

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* CORNELIS VAN BERKEL

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Appeal 2008-0113  
Application 10/191,425<sup>1</sup>  
Technology Center 2800

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Decided: July 17, 2008

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Before MAHSHID D. SAADAT, ROBERT E. NAPPI,  
and MARC S. HOFF, *Administrative Patent Judges*.

HOFF, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellant appeals under 35 U.S.C. § 134 from a Final Rejection of claims 1-20. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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<sup>1</sup> Application filed July 9, 2002. The real party in interest is Koninklijke Philips Electronics, N.V.

Appellant's invention relates to a color autostereoscopic display apparatus. In one mode, the apparatus displays a three-dimensional (3-D) stereoscopic image. In a second mode, diffusing means are positioned in front of the autostereoscopic display means so that the pixels previously visible only to left and right eyes individually are now mixed, allowing the same display information to be received by both eyes of the viewer, thus displaying a two-dimensional (2-D) image (Spec. 4). In another embodiment, the diffusing means comprises an electrically switchable light diffusing layer device; by varying an electrical potential across the layer, the display can be switched between a 3-D mode and a 2-D mode (Spec. 7).

Claim 1 is exemplary:

1. Colour autostereoscopic display apparatus comprising:

autostereoscopic display means including a display panel for displaying a stereoscopic image; and,

converting means which is selectively operable with said display means such that

in a first condition the apparatus displays a stereoscopic image  
and

in a second condition said converting means optically succeeds said display means enabling a two dimensional image to be perceived,

wherein

said converting means in said second condition comprises diffusing means.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Eichenlaub	US 5,500,765	Mar. 19, 1996
Battersby	US 6,069,650	May 30, 2000
Shinomiya	JP 06-265891	Sep. 22, 1994

Claims 1-6, 11, 12, 14-16, and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Eichenlaub.

Claims 1, 10, and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Battersby.

Claims 7-9, 17, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Eichenlaub.

Claims 10, 13, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Eichenlaub in view of Shinomiya.

Claims 1-20 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent 6,069,650 to Battersby.

Appellant contends that neither Eichenlaub nor Battersby teaches the claimed “diffusion means,” in that the materials used by Eichenlaub and Battersby to cancel the 3-D effect and render a 2-D image do not serve to diffuse light (App. Br. 6, 8); that Eichenlaub’s cancellation effect teaches away from the use of diffusion (App. Br. 7); and that Shinomiya does not teach an electrically switchable light diffusing layer (App. Br. 7).

Rather than repeat the arguments of Appellant or the Examiner, we make reference to the Brief (filed July 21, 2004) and the Answer (mailed

October 18, 2004), and the Reply Brief (filed December 13, 2004) for their respective details.

### ISSUE

The principal issue in the appeal before us is whether the Examiner erred in finding that Eichenlaub and/or Battersby teaches the claimed “diffusing means,” as the phrase is understood according to Appellant’s Specification.

### FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

#### *The Invention*

1. According to Appellant, he has invented a color autostereoscopic display apparatus. In one mode, the apparatus displays a three-dimensional (3-D) stereoscopic image. In a second mode, diffusing means are positioned in front of the autostereoscopic display means so that the pixels previously visible only to left and right eyes individually are now mixed, allowing the same display information to be received by both eyes of the viewer, thus displaying a two-dimensional (2-D) image (Spec. 4).

2. In another embodiment, the diffusing means comprises an electrically switchable light diffusing layer device; by varying an electrical potential across the layer, the display can be switched between a 3-D mode and a 2-D mode (Spec. 5, 7).

*Eichenlaub*

3. Eichenlaub teaches an image display convertible between a two dimensional, full resolution viewing mode and an auto stereoscopic, three dimensional viewing mode (col. 2, ll. 13-16).

4. Eichenlaub teaches a complementary lens made of the same material as the primary refractive lens (col. 5, ll. 11-15).

*Battersby*

5. Battersby teaches an autostereoscopic display apparatus including an array of lenticular elements for directing the outputs from respective groups of pixels in mutually different directions so as to enable a stereoscopic image to be perceived (col. 1, ll. 8-11).

6. Battersby further teaches including electro-optical material 38 whose refractive index can be altered by the selective application of electrical potential thereacross (col. 5, ll. 28-31).

7. When a predetermined potential is applied, the liquid crystal is oriented such that its refractive index in the direction of view is changed and substantially matches that of sheet 30, and the lens action of the lenticular elements 16 will effectively be turned off (col. 5, ll. 57-63).

8. The lenticular means then behaves like a light transmissive plate overlying the display panel, and a displayed 2-D image will be seen by the viewer as if the lenticular means were not present (col. 6, ll. 8-14).

*Shinomiya*

9. Shinomiya teaches a liquid crystal material (4) electrically switchable between a first condition such that its molecules cause scattering of light beams to cancel the lens function, or a second (“transparent”)

condition where entering light is refracted by a lens to converge or diverge light (Shinomiya 30, para. [0061]<sup>2</sup>).

#### PRINCIPLES OF LAW

Anticipation is established when a single prior art reference discloses expressly or under the principles of inherency each and every limitation of the claimed invention. *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999); *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994).

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1734, (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, (1966). *See also KSR*, 127 S. Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

Our reviewing court states that “claims must be interpreted as broadly as their terms reasonably allow.” *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir.

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<sup>2</sup> Citations to Shinomiya refer to the English translation in the record.

1989). Our reviewing court further states that “the words of a claim ‘are generally given their ordinary and customary meaning.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)(internal citations omitted). The “ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1313. The description in the specification can limit the apparent breadth of a claim in two instances: (1) where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess; and (2), where the specification “reveals an intentional disclaimer, or disavowal, of claim scope by the inventor.” *Id.* at 1316.

#### ANALYSIS

##### *Rejection of claims 1-6, 11, 12, 14-16, and 20 as anticipated by Eichenlaub*

We select claim 1 as representative of this group, pursuant to our authority under 37 C.F.R. § 41.37(c)(1)(vii).

Appellant argues that the Examiner erred in holding claim 1 to be anticipated by Eichenlaub, because Eichenlaub does not teach diffusing means to eliminate the stereoscopic effects provided by Eichenlaub’s refractive system (App. Br. 6).

We agree with Appellant to the extent that Eichenlaub teaches a complementary lens made of the same material as the primary refractive lens (App. Br. 6; FF 4), but we are not persuaded by Appellant’s argument.

In order to determine whether the Examiner erred in holding claim 1 to be anticipated by Eichenlaub, we must determine the meaning of “diffusing means.” Appellant urges upon us that the complementary lens of Eichenlaub does not meet the dictionary definition of “diffusion,” *i.e.*, “reflection of light by a rough surface; transmission of light through a translucent material; SCATTERING” (App. Br. 6). Our reviewing court commands, however, that while we are to accord terms their ordinary and customary meaning, “[t]he description in the specification can limit the apparent breadth of a claim ... where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess.” *Phillips* at 1316.

Appellant’s Specification describes the claimed converting means as comprising “diffusing means located in front of the autostereoscopic display means so that the pixels previously visible only to left and right eyes individually are now mixed allowing the same display information to be received by both eyes of that viewer” (FF 1). With regard to Appellant’s second embodiment, “the diffusing means comprises an electrically switchable light diffusing layer device.... By varying an electric potential applied across the layer such that it changes from transparent to diffusing or vice-versa, the colour display apparatus conveniently can be switched from a 3-D mode to a 2-D mode” (FF 2). Appellant’s Figure 5B illustrates that when the diffusing means (40) is in place, image information which was previously visible only to left and right eyes individually is now sent to both eyes. Figure 5B does not illustrate that image information is truly scattered in all directions, as the term “diffusing” might suggest. Taking Appellant’s

descriptions of the diffusing means (40) together, we find that the term “diffusing means” as used in this application refers to a means that makes pixels previously visible only to left and right eyes individually now visible to both eyes of a viewer, and that changes an apparent 3-D image into an apparent 2-D image.

Because we find that Appellant’s Specification has given a meaning to the claim term “diffusing” that differs from the meaning it would otherwise possess, we are not persuaded by Appellant’s arguments that Eichenlaub does not teach “diffusing means,” as the term is defined in the dictionary. We agree with the Examiner that because Eichenlaub’s second optical element (18) cancels the autostereoscopic imaging effect of its first optical element (16), producing a 2-D image display, Eichenlaub’s second optical element constitutes a “diffusing means” within the meaning accorded by Appellant’s Specification (Eichenlaub, col. 4, ll. 50-58).

We are similarly unpersuaded by Appellant’s argument that because the combination of first and second optical elements in Eichenlaub results in a “*lack of optical effect*” on the image, to hold that Eichenlaub teaches a “diffusing means” cannot be done without rendering the term “diffusion” meaningless (Reply Br. 1-2). From the viewer’s perspective, it may appear that no optical effect has been wreaked upon the image in Eichenlaub when its second lens sheet is in place. In reality, of course, Eichenlaub’s first lens sheet has a refractive effect upon the incoming light, and Eichenlaub’s second lens sheet then has a complementary refractive (or “diffusive,” within the meaning accorded by Appellant’s Specification) effect upon the light (Eichenlaub col. 5, ll. 11-15 and 32-38), such that image information is

caused to be visible by both the left and right eyes of the viewer, just as in the claimed invention.

Therefore, because we find that Eichenlaub teaches converting means selectively operable with display means that, in a second condition, comprises diffusing means that optically succeeds said display means enabling a two dimensional image to be perceived, we do not find error in the Examiner's rejection of claim 1, nor claims 2-6, 11, 12, 14-16, and 20 not separately argued, under 35 U.S.C. § 102(e).

*Rejection of claims 7-9, 17, and 18 as obvious over Eichenlaub*

Appellant presents no separate argument for the patentability of these claims, referring instead to the arguments made regarding independent claims 1 and 2. Because we affirm the rejection of claims 1-6, 11, 12, 14-16, and 20 *supra*, we therefore also affirm the rejection of claims 7-9, 17, and 18 under 35 U.S.C. § 103, for the same reasons.

*Rejection of claims 10, 13, and 19 as obvious over Eichenlaub in view of  
Shinomiya*

Appellant argues that the Examiner erred in combining Eichenlaub with Shinomiya to arrive at the claimed invention because Eichenlaub does not teach diffusing means, as argued with respect to claims 1 and 2 *supra*, because Shinomiya does not teach an electrically controllable diffusion layer, because Eichenlaub teaches away from the use of diffusion, and because diffusion adversely affects the cancellation effect provided by Eichenlaub's complementary lens (App. Br. 7).

We are not persuaded by Appellant's arguments regarding Eichenlaub because we find *supra* that Eichenlaub does teach diffusing means as

defined by Appellant's Specification. With regard to Shinomiya, we agree with the Examiner that Shinomiya teaches a liquid crystal material (4) electrically switchable between a first condition such that its molecules cause scattering of light beams to cancel the lens function, or a second ("transparent") condition where entering light is refracted by a lens to converge or diverge light (Ans. 11; FF 9).

Therefore, we do not find error in the Examiner's rejection of claims 10, 13, and 19 as obvious over Eichenlaub in view of Shinomiya.

*Rejection of claims 1, 10, and 13 as anticipated by Battersby*

Appellant argues that because Battersby teaches a refractive (bending) effect by its electro-optical material that counteracts the refractive (bending) effect produced by its lenticular lens, the combination of the two has no optical effect, which cannot meet the claim limitation of "diffusing means" (App. Br. 8).

We are not persuaded by Appellant's arguments, for the same reasons we were not persuaded by Appellant's arguments regarding the Eichenlaub reference, *supra*. As we noted in the analysis of the Examiner's anticipation rejection over Eichenlaub, we find that the term "diffusing means" as used in this application refers to a means that makes pixels previously visible only to left and right eyes individually now visible to both eyes of a viewer, and that changes an apparent 3-D image into an apparent 2-D image. Battersby teaches an autostereoscopic display apparatus including electro-optical material 38 whose refractive index can be altered by the selective application of electrical potential thereacross (FF 6). When a predetermined potential is applied, the liquid crystal is oriented such that its refractive index in the

direction of view is changed and substantially matches that of sheet 30, and the lens action of the lenticular elements 16 will effectively be turned off (FF 7). The lenticular means then behaves like a light transmissive plate overlying the display panel, and a 2-D image displayed will be seen by the viewer as if the lenticular means were not present (FF 8).

We agree with the Examiner that Battersby teaches a diffusing means comprising an electrically switchable light diffusing layer. Therefore, we do not find error in the Examiner's rejection of claims 1, 10, and 13 under 35 U.S.C. § 102 as anticipated by Battersby.

*Obviousness-type double patenting rejection of claims 1-20*

Appellant presents the same arguments with respect to the diffusing means of Battersby that were presented in the context of the Examiner's § 102 rejection. Appellant further argues that Eichenlaub teaches away from the use of diffusion in the conversion of a stereoscopic image to a two-dimensional image (App. Br. 8).

Because we find *supra* that both Eichenlaub and Battersby teach "diffusing means" as the term is used in Appellant's Specification, we are not persuaded by Appellant's arguments. We do not find error in the Examiner's rejection of claims 1-20 under the judicially created doctrine of obviousness-type double patenting.

CONCLUSION OF LAW

We conclude that Appellant has not shown that the Examiner erred in rejecting claims 1-20. Claims 1-20 are not patentable.

Appeal 2008-0113  
Application 10/191,425

DECISION

The Examiner's rejections of claims 1-20 are affirmed.

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

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