

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK THOMAS JOHNSON, JOHANNES NICOLAAS
HUIBERTS and ANDREA GIRLADO

Appeal 2008-0029
Application 10/477,489¹
Technology Center 2600

Decided: March 11, 2008

Before JAMESON LEE, SALLY C. MEDLEY and JAMES T. MOORE,
Administrative Patent Judges.

MEDLEY, *Administrative Patent Judge.*

DECISION ON APPEAL

¹ National stage application for patent filed under 35 U.S.C. § 371 on 12 Nov. 2003, based on International Application PCT/IB02/01701 filed 15 May 2002. The real party in interest is Koninklijke Philips Electronics N.V.

A. Statement of the Case

This is an appeal under 35 U.S.C. § 134 from the Examiner's Final Rejection of claims 10-12 and 14-20². We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

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

Holliman	US 6,075,557	06/13/2000
Kuno	US 6,707,437	03/16/2004
Aida	JP 59-126967	07/21/1984
Suzuki	JP 10-321367	04/12/1998
Aoyama	JP 2001-042786	02/16/2001
Huiberts	WO 01/22504	03/29/2001

Claims 10-12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Suzuki, Huiberts and Kuno.

Claims 14-16 and 20 stand rejected under 35 U.S.C. § 102(b) as anticipated by Aida.

Claim 17 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Aida and Holliman.

Claims 18-19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Aida and Aoyama.

BACKGROUND

The invention is related to a display device including a plurality of light-emitting diodes (LEDs) **5** and a method of manufacturing. The plurality of LEDs **5** comprises at least one layer **2** of an electroluminescent (EL)

² The Rejections of claims 1-9 and 13 were withdrawn in the Examiner's Answer mailed 12 March 2007.

material sandwiched between electrodes **3**, **4**, and a driving means **1** for driving the diodes **5**. A means for applying a reverse voltage to one or more individual diodes or groups of diodes and means for measuring the leakage current resulting from this reverse voltage are also included. The measured leakage current indicates the risk that a short circuit will occur in a particular diode or group of diodes. Weak diodes or groups of diodes are located when the leakage current or a value derived therefrom exceeds a predetermined threshold value. A timely and tailored reduction of the load of such diodes can be accomplished by decreasing the frequency or the current with which they are driven. (Spec. 1-2 and **fig. 1**).

B. Issues

The first issue before us is whether Appellants have shown that the Examiner erred in determining that claims 10-12 are unpatentable under 35 U.S.C. § 103(a) over Suzuki, Huiberts and Kuno?

The second issue before us is whether Appellants have shown that the Examiner erred in determining that claims 14-16 and 20 are anticipated under 35 U.S.C. § 102(b) by Aida?

The third issue before us is whether Appellants have shown that the Examiner erred in determining that claim 17 is unpatentable under 35 U.S.C. § 103(a) over Aida and Holliman?

The fourth issue before us is whether Appellants have shown that the Examiner erred in determining that claims 18-19 are unpatentable under 35 U.S.C. § 103(a) over Aida and Aoyama?

For the reasons that follow, Appellants have failed to sufficiently show that the Examiner erred in determining that claims 10-12 are unpatentable over Suzuki, Huiberts and Kuno, claims 14-16 and 20 are anticipated under

35 U.S.C. § 102(b) by Aida, claim 17 is unpatentable under 35 U.S.C. § 103(a) over Aida and Holliman and claims 18-19 are unpatentable under 35 U.S.C. § 103(a) over Aida and Aoyama.

C. Finding of Facts (“FF”)

The record supports the following finding of facts as well as any other findings of fact set forth in this opinion by at least a preponderance of the evidence.

1. Appellants’ claims 10-12 and 14-20 are the subject of this appeal.
2. The appealed rejections of claims 1-9 and 13 were withdrawn by the Examiner (Ans. 3 and 18-19 and Supp. Ans. 3 and 18-19).
3. Claims 10 and 14 are independent claims.
4. Claims 11-12 and 15-20 are dependent on claims 10 and 14 respectively.
5. Claims 10 and 12 stand or fall together (App. Br. 13).
6. Claim 11 stands or falls alone (App. Br. 13-15).
7. Claims 14-17 and 20 stand or fall together (App. Br. 6, 9)
8. Claims 18-19 stand or fall together (App. Br. 10).
9. Claims 10 and 14 are as follows:
 10. A method of manufacturing a display device comprising a plurality of light-emitting diodes, including:
 - applying a reverse-bias voltage to select diodes,
 - determining a parameter based on a leakage current produced by the reverse-bias voltage, and
 - comparing the parameter to a threshold value to detect a presence of at least one weak diode among the select diodes, the select diodes defining a locale of the at least one weak diode.
 14. A device comprising:
 - a display that includes an array of light emitting diodes,

a controller that is configured to provide information by selectively activating diodes of the display,
a tester that is configured to test the array of diodes to identify one or more locations of one or more weak diodes of the array,
wherein the controller is configured to control a format of the information based on the one or more locations of the weak diodes.

Claims 10-12

10. In addressing claim 10, the Examiner found that Suzuki describes a method of manufacturing a display device comprising a plurality of light-emitting diodes, including:
determining a parameter based on a leakage current produced by a voltage, but found that Suzuki failed to describe applying a reverse-bias voltage to select diodes for measuring the leakage current (Final Rejection 9 and 16, Ans. 7-8, Supp. Ans. 8, and Suzuki translation ¶ 11 and figs. 1-2).
11. The Examiner also found that Huiberts³ describes a device comprising a plurality of light-emitting elements and a method of applying a reverse-bias voltage to select diodes for measuring the leakage current (Final Rejection 9 and 16, Ans. 8, Supp. Ans. 8, and Huiberts p. 8, ll. 5-7).
12. The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the method of applying a reverse voltage to a diode display as described by Huiberts for the method of applying voltage of Suzuki since the finding of an unstable leakage current is often a precursor for

³ The Examiner referred to the Huiberts reference as Weijer in the Final Rejection.

- the occurrence of an early failure in a diode (Final Rejection 9-10 and 16, Ans. 8, Supp. Ans. 8-9, and Huiberts p. 8, ll. 17-19).
13. The Examiner also found that Suzuki and Huiberts fail to describe comparing the parameter to a threshold value to detect a presence of at least one weak diode among the select diodes, the select diodes defining a locale of the at least one weak diode (Final Rejection 13 and 16, Ans. 8 and Supp. Ans. 9).
 14. The Examiner found that Kuno describes comparing a measured parameter value to a threshold to detect a presence of at least one problematic display element among the select area, the select area defining a locale of the at least one problematic display element (Ans. 9, Supp. Ans. 9, and Kuno col. 13, ll. 30-55).
 15. The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of reducing the load on an area of the display when a predetermined threshold current is passed as described by Kuno with the display device described by the combination of Suzuki and Huiberts such that the load on a diode or group of diodes would be reduced if a predetermined leakage current is surpassed in order to control the luminescence of the display device (Final Rejection 13 and 16, Ans. 9 and Supp. Ans. 9).
 16. In addressing claim 11, the Examiner found that Suzuki, Huiberts and Kuno describe the method of claim 10 and found that Kuno further describes configuring the display device to reduce activation of display elements within the locale of at least one display element (Ans. 9, Supp. Ans. 10 and Kuno col. 13, ll. 30-55).

Claims 14-17 and 20

17. The Examiner found that Aida describes a matrix of LEDs arranged in M rows and N columns which meets the claim limitation of “a display that includes an array of light emitting diodes” (Final Rejection 6, Ans. 4, Supp. Ans. 5 and Aida translation p. 4, last ¶ and fig. 1).
18. The Examiner found that Aida describes a control section that performs testing according to a test procedure that selectively activates and tests each LED which meets the claim limitation of “a controller that is configured to provide information by selectively activating diodes of the display” (Final Rejection 6, Ans. 5, Supp. Ans. 5 and Aida translation: p. 5, last ¶, p. 7, last ¶ - p. 8, 2nd ¶ and figs. 3-4).
19. The Examiner found that Aida describes an electrical characteristic measurement section **2** that measures diode characteristics and stores them in a storage section **4** and a controller with x-sequence and y-sequence control sections that supply the storage section **4** with positional information such that the diode position can be determined which meets the claim limitation of “a tester that is configured to test the array of diodes to identify one or more locations of one or more weak diodes of the array” (Final Rejection 6, Ans. 5, Supp. Ans. 5 and Aida translation: p. 5, last ¶, p. 6, 2nd ¶ and **fig. 3**).
20. Aida does not explicitly characterize the diodes as “weak”, but instead describes comparing the results of electrical characteristic measurements to a preset reference value to judge the acceptance/rejection of the measurement and provide judgment results **f** (Aida translation: p. 5, last ¶, p. 6, 2nd ¶, p. 7, ll. 3-5).

21. The Examiner found that Aida describes that the stored contents of storage section 4 are displayed on display 14 and judgment results are displayed on display 14 at the position corresponding to the positional signals X_i and Y_j , such that the controller controls the format of the information of display 14 based on the location of the faulted electrodes, which meets the claim limitation “wherein the controller is configured to control a format of the information based on the one or more locations of the weak diodes” (Final Rejection 6, Ans. 5, Supp. Ans. 6 and Aida translation: p. 7, ll. 3-5. p.8, second ¶ and **fig. 3**).

Claims 18-19

22. The Examiner found Aida to not describe a controller configured to control the format such that the likelihood of activating the one or more weak diodes is substantially less than a likelihood of activating the other diodes of the array (Final Rejection 17; Ans. 11; Supp. Ans. 11).

23. The Examiner found that Aoyama describes that the duration of which diodes are activated can be controlled by ON/OFF switching means and that defective pixels can be set to the OFF state when detected, meaning that these pixels being turned OFF would be less likely to be driven which meets the limitation of the controlling a format such that a likelihood of activating the one or more weak diodes is substantially less than a likelihood of activating other diodes of the array (Final Rejection 17, Ans. 11, Supp. Ans. 12 and Aoyama ¶¶ 17-18).

24. The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Aoyama teaching of controlling the current level supplied to weak

diodes with the defect detection device of Aida in order to provide for a way to visually inspect the display device such that a pixel with a failure can be detected (Final Rejection 17-18, Ans. 11-12 and Supp. Ans. 12).

D. Principles of Law

“Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.” *In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

[T]he PTO gives a disputed claim term its broadest reasonable interpretation during patent prosecution. The “broadest reasonable interpretation” rule recognizes that “before a patent is granted the claims are readily amended as part of the examination process.” Thus a patent applicant has the opportunity and responsibility to remove any ambiguity in the claim term meaning by amending the application. Additionally, the broadest reasonable interpretation rule “serves the public interest by reducing the possibility that claims, finally allowed will be given broader scope than is justified.”

In re Bigio, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (citations omitted).

“In the patentability context, claims are to be given their broadest reasonable interpretations” and “limitations are not to be read into the claims

from the specification.” *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

“Absent claim language carrying a narrow meaning, the PTO should only limit the claim based on the specification or prosecution history when those sources expressly disclaim the broader definition.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

E. Analysis

Claims 10-12 and 14-20 remain under appeal following the Examiner’s withdrawal of the rejections of claims 1-9 and 13 (FF⁴s 1-2). Claims 1-9 and 13 were indicated by the Examiner during prosecution to be allowable, with the Examiner finding that the applied references did not teach or suggest the claimed 35 U.S.C. § 112 6th ¶ “means for” limitations recited in claim 1 (Ans. 3 and 18-19 and Supp. Ans. 3 and 18-19). On the other hand, claims 10-12, and 14-20 do not include “means for” or “step for” limitations and the Examiner maintained a rejection of those claims.

Appellants have put forth several arguments, and there are several groupings of claims, which we address below.

Claims 10 and 12

Appellants’ sole argument regarding claims 10 and 12 is based on the 35 U.S.C. § 112 6th ¶ “means for” argument made in connection with claim 1 (App. Br. 11-13). Claims 10 and 12 do not recite “means for” or “step for” limitations. As such, Appellants have not addressed, much less shown error in the Examiner’s rejections specific to the limitations of claims 10 and 12 (App. Br. 11-13 and Reply Br. 5). Accordingly, the Examiner’s rejection of

⁴ FF denotes Finding of Fact.

claims 10 and 12 as being unpatentable under 35 U.S.C. § 103(a) based on Suzuki, Huiberts and Kuno is affirmed.

Claim 11

Claim 11, which is dependent on claim 10, recites the limitation “configuring the display device to reduce activation of diodes within the locale of the at least one weak diode”. The Examiner found that Suzuki, Huiberts and Kuno describe the method of claim 10 and found that Kuno further describes configuring the display device to reduce activation of display elements within the locale of at least one display element (FF 10-16).

Appellants argue that the combination of Suzuki, Huiberts and Kuno to control the luminescence of a display device would not have been obvious since Suzuki and Huiberts teach LED devices while Kuno teaches an electron-emission phosphor display (App. Br. 14, 15).

We understand Appellants to argue that Kuno is non-analogous art. There are “[t]wo separate tests [that] define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.”⁵ Appellants have not explained why the Kuno reference, directed to an electron emission phosphor display, is not from the same field of endeavor as the Suzuki and Huiberts references which are directed to LED displays. Kuno, like Suzuki and Huiberts is directed to displays and appears facially to be from the same field of endeavor.

⁵ *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

Furthermore, even were Kuno not within the same field of endeavor, the Appellants would still have the burden of showing that Kuno is not pertinent to the particular problem solved by the inventor. Appellants are silent as to why the Kuno reference would not be reasonably pertinent to the particular problem with which the inventor is involved. Kuno describes controlling the luminance level of the display based on an overcurrent determination (Kuno Abstract) and therefore appears to be reasonably pertinent to Appellants stated problem of reducing activation of diodes within a display based on detection. In both instances, the goal appears to be to adjust the display or control display activation to extend the useful life of the display and avoid catastrophic failure. For all of these reasons, Appellants' non-analogous art argument is not persuasive.

Appellants also argue that Kuno's teaching of reducing the current to electron emitting devices in areas where the anode current is detected to be higher than a threshold is unrelated to Appellants' claimed invention (App. Br. 14). Appellants argue that the claims require reducing the load on diodes based on reverse bias leakage current and contend that reverse bias leakage current is not related to luminescence of a display device (App. Br. 14). Appellants argue that Kuno's elements are not reverse biased and leakage current resulting from a reverse bias is not measured (App. Br. 14). Appellants further contend that Kuno does not describe reducing activation of "weak" display elements, but instead describes reducing the activation of display elements that produce excess electron emissions that can be characterized as "strong" display elements (Reply Br. 4-5).

However, in this argument the Appellants are attacking Kuno alone instead of the combined teachings of Suzuki, Huiberts and Kuno. "Non-

obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.”⁶ The Examiner noted that Kuno was not relied upon to teach reverse biased elements or measuring leakage current therefrom. Instead, Kuno was one of a combination of references, and was relied on for teaching that activation of elements can be reduced within the locale of one display element (Ans. 22, Supp. Ans. 22). The Examiner explained that the “weak” status of a display element is determined based on measured values of the LED devices of Suzuki and Huiberts, not the elements of Kuno (Ans. 21, Supp. Ans. 21). Since Appellants have not addressed the combined teachings of the references, the Appellants have not sufficiently established that claim 11 is not obvious.

For all these reasons, the Appellants have failed to sufficiently show that the Examiner erred in determining that claim 11 is unpatentable under 35 U.S.C. § 103(a) over Suzuki, Huiberts and Kuno.

Claims 14-16 and 20

Claims 14-16 and 20 fall or stand together. Claim 14 recites the limitation “weak diodes”. The Examiner found that Aida describes measuring the electrical characteristics of diodes (FF 19). Aida does not explicitly characterize the diodes as “weak” (FF 20). Appellants argue that Aida is silent as to identifying “weak” diodes (App. Br. 7).

Appellants argue that Aida describes identifying each diode as “pass” or “fail” and replacing the failed LED (Light Emitting Diode) pellets (App. Br. 7). Appellants contend that Aida’s discrimination of “whether each LED pellet is good or not” further supports a simple pass or fail determination and

⁶ *In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

does not support the Examiner's characterization of the faulty or failed diodes as weak (App. Br. 7). Appellants also argue that equating "weak diodes" to "failed diodes" is inconsistent with Appellants' use of the term and the conventional use of the term in the art and would obviate any meaning to the term "weak" (Reply Br. 2-3). Appellants also argue that "weak" and "failed" would not be considered equivalent to one of ordinary skill in the art (Reply. Br. 2). In support of this contention, Appellants state that to one of skill in the art, a "weak" component exhibits some functionality, whereas a "failed" component exhibits no functionality (Reply Br. 2).

Although Appellants urge us to attribute a narrow meaning to the term "weak", "the PTO gives a disputed claim term its broadest reasonable interpretation during patent prosecution."⁷ Appellants' argument that equating "weak diodes" to "failed diodes" is inconsistent with Appellants' use of the term is not compelling because "limitations are not to be read into the claims from the specification."⁸ Appellants have not directed us to evidence to support Appellants' argument that equating "weak diodes" to "failed diodes" is inconsistent with the conventional use of "weak" in the art, or that one skilled in the art would understand a "weak" component to exhibit some functionality, and a "failed" component to exhibit no functionality. "Argument of counsel cannot take the place of evidence lacking in the record."⁹

⁷ *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004).

⁸ *In re Van Geuns* 988 F.2d 1181, 1184 (Fed. Cir. 1993).

⁹ *Meitzner v. Mindick*, 549 F.2d 775, 782 (CCPA 1977); *see also In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

Moreover, Appellants have not directed us to an express disclaimer of a broader definition of the word “weak” in the specification. “Absent claim language carrying a narrow meaning, the PTO should only limit the claim based on the specification or prosecution history when those sources expressly disclaim the broader definition.”¹⁰ Appellants’ description of a detection circuit that measures a leakage current that is above a given threshold (Spec. col. 4, ll. 13-15) would not appear to preclude failed diodes, e.g., short circuited diodes which draw a significant amount of current, over weak diodes, e.g., a diode that is also drawing too much current and is likely to fail.

The Appellants’ specification, in one instance, characterizes “weak diode” as any diode or group of diodes wherein the leakage current or a value derived therefrom exceeds a predetermined threshold value (Spec. col. 2, ll. 1-5)(emphasis added). By that description, it would appear that a “weak diode” would include any diode that is drawing too much current, be that a short circuited diode (e.g., failed diode) or a diode that is only partially defective. Appellants have failed to demonstrate otherwise. Although Appellants wish for us to narrowly interpret “weak” as an intermediate level of functionality, compared to no functionality (i.e. failure) or full functionality, we find that the Examiner’s interpretation that “weak” can mean any level of functionality less than full functionality to comport with the broadest reasonable interpretation standard. Therefore, the failed diodes of Aida meet the limitation of “weak diodes” since the failed diodes exhibit less than full functionality.

¹⁰ *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

Claim 14 also recites the limitation “the controller is configured to control a format of the information based on the one or more locations of the weak diodes”. The Examiner found that Aida’s description of displaying the contents of storage section 4 on display 14 and displaying the judgment results on display 14 at the position corresponding to the positional signals X_i and Y_j meets this claim limitation (FF 21). The Examiner interpreted that the controller controls the format of the information on the display 14 based on the location of the faulted electrodes (FF 21). Appellants argue that Aida is silent as to controlling a format of information based on the location of the weak diodes (App. Br. 7).

Appellants contend that Aida does not teach that the format of the information (test pattern) sent to the display **DUT** *changes* based on the location of the weak diodes (App. Br. 7). Appellants argue that Aida describes sending information to cause a display on matrix display **DUT** and sending different information to cause a display on display 14 (App. Br. 7). Appellants argue that the information sent to matrix display **DUT** remains constant and does not *change* based on the location of the weak diodes of the **DUT** (App. Br. 7). Appellants also argue that Aida does not describe *changing* the format of the information sent to display 14 based on the location of weak diodes (App. Br. 8). Appellants further argue that Aida describes changing the information content of the display, and that a change of information content is not the same as a change of information format (App. Br. 8).

As pointed out by the Examiner, claim 14 does not require a change in format, only for the format to be controlled by the controller (Ans. 14 and Supp. Ans. 14). Appellants’ argument that a change in format is required is

not persuasive since this specific limitation is not found in the claims and “limitations are not to be read into the claims from the specification.”¹¹ Appellants’ arguments also appear to be based on the premise that the information must be displayed on the same display as the diode display, but this is also not required by the claim language. Additionally, Appellants’ argument that a change in content is not the same as a change in format appears to be based on a narrow meaning of the term “format”, though Appellants have not stated their definition for the term. “[T]he PTO gives a disputed claim term its broadest reasonable interpretation during patent prosecution.”¹² “Absent claim language carrying a narrow meaning, the PTO should only limit the claim based on the specification or prosecution history when those sources expressly disclaim the broader definition.”¹³ Appellants have not directed us to an express disclaimer of a broader definition of the term “format”. In fact, the term “format” can not be found in Appellants’ Specification (Ans. 17 and Supp. Ans. 18).

Appellants also argue that the claim language “based on” necessitates a change in format, otherwise the meaning of the term would be obviated (Reply Br. 3). Appellants contend that if an element is controlled based on a parameter there must be at least some variation of the element as the parameter varies (Reply Br. 3). Appellants argue that control of an element can not be said to be based on a parameter if the element remains constant regardless of the parameter (Reply Br. 3). Appellants’ arguments are not persuasive since the claim language does not require a variation in location of the weak diodes.

¹¹ *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

¹² *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004).

¹³ *Id.* at 1325

Appellants also argue that if the claim can be interpreted as including two different displays, the information sent to display **14** is not a *reformatted* version of the same information that is sent to matrix display **DUT** (App. Br. 8). Appellants state that Aida describes test patterns provided to matrix display **DUT** and the results of the tests are provided to display **14** and argue that a test and a result of the test cannot be reasonably interpreted as being *different* formats of the same information (App. Br. 8).

Again, as pointed out by the Examiner, claim 14 does not require different formats of the same information or a reformatted version of the same information (Ans. 14 and Supp. Ans. 14). Appellants' claim language also does not require that the information remain the same. All that the claim language requires is *control* of a format of information based on the location of the weak diodes. Appellants' arguments that a different format of the same information or a reformatted version of the same information is required are not persuasive since neither of these specific limitations is found in the claims and "limitations are not to be read into the claims from the specification."¹⁴

For all these reasons we find that Appellants have failed to sufficiently show that the Examiner erred in determining that claims 14-16 and 20 are anticipated under 35 U.S.C. § 102(b) by Aida.

Claim 17

Claim 17 is dependent on claim 14 and includes all the limitations of claim 14. Appellants have not argued the limitations of claim 17 separately. For the same reasons as explained above with respect to claim 14, Appellants have failed to sufficiently show that the Examiner erred in

¹⁴ *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

determining that claim 17 is unpatentable under 35 U.S.C. § 103(a) over Aida and Holliman.

Claims 18-19

Claim 18, which depends on claim 14, recites “the controller is configured to control the format such that the likelihood of activating the one or more weak diodes is substantially less than a likelihood of activating the other diodes of the array”. The Examiner found that Aida fails to describe this limitation and instead relied on Aoyama to meet the limitation. Aoyama describes controlling the duration of which diodes are activated by ON/OFF switching means and that defective pixels can be set to the OFF state when detected (FF 21-22).

Appellants argue that Aoyama does not disclose *adjusting* the format of the display but instead Aoyama teaches disabling faulty pixels (App. Br. 10). Appellants argue that the format of Aoyama is *unchanged* (App. Br. 10). Appellants argue that if the displayed information includes areas of faulty pixels and Aoyama continues to use the same format, the result will be that faulty pixels are not illuminated. Appellants further argue that relocation of displayed information is conventionally termed a change in “format” and turning pixels on or off is not equivalent to changing the format because it is inconsistent with the conventional definition of “format” (Reply Br. 4).

As pointed out by the Examiner, claim 18 does not require a change or adjustment in format (Ans. 17 and Supp. Ans. 17). The claim language only requires *control* of the format. Appellants’ argument that a change in format is required is not persuasive since this specific limitation is not found in the claims and “limitations are not to be read into the claims from the

specification.”¹⁵ Appellants have not directed us to evidence to support their assertion that relocation of displayed information is conventionally termed a change in format. Moreover, this argument is based on the premise that a *change* in format is required by the claim language. Further, Appellants have not directed us to evidence supporting the contention that turning pixels on or off is inconsistent with the conventional definition of “format”.

“Argument of counsel cannot take the place of evidence lacking in the record.”¹⁶

For all these reasons we find that Appellants have failed to sufficiently show that the Examiner erred in determining that claims 18-19 are unpatentable under 35 U.S.C. § 103(a) over Aida in view of Aoyama.

Decision

Upon consideration of the record, and for the reasons given, the Examiner’s rejections of claims 10-12 as unpatentable over Suzuki, Huiberts and Kuno, claims 14-16 and 20 as anticipated under 35 U.S.C. § 102(b) by Aida, claim 17 as unpatentable under 35 U.S.C. § 103(a) over Aida and Holliman and claims 18-19 as unpatentable under 35 U.S.C. § 103(a) over Aida and Aoyama 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).

AFFIRMED

¹⁵ *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

¹⁶ *Meitzner v. Mindick*, 549 F.2d 775, 782 (CCPA 1977); *see also In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974).

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