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Datasheet for the decision of 11 June 2012

Case Number: T 2429/09 - 3.2.01

Application Number: 03010574.6

Publication Number: 1477368

IPC: B60R 13/10, G02B 6/00

Language of the proceedings: EN

Title of invention:
Illuminated license plate for vehicles and vehicle provided with the same

Patentee:
3M Innovative Properties Company

Opponent:
Erich Utsch AG

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step (Main Request, 1st to 5th auxiliary request) no"

Decisions cited:
-

Catchword:
-

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Case Number: T 2429/09 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 11 June 2012

Appellant: (Opponent)
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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 23 October 2009 rejecting the opposition filed against European patent No. 1477368 pursuant to Article 101(2) EPC.

Composition of the Board:

Chairman: G. Pricolo
Members: H. Geuss
T. Karamanli

Summary of Facts and Submissions

I. The appeal of the opponent is directed against the decision of the opposition division rejecting the opposition filed against European patent No. EP 1477368, which was posted on 23 October 2009.

II. The opposition division held that claim 1 met the requirements of Article 56 EPC 1973 having regard to the prior art disclosed by documents

US 2002/0178 627 (**D1**),
JP 10-119669 (**D2**) and
DE 202 159 88 U (**D3**).

III. The appellant requested in the statement of grounds of appeal that the decision under appeal be set aside and that the patent be revoked.

The respondent (patentee) requested with the letter of reply that the appeal be dismissed or that the patent be maintained in amended form on the basis of one of auxiliary requests 1 to 5, all filed with letter dated 8 July 2010.

IV. In the annex to the summons to oral proceedings, posted on 29 March 2012, the Board set out a provisional opinion and stated, inter alia, that the problem solved by the features distinguishing the subject-matter of claim 1 as granted from D1 was to provide a license plate with an alternative lighting technique.

V. With letter of 13 April 2012 the respondent informed the Board that he would not attend the oral proceedings.

With letter of 10 May 2012 the appellant withdrew the request for oral proceedings, filed arguments relating to lack of inventive step of claim 1 according to auxiliary requests 1 to 5, and requested a decision according to the state of the file.

Oral proceedings were duly held on 11 June 2012 in the absence of both parties.

VI. Claim 1 as granted reads as follows:

Illuminated license plate for vehicles, comprising

- a light guide (12) having opposite major front and back faces (14,16) and side faces (18,20,22,24) therebetween,
- an elongated light source (26) arranged along at least a portion of at least one of said side faces (18,20,22,24) of said light guide (12) for illuminating said light guide (12), and
- indicia (56,58) arranged in front of said front face (14) of said light guide (12),

characterized by

- a light-transmissive retro-reflective film (50),
- wherein said light-transmissive retro-reflective film (50) is arranged in front of said front face (14) of said light guide (12).

VII. Claim 1 according to auxiliary request 1 reads as follows (the difference with respect to the wording of claim 1 according to the main request is printed in bold):

Illuminated license plate for vehicles, comprising

- a light guide (12) having opposite major front and back faces (14,16) and side faces (18,20,22,24) therebetween,
- an elongated light source (26) arranged along at least a portion of at least one of said side faces (18,20,22,24) of said light guide (12) for illuminating said light guide (12), and
- indicia (56,58) arranged in front of said front face (14) of said light guide (12),

characterized by

- a light-transmissive retro-reflective film (50),
- wherein said light-transmissive retro-reflective film (50) is arranged in front of said front face (14) of said light guide (12),

and wherein said light guide (12), said light source (26), said indicia (56,58), and said light-transmissive retro-reflective film (50) are arranged within a housing (66) having an opening (74) in front of said front face (14) of said light-guide (12).

VIII. Claim 1 according to auxiliary request 2 reads as follows (the difference with respect to the wording of claim 1 according to the main request is printed in bold):

Illuminated license plate for vehicles, comprising

- a light guide (12) having opposite major front and back faces (14,16) and side faces (18,20,22,24) therebetween,
- an elongated light source (26) arranged along at least a portion of at least one of said side

faces (18,20,22,24) of said light guide (12) for illuminating said light guide (12), and

- indicia (56,58) arranged in front of said front face (14) of said light guide (12),

characterized by

- a light-transmissive retro-reflective film (50),
- wherein said light-transmissive retro-reflective film (50) is arranged in front of said front face (14) of said light guide (12),

and wherein said light guide (12) is a solid light guide, that comprises light scattering particles (64).

IX. Claim 1 according to auxiliary request 3 reads as follows (the difference with respect to the wording of claim 1 according to the main request is printed in bold):

Illuminated license plate for vehicles, comprising

- a light guide (12) having opposite major front and back faces (14,16) and side faces (18,20,22,24) therebetween,
- an elongated light source (26) arranged along at least a portion of at least one of said side faces (18,20,22,24) of said light guide (12) for illuminating said light guide (12), and
- indicia (56,58) arranged in front of said front face (14) of said light guide (12),

characterized by

- a light-transmissive retro-reflective film (50),
- wherein said light-transmissive retro-reflective film (50) is arranged in front of said front face (14) of said light guide (12),

and wherein a back reflector (44) is arranged at said back face (16) of said light guide (12).

X. Claim 1 according to auxiliary request 4 reads as follows (the difference with respect to the wording of claim 1 according to the main request is printed in bold):

Illuminated license plate for vehicles, comprising

- a light guide (12) having opposite major front and back faces (14,16) and side faces (18,20,22,24) therebetween,
- an elongated light source (26) arranged along at least a portion of at least one of said side faces (18,20,22,24) of said light guide (12) for illuminating said light guide (12), and
- indicia (56,58) arranged in front of said front face (14) of said light guide (12),

characterized by

- a light-transmissive retro-reflective film (50),
- wherein said light-transmissive retro-reflective film (50) is arranged in front of said front face (14) of said light guide (12),

and wherein within the light guide, light is transmitted by total internal reflection at the front and back side faces until the light rays impinge onto the front face and onto the light-transmissive retro-reflective film at an angle at which the light is transmitted out of the front face of the light guide and through the light-transmissive retro-reflective film.

XI. Claim 1 according to auxiliary request 5 reads as follows (the difference with respect to the wording of

claim 1 according to the main request is printed in bold):

Illuminated license plate for vehicles, comprising

- a light guide (12) having opposite major front and back faces (14,16) and side faces (18,20,22,24) therebetween,
- an elongated light source (26) arranged along at least a portion of at least one of said side faces (18,20,22,24) of said light guide (12) for illuminating said light guide (12), and
- indicia (56,58) arranged in front of said front face (14) of said light guide (12),

characterized by

- a light-transmissive retro-reflective film (50),
- wherein said light-transmissive retro-reflective film (50) is arranged in front of said front face (14) of said light guide (12),

and wherein within the light guide, light is transmitted by total internal reflection at the front and back side faces until the light rays impinge onto the front face and onto the light-transmissive retro-reflective film at an angle at which the light is transmitted out of the front face of the light guide and through the light-transmissive retro-reflective film,

and wherein said light guide (12) is a solid light guide, that comprises light scattering particles (64).

XII. The appellant's (opponent) submissions may be summarized as follows:

If D1 is considered to be the closest prior art, the subject-matter of claim 1 differs from the license plate according to D1 particularly in that the light source is an elongated light source illuminating a light guide and having opposite major front and back faces and side faces therebetween. Furthermore, the elongated light source is arranged along at least a portion of at least one of the side faces of said light guide.

The opposition division was not correct in stating that the problem solved by the invention in dispute is to provide an alternative design of an illuminated licence plate permitting low voltage power supply. Claim 1 does not define what kind of light source is used and what power supply is foreseen. The description of the patent refers to fluorescent light tubes as an elongated luminant which is in contradiction to the low power argument. Essentially, the description of the patent refers to the same type of luminant as used in D2.
In fact, the objective problem to be solved resulting from the distinguishing features is to replace the electrically activatable light film by a light guide with a longitudinal light source. However, the solution to this problem is rendered obvious in view of document D2.

The combination of documents D1 and D2 further render obvious a housing in accordance with the supplementary feature of claim 1 of auxiliary request 1 since this feature is disclosed by both D1 and D2.

Light scattering particles in accordance with the supplementary feature of claim 1 of auxiliary request 2

are known from D3 ("Mikrodiffusormaterial"). Since D2 explains that the diffusion film 7 is mounted on a surface of the light leading plate 6 in order to scatter light, it is obvious for a skilled person to replace the light leading plate 6 and the diffusion film 7 by a light leading plate comprising light scattering particles.

It is a matter of general knowledge to provide back reflectors in combination with vehicle lamps which enhance the light in a direction of the dedicated emission in accordance with the additional feature of claim 1 of auxiliary request 3.

The additional feature of claim 1 according to auxiliary request 4 merely clarifies the function of the light guide. Light transmission in accordance with this feature is a direct result of the presence of a reflector in front of the light guide. Thus the additional feature does not further distance the claimed subject-matter from the prior art as compared to claim 1 of the main request.

Claim 1 of auxiliary request 5 combines the supplementary features of claim 1 according to the auxiliary requests 3 and 4, respectively. For the reasons explained above, these features are obvious in view of the state of the art.

Hence, the subject-matter of claim 1 according to auxiliary requests 1 to 5 lacks inventive step.

XIII. The respondent (patentee) replied to the arguments as follows:

The distinguishing features which are not disclosed in D1, namely the light source having a longitudinal form and illuminating a light guide, provide an alternative embodiment with a homogeneous lighted area and improved energy efficiency.

Document D2 does not offer any solution to the given problem. The voltage converter which is necessary for the fluorescent tube has poor energy efficiency. Therefore the teaching of D2 is not able to lead the skilled person to a solution to the given problem. Hence, the skilled person would not take into account the disclosure of document D2.

Furthermore, document D1 teaches in paragraph [0003] that the electrically activable light film is advantageous because it provides direct lighting. This teachting is in contrast with the teaching of D2 to provide indirect lighting. Moreover, D1 (cf. paragraph [0003], last sentence) emphasizes the "extreme compact and space-saving" configuration of the disclosed license plate, which would be impaired by the provision of a light guide as shown in D2. Accordingly, the skilled person would not combine documents D1 and D2.

Reasons for the Decision

1. The appeal is admissible.

2. As announced in advance, the duly summoned parties did not attend the oral proceedings. According to Rule 71(2) EPC 1973, the proceedings could however continue without them. In accordance with Article 15(3) RPBA (Rules of Procedure of the Boards of Appeal of the European Patent Office, OJ EPO 2007, 536), the Board relied for its decision only on the parties' written submissions. The Board was in a position to decide at the conclusion of the oral proceedings, since the case was ready for decision (Article 15(5) and (6) RPBA), and the voluntary absence of the parties was not a reason for delaying a decision (Article 15(3) RPBA).

3. The invention as defined by the features of claim 1 as granted (main request) does not involve an inventive step according to the provisions of Article 56 EPC 1973.

3.1 D1 is considered to be the closest prior art and indisputably discloses the following features of the granted claim:

> An illuminated license plate for vehicles, comprising a light source (14),
> indicia (fig. 2, paragraph [0032]), and a light-transmissive retro-reflective film (15, retro-reflective film, paragraph [0028]) wherein
> the light-transmissive retro-reflective film and said indicia are arranged in front of the front face of said light source (paragraphs [0028], [0032], fig. 2).

3.2 The subject-matter of claim 1 differs from the license plate of D1 in that
(a) the light source is an elongated light source, and

(b) there is provided a light guide having opposite major front and back faces and side faces therebetween, and the elongated light source is arranged along at least a portion of at least one of said side faces of said light guide for illuminating said light guide.

Essentially, the distinguishing features define a modification of the license plate of D1 which is obtained by replacing the light film 14 by an elongated light source arranged along a side face of a light guide.

3.3 Therefore, in accordance with the opinion stated in the Board's communication annexed to the summons to oral proceedings, the problem to be solved by the distinguishing features is to provide a license plate with an alternative lighting technique.

On this aspect, the Board does not follow the decision of the opposition division according to which the technical problem to be solved by the contested invention is to provide a design of an illuminated licence plate permitting low voltage power (cf. decision, page 3, next to last paragraph). Nor does it accept the submissions of the respondent asserting that the invention should provide a homogeneous illuminated area for an alternative embodiment with improved energy efficiency. Indeed, since the claim is not restricted to a specific type of light source and moreover, no further feature in the claim addresses energy efficiency, the aspects of energy efficiency and low voltage power supply are not able to contribute to the

objective problem to be solved by means of features a) and b) (cf. 2.2).

3.4 Document D2 discloses a license plate with an alternative lighting technique comprising an elongated light source in the form of a fluorescent lamp in combination with a light leading plate (lamp 4, light leading plate 6).

In order to solve the above mentioned problem, the skilled person would consider this known alternative. By providing a fluorescent lamp, i.e. an elongated light source in combination with a light leading plate, i.e. a light guide in accordance with D2, in the license plate according to D1, he would directly arrive, in an obvious manner, at a license plate having the above-mentioned distinguishing features a) and b). The skilled person would thus arrive, in an obvious manner, at a license plate in accordance with claim 1 of the main request.

3.4.1 The respondent argues that a fluorescent lamp according to the license plate of D2 needs a voltage converter which has poor energy efficiency. Therefore a skilled person would not take document D2 into account.

The Board does not agree since the description of the patent refers explicitly to fluorescent light tubes as a possible elongated luminant (cf. paragraph [0008]. As already stated under point 3.3 above in connection with the problem to be solved, energy efficiency is not regarded as the problem to be solved by means of features a) and b).

3.4.2 Even if a skilled person realised that the fluorescent lamp technology of D2 is of poor energy efficiency, he would be aware of the fact that D2 discloses a homogeneous illuminated area for an illuminated number plate with an elongated light source and a light guide.

Consequently, the skilled person would take document D2 into account and would thereby implement features a) and b) in the license plate according to D1.

3.4.3 Additionally the respondent submits that document D1 leads the skilled person away from considering D2 since D1 provides a direct lighting technique and a space saving design.

The Board does not follow this argument. On the one hand, the indirect lighting techniques is an alternative to the direct lighting technique disclosed by D1 and thus would be considered by the skilled person, when dealing with the above mentioned problem. On the other hand, there is no evidence that the design of the license plate of D2 is less compact than the configuration shown in D1 and therefore, this argument can only be regarded as speculative.

4. The respondent has not submitted any arguments justifying why the additional features introduced in claim 1 according to the auxiliary requests 1 to 5 filed in appeal proceedings would support the presence of an inventive step.

5. Claim 1 of auxiliary request 1 differs from claim 1 as granted by the feature of granted dependent claim 26, namely that said light guide (12), said light source

(26), said indicia (56,58) and said light-transmissive retro-reflective film (50) are arranged within a housing (66) having an opening (74) in front of said front face (14) of said light-guide (12).

5.1 Both documents D1 and D2 show a housing in the sense of the supplementary feature of claim 1 of auxiliary request 1 (casing 3 in D1; case frame 2 in D2). Hence the supplementary feature of claim 1 of auxiliary request 1 is not able to delimit the subject-matter vis-à-vis the state of the art as discussed for the main request. Consequently, its subject-matter also lacks inventive step.

6. Claim 1 of auxiliary request 2 differs from claim 1 as granted by the features of granted claims 8 and 9 which have been incorporated into granted claim 1 ("wherein said light guide (12) is a solid light guide, that comprises light scattering particles (64)").

6.1 The light leading plate 6 of D2 is a solid state light guide in the sense of the supplementary feature of claim 1 of auxiliary request 2. According to the abstract of D2 a diffusion film 7 is mounted on a surface of the light leading plate to scatter light. Hence, in combination, a solid state light guide having a light scattering function is known from document D2.

6.2 It would be obvious for a skilled person to replace the light leading plate 6 and diffusion film 7 by a light leading plate comprising light scattering particles, given that the use of light scattering material for providing a diffusion function for a light guide is known from document D3, which discloses a vehicle lamp

with a light guide that comprises light scattering particles ("Mikrodiffusormaterial", see page 3, third paragraph).

As a result, these features cannot contribute to an inventive step of the subject-matter of claim 1 according to auxiliary request 2.

7. Claim 1 of auxiliary request 3 consists of claims 1 and 6 as granted, i.e. claim 1 of auxiliary request 3 defines in addition to claim 1 as granted that a back reflector (44) is arranged at said back face (16) of said light guide (12).

7.1 It is a matter of general knowledge to provide a back reflector in combination with vehicle lamps which enhances the light in the direction of the dedicated emission. Therefore, in the case of an illuminated license plate, too, the incorporation of a back reflector does not involve an inventive step.

8. Claim 1 of auxiliary request 4 defines in addition to claim 1 as granted that "within the light guide, light is transmitted by total reflection at the front and back side faces until the light rays impinge onto the front face and onto the light-transmissive retro-reflective film at an angle at which the light is transmitted out of the front face of the light guide and through the light-transmissive retro-reflective film", which is taken from paragraph [0010] of the description by a word-by-word citation.

8.1 The Board regards the additional feature of claim 1 of auxiliary request 4 as an explanation of the

functioning of the of the light guide. The light guide shown in document D2, i.e. the light leading plate 6, has, however, exactly the same functioning as described by the additional feature. Since no further features restrict the light guide vis-à-vis the light leading plate known from D2, the feature as added in claim 1 of auxiliary request 4 is not able to restrict the subject-matter of this claim with respect to the subject-matter as defined in claim 1 as granted. Hence, the subject-matter of claim 1 according to auxiliary request 4 also lacks an inventive step for the same reasons as given for the main request.

9. Claim 1 of auxiliary request 5 is a combination of the supplementary features as added in auxiliary requests 2 and 4, i.e. claim 1 consists of the features of granted claims 8 and 9 and the passage of paragraph [0010] of the description.

9.1 Considering that the supplementary features added in auxiliary request 2 do not support the presence of an inventive step, as explained above, and that the supplementary features added in auxiliary request 4 do not provide further limitations of the claimed subject-matter, as explained above, it is found that the subject-matter of claim 1 according to auxiliary request 5 likewise lacks an inventive step.

10. Since none of the requests presented by the respondent can be allowed, due to lack of inventive step (Article 56 EPC 1973), the decision under appeal must be set aside and the patent be revoked.

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:

A. Vottner G. Pricolo