

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* MICHAEL De ROOIJ and ROBERT STEIGERWALD

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Appeal 2007-1052  
Application 10/329,906  
Technology Center 2800

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Decided: June 29, 2007

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Before JAMES D. THOMAS, HOWARD B. BLANKENSHIP,  
and JEAN R. HOMERE, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's Final Rejection of claims 1 through 31, 33, and 34. Claim 32 has been canceled. We have jurisdiction under 35 U.S.C. § 6(b) to decide this appeal.

Appellants invented an integrated power converter system that injects an alternating current (AC) back into the mains voltage supply when excess energy is available. (Specification 4).

Claim 1 is illustrative of the claimed invention. It reads as follows:

1. A power conversion system comprising:

a first input converter configured to receive a first input voltage from a first power source and to produce a first converted input voltage;

a second input converter configured to receive a second input voltage from a second power source and to produce a second converted input voltage;

a combining circuit configured to receive each of the first converted input voltage and the second converted input voltage and to combine the first converted input voltage and the second converted input voltage to produce a combined converted voltage; and

an output inverter configured to receive the combined converted voltage and to produce a defined ac output current that is continuously injected into a mains voltage supply.

In rejecting the claims on appeal, the Examiner relied upon the following prior art:

Emmerich	US 5,889,659	Mar. 30, 1999
Ashley	US 6,043,629	Mar. 28, 2000
Fang	US 6,356,471 B1	Mar. 12, 2002
Lansberry	US 6,452,289 B1	Sep. 17, 2002

The Examiner rejected the claims on appeal as follows:

A. Claims 1, 5 through 8, 11, 13, 15 through 20, 24 through 31, 33, and 34 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Lansberry.<sup>1</sup>

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<sup>1</sup> We note that Lansberry qualifies as prior art under 35 U.S.C. § 102(e) since it has an effective filing date of July 10, 2000. See 37 C.F.R. 1.131 and MPEP 706.02(a).

B. Claims 2 through 4, 9, 10, 12, 14, 21, 22, and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lansberry.

C. Claims 1 through 7, 27, 28, and 32 through 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fang in view of Emmerich.

D. Claim 29 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fang in view of Emmerich and further in view of Lansberry.

E. Claims 8 through 18, 20 through 26, 30, and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fang in view of Emmerich and further in view of Ashley.

F. Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Fang in view of Emmerich, Ashley and further in view of Lansberry.

Appellants contend<sup>2</sup> that Lansberry does not anticipate claims 1, 5 through 8, 11, 13, 15 through 20, 24 through 31, 33, and 34. Particularly, Appellants contend that Lansberry does not disclose a system that continuously injects an AC current into the mains voltage supply, as set forth in independent claims 1, 8, 18, and 27. (Br. 10.) Appellants further contend that, as evidenced in column 2, lines 29-58 of the Lansberry reference, the lengthy discussion of the technical barriers and safety issues serve as disincentives for Lansberry to teach supplying energy back into a grid.

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<sup>2</sup> This decision considers only those arguments that Appellants submitted in the Appeal and Reply Briefs. Arguments that Appellants could have made but chose not to make in the Briefs are deemed to have been waived. *See* 37 C.F.R. § 41.37(c)(1) (vii)(eff. Sept. 13, 2004). *See also In re Watts*, 354 F.3d 1362, 1368, 69 USPQ2d 1453, 1458 (Fed. Cir. 2004). We have therefore not considered Appellants' previously submitted arguments, which are presently incorporated by reference in Appellants' Brief.

(Reply Br. 2.) In response, the Examiner contends that Lansberry teaches the cited limitation by continuously injecting an AC current into a load.

(Answer 10.)

Next, Appellants contend that claims 2 through 4, 9, 10, 12, 14, 21, 22, and 23 are not unpatentable over Lansberry because the cited reference does not teach injecting an AC current in the mains voltage. (Br. 13.) In response, the Examiner reiterates that Lansberry teaches the cited limitation by continuously injecting an AC current into a load. (Answer 15.)

Consequently, the Examiner contends that Lansberry in view of knowledge of the prior art renders the cited claims unpatentable. (*Id.*)

Further, Appellants contend that Fang, taken in combination with Emmerich, does not render claims 1 through 7, 27, 28, 32, and 34 unpatentable. Particularly, Appellants contend that neither Fang nor Emmerich teaches, inter alia, injecting the AC current into the mains voltage supply, as claimed. (Br. 12, 13, Reply Br. 3.) Additionally, Appellants contend that for these same reasons the combination of Fang and Emmerich with Lansberry or Ashley, does not render claims 8 through 26, 29 through 31 unpatentable. (Br. 14-15.) The Examiner, in contrast, contends that both Lansberry and Ashley further complement the Fang-Emmerich combination to yield the invention as set forth in cited claims. (Answer 15 through 17.) Therefore, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to combine the teachings of the cited references to render the cited claims unpatentable. (*Id.*)

We affirm.

## ISSUES

The *pivotal* issues in the appeal before us are as follows:

- (1) Have Appellants shown that the Examiner failed to establish that the disclosure of Lansberry anticipates the claimed invention under 35 U.S.C. § 102(a). Particularly, does Lansberry's disclosure of combining power from various sources to inject an alternating current (AC current) into a load teach Appellants' limitation of combining power from various sources to inject an AC current into the mains voltage?
- (2) Have Appellants shown that the Examiner failed to establish that one of ordinary skill in the art, at the time of the present invention, would have found that the disclosure of Lansberry renders the claimed invention unpatentable under 35 U.S.C. § 103(a)?
- (3) Have Appellants shown that the Examiner failed to establish that one of ordinary skill in the art, at the time of the present invention, would have found that the combined disclosures of Fang and Emmerich with Lansberry or Ashley renders the claimed invention unpatentable under 35 U.S.C. § 103(a)? Particularly, would the ordinarily skilled artisan conclude that the claimed limitation of combining power from various sources to inject an AC current into a mains voltage is obvious in light of the combined teachings of Fang and Emmerich?

## FINDINGS OF FACT

The following findings of fact are supported by a preponderance of the evidence.

### The invention

1. Appellants invented an integrated power conversion system (10) that combines power from various sources to inject an alternating current (AC) back into the mains voltage supply when excess energy is available.<sup>3</sup> (Specification 4).
2. As depicted in Figure 1, the power conversion system includes a plurality of power sources such as a photovoltaic array (10), a battery (14) and an alternative power source (16) (e.g. a fuel cell or a wind turbine). (*Id.*)
3. Each of the power source (10, 14, 16) is fed into a DC to DC converter (24) that produces a corresponding converted input voltage (*Id.* 5.)
4. The converted input voltages are fed into a DC regulated link (26) that produces a combined converted voltage. (*Id.*)

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<sup>3</sup> Appellants' Specification indicates that it is known in the art to implement an independent converter system to convert energy for each power source in a multi source system to produce a common voltage level that may be used to power a mains supply. Specifically, at page 1, lines 18-23 in the background of the invention section, Appellants' Specification states the following:

Generally speaking, in conventional multi-source systems, an independent converter system is implemented for each type of power source such that the energy provided from each alternative source can be converted to a common voltage level that may be used to supply power to a mains supply or load.

5. The combined converted voltage is fed into an inverter (28) that produces an AC output current that is injected into a mains voltage (30).  
(*Id.*)

#### The Prior Art Relied upon

6. As depicted in Figure 1, Lansberry teaches a grid-linked power supply system having a plurality of power sources (21, 60, 40), each providing an input voltage that is fed into a respective converter (10, 70, 50) to produce corresponding converted input voltages. (Col. 5, ll. 1-22.)

7. Lansberry teaches that the converted input voltages are combined in a circuit (77, 78, 79, and 89) that produces a combined input voltage. (Col. 5, ll. 24-34; col. 6, ll. 5-9.)

8. Lansberry teaches that the combined input voltage is fed into an inverter (80) that produces an AC current, which is fed to a load (100). (*Id.*)

9. Lansberry teaches that utilities companies have under-compensated consumers that supplied excess power into the utility grid. (Col. 2, ll. 55-58.)

10. As depicted in Figure 2, Fang teaches a plurality of power sources (AC/DC PFC and DC/DC) that are fed into an inverter (40) to produce an output voltage that is fed back to a reference generator. (Col. 5, ll. 9-13.)

11. As depicted in Figure 1, Emmerich teaches a utility company (12) that supplies energy to a load (10) through an inverter (12). (Col. 3, ll. 36-45.)

12. Emmerich also teaches an energy storage (20) that provides an input power to a converter to produce a converted voltage that is injected back into the grid to keep the energy of the grid from falling below a predetermined threshold. (Col. 3, ll. 8-23.)

13. Emmerich teaches that the power supplied by both the energy storage (20) and the utility company (12) are fed into a DC link, which produces an output voltage fed into the inverter to in turn produce an AC current injected into the load (10). (Col. 3, ll. 38-64.)

## PRINCIPLES OF LAW

### 1. ANTICIPATION

It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. *See In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

In rejecting claims under 35 U.S.C. § 102, a single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation. *Perricone v. Medicis Pharmaceutical Corp.*, 432 F.3d 1368, 1375-76, 77 USPQ2d 1321, 1325-26 (Fed. Cir. 2005), citing *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565, 24 USPQ2d 1321, 1326 (Fed. Cir. 1992). Anticipation of a patent claim requires a finding that the claim at issue “reads on” a prior art reference. *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346, 51 USPQ2d 1943, 1945 (Fed. Cir. 1999) (“In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art.”) (internal citations omitted).

## 2. OBVIOUSNESS

### OBVIOUSNESS (Prima Facie)

The Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966), stated that three factual inquiries underpin any determination of obviousness:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). *See also In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). Where the claimed subject matter involves more than the simple substitution one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness must be based on “an apparent reason to combine the known elements in the fashion claimed.” *KSR Int’l v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-41, 82 USPQ2d 1385, 1396 (2007). That is, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.*, 127 S. Ct. at 1741, 82 USPQ2d at 1396 (quoting *In re Kahn*, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed.

Cir. 2006)). Such reasoning can be based on interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art. *KSR*, 127 S. Ct. at 1740-41, 82 USPQ2d at 1396. Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the Appellant. *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444. *See also Piasecki*, 745 F.2d at 1472, 223 USPQ at 788. Thus, the Examiner must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the Examiner's conclusion.

#### ANALYSIS

##### A. 35 U.S.C. § 102(a) REJECTION

We begin our analysis by noting that the Court of Appeals for the Federal Circuit has determined “[t]eaching away is irrelevant to anticipation.” *Seachange International, Inc., v. C-Cor, Inc.*, 413 F.3d 1361, 1380, 75 USPQ2d 1385, 1398 (Fed. Cir. 2005), *citing Celeritas Tech., Ltd., v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522 (Fed. Cir. 1998); *Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1378, 58 USPQ2d 1508, 1515 (Fed. Cir. 2001). Therefore, Appellants’ reliance on the discussion of the technical barriers and safety issues in Lansberry to show disincentives in the cited reference to supply energy back into the grid is misplaced. Such arguments are therefore not persuasive.

Next, we note that independent claims 1, 8, 18, and 27 require combining power from various sources to inject an AC current into the

mains voltage. As detailed in the findings of fact section above, we have found that Lansberry teaches combining power from a plurality of sources to inject an AC current into a load. (Findings of Fact 7 and 8.) We have also found that Lansberry teaches that consumers are known to have supplied excess power back into the utility grid. (Finding of Fact 9.) In our view, the claimed mains voltage supply, given its broadest reasonable interpretation, is only a load that is being used<sup>4</sup> to store and/or supply previously received energy. Appellants appear to attempt to distinguish the claimed mains voltage from the load disclosed in Lansberry on the basis of their difference in types. Such a difference between the types of loads cannot serve as a proper basis to patentably distinguish these claims from the prior art of record. Further, as noted above, we find that Lansberry explicitly suggests that excess power is injected back into the utility grid. In light of these facts, we find that Lansberry's disclosure in the aggregate teaches injecting an AC current back in the mains voltage supply, as recited in independent claims 1, 8, 18, and 27. Therefore, it follows that the Examiner did not err in rejecting the cited claims as being anticipated by Lansberry.

Appellants did not provide separate arguments with respect to the rejection of dependent claims 5 through 7, 11, 13, 15 through 17, 19, 20, 24 through 26, 28 through 31, 33, and 34 as being anticipated by Lansberry. Therefore, they fall together with their respective base claims. *See In re*

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<sup>4</sup> A different intended use of the same structure as in the prior art does not prohibit a statutory anticipation rejection. It is well-settled that the recitation of a new intended use for an old product does not make a claim to that old product patentable. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). *See also Ex Parte Wikdahl*, 10 USPQ2d 15546, 1548 (Bd. Pat. App. & Int. 1989) and *In re Casey*, 370 F.2d 576, 580, 152, USPQ 235, 238, CCPA 1967.)

*Young*, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii).

B. 35 U.S.C. § 103(a) REJECTION

Now, we turn to the rejection of claims 2 through 4, 9, 10, 12, 14, and 21 through 23 as being unpatentable over Lansberry alone within 35 U.S.C. § 103. We note that Appellants merely reiterate the same arguments addressed above in the discussion of independent claims 1, 8, 18, and 27. As discussed above, we find that Lansberry teaches the claimed limitation of injecting an AC current into the mains voltage. As stated earlier, we find that the difference in nature between Appellants' load (Mains voltage) and Lansberry's (a house) cannot be considered as a proper basis of patentability for the present claims. Thus, we generally agree with the Examiner's position that Lansberry's teachings are reinforced by knowledge of the prior art. We find that the Examiner's position is substantiated by Appellants' own admission revealing that it is common practice in the art to inject excess power back into the mains voltage. (Finding of fact 1, footnote 3.) In light of these findings, it is our view that one of ordinary skill in the art would have found it obvious to combine the teachings of Lansberry with knowledge of the prior art to yield the invention as claimed. Therefore, it follows that the Examiner did not err in rejecting claims 2 through 4, 9, 10, 12, 14, and 21 through 23 as being unpatentable over of Lansberry.

Now, we turn to the rejection of claims 1 through 31, 33, and 34 as being unpatentable over Fang taken in combination with Emmerich. We have found that Fang teaches feeding back an output voltage to a reference generator. (Finding of fact 10.) We have also found that Emmerich teaches

an energy source that supplies power to a utility grid when the DC link voltage connected to these power sources falls below a threshold. (Findings of Fact 11 through 13.) Additionally, as noted above, Appellants' own Specification admits that combining power from a plurality of sources to inject an AC current back into the mains voltage is a conventional practice in the art. In light of these findings, it is our view that one of ordinary skill in the art would have found it obvious to combine the teachings of Fang and Emmerich to yield the invention as claimed. Therefore, it follows that the Examiner did not err in rejecting claims 1 through 33, and 34 as being unpatentable over Fang and Emmerich taken in various combinations with Ashley and Lansberry.

#### CONCLUSION OF LAW

On the record before us, Appellants have not shown that the Examiner has failed to establish that Lansberry anticipates claims 1, 5 through 8, 11, 13, 15 through 20, 24 through 31, 33, and 34 under 35 U.S.C. § 102(a). Further, Appellants have not shown that the Examiner failed to establish that Lansberry renders claims 2 through 4, 9, 10, 12, 14, and 21 through 23 unpatentable. Additionally, Appellants have not shown that the Examiner failed to establish that the combination of Fang and Emmerich, taken in combination with Ashley and Lansberry, renders claims 1 through 31, 33, and 34 unpatentable under 35 U.S.C. § 103(a).

#### DECISION

We have affirmed the Examiner's decision rejecting claims 1 through 31, 33, and 34.

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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

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