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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* TERRANCE L. THOMAS and JOHN HENRY BOOSE

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Appeal 2014-000712  
Application 12/208,638<sup>1</sup>  
Technology Center 2800

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Before HUNG H. BUI, KEVIN C. TROCK, and AMBER L. HAGY,  
*Administrative Patent Judges.*

TROCK, *Administrative Patent Judge.*

DECISION ON APPEAL

*Introduction*

Appellants seek review under 35 U.S.C. § 134(a) from the Non-Final Rejection of claims 1, 5–9, 13–16, 20–26, and 29–38.<sup>2</sup> We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> Appellants indicate the real party in interest is The Boeing Company. App. Br. 2.

<sup>2</sup> Claims 2–4, 10–12, 17–19, 27, and 28 are cancelled. Non-Final Act. 2.

*Invention*

The claims are directed to illuminating faults in a wiring system.

Abstract.

*Exemplary Claim*

Claim 1 is illustrative of the claimed subject matter:

1. A computer implemented method for illuminating faults in a wiring system in a vehicle, the computer implemented method comprising:

    sending a set of spread spectrum test time domain reflectometry signals through a set of paths in the wiring system in the vehicle during operation of the wiring system, wherein the set of spread spectrum test signals includes a pseudo noise code, operation of the wiring system comprises normal usage of the wiring system in operation in which data signals, power, or data signals and power are present in the wiring system;

    detecting a set of reflected pulses generated in response to the set of test signals during operation of the wiring system;

    analyzing in real time the set of reflected pulses to determine whether the fault has occurred;

    responsive to detecting the fault, estimating a location of the fault within the wiring system;

    presenting a wiring diagram for the wiring system with an indication of the location of the fault within the wiring system;  
and

    presenting an installation diagram for the wiring system with an indication of the location of the fault within the installation diagram, the installation diagram comprising the wiring diagram combined with a diagram of the vehicle so as to identify an actual location of the fault within the vehicle, and the installation diagram illustrating a physical relationship between the wiring diagram and the diagram of the vehicle.

## REJECTIONS

(1) Claims 1, 5–9, 13–16, 20–26, 29–31, 33–36, and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Baracat et al. (US Pub. 2002/0147561 A1; Oct. 10, 2002), Liu et al. (US Pub. 2009/0228223 A1; Sept. 10, 2009), Dunand (FR Pub. 2002/2822130 A1; Sept. 20, 2002), Chaplin et al. (US Pub. 2007/0300198 A1; Dec. 27, 2007), and Gervais (US Pub. 2006/0043976 A1; Mar. 2, 2006).

(2) Claim 32 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Baracat, Liu, Dunand, Chaplin, Gervais, and Yoon (US Pat. 6,272,387 B1; Aug. 7, 2001).

(3) Claim 37 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Baracat, Liu, Dunand, Chaplin, Gervais, and Shema et al. (US Pat. 6,766,331 B2; July 20, 2004).

## ANALYSIS

We have reviewed Appellants' arguments in the Briefs, the Examiner's rejections, and the Examiner's response to the Appellants' arguments. We are persuaded by Appellants' arguments that the Examiner erred. We highlight specific findings and argument for emphasis as follows.

Appellants contend it is improper to combine five separate references from different subject matter areas in order to construct a rejection of the independent claims, and that such a combination is an impermissible application of hindsight. App. Br. 12; Reply Br. 2–3. Appellants argue that the specific references cannot be combined together because their combination would change their principle of operation or make them

unsatisfactory for their intended purpose. App. Br. 18–19; Reply Br. 3–6. Appellants also argue that there is no logical or reasonable basis to combine the various references in the manner proposed by the Examiner and that a person of ordinary skill in the art would not look to so many references from such different areas of technology to construct Appellants’ invention. Reply Br. 5.

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of presenting a prima facie case of unpatentability. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). The Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). It is also well established that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007). Moreover, “rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) *cited with approval in KSR*, 550 U.S. at 418. The reasoning is important “because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR*, 550 U.S. at 418–19.

We have considered the Examiner's reasoning, in light of the Appellants' arguments that someone of ordinary skill in the art would not attempt to combine five separate pieces of prior art from such different areas of technology, and we find the Appellants' arguments persuasive of Examiner error. The Examiner has sought to combine references from such different areas of technology such as land-based systems (Baracat), power-line systems (Liu), passenger-comfort functions (Dunand), and portable systems (Gervais). The Examiner's articulated reasoning as to why someone of ordinary skill in the art would be motivated to combine this art ranges from (1) "improving the effectiveness and robustness on detecting wire faults in real time" (Non-Final Act. 6) to (2) "locating the physical location of the wiring system inside an aircraft" (*id.* at 7) to (3) "increasing the efficiency on tracking a desired wiring paths associated with the various elements of the aircraft and using the CAD tool to generate detail wiring diagram" (*id.* at 8) to (4) "increasing the efficiency and productively (sic) on testing, locating, and fixing problems." (*id.* at 9). While we agree with the Examiner that reliance on a large number of references in a rejection does not, by itself, weigh against the obviousness of the claimed invention (Ans. 4; *see In re Gorman*, 933 F.2d 982, 986 (Fed. Cir. 1991)), the necessity of ascribing such diverse motivations to combine five separate references from such different fields of technology persuades us that it would not be reasonable, nor obvious, for one of ordinary skill in the art to combine these references in the manner proffered by the Examiner.

Accordingly, we find the Examiner erred in combining Baracat, Liu, Dunand, Chaplin, and Gervais in rejecting independent claims 1, 9, 16, and

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21. Therefore, we do not sustain the rejection of claims 1, 5–9, 13–16, 20–26, and 29–38 under 35 U.S.C. § 103(a).

DECISION

We REVERSE the Examiner’s rejection of claims 1, 5–9, 13–16, 20–26, and 29–38.

REVERSED