

The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOSEPH S. STAM, JON H. BECHTEL,
SPENCER D. REESE, JOHN K. ROBERTS,
WILLIAM L. TONAR,
and G. BRUCE POE

Appeal 2007-2217
Application 11/231,232¹
Technology Center 2600

Decided: September 4, 2007

Before ALLEN R. MACDONALD, JAY P. LUCAS,
and JOHN A. JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

¹ This application is a continuation of Application Ser. No. 10/326,673, now U.S. Pat. No. 6,947,577, which is a continuation of Application Ser. No. 09/528,389, filed Mar. 20, 2000, now U.S. Pat. 6,611,610, which is a continuation-in-part of Application Ser. No. 09/151,487, filed Sept. 11, 1998, now U.S. Pat. 6,255,639, which is a continuation of Application Ser. No. 08/831,232, filed Apr. 2, 1997, now U.S. Pat. 5,837,994.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-21. We have jurisdiction under 35 U.S.C. § 6(b), and we heard the appeal on August 7, 2007. We affirm.

STATEMENT OF THE CASE

Appellants invented a system that automatically controls vehicle exterior lights (e.g., headlights). In one embodiment, a controller generates an exterior light status indicator signal as a function of at least a portion of a detected image, such as an oncoming vehicle.² Claim 9 is illustrative:

9. A vehicle automatic vehicle exterior light control, comprising:

an image sensor having an array of pixels; and

a controller comprising at least one output, said controller is configured to receive at least a portion of at least one image acquired by said image sensor, wherein said controller is configured to control said at least one output and to generate an exterior light status indicator signal as a function of said at least a portion of at least one image.

The Examiner relies on the following prior art references to show unpatentability:

Schierbeek	US 5,715,093	Feb. 3, 1998
Pabla	US 5,780,974	Jul. 14, 1998
O'Farrell	US 5,798,575	Aug. 25, 1998
Schofield	US 6,498,620 B2	Dec. 24, 2002 (filed Jun. 3, 1997)

² See generally Specification ¶¶ 0047 and 0125.

1. Claims 1-4, 7-15, and 17-21 stand rejected under 35 U.S.C. § 102(b)³ as being anticipated by Schofield.
2. Claim 6 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Schofield in view of O'Farrell.
3. Claims 5 and 16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Schofield in view of Pabla.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Briefs and the Answer⁴ for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

OPINION

The Anticipation Rejection

We first consider the Examiner's rejection of claims 1-4, 7-15, and 17-21 under 35 U.S.C. § 102(b) as being anticipated by Schofield. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a

³ Since the Schofield reference was published on December 24, 2002 -- after the effective filing date of the present application -- the reference qualifies as prior art under § 102(e), not § 102(b). Nevertheless, we consider the Examiner's error harmless as it does not affect our assessment of the merits of the anticipation rejection.

⁴ An Examiner's Answer was first mailed Jan. 29, 2007 which was revised on Mar. 28, 2007. We refer to the revised Answer throughout this opinion.

claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. *RCA Corp. v. Applied Digital Data Systems, Inc.*, 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984); *W.L. Gore and Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983).

Regarding representative claim 9,⁵ the Examiner has indicated how the claimed invention is deemed to be fully met by the disclosure of Schofield -- a reference that incorporates the disclosure of Scheierbeek by reference.⁶ According to the Examiner, Schofield discloses a display whose illumination level is controlled responsive to the ambient light level around the vehicle. The Examiner further notes that Schierbeek detects light around the vehicle via sensors 20, 22 that indicates a twilight or nighttime condition (Answer 4-10, 13-16).

Appellants argue that the prior art fails to teach or suggest a status indicator, let alone a controller configured to generate a status indicator signal as a function of at least a portion of at least one image as claimed. Appellants contend that Schofield's display is not an exterior light status indicator, but merely depicts a merged image of a scene rearward of a vehicle derived from a series of rearward facing cameras (Br. 17; Reply Br.

⁵ Although Appellants nominally argue each independent claim separately (Br. 16-18), the arguments are essentially directed to the prior art's alleged failure to teach or suggest an exterior light status indicator signal as a function of at least a portion of the image as claimed -- a feature common to all independent claims. *See* Br. 16-18; *see also* Reply Br. 2. Accordingly, we select the broadest independent claim -- claim 9 -- as representative. *See* 37 C.F.R. § 41.37(c)(1)(vii).

⁶ *See* n.7, *infra*, of this opinion.

2-4). Appellants add that Schierbeek does not employ an image sensor as a control signal and therefore fails to disclose an exterior status indicator signal as a function of at least one image as claimed (Reply Br. 4-6).

We will sustain the Examiner's rejection of representative claim 9. Schofield discloses a rearview vision system that displays an image synthesized from outputs from multiple image capture devices 14, 16 so that a composite image depicting the vehicle's rearward field of view is displayed (Schofield, abstract, col. 5, ll. 48-64; Figs. 1 and 3). To this end, the outputs of the image capture devices are provided to image processor 18. Image processor supplies a video signal to an image generator 74 that is coupled to display 20. Using display 20, the image is projected directly toward the driver (Schofield, Figs. 5 and 12-14; col. 9, ll. 18-20; col. 10, ll. 53-56).

As shown in Figure 14 of Schofield, the illumination level of the display 20 can be set responsive to an ambient light input 104 indicative of the ambient light level around the vehicle. To this end, image processor 18 produces a luminance intensity signal 102 responsive to the ambient light level (Schofield, col. 10, ll. 57-64). Significantly, ambient light input 104 may be supplied with a signal developed by one or more of the image capture devices 14, 16 -- a signal based upon an average intensity value sensed by some or all of the pixels in the image capture device(s) (Schofield, col. 11, ll. 26-31). Alternatively, Schofield indicates that the ambient light input 104 can be produced by a vehicle headlight control system responsive

to ambient light levels as disclosed in Schierbeek, the disclosure of which is incorporated in Schofield (Schofield, col. 11, ll. 9-20).⁷

With this brief discussion of Schofield in mind, we turn to the specific language of representative claim 9. At the outset, we note the extensive scope and breadth of a key term in the claim: “exterior light.” Although Appellants’ representative indicated at the oral hearing that the term was intended to recite lights exterior to the body of the vehicle (e.g., headlights, taillights, fog lights, etc.), we find the term to be not so limited. Significantly, neither the term “exterior light” itself nor its usage in context in the claim reasonably indicates *in what respect* to which the light is exterior (i.e., with respect to the vehicle body, dashboard, etc.).

Furthermore, the term “exterior light” appears twice in representative claim 9: (1) with respect to a “vehicle exterior light control” in the preamble, and (2) with respect to “an exterior light status indicator signal” in the body of the claim. Significantly, nothing in the claim requires that the “exterior light” that is *controlled* be the same as the “exterior light” *whose status is indicated* via the status indicator signal. Simply put, the scope and breadth of the recited “exterior light status indicator signal” does not preclude a signal that indicates the status of *ambient* light exterior to the vehicle.

Leaving aside for the moment the incorporated Schierbeek disclosure, we find Schofield amply discloses all limitations of representative claim 9. First, the display 20 reasonably constitutes an “exterior light” at least with respect to the vehicle’s dashboard and other internal components. As

⁷ Schofield incorporates the disclosure of Schierbeek’s Application No. 08/277,674 which is a parent application to the application that ultimately issued as U.S. Pat. 5,715,093 (Schierbeek) cited by the Examiner.

Schofield indicates, display 20 can be a variety of illuminated display components, including, among other things, a flat panel LCD or plasma display, a cathode ray tube, or an electroluminescent, light-emitting diode display (Schofield, col. 8, ll. 42-46).

This “exterior light” in the form of a display is controlled, at least in part, by ambient light input 104 that can be supplied with a signal developed by one or more of the image capture devices 14, 16. This ambient light signal is based upon an average intensity value sensed by some or all of the pixels in the image capture device(s) (Schofield, col. 11, ll. 26-31). In our view, detecting ambient light exterior to the vehicle reasonably indicates the “status” of the ambient light (e.g., twilight or nighttime conditions). Since the image capture devices are used for such indication, the resulting status indicator signal would likewise be generated as a function of at least a portion of the detected image. For this reason alone, representative claim 9 is fully met by Schofield.

But even if we construe the claimed controlled vehicle exterior light as being limited to vehicle lights exterior to the body of the vehicle, we still find Schofield fully meets representative claim 9. As indicated previously, Schofield incorporates the disclosure of Schierbeek by reference (Schofield, col. 11, ll. 15-20). It is well settled that “material not explicitly contained in [a] single, prior art document may still be considered for purposes of anticipation if that material is incorporated by reference into the document.” That is, “material incorporated by reference is effectively part of the host document as if it were explicitly contained therein.” *Liebel-Flarsheim Co. v.*

Medrad, Inc., 481 F.3d 1371, 1382 n.3, 82 USPQ2d 1113, 1121 n.3 (Fed. Cir. 2007) (internal citations and quotation marks omitted).

Schierbeek discloses, in pertinent part, a control system for a headlight⁸ that is responsive to ambient light levels detected by light sensors 20, 22 (Schierbeek, col. 5, l. 21 - col. 6, l. 39). Detecting a decreased light level by these sensors can be indicative of a twilight, nighttime, or other low light condition (Schierbeek, col. 6, ll. 14-18).

Turning again to Schofield, the reference indicates that the ambient light input 104 can be produced by a headlight control system such as that shown by Schierbeek (Schofield, col. 11, ll. 9-20). Considering both references together, an embodiment of Schofield can, in effect, comprise both (1) a headlight control system responsive to ambient light detected by sensors 20, 22 (as shown in Schierbeek), and (2) a rearview image display control system that is likewise responsive to ambient light.

Here again, nothing in the claim requires that the “exterior light” that is *controlled* be the same as the “exterior light” *whose status is indicated* via the status indicator signal. Even if the ambient light signal 104 used to vary the luminance level of the display in Schofield was based on ambient light sensors 20 and 22 in Schierbeek, the “status” of light exterior to the vehicle (e.g., ambient light or even light generated by the vehicle’s own exterior lights) would nonetheless be “indicated” by the images captured by at least one of the image capture devices 14 and 16. That is, in the embodiment combining the teachings of Schofield and Schierbeek, the control system

⁸ Schierbeek’s system also controls a variable reflectance mirror element. This feature, however, is irrelevant to our analysis of the reference with respect to the claimed invention.

would (1) generate an automatic exterior light control signal responsive to light sensors 20, 22, and (2) generate an “exterior light status indicator signal” via image capture devices 14 and 16.⁹ Therefore, representative claim 9 is fully met by this embodiment of Schofield as well.

For at least these reasons, we will sustain the Examiner’s rejection of representative claim 9 and independent claims 1 and 17 which fall with claim 9.

Although Appellants nominally argue the rejection of dependent claims 2-4, 7, 8, 10-15, and 18-21 separately (Br. 18-20), Appellants merely reiterate the arguments made with respect to the independent claims. These arguments, however, do not persuasively rebut the Examiner’s prima facie case of anticipation for the reasons previously discussed. The Examiner’s rejection of these claims is therefore sustained.

⁹ We further note that the term “exterior light status indicator signal” is fully met by a signal that would merely indicate whether power is being applied to the lights at all (e.g., a voltage or current signal). Although Schierbeek does disclose such an exterior light status indicator signal at least via input 68 (*see* col. 6, ll. 28-30), that signal is not a function of a portion of at least one image as claimed. Rather, such a light status indicator signal is based on the signal from sensors 20, 22.

However, the question of whether it would have been obvious to the skilled artisan at the time of the invention to utilize an ambient light signal in Schierbeek’s headlight control system that is based on ambient light detected by image capture devices 14, 16 as suggested by Schofield in lieu of light sensors 20, 22 in Schierbeek is a question based on an obviousness determination that is not before us.

The Obviousness Rejections

Likewise, we will sustain the Examiner's obviousness rejections of (1) claim 6 under 35 U.S.C. § 103(a) as unpatentable over Schofield in view of O'Farrell, and (2) claims 5 and 16 under 35 U.S.C. § 103(a) as unpatentable over Schofield in view of Pabla.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966). If the Examiner's burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Specifically, we find that (1) the Examiner has established at least a prima facie case of obviousness for these claims on Pages 10-13 of the Answer, and (2) Appellants have not persuasively rebutted the Examiner's prima facie case, but merely reiterate the arguments made with respect to the independent claims (Br. 20-21). For the reasons previously discussed, the rejection is therefore sustained.

OTHER ISSUES

Should further prosecution follow this opinion, we refer the Examiner to the following prior art references that appear relevant to the claimed

invention. While this list is by no means exhaustive, all of these references teach controlling vehicle exterior lights responsive, at least in part, to at least a portion of a detected image.

US Patents	Foreign Patents
5,660,454	JP60-240545
5,896,085	JP60-255537
5,796,094	JP59-196488
	JP5-185871
	JP7-69125
	JP6-270733

DECISION

We have sustained the Examiner's rejections with respect to all claims on appeal. Therefore, the Examiner's decision rejecting claims 1-21 is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

KIS

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