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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JUNG-HWAN HWANG, SUNG-WEON KANG,
KYUNG-SOO KIM, JUNG-BUM KIM, IN-GI LIM,
CHANG-HEE HYOUNG, SUNG-EUN KIM,
JIN-KYUNG KIM, HYUNG-IL PARK, TAE-WOOK KANG,
and HEY-JIN MYOUNG

Appeal 2016-000937
Application 12/988,964¹
Technology Center 2600

Before CARL W. WHITEHEAD JR., JOHN R. KENNY, and
MICHAEL J. ENGLE, *Administrative Patent Judges*.

ENGLE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 3, 5, 6, 8, 11, and 15, which are all of the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ According to Appellants, the real party in interest is Samsung Electronics Co., Ltd. App. Br. 2.

Technology

The application relates to “using a human body as a transmission medium” and specifically to “measuring [a] phase response characteristic of a human body in human-body communication.” Spec. ¶ 5, Abstract.

Illustrative Claim

Claim 3 is illustrative and reproduced below with certain limitations at issue emphasized:

3. A system for measuring a phase response characteristic of a human body in human-body communication, the system comprising:

a reference signal transmitter configured to distribute a reference signal into first and second reference signals, to transmit the first reference signal through a human body and *to transmit the second reference signal through an optical cable,*

an optical signal receiver configured to receive the second reference signal from the reference signal transmitter through the *optical cable*, and to convert the second reference signal into an electrical signal; and

a phase measurer configured to measure phases of each of the first reference signal transmitted through the human body and the electrical signal converted from the second reference signal transmitted through the *optical cable* and to calculate a phase response characteristic of the human body by comparing the two measured phases.

Rejections

Claims 3, 6, 8, 11, and 15 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Hwang et al. (US 2010/0094159 A1; Apr. 15, 2010), Tajima (US 7,088,267 B2; Aug. 8, 2006), and Yoshida et al. (US 5,615,033; Mar. 25, 1997). Final Act. 3.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as obvious over the combination of Hwang, Tajima, Yoshida, and Decker et al. (US 5,206,500; Apr. 27, 1993). Final Act. 13.

ISSUE

Did the Examiner err in finding a person of ordinary skill in the art would have had reason to modify Hwang to use Yoshida's "optical cable" for the "second reference signal," as recited in claim 3?

ANALYSIS

Claims 3, 6, 8, 11, and 15

Claim 3 recites "to transmit the first reference signal through a human body and to transmit the second reference signal *through an optical cable.*"

Hwang—which shares many of the same named inventors as the present application—discloses "measuring the phase response characteristic of a human body in human body communication." Hwang Abstract. In a section titled "BACKGROUND ART," Hwang discloses Figure 1 as showing a first reference signal "through a human body" and a second reference signal "transmitted by electromagnetic coupling." Hwang ¶ 8. Figure 3 of Hwang, on the other hand, depicts "an embodiment of the present invention" that instead transmits the second reference signal "wirelessly." Hwang ¶¶ 30, 32.

However, Hwang "do[es] not explicitly show optical [cables]." Final Act. 5. Instead, the Examiner relies on Yoshida for teaching the claimed optical cable. *Id.* at 6.

Appellants argue that "one of the main purposes of . . . Hwang is to provide a system that can wirelessly transmit" and therefore "Hwang

essentially teaches away from having a wired communication” and “would not work for its intended purpose by adding the wired communication.” App. Br. 6 (some emphasis omitted).

We are not persuaded by Appellants’ argument. “A reference does not teach away . . . if it merely expresses a general preference for an alternative invention but does not criticize, discredit, or otherwise discourage investigation into the invention claimed.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (quotation omitted). Moreover, “a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.” *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006). Here, Hwang expressly acknowledges tradeoffs between “wired” and “wireless” methods:

[T]he wired transmission method is favorable in terms of security of data to be transmitted and transmission rate, but unfortunately, it is necessary to always carry a wired device, such as a cable.

. . . [T]he wireless transmission method is convenient to perform data transmission. However it needs additional circuits for wireless transmission and thus, it is difficult to provide at low costs.

Hwang ¶¶ 4–5. Appellants have not persuaded us that Hwang’s use of wireless transmission (e.g., for convenience) necessarily teaches away from wired transmissions (e.g., for increased “security” or “transmission rate”).

Moreover, Appellants have not addressed sufficiently the Examiner’s finding that modifying Hwang with Yoshida’s wired connection would “achieve a predictable result.” Ans. 3. For example, Appellants do not point to any unexpected result from replacing Hwang’s wireless transmission with an optical cable. *See* Reply Br. 2–3. To the contrary, Hwang supports the

Examiner's finding that these were known and predictable methods: "As methods of transmitting various data between these devices, there are (1) a wired transmission method using a cable and (2) a wireless transmission method using radio wave or light." Hwang ¶ 3; *see also* Hwang ¶ 8, Fig. 1 (showing a reference signal "transmitted through electromagnetic coupling"). As the Supreme Court has held, "when a patent simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (quotation omitted).

Appellants further argue that the claimed optical cable solves Hwang's problem of reflected wireless signals. App. Br. 7. However, Appellants fail to explain the relevance of this to the motivation of a person of ordinary skill in the art at the time of the invention. For example, Appellants do not explain whether reflection was a known problem that would have motivated a person of ordinary skill in the art to use an optical cable rather than a wireless transmission, nor whether the "electromagnetic coupling" shown in Figure 1 of Hwang already resolved such reflections.

Appellants also argue that "Yoshida is directed to a completely different field of endeavor and should be removed as a prior art reference." App. Br. 8. First, "[t]he field of endeavor of a patent is not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field." *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1001 (Fed. Cir. 2016). Here, the Examiner finds Yoshida's optical cable "can be used in *any* communication device." Ans. 7 (emphasis added). Second, being in the same "field of endeavor" is merely

one way for a reference to be analogous prior art; it is not the only way. *In re Ethicon, Inc.*, 844 F.3d 1344, 1349 (Fed. Cir. 2017) (“Prior art is analogous where either (1) the art is from the same field of endeavor, regardless of the problem addressed or (2) even if the reference is not within the same field of endeavor, the reference still is reasonably pertinent to the particular problem with which the inventor is involved.”) (quotations omitted). Thus, even if Yoshida were not in the same field of endeavor, it would still be reasonably pertinent to the particular problem with which the inventor is involved (i.e., the transmission of a reference signal).

Accordingly, we sustain the Examiner’s rejection of claim 3, and claims 6, 8, 11, and 15, which Appellants argue are patentable for similar reasons. *See* App. Br. 9–13; 37 C.F.R. § 41.37(c)(1)(iv).

Claim 5

Claim 5 depends from claim 3, and Appellants argue “Decker adds nothing to cure the deficiencies of Hwang, Tajima and Yoshida.” App. Br. 13. We do not agree that Hwang, Tajima, and Yoshida are deficient for the reasons discussed above.

Accordingly, we sustain the Examiner’s rejection of claim 5.

DECISION

For the reasons above, we affirm the Examiner’s decision rejecting claims 3, 5, 6, 8, 11, and 15.

No time for taking subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED