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Datasheet for the decision of 13 January 2011

Case Number: T 1353/07 - 3402

Application Number: 01108295.5

Publication Number: 1143286

IPC: G02B27/01, B62J17/04

Language of the proceeding: EN

Title of invention:
Head-up display for motorcycle

Applicant:
HONDA GIKEN KOGYO KABUSHIKI KAISHA

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive Step - yes (Claim 1 after amendment)

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Case Number: T1353/07 - 3402

D E C I S I O N
of the Technical Board of Appeal 3402
of 13 January 2011

Appellant: (Applicant)	HONDA GIKEN KOGYO KABUSHIKI KAISHA 1-1, Minami-Aoyama 2-chome Minato-ku, Tokyo (JP)
Representative:	Liska, Horst Weickmann & Weickmann Patentanwälte Postfach 86 08 20 81635 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patenbt Office posted 27.03.07 refusing European patent application No. 01108295.5 pursuant to Article 97(1) EPC**

Composition of the Board:

Chairman: A. Klein
Members: M. Rayner
L. Bühler

Summary of Facts and Submissions:

I. The applicant has appealed against the decision of the examining division refusing European patent application number 01 108 295.5 concerning a motorcycle with a head up display. In the examination and/or appeal proceedings, reference has been made to, amongst others, the following documents:

D1 EP-A-0 338 703

D2 WO-A-89 03 059

D3 Mullins C A et al: "Integrated Collision Avoidance Vehicle" Automotive Engineering, US, Society of Automotive Engineers, vol. 103, no. 6, 1 June 1995 (1995-06-01), pages 1-4, XP000509409 ISSN: 0098-2571

D6 JP-A-02 216 600.

II. In the decision under appeal, the examining division considered the subject matter of the independent claims before it not to involve an inventive step in the sense of Article 56 EPC. Reasons for the decision pertinent to the appeal can be summarised as follows.

Document D1 discloses a motorcycle comprising a window shield attached thereto in front of a driver and a head-up display comprising a projector. The projector comprises a plurality of light emitting devices arranged in series such that the image projected onto the window shield has the form of a stripe or linear pattern extending in the horizontal direction, wherein the pattern extends longer in the horizontal direction than in the vertical direction and wherein the control system turns on the light emitting devices for displaying a traffic warning information.

The division also observed that document D2 provides additional support for LEDs being alternative light sources for displays. Moreover, document D2 teaches that a horizontal spread of the image in a similar range as claimed is within the skill of the practitioner who designs head-up displays and depends on the available dimensions of the vehicle.

III. The appellant requested that the decision under appeal be set aside and a patent granted. Oral proceedings were requested on an auxiliary basis.

IV. In support of its case, the appellant advanced arguments including the following.

Starting from document D1, the problem addressed by the application is how to provide traffic warning information to a driver of a motorcycle by means of a simple construction without lowering the attention the driver has to pay in driving the motorcycle. Document D2 discloses a head-up display for a four-wheeled vehicle, but there is no suggestion how to deal with problems encountered with a motorcycle. Document D2 aims to avoid refocusing the eyes of a driver who focuses the road at optical infinity. The head-up display is intended to display numerical data, for example the velocity or information in letter form. There is no disclosure of displaying traffic warning information nor is an image in the form of a stripe or linear pattern disclosed, which is composed of a plurality of dots and extends in the horizontal direction and which patterns extend longer in the horizontal direction than in the vertical direction.

Therefore, an inventive step was necessary to reach the subject matter claimed.

V. Consequent to the request of the appellant, oral proceedings were appointed by the board.

In a communication attached to the summons, the board observed, amongst other things, that a broader than tall stripe/dot array type presentation is a typical way to present analogue information.

VI. During the oral proceedings, the appellant stressed that the rider of a motorcycle should not have to read data to understand warning information, which reading may cause rider balance to be disturbed. It is rather more a case of providing an on/off display of a warning with a simple projector, where simply by virtue of their position, size and activation, the LEDs give sufficient warning. Since this particular way of presenting traffic warning information does not require the driver to perceive a sharp image of the displayed elements, it allows for the provision of a very simple projector formed as further set out in detail in paragraph (f) of the claim as amended during the oral proceedings.

VII. Claim 1 submitted by the appellant as sole request is worded as follows.

1. A motorcycle comprising:
   a) a window shield (18) attached thereto in a front portion of the motorcycle,
   b) a head-up display comprising a projector (37),
   c) wherein the head-up display is adopted to display information by means of an image

(31) projected from the projector (37) on the window shield (18) within a visual field to be seen by the driver when he takes a riding posture with his eyes turned to the front side at an eye position (32) defined by light rays (42) of the projector (37) reflected from the window shield (18), and wherein the visual field comprises a center field (48) as a clearly visible region and which is defined by an angle (1) of about ±3° with respect to a center line (47) of the visual field and a peripheral field (49) of reduced visual acuity surrounding the center field (48) on the upper and lower sides of the center field (48) and which is defined by an angle (2) of about ±75° with respect to the center line 47),

d) and a control system (53) for controlling the projector (37),

characterized in that

e) the projector (37) projects the image (31) onto the window shield (18) in the lower peripheral field (49), the angle (2) of which is defined with a bottom edge of the lower peripheral field overlapping with a meter (43) on a back surface of which the projector (37) is placed,

f) wherein the projector (37) is formed by a case (33) closed by a lens (36) and by a plurality of light emitting devices (35) arranged in series on a circuit board (34) in the case (33) such that the image (31) projected onto the window shield (18) has the form of a stripe or linear pattern which is composed of a plurality of dots and extends in the horizontal direction,

g) wherein the pattern extends longer in the horizontal direction than in the vertical direction, a horizontal length of the image (31) is determined so that an angle (3,4) formed between two lines extending from each point between an uppermost point in the center field (48) and a lowermost point in the center field (48) to both ends of the image (31) becomes at least 20°,

h) wherein the motorcycle further comprises an antenna (51) and a receiver (52) for receiving radio waves transmitted from a movable body (56),

i) and wherein the control system (53) in response to the information received by the receiver (52) turns on the light emitting devices (35)for displaying traffic warning information, if the information represents the presence of a movable body (56) running in the direction facing or crossing the running direction of the motorcycle.

VIII. At the end of the oral proceedings, the board gave its decision.

Reasons for the Decision

1. The appeal is admissible.

2. Patentability

2.1 As it is concerned with a motorcycle visual display apparatus, document D1 has been taken, in the board's view correctly, to represent the closest prior art document in the examination and appeal proceedings. The

features contained in the characterising part of the claim can be considered novel over the disclosure of document D1. In particular, the board does not consider that document D1 discloses features (f) and (g) because, even if there is a hint towards using LED's, document D1 nevertheless teaches displaying information having to be read, i.e. alphanumeric information, including punctuation marks and not a plurality of LED's arranged in series on a circuit board such that the image projected has the form of stripe or linear pattern. Nor does document D1 really disclose display of traffic warning information, but rather information displaying and/or warning about the motorcycle operation as such.

2.2 The novel features in the characterising part of the claim address the problem of providing a motorcycle rider with traffic warning information in a simple manner without distraction from vehicle control. A simple on/off stripe/linear pattern of LEDs arranged in series and dimensioned as now claimed and projected using a simple projector structure as now set out also in the claim (cf. features (f) and (g)) cannot be considered obvious from the disclosure of document D1, because in that disclosure, the characters displayed carry an information function depending on which function they are and need therefore to be sharply imaged. For example speed 106 and rpm 108 as shown in Figure 5 are digits needing to be read to understand the information and the blinking exclamation mark 11 needs to be recognised as such.

2.3 Document D2 concerns an automobile head up display system and is not concerned with motorcycles. An example of the information displayed is shown in Figure 6. As can be seen in this Figure, the power band of the

RPM gauge is a horizontal line display, low revolutions being vertical as are the fuel and temperature gauges. As the board pointed out in the communication attached to the summons, a stripe/dot array type presentation is a typical way to present analogue information, and in the case of document D2, a continuous and variable line display of rpm or fuel/temperature, according to a scale in the gauge concerned is presented. This is, however, rather different to the simple projector now claimed where there is no alphanumeric scale involved for the stripe or linear pattern, nor, naturally, is the motorcycle warning continuous. The board thus sees no reason to consider modifying the line displays taught by document D2 to power up only in traffic warning situations, as this would not make sense because the driver needs to check fuel, oil and temperature at any time of his choice while driving. Therefore, since the driver (not a motorcycle rider also concerned with stability) needs to identify the line display concerned and information involved according to the scale rather than simply to be warned, the board concluded that even taking the teaching of document D2 into account, the subject matter of claim 1 cannot be considered obvious.

2.4 The other documents in the file do not come closer to the subject matter of claim 1. In particular, document D3 concerns collision avoidance systems for an automobile, but does not use a projector as claimed because it again calls for recognising symbols (see Figure 4 and description on page 4), in this case a yellow triangle or a red octagon. As is recited on page 14 of the application, shapes and silhouettes are not part of the invention. Document D6 concerns prevention of traffic accidents, but is silent as to displays.

2.5 The board therefore reached the view that the subject matter of claim 1 can be considered to involve an inventive step within the meaning of article 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the first instance with the order to grant a patent based on the following documents:

Description

Pages 1, 2, 6-13 and 15-18 as originally filed,
Pages 4 and 5 filed on 19 October 2005,
Pages 3, 3a filed with the letter of 25 July 2007,
Page 14 filed during the oral proceedings of 13 January 2010,

Claims

No. 1 filed during the oral proceedings of 13 January 2010,

Drawings

Sheets 1/6 to 6/6 of the drawings as originally filed.

The Registrar: The Chairman:

M Kiehl A G Klein