and 5.

The further features of Claim 1 that the lamp assembly comprises a housing having a reflector and an internal lamp and that the front cover is coloured to give the assembly a different colour appearance when not energised to said specific colour is disclosed on page 5, lines 1 to 7 and on page 6, lines 15 to 28, respectively, of the original description.

Claim 1 complies with the requirement of Article 123(2) EPC.

The above-cited further features incorporated in Claim 1 additionally relative to Claim 1 as granted are of a character limiting the scope of protection and Claim 1 complies therefore also with Article 123(3) EPC. Claims 2, 3 and 4 correspond with original Claims 2, 3 and 6, respectively.

The features of Claims 5 and 6 derive from page 6, lines 4 to 8, and page 5, paragraph 1 in combination with page 6, paragraph 2, respectively, of the original description.

The features of the dependent claims relate to further limitations of the subject-matter of Claim 1 and comply therefore with the requirement of Article 123(3) EPC.

## 2.2 Auxiliary request

Claim 1 contains additionally to the subject-matter of Claim 1 of the main request the features of Claim 6 of the main request which derive from page 5, paragraph 1 and page 6, paragraph 2 of the original description. These features lead to a limitation of the protection conferred to granted Claim 1.

Claims 2 to 5 correspond to Claims 2 to 5 of the main request.

The claims of the auxiliary request comply therefore also with the requirements of Article 123(2) and (3) EPC.

## 3. *Clarity and sufficiency of the disclosure* *(Article 100(b) EPC)*

3.1 In the oral proceedings before the Board the issue of whether the patent discloses the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art was not discussed in substance. The Appellant, when asked, declared that he intended to maintain his objection under Article 100(b) EPC. He presented, however, no further arguments on this issue in addition to those submitted previously in writing.

3.2 In support of his request that the patent would have to be revoked on the grounds of Article 102(1) in combination with Article 100(b) EPC, the Appellant had essentially set out that it is not clear for the skilled

person in which way a filter can colour light in a mixture of two different colours and what is to be understood in the field of subtractive colour mixing - which occurs in the lamp assembly according to the independent Claim 1 - by the term "colour complementary to that of the front cover".

- 3.3 The Opposition Division had already pointed out in its letter of 26 January 1990 (cf. section 2) that in English it is quite common to speak of "subtractive colour mixture" and of "filter means colouring emitted light", reference being made to "Encyclopaedia Britannica", 15th Edition, Vol. 16, page 596, right-hand column, last paragraph. The relevant part of this passage reads: "Subtractive colour mixing involves the absorption and selective transmission or reflection of light. It occurs when colorants ... are mixed or when several coloured filters are inserted in a single beam of white light".

The subject-matter according to Claim 1 of the patent in suit (main request and auxiliary request), interpreted by the description and the drawing, concerns a lamp assembly in which the light emitted by the incandescent bulbs being usually of white colour is transmitted through two filter means disposed in series. It is therefore clear for the skilled person that the patent deals with subtractive colour mixing.

- 3.4 In the communication of the Board dated 11 May 1993 reference was made to "Encyclopaedia Britannica", Micropaedia, Vol. III, 15th Edition, 1975. In this citation, it is stated under the heading "colour" on page 22, right-hand column:

"Colours are said to be complementary if they produce white when they are mixed additively or they produce black if mixed subtractively".

It follows from the foregoing that, contrary to the Appellant's statement, the term "filter means colouring emitted light in a mixture of the specified colour and a colour complementary to that of the front cover" of Claim 1 according to both requests provides an unambiguous teaching in the field of subtractive colour mixing to the person skilled in the art.

Thus, the Board is satisfied that the patent provides a sufficiently clear and complete teaching for it to be carried out by the skilled person.

4. Novelty was not disputed by the Appellant in the appeal proceedings so that this issue needs no detailed discussion.

The question remaining to be answered is whether the subject-matter of Claim 1 in its versions according to the main or auxiliary request is based on an inventive step.

5. *Main request*

- 5.1 Taking into account the observations of the Appellant filed with the letter of 18 June 1993 and made in the oral proceedings, the Board considers that the document D4 is more relevant than the documents D1 or D2.

Document D4 discloses the greatest number of features according to Claim 1 and is also concerned with the problem of avoiding ambient light entering the lamp and affecting the chromaticity of the light emitted from the lamp and the problem of improving the aesthetic

appearance of the lamp. It has, therefore, to be regarded as the closest prior art.

Document D4 discloses a lamp assembly designed to emit light of a specified colour when energised comprising a housing having an internal lamp (11, 12), a light transmitting front cover (23) which is coloured to give the assembly a different colour appearance when not energised to said specified colour and filter means (13) positioned within the housing so as to intercept light before it is emitted through the front cover (23), the housing having a reflector (10), the front cover (23), in use, being juxtaposed to a coloured decorative panel, a lens element (13) including a multiplicity of individual lenses being positioned within the housing, a baffle (18) being disposed between the lens element (13) and the front cover (23), the latter being provided with lensing so that it forms an additional lens element and the baffle (18) having a plurality of light transmitting portions (19) each of which is disposed on the optical axis of a respective one of those lenses, the remainder of the baffle (18) being light-absorbing or opaque.

Having regard to the feature of Claim 1 that the front cover of the lamp assembly, in use, is juxtaposed to a coloured decorative panel, reference is made to page 7, last paragraph, first sentence of document D4. In accordance with this passage, the present trend is to adapt the exterior of the lamp assembly to the form of the vehicle body in the area of the lamp for purpose of an aesthetic appearance.

The vehicle body visible in the area of the front cover of the lamp assembly as a rule constitutes a coloured decorative panel. The above-cited passage of document D4 discloses therefore to the person skilled in the art

also the feature that the front cover, in use, is juxtaposed to a coloured decorative panel.

- 5.2 Claim 1 is distinguished from the disclosure of document D4 by the feature that the filter means positioned within the housing colour emitted light in a mixture of the specified colour and a colour complementary to that of the front cover.

The technical effect resulting from this feature is, in agreement with column 3, lines 60 to 63 of the patent in suit, that the coloration of the front cover and the complementary colour in the lens element will cancel each other out, leaving only the desired colour in the light emitted by the lamp.

The objectively inherent problem is therefore to be seen in producing in a lamp assembly having an internal lamp and two coloured filter means disposed in series such as known from document D4 a light radiating from the lamp of a desired colour or chromaticity which is determined, for example, by legal requirements.

The realisation of this problem cannot be regarded as contributing to the presence of an inventive step since the selection of light of a specified colour arises from an aesthetic viewpoint and/or regulations imposed, i.e. from demands resulting from the operation and function of the lamp assembly envisaged.

- 5.3 From the basic laws of colour mixing it is known that the two fundamental ways of combining the primary colours to produce any desired colour are by addition and by subtraction. Subtractive colour mixing involves the absorption and selective transmission or reflection of light. It occurs, as already outlined in above

section 3.3, when several coloured filters are inserted into a single beam of white light.

Faced with the problem of producing a colour of a given chromaticity by subtractive colour mixing, the skilled person will make use of his basic knowledge of chromatics and select the colours of the front cover and of the filter means within the housing such that they produce, depending on their absorption and transmission characteristics, the desired colour. This customary procedure of the skilled person includes the selection of the filter means positioned in the housing such that the filter will transmit light in a mixture of the specified colour and a colour complementary to that of the front cover. It is known that in such an arrangement complementary colours produce black, i.e. cancel each other out, removing thereby light of a certain chromaticity from the beam. Light of a different chromaticity is, however, transmitted through the filters.

Thus, the complementary colours have only to be selected such that the colour transmitted through the filters corresponds with the desired colour, arriving thereby at the subject-matter of Claim 1.

5.4 The document D3 discloses a lamp assembly comprising two lamps arranged side by side in a housing closed by a coloured front cover (21). A pane of glass (12) of a colour different from that of the front cover is provided within the housing such that the light beam emitted from the bulb (16) traverses the pane of glass and the front cover corresponding to subtractive colour mixing.

In this document (cf. column 2, lines 15 to 29 and Claims 1 to 3) the teaching is provided to choose the

colour of the pane of glass such that on energising a respective light source the desired colour mixture is obtained in combination with the coloured front cover.

In the opinion of the Board, there is no doubt that the skilled person would not exclude from this teaching the use of complementary colours such colours forming part of the spectrum as shown e.g. in Newton's colour circle.

Moreover, it has been shown (cf. the disclosure of documents D1 or D2 and the corresponding observations in section 3 of the Board's communication of 11 May 1993) that filters of complementary colours have been employed in subtractive colour mixing in the field of lamp assemblies, a fact which the Respondent has taken account of by incorporating such an arrangement in the prior art portion of Claim 1 according to both requests.

- 5.5 The Board concludes from the foregoing that the skilled person starting out from the disclosure of document D4 would be led not only by his general knowledge in the field of chromatics but in a different way also by the disclosure of document D3 to employ a pair of filters of complementary colours inserted successively in the beam of the internal lamp to obtain a specified colour in accordance with the particular requirements without the exercise of inventive skills in the meaning of Article 56 EPC.

Claim 1 of the main request is not, therefore, valid. Claims 2 to 6 being dependent on Claim 1 can also not be maintained so that the main request is rejected.

6. *Auxiliary request*

6.1 Claim 1 is distinguished from Claim 1 according to the main request in that it additionally incorporates the following feature:

"(f) the housing (10) has a further reflector (12), a further internal lamp (14) and further filter means (16) to intercept light emitted from said further lamp (14) and colour the light in a mixture of a colour complementary to that of the front cover (22) and a further specified colour which is different to said first specified colour, said further reflector (12), further lamp (14) and further filter means (16) being disposed laterally of the first-mentioned reflector (11), lamp (13) and filter means (15) so that light from the further lamp (14) passes through the front cover (22) without passing through the first filter means (15)."

6.2 The above-cited feature (f) leads to the result that a light of a second specified colour emitted from a further lamp disposed side by side with the first lamp can be generated with the common housing of the lamp assembly. The additional aspect of the problem underlying this feature is to be seen in improving the lamp assembly disclosed in document D4 such that a second light beam of a second specified colour is emitted.

6.3 Document D3 describes a lamp assembly comprising, apart from an intermediate lamp, an upper (4) and a lower (3) lamp within a housing closed by a coloured front cover (21), a respective pane of glass (12) of a colour different from that of the front cover being provided within the housing with regard to each lamp to effect subtractive colour mixing in combination with the front cover. As the upper and the lower lamps are provided for different purposes, i.e. as a brake signal (4) and as a

rear light (3), it is clear that the beam of specified light emitted from these lamps have not to be of the same chromaticity in order to provide distinguishable signals.

- 6.4 Thus, the additional feature of Claim 1 according to the auxiliary request amounts to nothing more than a duplication of the lamp arrangement according to Claim 1 of the main request which is arrived at in an obvious manner by integration of the double lamp concept according to D3 into the lamp assembly disclosed in document D4.

Claim 1 of the auxiliary request cannot be maintained due to lack of an inventive step (Article 56 EPC). Claims 2 to 5 being dependent on Claim 1 are, therefore, also not valid and the auxiliary request is rejected.

### Order

For these reasons, it is decided that:

1. The impugned decision is set aside.
2. The patent is revoked.

The Registrar:



N. Maslin

The Chairman:



C.T. Wilson